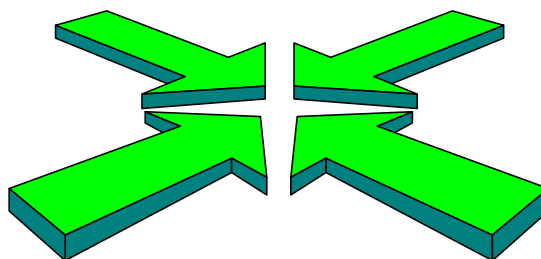


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**INVENTAIRE DES EMISSIONS  
DE GAZ A EFFET DE SERRE  
EN FRANCE AU COURS  
DE LA PERIODE 1990 - 1999**



**décembre 2000**

format unfccc

## INVENTAIRE DES EMISSIONS DE GAZ A EFFET DE SERRE EN FRANCE AU COURS DE LA PERIODE 1990 - 1999

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**Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique**

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## *résumé*

Le présent rapport fournit pour la France sur la période 1990 - 1999 les données d'émissions des différentes substances impliquées dans l'accroissement de l'effet de serre retenues au titre de la Convention Cadre sur le Changement du Climat de l'Organisation des Nations Unies. Les substances inventoriées sont les six gaz à effet de serre direct qui constituent le « panier de Kyoto » : dioxyde de carbone (CO<sub>2</sub>), méthane (CH<sub>4</sub>), oxyde nitreux (N<sub>2</sub>O), les deux familles de substances halogénées – hydrofluorocarbures (HFC) et perfluorocarbures (PFC) ainsi que le l'hexafluorure de soufre (SF<sub>6</sub>). A ces substances s'ajoutent les quatre gaz à effet de serre indirect : SO<sub>2</sub>, NO<sub>x</sub>, CO<sub>2</sub> et CO pour lesquels les Etats sont invités à rapporter les émissions dans le cadre de la convention.

Pour l'ensemble de la période 1990 – 1998 les estimations produites dans les inventaires précédents ont été revues et corrigées pour tenir compte des mises à jour statistiques, de l'amélioration des connaissances, de modifications méthodologiques et des **spécifications contenues dans le document FCCC/CP/1999/7** de la Convention Cadre sur le Changement Climatique des Nations Unies (UNFCCC) pour ce qui concerne les rapports relatifs aux inventaires d'émissions et notamment la mise en œuvre du format de rapport commun (CRF).

**Les émissions des gaz à effet de serre direct** exprimées en terme de pouvoir de réchauffement global se situent pour l'année 1999 à **2,1 % au-dessous de celles de 1990**. Cette **stabilité apparente se traduit dans le détail** des six gaz impliqués par des **situations beaucoup plus contrastées**. Le **niveau d'émission nette de dioxyde de carbone est en 1999 supérieur de 3 % à celui de 1990**,

## *summary*

The present report supplies emission data, for France and for the period 1990 - 1999, concerning all the substances involved in the increase in the greenhouse effect and covered under the United Nations' Framework Convention on Climate Change (UNFCCC). The substances are the six direct greenhouse gases covered by the Kyoto protocol : carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), the two species of halogenous substances - hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>). Emissions of sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), non methane volatile organic compounds (NMVOCs), and carbon monoxide (CO), gases which indirectly make a significant contribution to the greenhouse effect, are reported under the Convention.

For the period 1990 - 1998 as a whole, estimates provided in the previous inventories have been reviewed and corrected to take into account updated statistics, improved knowledge, possible changes in methodology and specifications contained in the guidelines (FCCC/CP/1999/7) defined by the UNFCCC on reporting for inventories of emissions, in particular the use of the Common Reporting Format (CRF).

The emissions of the six gases that directly contribute to the greenhouse effect are expressed in terms of Global Warming Potential (GWP) which decreased by 2.1 % in 1999 compared to 1990. This apparent unchanged level of emissions shows, in detail, trends, in each of the six gases involved, that are much more standing in contrast. The level of net CO<sub>2</sub> emissions is higher by 3 % in 1999 than in

les rejets de **méthane** sont en **recul de près de 9 %**, les émissions **d'oxyde nitreux en diminution de 17 %**.

L'inventaire met aussi en évidence une **évolution très atypique** des émissions **des hydrofluorocarbures en masse (+962 %)** qui, compte tenu des **différences structurelles** liées aux molécules mises en jeu, se traduit **seulement par un accroissement de 109 % en terme de pouvoir de réchauffement global**. Les **perfluorocarbures** sont en **régression de 41 %** et **l'hexafluorure de soufre croît de 10 %** sur la période 1990 - 1999. Les émissions de **HFC et de PFC tendent à s'accroître rapidement au cours des trois à quatre dernières années**.

Les émissions des gaz à effet de serre indirect sont orientées à la baisse pour les quatre gaz visés. Cette **baisse** est de **17 %** pour les **oxydes d'azote**, **23 %** pour les **composés organiques volatils non méthaniques**, **33 %** pour le **monoxyde de carbone** et atteint **44 %** pour le **dioxyde de soufre**.

La contribution des différents gaz au "panier" est la suivante pour 1999 (en %) : CO<sub>2</sub> 70 ; N<sub>2</sub>O 16 ; CH<sub>4</sub> 12 ; SF<sub>6</sub> 0,5 ; HFC 0,99 et PFC 0,39.

Les puits de CO<sub>2</sub> représentent environ un quart des émissions brutes totales de gaz à effet de serre exprimées en équivalent CO<sub>2</sub>.

Bien que des progrès significatifs soient introduits en continu quant à la couverture des sources et la qualité des estimations, les émissions s'accompagnent d'incertitudes non négligeables dont il convient de tenir compte dans l'utilisation de ces informations.

Des révisions ultérieures de ces données sont toujours possibles sinon probables pour tenir compte des modifications méthodologiques et des travaux en cours au plan international en vue d'améliorer la connaissance et les règles d'établissement et de présentation des émissions.

1990, emissions of CH<sub>4</sub> are decreasing by 9 %, emissions of N<sub>2</sub>O are in decrease by 17 %. The inventory also shows an atypical trend in the emissions of HFCs in mass (+ 962 %), i.e., taking into account structural differences linked to the present molecules, an increase by 109 % only in terms of GWP. PFCs are decreasing by 41 % and SF<sub>6</sub> is increasing by 10 % within the period 1990 - 1999. Emissions of HFCs and PFCs lead to increase swiftly within the three, four last years.

The emissions of the four gases that indirectly contribute to the greenhouse effect are moving towards decrease: this is by 17% for NO<sub>x</sub>, 23% as regards NMVOCs, 33% for CO and by 44% regarding SO<sub>2</sub>.

Out of the six greenhouse gases covered by the Kyoto Protocol, CO<sub>2</sub> accounts for the largest share in total GWP emissions (70 %), followed by N<sub>2</sub>O (16 %), CH<sub>4</sub> (12 %), HFCs (0.99 %), SF<sub>6</sub> (0.5 %), and PFCs (0.39 %).

CO<sub>2</sub> sinks account for approximately one quarter of the total crude greenhouse gas emissions expressed as CO<sub>2</sub> equivalent.

Despite the fact that significant progresses have been introduced continuously with regard to the covering of sources and the quality of estimates, emissions have uncertainties that are not negligible and which must be taken into account in the use of this information.

Future reviews of these data are always possible, if not probable, to take into account both changes in methodology and work underway at international level in order to improve knowledge and rules on compiling and presenting emissions.

## EMISSIONS DES GAZ A EFFET DE SERRE EN FRANCE (Métropole et Outre-mer)

*Ces valeurs sont régulièrement révisées et complétées afin de tenir compte de l'amélioration permanente des connaissances et des méthodes d'estimation. Les utilisateurs sont invités à s'assurer de l'existence de mises à jour plus récentes.*

source CITEPA / CORALIE format UNFCCC (\*) - mise à jour 07/11/2000

serre\_dec2000/résumé.xls

Substance	Unité	1990		1999		Ecart 99 - 90 (%)	
		hors LULUCF (c)	net (a)	hors LULUCF (c)	net (a)	hors LULUCF (c)	net (a)
Gaz à effet de serre direct							
CO <sub>2</sub>	Tg	386	326	405	336	5.0	3.0
	Tg équiv. C	105	89	110	92	5.0	3.0
CH <sub>4</sub>	Gg	3010	3 109	2740	2 841	-9.0	-8.6
	Tg équiv. CO <sub>2</sub>	63	65	58	60	-9.0	-8.6
	Tg équiv. C (**)	17	18	16	16	-9.0	-8.6
N <sub>2</sub> O	Gg	288	306	236	254	-17	-17
	Tg équiv. CO <sub>2</sub>	89	95	73	79	-17	-17
	Tg équiv. C (**)	24	26	20	21	-17	-17
HFC	Mg	258	258	2 739	2 739	962	962
	Tg équiv. CO <sub>2</sub>	2.3	2.3	4.8	4.8	114	114
	Tg équiv. C (**)	0.6	0.6	1.3	1.3	114	114
PFC	Mg	452	452	268	268	-41	-41
	Tg équiv. CO <sub>2</sub>	3.2	3.2	1.9	1.9	-40	-40
	Tg équiv. C (**)	0.9	0.9	0.5	0.5	-40	-40
SF <sub>6</sub>	Mg	92	92	101	101	9.8	9.8
	Tg équiv. CO <sub>2</sub>	2.2	2.2	2.4	2.4	9.8	9.8
	Tg équiv. C (**)	0.6	0.6	0.7	0.7	9.8	9.8
PRG (b)	Tg équiv. CO <sub>2</sub>	546	494	545	483	-2.1	-2.1
	Tg équiv. C (**)	149	135	149	132	-2.1	-2.1
	kg CO <sub>2</sub> /hab.	9 351	8 460	8 944	7 937	-6.2	-6.2
	kg C/hab. (**)	2 550	2 307	2 439	2 165	-6.2	-6.2
	g CO <sub>2</sub> /euros PIB	544	492	397	352	-28	-28
	g C/euros PIB (**)	148	134	108	96	-28	-28
Gaz à effet de serre indirect							
SO <sub>2</sub>	Gg	1 321	1 321	741	741	-44	-44
NOx	Gg	1 926	1 929	1 606	1 609	-17	-17
COVNM	Gg	2 526	2 963	1 845	2 295	-27	-23
CO	Gg	10 904	10 996	7 271	7 369	-33	-33

(a) puits, changement d'utilisation des sols et sylviculture inclus

(b) pouvoir de réchauffement global intégré sur une période de 100 ans et calculé sur la base des coefficients suivants : CO<sub>2</sub> = 1 ; CH<sub>4</sub> = 21 ; N<sub>2</sub>O = 310 ; SF<sub>6</sub> = 23900 ; HFC et PFC = valeurs variables dépendantes de la part relative des différentes molécules.

(c) hors changement d'utilisation des sols, hors puits et hors sylviculture

(\*) Les émissions du trafic maritime international et du trafic aérien international sont exclues.

(\*\*) Tg équivalent Carbone = (12/44) Tg équivalent CO<sub>2</sub>

	1990	1999	Ecart 99 - 90 (%)
Population (1000 hab.)(c)	58 356	60 882	4
PIB (10 <sup>9</sup> euros courants)(c)(d)	1 004	1 373	37

(c) source INSEE

(d) source INSEE et CITEPA

## *préambule*

La convention cadre des Nations unies sur le changement climatique comporte les dispositions relatives à la communication des informations portant sur les émissions dans l'air ; à savoir, les émissions de gaz à effet de serre direct (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub>) et à effet indirect (NO<sub>x</sub>, CO, COVNM, SO<sub>2</sub>). Le Protocole de Kyoto adopté le 10 décembre 1997 précise les engagements assignés à chaque Etat signataire.

Les données présentées s'appliquent aux champs géographiques, temporels et sectoriels définis spécifiquement dans ce cadre et peuvent donc différer de celles correspondant à d'autres définitions établies dans le cadre d'autres conventions comme par exemple celle relative à la pollution transfrontalière à longue distance.

Au cours des dernières années, notamment depuis 1994, date du premier inventaire des émissions de gaz à effet de serre (cf. Programme National de Prévention du Changement de Climat - Février 1995), les estimations des émissions ont été révisées à plusieurs reprises pour tenir compte des événements intervenus au plan international concernant le développement et l'harmonisation des méthodes de quantification des rejets atmosphériques. Ce processus n'est pas encore totalement achevé, ce qui laisse augurer que de nouvelles révisions s'avéreront nécessaires, en particulier en ce qui concerne la comptabilisation des puits de CO<sub>2</sub>. En outre, au plan national, diverses investigations sont régulièrement menées afin d'améliorer la qualité des estimations des émissions. Le présent rapport intègre les changements et progrès effectifs à ce jour. Certaines estimations peuvent donc différer sensiblement de celles produites précédemment.

**Ce rapport annule et remplace toutes les publications antérieures établies pour la même application, en particulier les mises à jour de l'inventaire en date du 30 avril 1999 et du 1<sup>er</sup> mars 2000.**

Avec l'amélioration continue des connaissances, les évolutions méthodologiques, les révisions statistiques et les évolutions des spécifications de l'inventaire susceptibles d'intervenir, il y a lieu d'attirer l'attention du lecteur sur la nécessité de s'assurer auprès du CITEPA de l'existence éventuelle d'une mise à jour plus récente.



## *pour une bonne interprétation des résultats*

### **1. Références et limitations méthodologiques**

Les estimations des émissions sont déterminées et rapportées conformément aux prescriptions définies par l'UNFCCC (cf. document FCCC/CP/1999/7 et Guidelines du GIEC publiées en 1996). Plus précisément, les émissions sont estimées selon les méthodes préconisées ou des méthodes équivalentes et les données sont rapportées selon la structure définie dans les tables du format de rapport commun (CRF) établi par les Nations Unies.

Dans le présent inventaire, la France couvre l'ensemble constitué par les 96 départements de la métropole, les départements d'outre-mer (Guadeloupe, Martinique, Guyane et Ile de la Réunion), les collectivités territoriales de Saint-Pierre-et-Miquelon et de Mayotte, ainsi que les territoires d'outre-mer (Nouvelle-Calédonie, Polynésie Française et Wallis-et-Futuna). Quelques autres territoires exigus et pratiquement inhabités ainsi que les Terres Australes et Antarctiques Françaises ne sont pas pris en compte ; les émissions anthropiques y étant quasi nulles. Cette particularité géographique propre à la France a conduit à réaliser en fait deux inventaires : l'un relatif à la métropole et l'autre relatif aux départements et territoires d'outre-mer.

Les émissions sont déterminées, dans un premier temps, au moyen du système CORINAIR utilisé par le CITEPA pour réaliser l'ensemble des inventaires français. Ce système, reconnu au plan international et largement utilisé à l'échelle européenne, est conçu avec pour objectif de répondre à différents besoins en matière d'inventaire d'émissions (la Convention Climat étant l'un d'eux). Il est basé sur une structure suffisamment fine pour être compatible avec les spécifications de l'UNFCCC. C'est à dire que le niveau de détail des sources prises en compte est, sauf exception, égal ou plus fin que celui requis par le CRF.

Dans un deuxième temps, les résultats obtenus selon la structure fine CORINAIR (SNAP 97) sont traduits au format UNFCCC / CRF par l'intermédiaire d'une interface permettant d'allouer à chaque poste du CRF chacune des émissions élémentaires du système CORINAIR (voir annexe 1). Ces données sont complétées autant que de besoin par des informations additionnelles pour produire l'inventaire selon les spécifications demandées.

Une description générale de la méthode est présentée en annexe 3. Cependant, pour une bonne interprétation des résultats, quelques éléments sont rappelés ci-après.

La méthode utilisée pour les sources liées à l'utilisation de l'énergie, correspond à l'approche dite "sectorielle". Les tests effectués pour le CO<sub>2</sub> conduisent à l'obtention de résultats en bon accord avec l'approche dite de "référence". Toutefois, il est utile de rappeler que les conventions suivantes ont été retenues :

- l'auto-production d'électricité est comptabilisée dans le secteur producteur comme par exemple l'industrie, le chauffage urbain, etc. (spécification GIEC).
- les émissions de COVNM par évaporation dans le cas des véhicules routiers figurent dans la rubrique transports routiers dans la catégorie combustion (spécification UNFCCC).

- la définition du trafic maritime international prise en compte est identique à celle retenue par la Commission Economique pour l'Europe des Nations Unies. De ce fait, une partie des soutes françaises n'est pas comptabilisée dans le champ couvert par les émissions nationales. Cette partie correspond à environ 9 Mt CO<sub>2</sub> en 1999 et 8 Mt en 1990. La partie non comptabilisée dans le total national est rapportée hors total (spécification UNFCCC).
- Le trafic aérien domestique est inclus dans le total national, tandis que la part relative au trafic aérien international est rapportée séparément (spécification UNFCCC). Les quantités correspondantes passent de près de 9 Mt CO<sub>2</sub> en 1990 à 14 Mt CO<sub>2</sub> en 1999.
- les forêts qui ne sont pas dans un état d'équilibre naturel ont été intégrées dans les émissions anthropiques (95 % de la forêt en métropole).
- les émissions de CO<sub>2</sub> d'origine organique lors du traitement des déchets ne sont pas retenues : on conserve seulement 15 % du CO<sub>2</sub> provenant de l'incinération des déchets ménagers (estimation de la part de carbone inorganique) et l'on exclut le CO<sub>2</sub> provenant de l'incinération des boues issues du traitement des eaux, de l'épandage des boues, des décharges, de la fabrication de compost et de la production de biogaz.

## 2. Pouvoir de réchauffement global et définitions

Le pouvoir de réchauffement global net (PRG), intégré sur une période de 100 ans, provenant des six substances retenues dans le protocole de Kyoto est calculé au moyen des PRG respectifs de chacune des substances exprimés en équivalent CO<sub>2</sub>. A savoir :

PRG<sub>CO2</sub> = 1 par définition

PRG<sub>CH4</sub> = 21

PRG<sub>N2O</sub> = 310

PRG<sub>SF6</sub> = 23900

PRG<sub>HFC</sub> = valeurs variables selon les molécules considérées et leurs contributions qui sont variables au cours des années de la période étudiée (exemples 8733 en 1990, 1673 en 1998). Les calculs sont effectués sur les bases suivantes : HFC-125 = 2800, HFC-134a = 1300, HFC-143a = 3800, HFC-152a = 140, HFC-227ea = 2900, HFC-23 = 11700, HFC-4310mee = 1300 et HFC-32 = 650.

PRG<sub>PFC</sub> = valeurs variables selon les molécules considérées et leurs contributions qui sont variables au cours des années de la période étudiée (exemples 7075 en 1990, 7173 en 1998). Les calculs sont effectués sur les bases suivantes : PFC-14 = 6500, PFC-116 = 9200, C<sub>4</sub>F<sub>10</sub> = 7000, C<sub>5</sub>F<sub>12</sub> = 7500, C<sub>6</sub>F<sub>14</sub> = 6500.

Les émissions des différentes substances rapportées sous entendent les définitions suivantes :

- CO<sub>2</sub> dioxyde de carbone exprimé en CO<sub>2</sub> ultime, soit brut, soit net. Dans ce dernier cas les puits sont déduits des émissions brutes.
- CH<sub>4</sub> méthane exprimé en CH<sub>4</sub>.
- N<sub>2</sub>O oxyde nitreux exprimé en N<sub>2</sub>O.
- HFC hydrofluorocarbures exprimés en somme de HFC bruts (aucune équivalence n'est prise en compte sauf pour le calcul du PRG).
- PFC perfluorocarbures exprimés en somme de PFC bruts (aucune équivalence n'est prise en compte sauf pour le calcul du PRG).
- SF<sub>6</sub> hexafluorure de soufre exprimé en SF<sub>6</sub>.

Les quatre gaz ci-dessous participent indirectement à l'accroissement de l'effet de serre en tant que polluants primaires intervenant dans la formation de polluants secondaires gazeux contribuant à l'effet de serre comme l'ozone ou les aérosols. Ils n'entrent pas dans le "panier" de Kyoto et ne sont pas assortis d'un PRG par les experts du GIEC. Ils sont inclus dans l'inventaire avec les conventions suivantes :

- CO monoxyde de carbone exprimé en CO.
- COVNM composés organiques volatils non méthaniques exprimés en somme de COV bruts (aucune équivalence n'est prise en compte).
- NOx NO + NO<sub>2</sub>, exprimés en équivalent NO<sub>2</sub>.
- SO<sub>2</sub> SO<sub>2</sub> + SO<sub>3</sub>, exprimés en équivalent SO<sub>2</sub>.

### 3. Facteurs d'émission

Les facteurs d'émission retenus sont déterminés pour chaque type de source, de combustible et de technique rencontrés. Ils tiennent compte dans un grand nombre de cas de données spécifiques relatives à chaque secteur et/ou au cas français. Un certain nombre de données proviennent d'une mesure directe des émissions en particulier pour le SO<sub>2</sub> et secondairement les NOx, les COVNM et le N<sub>2</sub>O.

Dans le cas particulier du CO<sub>2</sub> résultant de la combustion d'énergie fossile, des facteurs d'émission sont utilisés par défaut lorsque des informations spécifiques ne sont pas disponibles. A savoir pour les principaux combustibles (en kg CO<sub>2</sub>/GJ) :

charbon à coke ou à vapeur	95	charbon sous-bitumineux	96
agglomérés	95	lignite	100
coke de houille	107	coke de lignite	108
coke de pétrole	96	fioul lourd	78 +/- 1 selon qualité
fioul domestique et gazole	75	kérosène et carburacteur	74
essence	73	gaz naturel	57
GPL	64	gaz de raffinerie	56
gaz de cokerie	47	gaz de haut fourneau	268

Pour les autres sources, non relatives à l'utilisation de l'énergie, les facteurs d'émission sont, si nécessaire, déterminés au cas par cas.

### 4. Principales modifications apportées à la présente révision

Depuis la mise à jour de l'inventaire des émissions de gaz à effet de serre en date du 1<sup>er</sup> mars 2000, plusieurs améliorations et changements notables ont été opérés. Les corrections concernent dans certains cas toute la série chronologique et dans d'autres cas n'affectent que certaines années. Les principaux écarts enregistrés sont explicités ci-après ; on se limite aux bornes de l'intervalle considéré dans le rapport précédent (années 1990 et 1998). Les différences dues aux ajustements des données provisoires utilisées précédemment en raison de l'indisponibilité de certaines informations ne sont pas détaillées car implicites.

Le détail des modifications est indiqué dans les tables correspondantes du CRF pour l'année 1999.

#### 4.1 - Energie

- la révision statistique rétroactive du bilan énergétique apportée par l'Observatoire de l'Energie aux années 1996 à 1998 conduit à une révision des valeurs précédentes.
- la consolidation de l'enquête chauffage urbain pour 1997 a induit une mise à jour des données qui reste limitée. A noter que les enquêtes pour 1998 et 1999 n'étant pas encore disponibles, les valeurs de 1997 ont été provisoirement reportées et feront l'objet d'ajus-

tements ultérieurs. Par effet de ricochet, toute modification du poste "chauffage urbain" a une incidence sur le secteur "résidentiel / tertiaire / commercial" du fait de la structure du bilan énergétique national.

- les consommations de produits combustibles issus de la biomasse (bois et résidus de récoltes) ont été entièrement révisés suite à la disponibilité de l'étude réalisée par le CEREN pour l'Observatoire de l'Energie. Les secteurs "industrie" et "résidentiel / tertiaire / commercial" sont concernés. Pour le secteur "résidentiel", le résultat de cette révision se traduit par une augmentation des émissions de l'ordre de 12 % en 1990 (soit 6 Tg pour le CO<sub>2</sub>). Cet écart s'amenuise au cours des années suivantes pour être quasi nul en 1997.
- les travaux dits de " rebaselement de la circulation " effectués dans le courant de l'année par la Commission des Comptes des Transports de la Nation (CCTN) ont conduit à une révision des hypothèses du parc roulant et des consommations de carburants. Par effet de ricochet, ces nouvelles hypothèses affectent également le trafic maritime (voir plus loin). Les émissions du transport routier pour CO<sub>2</sub> et SO<sub>2</sub>, substances liées uniquement aux quantités consommées, ne subissent que des changements relativement faibles, tandis qu'ils sont plus importants pour les autres substances qui dépendent du type de véhicule et des conditions de circulation. Le CO<sub>2</sub> est diminué de respectivement 2,1 et 1,7 Tg en 1990 et 1998, le SO<sub>2</sub> baisse de 4 et 0,55 Gg, les NOx augmentent de 7 et 20 Gg, les COVNM reculent de 65 et 67 Gg et le CO baisse de 48 et 148 Gg.
- les apports du groupe de travail de la DGAC sur l'évaluation du CO<sub>2</sub> du trafic aérien a conduit à un nouvel affinement en tenant compte notamment des appareils de type turbo-propulseur. Une surestimation des émissions du trafic national dans la version précédente a été mise en évidence. Les émissions de CO<sub>2</sub> sont réduites respectivement de 0,76 et 1,3 Tg en 1990 et 1998, celles de NOx sont diminuées de 10 et 5 Gg. Les modifications concernent aussi SO<sub>2</sub>, CO et COVNM mais sont relativement faibles.
- la prise en compte des dispositions dites "stage 1" en ce qui concerne la distribution de l'essence ont été introduites et ont pour conséquence une réduction des émissions de COVNM en 1997 (-0,5 Gg) et en 1998 (-7,4 Gg).
- la conséquence des travaux de la CCTN déjà mentionnés ci-dessus et la révision des facteurs d'émission du SO<sub>2</sub> pour le trafic maritime ont un impact important sur le SO<sub>2</sub> (+10 Gg en 1990 et +9,4 Gg en 1998), les NOx (+4,2 Gg en 1990 et +1,8 Gg en 1998), les COVNM (+21 Gg en 1990 et +30 Gg en 1998), le CO (+85 Gg en 1990 et +123 Gg en 1998) et le CO<sub>2</sub> (+0,7 Tg en 1990 et 0,6 Tg en 1998)

En conséquence, les consommations d'énergie des secteurs 1A1, 1A2, 1A3, 1A4 et 1B2 ont été révisées.

#### 4.2 - Procédés industriels

Les études relatives aux gaz fluorés (HFC, PFC et SF<sub>6</sub>) se sont poursuivies notamment en ce qui concerne les HFC avec les travaux de D. Clodic de l'Ecole des Mines de Paris et divers autres secteurs. Elles ont permis d'affiner certaines informations. Le domaine du froid est particulièrement concerné. Au total les émissions de l'année 1998 sont relevées de 226 Mg pour les HFC, et de 7 Mg pour les PFC. D'autres années intermédiaires ont également fait l'objet de modifications.

#### 4.3 - Solvants et autres produits

- l'application stricte des règles du CRF ont conduit à ne plus convertir en CO<sub>2</sub> la quantité de carbone contenue dans les COVNM attribués au secteur 3C. L'impact sur les émissions de CO<sub>2</sub> reste très faible (de l'ordre de 0,3 Tg).

- certaines entreprises appartenant au secteur de la chimie fine ont été nouvellement prises en compte, ce qui amène une réévaluation des émissions de COVNM de 6,5 Gg en 1990 et de 4,3 Gg en 1998.

#### 4.4 - Agriculture

Il n'y a pas de changement apporté dans ce secteur depuis la dernière version de l'inventaire, mis à part des ajustements statistiques de données devenues disponibles dans l'intervalle.

#### 4.5 – Changement d'affectation des sols et sylviculture

- il n'y a pas eu de changement apporté dans ce secteur depuis la dernière version de l'inventaire, mis à part des ajustements statistiques de données devenues disponibles dans l'intervalle.
- la mise à jour des profils de température utilisés pour l'année 1998 est responsable d'une correction de -20 Gg de COVNM.

#### 4.6 – Déchets

- c'est dans le domaine du traitement des déchets qu'est intervenue la principale modification depuis la révision précédente de l'inventaire en mars 2000. Du fait de la disponibilité de données plus nombreuses et plus détaillées issues des enquêtes de l'ADEME, il s'avérait judicieux de réviser les estimations précédentes. Jusqu'à la version de mars 2000, les émissions des décharges d'ordures ménagères et assimilées étaient déterminées au moyen de la méthode dite "d'ordre zéro" (la totalité des déchets est supposée se décomposer durant l'année de mise en décharge). La révision méthodologique consiste à utiliser la méthode préconisée par le GIEC dite "d'ordre un" (les déchets sont supposés se décomposer progressivement pendant 30 ans avec une loi de décroissance préétablie) plus représentative de la réalité du phénomène. Les deux méthodes aboutissent à terme aux mêmes quantités de gaz de décharge, mais diffèrent sur leur répartition dans le temps. La nouvelle méthode et les paramètres associés ont été mis en œuvre en concertation avec l'ADEME. Les changements introduits conduisent à rectifier les émissions de CH<sub>4</sub> de +73 Gg en 1990 et +364 Gg en 1998.
- le retour des informations issues de la TGAP en ce qui concerne l'incinération des déchets ménagers a permis d'affiner les facteurs d'émission précédemment utilisés à partir de l'année 1995. Cette modification concerne le SO<sub>2</sub>, les NO<sub>x</sub> et les COVNM et représente -8 Gg en 1998 pour le SO<sub>2</sub>, -12 Gg pour les NO<sub>x</sub> et -0,8 Gg pour les COVNM.

#### 4.7 – Autre

Ce secteur ne reçoit toujours aucune source émettrice.

#### 4.8 – Memo items

Les travaux mentionnés en ce qui concerne le trafic aérien (cf. section 4.1 ci-dessus) ont également un impact sur les quantités d'émissions rapportées hors total national pour les avions. Le CO<sub>2</sub> est ajusté à la hausse de 0,77 Tg en 1990 et de 0,78 Tg en 1998, les NO<sub>x</sub> sont abaissés de 3,9 et 1,2 Gg respectivement aux années 1990 et 1998. Le CO, les COVNM et le SO<sub>2</sub> sont affectés de manière marginale.

## EMISSIONS DES GAZ A EFFET DE SERRE EN FRANCE

(Métropole et Outre-mer)

*Ecart entre la version de décembre 2000 et celle de mars 2000*

source CITEPA / CORALIE format UNFCCC (\*)

serre\_dec2000.xls / comp-méth

Substance	année 1990 (e)		année 1998 (e)		écart entre les deux versions (en %)	
	en mars 2000	en décembre 2000	en mars 2000	en décembre 2000	1990	1998
<b>Gaz à effet de serre direct</b>						
CO <sub>2</sub> hors LULUCF (f)	387.6	385.5	412.9	410.7	-0.5	-0.5
CO <sub>2</sub> net (a)	328.0	325.9	343.1	342.7	-0.6	-0.1
CH <sub>4</sub> hors LULUCF (f)	2923.3	3009.9	2483.6	2838.3	3.0	14.3
CH <sub>4</sub> net (a)	3022.4	3109.0	2584.4	2939.1	2.9	13.7
N <sub>2</sub> O hors LULUCF (f)	306.7	305.9	271.8	272.3	-0.2	0.2
N <sub>2</sub> O net (a)	288.9	288.1	253.8	254.3	-0.3	0.2
HFC	258.0	258.0	1906.0	2255.7	0.0	18.3
PFC	452.0	452.0	197.0	232.0	0.0	17.7
SF <sub>6</sub>	92.0	92.0	101.0	101.0	0.0	0.0
PRG hors LULUCF (b)(f)	546.6	545.7	551.0	557.0	-0.2	1.1
PRG net (a)(b)	494.2	493.6	484.2	496.6	-0.1	2.6
<b>Gaz à effet de serre indirect</b>						
SO <sub>2</sub>	1312.0	1320.8	821.0	867.4	0.7	5.7
NO <sub>x</sub>	1925.2	1928.6	1690.4	1671.9	0.2	-1.1
COVNM	2979.5	2962.9	2457.6	2346.6	-0.6	-4.5
CO	10767.7	10996.1	8001.0	7802.6	2.1	-2.5

(a) puits, changement d'utilisation des sols et sylviculture inclus (c) hors changement d'utilisation des sols, hors puits et hors sylviculture

(b) pouvoir de réchauffement global intégré sur une période de 100 ans et calculé sur la base des coefficients suivants : CO<sub>2</sub> = 1 ; CH<sub>4</sub> = 21 ; N<sub>2</sub>O = 310 ;SF<sub>6</sub> = 23900 ; HFC et PFC = valeurs variables dépendantes de la part relative des différentes molécules.(e) unités des émissions en Gg sauf CO<sub>2</sub> et PRG en Tg

(\*) Les émissions du trafic maritime international et du trafic aérien international sont exclues.

	année 1990		année 1998		écart entre les deux versions (en %)	
	en mars 2000	en décembre 2000	en mars 2000	en décembre 2000	1990	1998
Population (1000 hab.)(c)	58352	58356	60862	60607	0.0	-0.4
PIB (10 <sup>9</sup> euros courants)(c)(d)	1004	1004	1263	1333	0.0	5.5

(c) source INSEE

(d) source INSEE et CITEPA

## *résultats*

Les résultats d'ensemble pour les années 1990 à 1999, pour la France (Métropole et outre-mer) comportent les émissions brutes de chaque gaz à effet de serre et le pouvoir de réchauffement global. Les émissions de HFC et de PFC sont fournies pour chacune des molécules concernées.

### **1. Emissions par substance et Pouvoir de Réchauffement Global (PRG)**

Le tableau page 16 présente les émissions des six gaz à effet de serre direct, des quatre gaz à effet de serre indirect ainsi que le PRG pour la France (Métropole et outre-mer) au cours de la période 1990 - 1999.

De l'examen de ces résultats, il découle :

#### *1.1 - CO<sub>2</sub>*

Les émissions brutes de CO<sub>2</sub> sont en augmentation de près de 6 % sur la période 1990 - 1999, mais compte tenu de l'évolution des puits, les émissions nettes de CO<sub>2</sub> de 1999 ne sont supérieures à celles de 1990 que de seulement 3 %. La forte corrélation des rejets de CO<sub>2</sub> et de la consommation d'énergie fossile rend sensible le fait que les émissions sont estimées sur la base de données non corrigées des variations climatiques. La comparaison des années 1990 et 1999 doit être doublement appréciée compte tenu que cette dernière année a été au plan climatique nettement moins douce comparativement à 1990 (voir ci-dessous). Si l'on s'affranchit de l'incidence de la variabilité climatique, les émissions au cours de l'année 1999 seraient donc plus proches de celles de 1990. Les niveaux plus élevés observés en 1991 et 1998 par rapport au reste de la décennie s'expliquent en grande partie par des circonstances climatiques ou conjoncturelles particulières (solicitation accrue des centrales thermiques classiques de production d'électricité, activité économique plus soutenue, etc.).

*Coefficients de rigueur (la valeur 1 correspond à la moyenne trentenaire 1961 - 1990)*

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
0,88	1,05	0,96	0,97	0,85	0,93	1,03	0,90	0,96	0,93

Les puits de CO<sub>2</sub> dus à la photosynthèse et aux variations de la teneur en carbone du sol (160 Tg en 1999) représentent environ 30 % des émissions totales de CO<sub>2</sub> et sont en légère hausse continue au cours de la période (un peu plus de 1 % par an en moyenne).

#### *1.2 - CH<sub>4</sub>*

Après avoir atteint un point haut en 1995, les émissions de CH<sub>4</sub> sont depuis cette date en diminution notable de 13 % en quatre ans, ce qui conduit à une baisse des émissions de près de 9 % par rapport à 1990. Cette évolution est due à la captation des gaz de décharge.

### 1.3 - $N_2O$

Jusqu'en 1997 les émissions de  $N_2O$  fluctuaient avec une amplitude de quelques pour-cent autour d'une valeur moyenne d'environ 295 Gg. Au cours des deux dernières années une nette diminution est observée en raison principalement des actions menées dans le secteur des industries chimiques. L'écart est de -17 % en 1999 par rapport à 1990.

### 1.4 - HFC

Les rejets de HFC sont caractérisés par un accroissement très fort de la quantité émise en masse entre 1990 et 1999 par suite de l'utilisation de ces produits en substitution aux CFC (+ 962 %). Toutefois, l'effet de structure des différentes molécules émises conduit à un accroissement plus limité du PRG relatif aux HFC (+ 114 %).

Les émissions brutes de HFC sont en très nette augmentation ces dernières années, en particulier en raison du développement de l'utilisation de ces produits dans la réfrigération (climatisation automobile entre autres) et dans les aérosols en remplacement des CFC interdits par le protocole de Montréal. En revanche, les émissions fugitives lors de la production sont beaucoup mieux contrôlées depuis 1990 et diminuent à partir de 1992.

Les émissions de HFC, exprimées en  $CO_2$  équivalent, diminuent entre 1990 et 1994 et restent inférieures au niveau de 1990 jusqu'en 1995. Ce recul provient de la forte évolution structurelle des types de HFC émis depuis 1990. A cette date le HFC-23, sous-produit de la fabrication du HCFC-22, était le principal composé émis à l'atmosphère avec un coefficient de 11 700 en équivalent  $CO_2$  (PRG à 100 ans). Au cours des années suivantes, le HCFC-22 est progressivement abandonné. Dans le même temps, le HFC-134a (coefficient de 1300 en équivalent  $CO_2$ ), est de plus en plus utilisé à partir de 1993. Ceci explique que les émissions de HFC, traduites en équivalent  $CO_2$ , ne retrouvent leur niveau de 1990 qu'à partir de 1996 bien qu'en terme d'émissions brutes, les émissions soient très fortement orientées à la hausse à partir de 1993. Cet accroissement se poursuit à un rythme soutenu en 1997, 1998 et 1999.

### 1.5 - PFC

Les PFC voient leurs émissions brutes réduites de 40 % au cours de la période 1990 - 1999.

Les émissions brutes de PFC sont en régression jusqu'en 1995 (meilleur contrôle des émissions du PFC-14 et du PFC-116 lors de la production d'aluminium par électrolyse) puis repartent à la hausse du fait d'une utilisation accrue de ces produits dans l'industrie électronique et d'une recrudescence des émissions de l'électrolyse de l'aluminium.

Les effets de structure sont moins importants dans le cas des PFC car les PRG des différentes molécules sont plus proches (entre 5100 et 9200 équivalent  $CO_2$ ). De plus, les variations des émissions brutes de chaque PFC ne sont pas aussi importantes que dans le cas des HFC. Par suite, les quantités de PFC exprimées en équivalent  $CO_2$ , diminuent entre 1990 et 1999 dans une proportion similaire à celle des émissions en masse brute, soit de 40 %.

### 1.6 - $SF_6$

Les émissions de  $SF_6$  sont en hausse lente mais régulière d'environ 2 % par an jusqu'en 1997. En 1998 et 1999, une légère baisse est enregistrée du fait de la réduction de l'utilisation de ce composé dans la fabrication des microprocesseurs et de certaines chaussures de sport, compensée par une hausse liée à une production plus importante d'équipements électriques. La situation observée en 1999 fait apparaître un accroissement de 10 % par rapport à 1990.



Les usages principaux du SF<sub>6</sub> concernent les équipements électriques, la production de métaux et l'industrie électronique. La répartition sectorielle des émissions varie peu au cours des années.

### EMISSIONS DETAILLEES DES HFC ET PFC EN FRANCE (Métropole et Outre-mer)

Ces valeurs sont régulièrement révisées et complétées afin de tenir compte de l'amélioration permanente des connaissances et des méthodes d'estimation. Les utilisateurs sont invités à s'assurer de l'existence de mises à jour plus récentes.

source CITEPA / CORALIE format UNFCCC (*)				mise à jour 07/11/2000							serre_2000/hfc_pfc.xls	
émissions brutes (Mg)											Ecart 99-90	
Substances	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	(%)	
HFC-23	168	105	66	42	27	18	12	14	24	33	-80	
HFC-32	0	0	0	0	0	0	0	0	1	4	-	
HFC-4310mee	0	0	0	5	14	23	40	40	39	63	-	
HFC-125	12	20	33	47	62	83	110	137	180	258	2109	
HFC-134a	0	0	0	0	118	523	1 176	1 711	1 889	2 169	-	
HFC-152a	12	10	8	7	6	5	2.5	2.5	0.7	0.7	-94	
HFC-143a	67	60	53	47	42	38	39	70	120	207	210	
HFC-227ea	0	0	0	0	0	0	1.1	1.9	3.1	4.6	-	
total HFC	258	194	161	148	268	691	1 381	1 976	2 256	2 739	962	
PFC-14	317	229	197	139	115	102	105	113	143	183	-42	
PFC-116	80	65	53	38	32	27	38	48	46	55	-32	
Autres PFC	55	54	53	55	49	60	52	41	43	30	-45	
total PFC	452	348	302	232	196	190	196	202	232	268	-41	

	émissions ( Gg équivalent CO <sub>2</sub> )										Ecart 99-90
Substances	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	(%)
total HFC	2 252	1 510	1 067	807	821	1 302	2 186	3 097	3 751	4 816	114
total PFC	3 193	2 473	2 142	1 650	1 396	1 349	1 412	1 473	1 662	1 914	-40

#### 1.7 - PRG

Les variations des rejets des six gaz ci-dessus se traduisent globalement par un écart de -2,1 % du PRG en 1999 comparé au niveau de 1990. Une réduction plus notable est observée lorsque le PRG est rapporté à la population (-6 %) ou au Produit Intérieur Brut (-28 %). Cette stabilité du PRG résulte des évolutions respectives des différents gaz : les réductions du CH<sub>4</sub>, du N<sub>2</sub>O et des PFC compensent à peu près les accroissements du CO<sub>2</sub> du SF<sub>6</sub> et des HFC.

#### 1.8 - SO<sub>2</sub>, NO<sub>x</sub>, COVNM et CO

Les quatre gaz à effet de serre indirect étudiés voient leurs émissions orientées à la baisse au cours des neuf années écoulées (-46 % pour le SO<sub>2</sub>, -33 % pour le CO, -23 % pour les COVNM et -17 % pour les NO<sub>x</sub>).

Le rejet d'environ 740 kt de SO<sub>2</sub> en 1999 constitue le plus bas niveau atteint depuis plus de un demi siècle et confirme la forte tendance de diminution entamée en 1991 et qui avait été interrompue en 1998 en raison de circonstances particulières. Cette tendance est à mettre principalement à l'actif de la réduction de la teneur en soufre des combustibles pétroliers et à la part de plus en plus prépondérante prise par des combustibles peu soufrés.

Les émissions de NO<sub>x</sub> continuent à décroître principalement en raison de la pénétration accrue des pots catalytiques sur les véhicules routiers.

La même cause contribue à la baisse des rejets de COVNM, mais celle-ci est également due à des progrès significatifs dans le domaine de la distribution des carburants et dans l'utilisation des solvants.

La forte baisse du CO provient aussi de l'équipement des véhicules en pots catalytiques, mais aussi de progrès dans le domaine de l'industrie notamment la sidérurgie.

## EMISSIONS DES GAZ A EFFET DE SERRE EN FRANCE (Métropole et Outre-mer)

Ces valeurs sont régulièrement révisées et complétées afin de tenir compte de l'amélioration permanente des connaissances et des méthodes d'estimation. Les utilisateurs sont invités à s'assurer de l'existence de mises à jour plus récentes.

source CITEPA / CORALIE format UNFCCC (\*)

mise à jour 07/11/2000

serre\_dec2000/recap.xls

Substance	Unité	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Ecart 99 / 90 (%)
<b>Gaz à effet de serre direct</b>												
CO <sub>2</sub>	Tg	386	409	401	380	376	382	396	390	411	405	5.0
<b>hors LULUCF (c)</b>	Tg équiv. C	105	112	109	104	102	104	108	106	112	110	5.0
CO <sub>2</sub>	Tg	326	353	340	314	308	317	329	322	343	336	3.0
<b>net (a)</b>	Tg équiv. C	89	96	93	86	84	86	90	88	93	92	3.0
CH <sub>4</sub>	Gg	3 010	3 065	3 078	3 109	3 112	3 165	3 119	2 867	2 838	2 740	-9.0
<b>hors LULUCF (c)</b>	Tg équiv. CO <sub>2</sub>	63	64	65	65	65	66	65	60	60	58	-9.0
	Tg équiv. C (**)	17	18	18	18	18	18	18	16	16	16	-9.0
CH <sub>4</sub>	Gg	3 109	3 165	3 179	3 209	3 212	3 265	3 220	2 967	2 939	2 841	-8.6
<b>net (a)</b>	Tg équiv. CO <sub>2</sub>	65	66	67	67	67	69	68	62	62	60	-8.6
	Tg équiv. C (**)	18	18	18	18	18	19	18	17	17	16	-8.6
N <sub>2</sub> O	Gg	288	288	276	263	269	274	277	280	254	236	-18
<b>hors LULUCF (c)</b>	Tg équiv. CO <sub>2</sub>	89	89	86	82	83	85	86	87	79	73	-18
	Tg équiv. C (**)	24	24	23	22	23	23	23	24	21	20	-18
N <sub>2</sub> O	Gg	306	305	294	281	287	292	295	298	272	254	-17
<b>net (a)</b>	Tg équiv. CO <sub>2</sub>	95	95	91	87	89	91	91	92	84	79	-17
	Tg équiv. C (**)	26	26	25	24	24	25	25	25	23	21	-17
HFC	Mg	258	194	161	148	268	691	1 381	1 976	2 256	2 739	962
	Tg équiv. CO <sub>2</sub>	2.3	1.5	1.1	0.8	0.8	1.3	2.2	3.1	3.8	4.8	114
	Tg équiv. C (**)	0.6	0.4	0.3	0.2	0.2	0.4	0.6	0.8	1.0	1.3	114
PFC	Mg	452	348	302	232	196	190	196	202	232	268	-41
	Tg équiv. CO <sub>2</sub>	3.2	2.5	2.1	1.7	1.4	1.3	1.4	1.5	1.7	1.9	-40
	Tg équiv. C (**)	0.9	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.5	-40
SF <sub>6</sub>	Mg	92	93	94	95	96	97	100	102	101	101	9.8
	Tg équiv. CO <sub>2</sub>	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	9.8
	Tg équiv. C (**)	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	9.8
PRG (b)	Tg équiv. CO <sub>2</sub>	546	569	557	531	529	538	553	544	557	545	-0.2
<b>hors LULUCF (c)</b>	Tg équiv. C (**)	149	155	152	145	144	147	151	148	152	149	-0.2
PRG	Tg équiv. CO <sub>2</sub>	494	520	503	473	469	481	494	483	497	483	-2.1
<b>(a)(b)</b>	Tg équiv. C (**)	135	142	137	129	128	131	135	132	135	132	-2.1
	kg CO <sub>2</sub> /hab.	8 460	8 809	8 475	7 924	7 820	8 005	8 204	8 003	8 194	7 937	-6.2
	kg C/hab. (**)	2 307	2 402	2 311	2 161	2 133	2 183	2 238	2 183	2 235	2 165	-6.2
	g CO <sub>2</sub> /€ PIB	492	496	465	430	410	400	399	378	373	352	-28
	g C /€ PIB (**)	134	135	127	117	112	109	109	103	102	96	-28
<b>Gaz à effet de serre indirect</b>												
SO <sub>2</sub> net (a)	Gg	1 321	1 437	1 261	1 106	1 051	994	973	829	867	741	-34
NO <sub>x</sub> net (a)	Gg	1 929	2 005	1 960	1 847	1 808	1 780	1 762	1 715	1 672	1 609	-13
<b>hors LULUCF (c)</b>	Gg	1 926	2 002	1 957	1 845	1 806	1 777	1 760	1 712	1 669	1 606	-13
COVNM net (a)	Gg	2 963	2 948	2 892	2 740	2 649	2 561	2 459	2 434	2 347	2 295	-21
<b>hors LULUCF (c)</b>	Gg	2 526	2 507	2 460	2 337	2 203	2 125	2 058	1 981	1 920	1 846	-24
CO net (a)	Gg	10 996	10 868	10 450	9 885	9 206	9 083	8 491	8 060	7 803	7 369	-29
<b>hors LULUCF (c)</b>	Gg	10 904	10 776	10 355	9 791	9 110	8 987	8 394	7 962	7 704	7 271	-29

(a) puits, changement d'utilisation des sols et sylviculture inclus

(c) hors changement d'utilisation des sols, hors puits et hors sylviculture

(b) pouvoir de réchauffement global intégré sur une période de 100 ans et calculé sur la base des coefficients suivants :

CO<sub>2</sub> = 1 ; CH<sub>4</sub> = 21 ; N<sub>2</sub>O = 310 ; SF<sub>6</sub> = 23900 ; HFC et PFC = valeurs variables dépendantes de la part relative des différentes molécules.

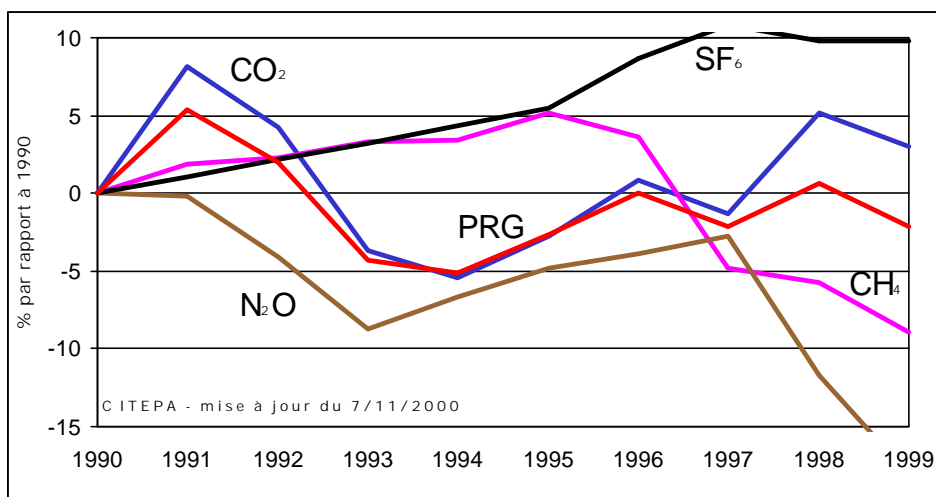
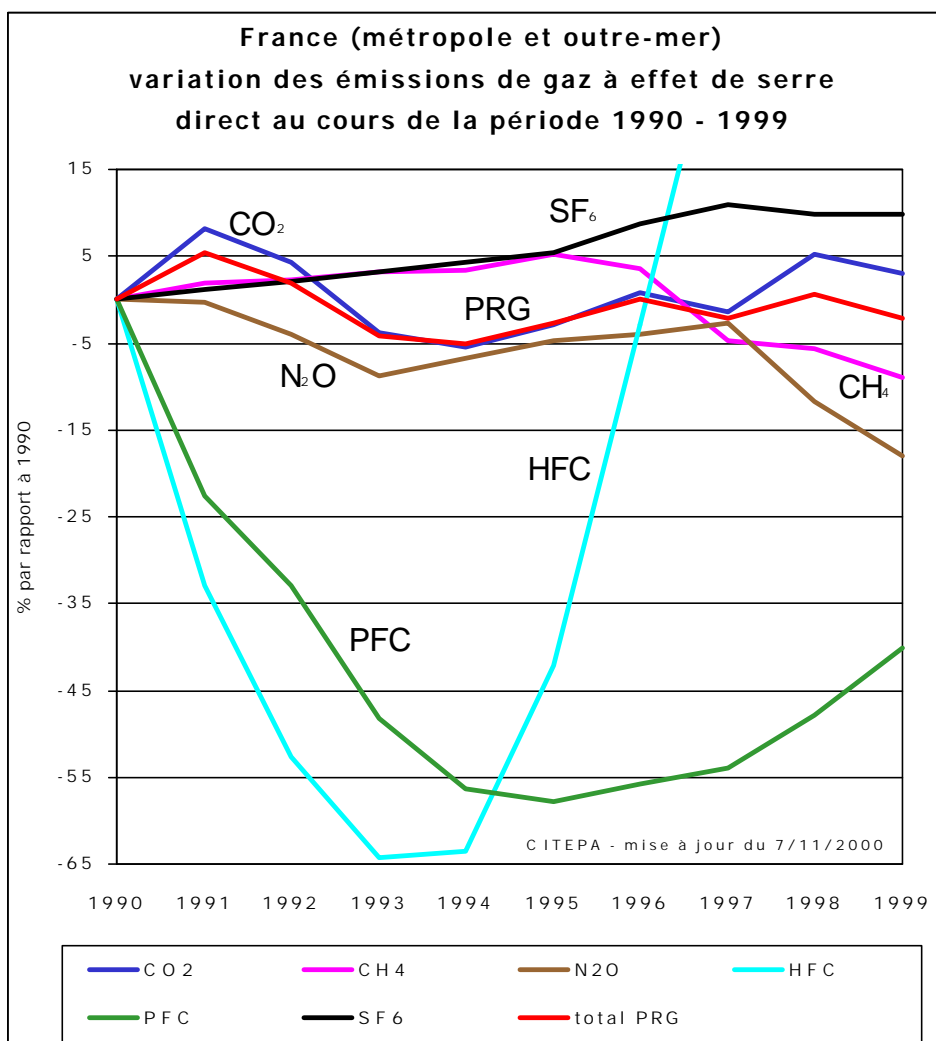
(\*) Les émissions du trafic maritime international et du trafic aérien international sont exclues.

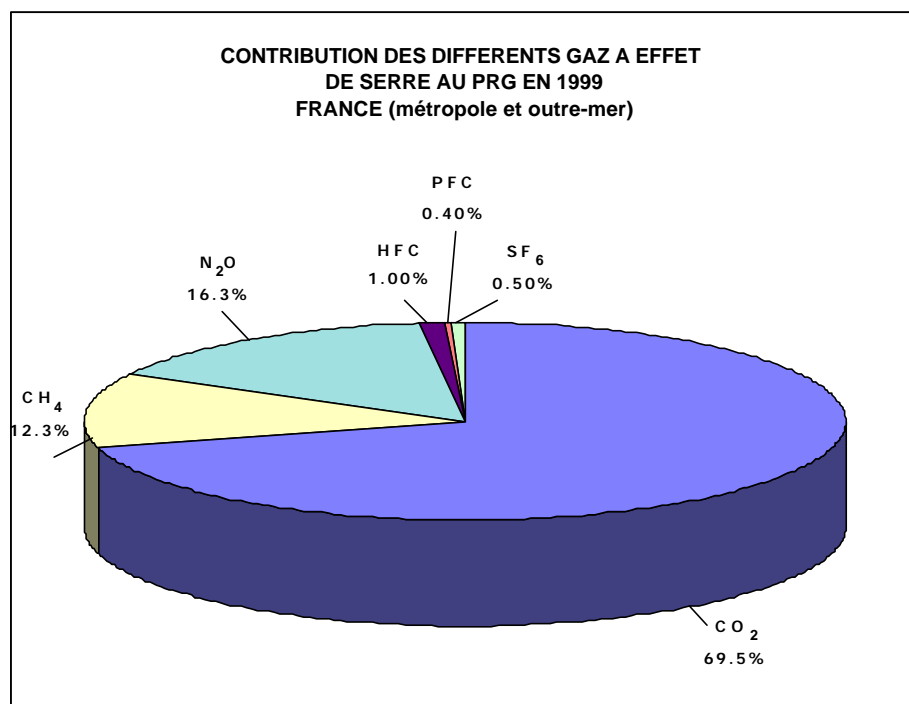
(\*\*) Tg équivalent Carbone = (12/44) Tg équivalent CO<sub>2</sub>

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Ecart 99 / 90 (%)
Population (1000 hab.)(c)	58 356	59 028	59 382	59 698	59 978	60 077	60 173	60 389	60 607	60 882	3.9
PIB (10 <sup>9</sup> euros courants)(c)(d)	1 004	1 048	1 083	1 100	1 145	1 204	1 236	1 279	1 333	1 373	32.8

(c) source INSEE

(d) source INSEE et CITEPA





## 2. Particularités métropole et outre-mer

Au vu de la part relativement limitée que représente l'outre-mer, les résultats d'ensemble s'appliquent à peu de chose près à la métropole pour laquelle les résultats sont présentés dans le premier tableau ci-après. On notera cependant que, concernant le CO<sub>2</sub>, les émissions brutes localisées outre-mer sont en nette augmentation au cours de la période étudiée. L'évolution des émissions nettes est très peu précise compte tenu de la méconnaissance des puits dans ces territoires (une valeur forfaitaire unique est prise pour les puits pour toutes les années). Cet accroissement est lié à une augmentation soutenue de la consommation d'énergie fossile qui est en adéquation avec l'augmentation importante des rejets de SO<sub>2</sub> et de NO<sub>x</sub>. On observe une baisse des émissions de ces polluants au cours des deux dernières années par suite des teneurs en soufre réduites des carburants et la pénétration progressive de véhicules munis de pots catalytiques. L'outre-mer participe pour une part modeste au total national : les scores les plus élevés pour l'année 1999 sont ceux du SO<sub>2</sub> (7,8 %), des COVNM (5,2 %) et des NO<sub>x</sub> (4,5 %). Le CO<sub>2</sub> brut atteint 2.4 % et le CO<sub>2</sub> net 1.8 %. On constatera également la différence de valeur du ratio PRG/habitant entre la métropole et l'outre-mer qui, même s'il se réduit progressivement, est encore d'un facteur supérieur à deux en 1999.

## EMISSIONS DES GAZ A EFFET DE SERRE EN FRANCE (Métropole)

Ces valeurs sont régulièrement révisées et complétées afin de tenir compte de l'amélioration permanente des connaissances et des méthodes d'estimation. Les utilisateurs sont invités à s'assurer de l'existence de mises à jour plus récentes.

source CITEPA / CORALIE format UNFCCC (\*)

mise à jour 07/11/2000

serre\_dec2000/recap.xls

Substance	Unité	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Ecart 99 / 90 (%)
<b>Gaz à effet de serre direct</b>												
<b>CO<sub>2</sub></b>	Tg	378	400	392	370	366	372	386	379	400	394	4.2
<b>hors LULUCF (c)</b>	Tg équiv. C	103	109	107	101	100	101	105	103	109	107	4.2
<b>CO<sub>2</sub></b>	Tg	323	349	336	309	303	311	323	316	337	330	2.1
<b>net (a)</b>	Tg équiv. C	88	95	92	84	83	85	88	86	92	90	2.1
<b>CH<sub>4</sub></b>	Gg	2 945	2 997	3 007	3 045	3 054	3 097	3 052	2 809	2 783	2 688	-8.7
<b>hors LULUCF (c)</b>	Tg équiv. CO <sub>2</sub>	62	63	63	64	64	65	64	59	58	56	-8.7
	Tg équiv. C (**)	17	17	17	17	17	18	17	16	16	15	-8.7
<b>CH<sub>4</sub></b>	Gg	3 043	3 096	3 107	3 145	3 153	3 196	3 152	2 909	2 883	2 788	-8.4
<b>net (a)</b>	Tg équiv. CO <sub>2</sub>	64	65	65	66	66	67	66	61	61	59	-8.4
	Tg équiv. C (**)	17	18	18	18	18	18	18	17	17	16	-8.4
<b>N<sub>2</sub>O</b>	Gg	286	286	275	261	267	273	275	279	253	234	-18
<b>hors LULUCF (c)</b>	Tg équiv. CO <sub>2</sub>	89	89	85	81	83	85	85	86	78	73	-18
	Tg équiv. C (**)	24	24	23	22	23	23	23	24	21	20	-18
<b>N<sub>2</sub>O</b>	Gg	304	304	293	279	285	291	293	297	271	252	-17
<b>net (a)</b>	Tg équiv. CO <sub>2</sub>	94	94	91	87	88	90	91	92	84	78	-17
	Tg équiv. C (**)	26	26	25	24	24	25	25	25	23	21	-17
<b>HFC</b>	Mg	258	194	161	148	264	674	1 342	1 917	2 188	2 658	930
	Tg équiv. CO <sub>2</sub>	2.3	1.5	1.1	0.8	0.8	1.3	2.1	3.0	3.7	4.7	108
	Tg équiv. C (**)	0.6	0.4	0.3	0.2	0.2	0.3	0.6	0.8	1.0	1.3	108
<b>PFC</b>	Mg	452	348	302	232	196	190	196	202	232	268	-41
	Tg équiv. CO <sub>2</sub>	3.2	2.5	2.1	1.7	1.4	1.3	1.4	1.5	1.7	1.9	-40
	Tg équiv. C (**)	0.9	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.5	-40
<b>SF<sub>6</sub></b>	Mg	91	92	93	94	95	96	99	101	100	100	9.9
	Tg équiv. CO <sub>2</sub>	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.4	9.9
	Tg équiv. C (**)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	9.9
<b>PRG (b)</b>	Tg équiv. CO <sub>2</sub>	536	558	546	520	517	526	541	531	544	531	-0.8
<b>hors LULUCF (c)</b>	Tg équiv. C (**)	146	152	149	142	141	144	147	145	148	145	-0.8
<b>PRG</b>	Tg équiv. CO <sub>2</sub>	488	514	497	466	462	473	486	475	489	475	-2.7
<b>(a)(b)</b>	Tg équiv. C (**)	133	140	136	127	126	129	133	130	133	130	-2.7
	kg CO <sub>2</sub> /hab.	8 659	9 009	8 663	8 090	7 984	8 168	8 376	8 170	8 370	8 110	-6.3
	kg C/hab. (**)	2 362	2 457	2 363	2 206	2 177	2 228	2 284	2 228	2 283	2 212	-6.3
	g CO <sub>2</sub> /euros PIB	494	498	467	432	411	401	401	379	374	354	-28
	g C /euros PIB (**)	135	136	127	118	112	109	109	103	102	96	-28
<b>Gaz à effet de serre indirect</b>												
<b>SO<sub>2</sub> net (a)</b>	Gg	1 279	1 389	1 212	1 053	990	935	914	767	808	682	-47
<b>NOx net (a)</b>	Gg	1 870	1 936	1 891	1 778	1 736	1 707	1 691	1 640	1 598	1 536	-18
<b>hors LULUCF (c)</b>	Gg	1 868	1 934	1 889	1 775	1 734	1 704	1 688	1 637	1 596	1 534	-18
<b>COVNM net (a)</b>	Gg	2 835	2 819	2 760	2 609	2 520	2 432	2 331	2 308	2 227	2 175	-23
<b>hors LULUCF (c)</b>	Gg	2 457	2 436	2 388	2 265	2 132	2 054	1 990	1 913	1 859	1 784	-27
<b>CO net (a)</b>	Gg	10 854	10 726	10 304	9 741	9 065	8 948	8 363	7 941	7 702	7 266	-33
<b>hors LULUCF (c)</b>	Gg	10 769	10 641	10 217	9 653	8 977	8 858	8 274	7 850	7 610	7 175	-33

(a) puits, changement d'utilisation des sols et sylviculture inclus

(c) hors changement d'utilisation des sols, hors puits et hors sylviculture

(b) pouvoir de réchauffement global intégré sur une période de 100 ans et calculé sur la base des coefficients suivants :

CO<sub>2</sub> = 1 ; CH<sub>4</sub> = 21 ; N<sub>2</sub>O = 310 ; SF<sub>6</sub> = 23900 ; HFC et PFC = valeurs variables dépendantes de la part relative des différentes molécules.

(\*) Les émissions du trafic maritime international et du trafic aérien international sont exclues.

(\*\*) Tg équivalent Carbone = (12/44) Tg équivalent CO<sub>2</sub>

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Ecart 99 / 90 (%)
Population (1000 hab.)(c)	56 411	57 048	57 367	57 647	57 891	57 954	58 017	58 198	58 379	58 604	3.9
PIB (10 <sup>9</sup> euros courants)(c)(d)	989	1 032	1 065	1 081	1 125	1 181	1 212	1 254	1 306	1 344	32

(c) source INSEE

## EMISSIONS DES GAZ A EFFET DE SERRE EN FRANCE (Outre-mer)

Ces valeurs sont régulièrement révisées et complétées afin de tenir compte de l'amélioration permanente des connaissances et des méthodes d'estimation. Les utilisateurs sont invités à s'assurer de l'existence de mises à jour plus récentes.

source CITEPA / CORALIE format UNFCCC (\*)

mise à jour 07/11/2000

serre\_dec2000/recap.xls

Substance	Unité	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Ecart 99 / 90 (%)
<b>Gaz à effet de serre direct</b>												
CO <sub>2</sub>	Tg	8.0	9.0	9.0	9.7	10.2	10.2	10.4	11.0	11.1	11.2	40
hors LULUCF (c)	Tg équiv. C	2.2	2.5	2.5	2.6	2.8	2.8	2.8	3.0	3.0	3.1	40
CO <sub>2</sub>	Tg	3.3	4.0	4.3	4.8	5.0	5.5	5.7	5.9	6.2	6.2	88
net (a)	Tg équiv. C	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.7	88
CH <sub>4</sub>	Gg	65	68	71	64	59	69	67	58	55	52	-21
hors LULUCF (c)	Tg équiv. CO <sub>2</sub>	1.4	1.4	1.5	1.3	1.2	1.4	1.4	1.2	1.2	1.1	-21
	Tg équiv. C (**)	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	-21
CH <sub>4</sub>	Gg	66	69	71	65	60	70	68	58	56	53	-19
net (a)	Tg équiv. CO <sub>2</sub>	1.4	1.5	1.5	1.4	1.3	1.5	1.4	1.2	1.2	1.1	-19
	Tg équiv. C (**)	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	-19
N <sub>2</sub> O	Gg	1.9	1.4	1.4	2.0	1.7	1.2	1.8	1.2	1.3	2.0	5.3
hors LULUCF (c)	Tg équiv. CO <sub>2</sub>	0.6	0.4	0.4	0.6	0.5	0.4	0.6	0.4	0.4	0.6	5.3
	Tg équiv. C (**)	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	5.3
N <sub>2</sub> O	Gg	1.7	1.7	1.6	1.7	1.7	1.7	1.6	1.7	1.7	1.7	2.4
net (a)	Tg équiv. CO <sub>2</sub>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.4
	Tg équiv. C (**)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4
HFC	Mg	0	0	0	0	4.1	17	39	59	68	81	-
	Tg équiv. CO <sub>2</sub>	0	0	0	0	0.01	0.03	0.06	0.08	0.09	0.09	-
	Tg équiv. C (**)	0	0	0	0	0.002	0.007	0.017	0.022	0.024	0.024	-
PFC	Mg	0	0	0	0	0	0	0	0	0	0	-
	Tg équiv. CO <sub>2</sub>	0	0	0	0	0	0	0	0	0	0	-
	Tg équiv. C (**)	0	0	0	0	0	0	0	0	0	0	-
SF <sub>6</sub>	Mg	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	0.9	1.1
	Tg équiv. CO <sub>2</sub>	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	1.1
	Tg équiv. C (**)	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	1.1
PRG (b)	Tg équiv. CO <sub>2</sub>	10.0	10.9	10.9	11.7	12.0	12.1	12.4	12.7	12.8	13.0	30
hors LULUCF (c)	Tg équiv. C (**)	2.7	3.0	3.0	3.2	3.3	3.3	3.4	3.5	3.5	3.6	30
PRG	Tg équiv. CO <sub>2</sub>	5.2	6.0	6.3	6.7	6.8	7.6	7.7	7.8	8.0	7.9	52
(a)(b)	Tg équiv. C (**)	1.4	1.6	1.7	1.8	1.9	2.1	2.1	2.1	2.2	2.2	52
	kg CO <sub>2</sub> /hab.	2 668	3 020	3 133	3 265	3 279	3 567	3 589	3 549	3 591	3 469	30
	kg C/hab. (**)	728	824	854	891	894	973	979	968	979	946	30
	g CO <sub>2</sub> /euros PIB	344	365	363	354	328	333	321	304	295	275	-20
	g C /euros PIB (**)	94	99	99	97	89	91	88	83	81	75	-20
<b>Gaz à effet de serre indirect</b>												
SO <sub>2</sub> net (a)	Gg	42	48	50	53	61	60	59	62	59	58	38
NOx net (a)	Gg	59	69	69	70	72	73	72	75	74	73	24
hors LULUCF (c)	Gg	58	69	69	69	72	73	71	75	74	73	24
COVNM net (a)	Gg	128	129	131	131	130	129	127	126	120	120	-5.8
hors LULUCF (c)	Gg	69	71	73	72	71	71	69	68	61	62	-11
CO net (a)	Gg	142	142	146	144	141	135	127	118	101	104	-27
hors LULUCF (c)	Gg	135	135	139	137	133	128	120	111	94	97	-28

(a) puits, changement d'utilisation des sols et sylviculture inclus

(c) hors changement d'utilisation des sols, hors puits et hors sylviculture

(b) pouvoir de réchauffement global intégré sur une période de 100 ans et calculé sur la base des coefficients suivants :

CO<sub>2</sub> = 1 ; CH<sub>4</sub> = 21 ; N<sub>2</sub>O = 310 ; SF<sub>6</sub> = 23900 ; HFC et PFC = valeurs variables dépendantes de la part relative des différentes molécules.

(\*) Les émissions du trafic maritime international et du trafic aérien international sont exclues.

(\*\*) Tg équivalent Carbone = (12/44) Tg équivalent CO<sub>2</sub>

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Ecart 99 / 90 (%)
Population (1000 hab.)(c)	1 945	1 980	2 015	2 051	2 087	2 123	2 156	2 191	2 228	2 278	17
PIB (10 <sup>9</sup> euros courants)(c)(d)	15	16	17	19	21	23	24	26	27	29	90

(c) source INSEE

(d) les PIB n'étant que partiellement disponibles pour les années postérieures à 1995, les valeurs relatives à ces années ont été extrapolées par le CITEPA.

### 3 Validation et incertitudes

L'évaluation des incertitudes et la validation des résultats de l'inventaire sont des sujets particulièrement complexes. Dans la plupart des cas il est très difficile de déterminer l'incertitude associée à une source donnée compte tenu de la complexité des phénomènes étudiés, de leur variabilité et des méthodes utilisées.

Ces questions ont fait l'objet de travaux dans le cadre du GIEC en vue de réduire ces incertitudes et en tout état de cause de les quantifier en suivant des règles de bonnes pratiques. Ces dernières sont en cours d'approbation.

Afin de s'assurer que l'inventaire propose les meilleures données possibles, l'estimation est produite dans un esprit de démarche assurance qualité qui permet le cas échéant d'explicitier tout le cheminement effectué et les hypothèses prises en compte. Dans nombre de cas, ces éléments sont soumis à l'avis d'experts spécialistes des secteurs considérés.

Des tentatives de recoupements peuvent être effectuées quand cela est possible en particulier en ce qui concerne l'énergie et les produits fluorés en comparant les méthodes "sectorielles" aux méthodes de "référence" (pour l'énergie) et "potentielle" (pour les produits fluorés). Ces méthodes globales alternatives ont leurs propres limites et ne sauraient constituer des référentiels absolus. L'approche "potentielle" s'avère peu pertinente et n'est pas mise en œuvre. L'approche de "référence" pour l'énergie fournit des résultats voisins de l'approche "sectorielle" (voir tableaux ci-après et CRF en annexe). On constate toutefois, que l'application de l'approche de référence détaillée soulève quelques difficultés qui rendent plus incertaines les comparaisons pour des sous-ensembles, tandis qu'au niveau global ces aspects disparaissent.

Par suite les approximations sur le SO<sub>2</sub> et le CO<sub>2</sub> provenant de l'utilisation de l'énergie sont d'une manière générale inférieures à 5 %. Plus précisément concernant le CO<sub>2</sub>, la méthode alternative proposée par le GIEC dite "approche de référence" (à partir des bilans énergétiques établis par l'Observatoire de l'Energie) comparée à l'approche sectorielle retenue dans le présent inventaire, conduit à des différences très faibles de l'ordre de 1.5 % au plus (valeur jugée très satisfaisante par le GIEC et l'UNFCCC lorsqu'elle n'excède pas 2 %). Ces écarts s'expliquent par les différences entre les PCI réels et par défaut, les caractéristiques des combustibles et les recoupements statistiques. Pour les autres substances et le CO<sub>2</sub> globalement, les incertitudes sont certainement plus importantes mais ne peuvent pas faire actuellement l'objet d'estimations précises. Des travaux sont en cours tant au plan international que français pour permettre à terme une telle estimation.

L'inventaire national fait en outre l'objet d'une revue de la part des autorités et les différentes administrations concernées sont consultées. Le présent rapport a été approuvé le 6 décembre 2000.

#### COMPARAISON DE L'APPROCHE DE REFERENCE SIMPLIFIEE ET DE L'APPROCHE SECTORIELLE POUR LES EMISSIONS DE CO<sub>2</sub> DU SECTEUR GIEC ENERGIE (METROPOLE)

*Ces valeurs sont régulièrement révisées et complétées afin de tenir compte de l'amélioration permanente des connaissances et des méthodes d'estimation. Les utilisateurs sont invités à s'assurer de l'existence de mises à jour plus récentes.*

source CITEPA / CORALIE format IPCC	mise à jour 07/11/2000							serre_dec2000/appro-refer.xls		
	émissions brutes de CO <sub>2</sub> (Tg)									
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
approche de référence <sup>(1)</sup>	374.4	391.9	389.9	370.5	361.6	372.0	386.9	373.3	398.3	393.0
approche sectorielle										
Total national secteur 1	352.3	377.0	370.1	349.1	343.6	348.9	364.0	357.4	377.8	372.7
Aérien hors total <sup>(2)</sup>	8.3	8.2	9.6	10.0	10.4	10.4	11.0	11.4	12.2	13.7
Maritime hors total <sup>(2)</sup>	7.9	8.2	8.0	7.7	6.9	7.1	7.4	8.2	9.0	9.1
total	368.5	393.4	387.7	366.8	360.9	366.4	382.4	377.0	399.0	395.5
écart sectoriel / référence (%)	-1.6	0.4	-0.6	-1.0	-0.2	-1.5	-1.2	1.0	0.2	0.6

<sup>(1)</sup> sur la base des bilans énergétiques de l'Observatoire de l'Energie

<sup>(2)</sup> les trafics maritime et aérien internationaux qui sont pris en compte dans les bilans de l'Observatoire de l'Energie doivent être ajoutés

CALCUL DES EMISSIONS DE CO<sub>2</sub> DE L'ENERGIE PAR LA METHODE DE REFERENCE SIMPLIFIEE

source CITEPA / CORALIE format UNFCCC

mise à jour 07/11/2000

serre\_dec2000/réfé-annexe.xls

année	combustible	consommations <sup>(1)</sup>		carbone contenu <sup>(2)</sup>	quantité de carbone	quantité de carbone fixé <sup>(3)</sup>	émissions nettes de C	fraction de C oxydé <sup>(2)</sup>	émissions de CO <sub>2</sub> oxydé en partie	émissions de CO <sub>2</sub> oxydé en totalité <sup>(4)</sup>
		10 <sup>6</sup> tep	PJ	Gg C / PJ	Gg C	Gg C	Gg C	%	Gg CO <sub>2</sub>	Gg CO <sub>2</sub>
1990	Houille + lignite	18.52	778	26.0	20 224	0	20 224	98.0	72 671	74 154
	Coke + aggloméré	0.47	20	26.0	513	0.3	513	98.0	1 843	1 881
	Produits pétroliers	89.38	3 754	20.0	75 079	8 618	66 461	99.0	241 254	243 691
	Gaz naturel et ind.	25.14	1 056	15.3	16 155	1 247	14 908	99.5	54 389	54 663
	<b>Total</b>	<b>133.51</b>	<b>5 607</b>	<b>19968.4</b>	<b>111 971</b>	<b>9 865</b>	<b>102 106</b>	<b>98.9</b>	<b>370 158</b>	<b>374 389</b>
1991	Houille + lignite	19.88	835	26.0	21 709	0	21 709	98.0	78 008	79 600
	Coke + aggloméré	0.33	14	26.0	360	0.3	360	98.0	1 294	1 320
	Produits pétroliers	91.99	3 864	20.0	77 272	9 223	68 049	99.0	247 016	249 512
	Gaz naturel et ind.	28.01	1 176	15.3	17 999	1 247	16 752	99.5	61 118	61 425
	<b>Total</b>	<b>140.21</b>	<b>5 889</b>	<b>19925.9</b>	<b>117 340</b>	<b>10 470</b>	<b>106 870</b>	<b>98.9</b>	<b>387 436</b>	<b>391 856</b>
1992	Houille + lignite	17.67	742	26.0	19 296	0	19 296	98.0	69 336	70 751
	Coke + aggloméré	0.15	6	26.0	164	0.2	164	98.0	588	600
	Produits pétroliers	95.70	4 019	20.0	80 388	10 114	70 274	99.0	255 095	257 671
	Gaz naturel et ind.	27.93	1 173	15.3	17 948	1 349	16 599	99.5	60 558	60 862
	<b>Total</b>	<b>141.45</b>	<b>5 941</b>	<b>19827.8</b>	<b>117 795</b>	<b>11 463</b>	<b>106 332</b>	<b>98.9</b>	<b>385 576</b>	<b>389 884</b>
1993	Houille + lignite	14.19	596	26.0	15 495	0	15 495	98.0	55 680	56 817
	Coke + aggloméré	0.37	16	26.0	404	0.2	404	98.0	1 451	1 481
	Produits pétroliers	93.08	3 909	20.0	78 187	10 181	68 006	99.0	246 863	249 356
	Gaz naturel et ind.	28.81	1 210	15.3	18 513	1 369	17 144	99.5	62 548	62 862
	<b>Total</b>	<b>136.45</b>	<b>5 731</b>	<b>19647.9</b>	<b>112 600</b>	<b>11 550</b>	<b>101 050</b>	<b>98.9</b>	<b>366 542</b>	<b>370 516</b>
1994	Houille + lignite	13.98	587	26.0	15 266	0	15 266	98.0	54 856	55 976
	Coke + aggloméré	0.34	14	26.0	371	0.2	371	98.0	1 333	1 361
	Produits pétroliers	92.41	3 881	20.0	77 624	11 029	66 595	99.0	241 741	244 183
	Gaz naturel et ind.	27.68	1 163	15.3	17 787	1 401	16 386	99.5	59 782	60 083
	<b>Total</b>	<b>134.41</b>	<b>5 645</b>	<b>19671.3</b>	<b>111 049</b>	<b>12 430</b>	<b>98 619</b>	<b>98.9</b>	<b>357 713</b>	<b>361 602</b>
1995	Houille + lignite	14.33	602	26.0	15 648	0	15 648	98.0	56 230	57 377
	Coke + aggloméré	0.33	14	26.0	360	0.2	360	98.0	1 294	1 321
	Produits pétroliers	93.83	3 941	20.0	78 817	10 954	67 863	99.0	246 343	248 832
	Gaz naturel et ind.	29.52	1 240	15.3	18 970	1 388	17 582	99.5	64 143	64 466
	<b>Total</b>	<b>138.01</b>	<b>5 796</b>	<b>19632.0</b>	<b>113 795</b>	<b>12 342</b>	<b>101 453</b>	<b>98.9</b>	<b>368 011</b>	<b>371 995</b>
1996	Houille + lignite	15.23	640	26.0	16 631	0	16 631	98.0	59 761	60 981
	Coke + aggloméré	0.39	16	26.0	426	0.2	426	98.0	1 530	1 561
	Produits pétroliers	95.66	4 018	20.0	80 354	11 180	69 174	99.0	251 103	253 639
	Gaz naturel et ind.	32.29	1 356	15.3	20 750	1 452	19 298	99.5	70 404	70 758
	<b>Total</b>	<b>143.57</b>	<b>6 030</b>	<b>19595.7</b>	<b>118 161</b>	<b>12 632</b>	<b>105 529</b>	<b>98.9</b>	<b>382 798</b>	<b>386 939</b>
1997	Houille + lignite	13.03	547	26.0	14 229	0	14 229	98.0	51 129	52 172
	Coke + aggloméré	0.65	27	26.0	710	0.2	710	98.0	2 550	2 602
	Produits pétroliers	95.87	4 027	20.0	80 531	12 205	68 326	99.0	248 023	250 528
	Gaz naturel et ind.	31.19	1 310	15.3	20 043	1 510	18 533	99.5	67 613	67 953
	<b>Total</b>	<b>140.74</b>	<b>5 911</b>	<b>19541.6</b>	<b>115 512</b>	<b>13 715</b>	<b>101 797</b>	<b>98.9</b>	<b>369 315</b>	<b>373 255</b>
1998	Houille + lignite	15.51	651	26.0	16 937	0	16 937	98.0	60 860	62 102
	Coke + aggloméré	0.76	32	26.0	830	0.2	830	98.0	2 981	3 042
	Produits pétroliers	98.96	4 156	20.0	83 126	12 130	70 996	99.0	257 717	260 320
	Gaz naturel et ind.	33.25	1 397	15.3	21 366	1 497	19 869	99.5	72 490	72 855
	<b>Total</b>	<b>148.48</b>	<b>6 236</b>	<b>19605.0</b>	<b>122 260</b>	<b>13 627</b>	<b>108 632</b>	<b>98.9</b>	<b>394 049</b>	<b>398 319</b>
1999	Houille + lignite	13.84	581	26.0	15 113	0	15 113	98.0	54 307	55 415
	Coke + aggloméré	0.56	24	26.0	612	0.2	611	98.0	2 197	2 242
	Produits pétroliers	99.03	4 159	20.0	83 185	12 289	70 896	99.0	257 353	259 953
	Gaz naturel et ind.	34.24	1 438	15.3	22 003	1 433	20 570	99.5	75 045	75 422
	<b>Total</b>	<b>147.67</b>	<b>6 202</b>	<b>19495.3</b>	<b>120 913</b>	<b>13 722</b>	<b>107 190</b>	<b>98.9</b>	<b>388 902</b>	<b>393 032</b>

<sup>(1)</sup> source bilan énergétique de l'Observatoire de l'énergie (consommation finale énergétique et non énergétique non corrigée du climat)<sup>(2)</sup> source GIEC 1996<sup>(3)</sup> source bilan énergétique de l'Observatoire de l'énergie (quantité de carbone contenu dans les combustibles consommés à des fins non énergétiques = consommation finale non énergétique x carbone contenu x 42)<sup>(4)</sup> en considérant que tout le carbone est oxydé comme il est supposé dans l'approche sectorielle



## 4 Analyse sectorielle

Le premier tableau ci-après présente les contributions les plus importantes aux émissions de chacun des gaz étudiés en considérant les catégories de sources définies par l'UNFCCC.

Les tableaux suivants récapitulent les émissions selon le format UNFCCC pour CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SO<sub>2</sub>, NO<sub>x</sub>, COVNM et CO.

### CONTRIBUTION DES TYPES DE SOURCES AUX EMISSIONS DE GAZ A EFFET DE SERRE FRANCE 1999 (métropole et outre-mer)

La définition des types de sources et l'indication entre parenthèses font référence à la classification du UNFCCC.

source CITEPA / CORALIE format UNFCCC (*)		mise à jour 07/11/2000		serre_dec2000/secteurs.xls	
<b>CO<sub>2</sub> hors LULUCF ( Tg )</b>		<b>405</b>	<b>CH<sub>4</sub> ( Gg )</b>		<b>2841</b>
<b>Sources GIEC</b>		<b>%</b>	<b>Sources GIEC</b>		<b>%</b>
Transports (1A3)	34.3		Fermentation entérique (4A)	46.8	
Combustion résidentiel, tertiaire, agricult. (1A4)(a)	25.2		Mise en décharge (6A)	27.6	
Combustion industrie manufac. et construc. (1A2)	19.1		Epandage des déjections animales (4B)	6.1	
Combustion transformation d'énergie (1A1)	15.2		Combustion résidentiel, tertiaire, agriculture (1A4)	4.7	
Procédés industriels - produits minéraux (2A)	2.6		Extraction et distribution du charbon (1B1)	4.5	
Autres sources	3.6		Extraction et distrib. du pétrole et gaz naturel (1B2)	3.2	
(a) hors biomasse			Autres sources	7.1	
<b>N<sub>2</sub>O ( Gg )</b>		<b>254</b>	<b>HFC ( Gg équivalent CO<sub>2</sub> )</b>		<b>4815</b>
<b>Sources GIEC</b>		<b>%</b>	<b>Sources GIEC</b>		<b>%</b>
Sols agricoles (4D)	65.0		Utilisation des HFC (2F)	86.7	
Procédés industrie chimique (2B)	14.1		Production de HFC (2E)	13.3	
Transports (1A3)	4.0				
Epandage des déjections animales (4B)	4.0				
Autres sources	12.9				
<b>PFC ( Gg équivalent CO<sub>2</sub> )</b>		<b>1915</b>	<b>SF<sub>6</sub> ( Mg )</b>		<b>101</b>
<b>Sources GIEC</b>		<b>%</b>	<b>Sources GIEC</b>		<b>%</b>
Procédés industrie métallurgique (2C)	61.0		Utilisation du SF <sub>6</sub> (2F)	53.0	
Utilisation des PFC (2F)	34.6		Procédés industrie métallurgique (2C)	47.0	
Production de PFC (2E)	4.4				
<b>NO<sub>x</sub> ( Gg )</b>		<b>1609</b>	<b>CO ( Gg )</b>		<b>7369</b>
<b>Sources GIEC</b>		<b>%</b>	<b>Sources GIEC</b>		<b>%</b>
Transports (1A3)	49.9		Transports (1A3)	44.8	
Combustion résidentiel, tertiaire, agriculture (1A4)	21.5		Combustion résidentiel, tertiaire, agriculture (1A4)	27.2	
Combustion industrie manufac. et construc. (1A2)	16.2		Procédés industrie métallurgique (2C)	11.3	
Combustion transformation d'énergie (1A1)	10.3		Combustion industrie manufac. et construc. (1A2)	11.1	
Autres sources	2.1		Incinération des déchets (6C)	4.0	
			Autres sources	1.6	
<b>COVNM ( Gg )</b>		<b>2295</b>	<b>SO<sub>2</sub> ( Gg )</b>		<b>741</b>
<b>Sources GIEC</b>		<b>%</b>	<b>Sources GIEC</b>		<b>%</b>
Transports (1A3)	28.2		Combustion transformation d'énergie (1A1)	42.3	
Utilisation des solvants (3)	27.2		Combustion industrie manufac. et construc. (1A2)	28.3	
Forêts (5E)	19.6		Combustion résidentiel, tertiaire, agriculture (1A4)	12.4	
Combustion résidentiel, tertiaire, agriculture (1A4)	12.9		Extraction et distrib. du pétrole et gaz naturel (1B2)	8.4	
Extraction et distrib. du pétrole et gaz naturel (1B2)	4.1		Transports (1A3)	5.1	
Autres sources	8.0		Autres sources	3.5	
<b>POUVOIR DE RECHAUFFEMENT GLOBAL hors LULUCF 6 GAZ : CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub> ( Tg équiv. CO<sub>2</sub> )</b>		<b>545</b>	<b>Sources GIEC</b>		<b>%</b>
<b>Sources GIEC</b>		<b>%</b>	<b>Sources GIEC</b>		<b>%</b>
Transports (1A3)	26.1		Fermentation entérique (4A)	5.1	
Combustion résidentiel, tertiaire, agriculture (1A4)	19.6		Mise en décharge (6A)	3.0	
Combustion industrie manufac. et construc. (1A2)	14.3		Procédés industrie chimique (2B)	2.5	
Combustion transformation d'énergie (1A1)	11.4		Procédés industriels - produits minéraux (2A)	1.9	
Sols agricoles (4D)	9.5		Autres sources	6.6	

(\*) Les émissions du trafic maritime international et du trafic aérien international sont exclues.

FRANCE (METROPOLE+DOM-TOM)

1990 - 1999

CO<sub>2</sub> (Gg)

source CITEPA / CORALIE format UNFCCC

mise à jour 07/11/2000

serre\_dec2000/CO2.xls

secteurs UNFCCC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	écart (%) 99 / 90
<b>Total national (émissions nettes)</b>	<b>325 873</b>	<b>352 611</b>	<b>339 764</b>	<b>313 795</b>	<b>308 215</b>	<b>316 845</b>	<b>328 661</b>	<b>321 489</b>	<b>342 660</b>	<b>335 700</b>	<b>3.0</b>
<b>1 Energie</b>	<b>360 251</b>	<b>385 751</b>	<b>379 083</b>	<b>358 601</b>	<b>353 432</b>	<b>359 235</b>	<b>374 385</b>	<b>368 100</b>	<b>388 693</b>	<b>383 598</b>	<b>6.5</b>
<b>A Conso. de combustible (approche sectorielle)</b>	<b>355 945</b>	<b>381 154</b>	<b>374 696</b>	<b>354 007</b>	<b>348 976</b>	<b>355 365</b>	<b>370 381</b>	<b>363 863</b>	<b>384 549</b>	<b>379 591</b>	<b>6.6</b>
1 Industries de l'énergie	65 495	77 232	69 530	56 161	52 439	55 169	59 468	55 984	68 432	61 389	-6.3
2 Industries manufacturières et construction	76 919	77 956	75 552	70 782	74 188	73 393	74 173	75 208	77 045	77 213	0.4
3 Transport	119 156	121 771	126 258	126 280	127 572	129 657	131 182	133 599	135 766	138 822	16.5
4 Autres secteurs	94 375	104 195	103 357	100 784	94 777	97 146	105 557	99 072	103 306	102 167	8.3
5 Autre	0	0	0	0	0	0	0	0	0	0	-
<b>B Emissions fugitives des combustibles</b>	<b>4 306</b>	<b>4 597</b>	<b>4 386</b>	<b>4 595</b>	<b>4 456</b>	<b>3 871</b>	<b>4 005</b>	<b>4 237</b>	<b>4 145</b>	<b>4 006</b>	<b>-7.0</b>
1 Combustibles solides	0	0	0	0	0	0	0	0	0	0	-
2 Combustibles liquides et gazeux	4 306	4 597	4 386	4 595	4 456	3 871	4 005	4 237	4 145	4 006	-7.0
<b>2 Procédés industriels</b>	<b>21 254</b>	<b>19 421</b>	<b>17 940</b>	<b>17 180</b>	<b>18 228</b>	<b>18 703</b>	<b>17 441</b>	<b>17 610</b>	<b>18 045</b>	<b>17 194</b>	<b>-19.1</b>
A Produits minéraux	13 016	12 443	11 348	10 632	10 938	10 686	10 454	10 186	10 792	10 371	-20.3
B Chimie	3 007	3 036	2 666	2 810	2 822	2 826	2 966	2 889	2 844	2 723	-9.4
C Métallurgie	4 550	3 478	3 249	3 172	3 890	4 597	3 391	3 945	3 833	3 443	-24.3
D Autres productions	681	464	676	566	579	593	629	591	576	656	-3.6
E Production d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
F Consommation d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>3 Utilisation de solvants et autres produits</b>	<b>1 852</b>	<b>1 770</b>	<b>1 733</b>	<b>1 615</b>	<b>1 617</b>	<b>1 633</b>	<b>1 613</b>	<b>1 621</b>	<b>1 647</b>	<b>1 617</b>	<b>-12.7</b>
<b>4 Agriculture</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
A Fermentation entérique	0	0	0	0	0	0	0	0	0	0	-
B Gestion des déjections animales	0	0	0	0	0	0	0	0	0	0	-
C Rizières	0	0	0	0	0	0	0	0	0	0	-
D Sols agricoles	0	0	0	0	0	0	0	0	0	0	-
E Brûlage de la savane	0	0	0	0	0	0	0	0	0	0	-
F Incinération des résidus de culture	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>5 Changement d'utilisation des sols et sylviculture</b>	<b>-59 617</b>	<b>-56 488</b>	<b>-61 246</b>	<b>-65 865</b>	<b>-67 495</b>	<b>-65 151</b>	<b>-67 197</b>	<b>-68 090</b>	<b>-68 024</b>	<b>-68 995</b>	<b>15.7</b>
A Variation des stocks forestiers et des autres types de biomasse	-75 330	-72 020	-76 878	-81 506	-82 824	-81 249	-82 995	-83 880	-83 748	-84 861	12.7
B Conversion des forêts et des prairies	11 710	11 710	11 987	12 066	12 165	12 343	12 343	12 540	12 540	12 540	7.1
C Abandon des sols cultivés	-48	-48	-48	-48	-48	-48	-48	-48	-48	-48	0.0
D Puits et émissions de CO <sub>2</sub> des sols	4 051	3 870	3 693	3 623	3 212	3 803	3 503	3 298	3 232	3 374	-16.7
E Autre	0	0	0	0	0	0	0	0	0	0	-
<b>6 Déchets</b>	<b>2 133</b>	<b>2 157</b>	<b>2 254</b>	<b>2 264</b>	<b>2 433</b>	<b>2 425</b>	<b>2 420</b>	<b>2 248</b>	<b>2 298</b>	<b>2 287</b>	<b>7.2</b>
A Décharges	0	0	0	0	0	0	0	0	0	0	-
B Traitement des eaux	0	0	0	0	0	0	0	0	0	0	-
C Incinération de déchets	2 133	2 157	2 254	2 264	2 433	2 425	2 420	2 248	2 298	2 287	7.2
D Autre	0	0	0	0	0	0	0	0	0	0	-
<b>7 Autre</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>Memo</b>											
<b>Soutes internationales</b>	<b>16 755</b>	<b>16 777</b>	<b>17 988</b>	<b>18 103</b>	<b>17 607</b>	<b>17 730</b>	<b>18 808</b>	<b>20 013</b>	<b>21 422</b>	<b>23 064</b>	<b>37.7</b>
Aviation	8 618	8 336	9 831	10 244	10 605	10 513	11 240	11 634	12 255	13 753	59.6
Marine	8 137	8 441	8 157	7 860	7 002	7 217	7 568	8 379	9 166	9 311	14.4
<b>Emissions de CO<sub>2</sub> de la biomasse</b>	<b>37 859</b>	<b>45 267</b>	<b>42 905</b>	<b>42 251</b>	<b>37 077</b>	<b>37 894</b>	<b>39 933</b>	<b>36 405</b>	<b>37 281</b>	<b>36 992</b>	<b>-2.3</b>

FRANCE (METROPOLE+DOM-TOM)		1990 - 1999		CH <sub>4</sub> (Gg)							
source CITEPA / CORALIE format UNFCCC		mise à jour 07/11/2000		serre_dec2000/CH4.xls							
secteurs UNFCCC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	écart (%) 99 / 90
Total national	3 109	3 165	3 179	3 209	3 212	3 265	3 220	2 967	2 939	2 841	-8.6
1 Energie	484	509	501	504	473	475	438	386	388	371	-23.2
A Conso. de combustible (approche sectorielle)	173	205	194	190	164	165	174	155	157	154	-10.
1 Industries de l'énergie	2.2	2.5	2.3	2.4	2.3	2.2	2.0	1.7	1.7	1.3	-39.4
2 Industries manufacturières et construction	3.9	3.8	4.1	4.0	4.5	4.0	4.3	4.1	4.2	3.8	-2.0
3 Transport	22	21	22	21	20	18	17	16	15	15	-31.2
4 Autres secteurs	145	178	165	163	137	140	151	133	136	134	-7.4
5 Autre	0	0	0	0	0	0	0	0	0	0	-
B Emissions fugitives des combustibles	311	304	307	314	310	310	263	231	230	217	-30.1
1 Combustibles solides	206	192	200	209	213	211	161	137	133	127	-
2 Combustibles liquides et gazeux	105	112	107	106	97	99	102	93	97	91	-13.4
2 Procédés industriels	2.5	2.2	2.3	2.1	2.4	2.6	2.5	2.5	2.6	2.6	3.8
A Produits minéraux	0	0	0	0	0	0	0	0	0	0	-
B Chimie	2.5	2.2	2.3	2.1	2.4	2.6	2.5	2.5	2.6	2.6	3.8
C Métallurgie	0	0	0	0	0	0	0	0	0	0	-
D Autres productions	0	0	0	0	0	0	0	0	0	0	-
E Production d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
F Consommation d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
3 Utilisation de solvants et autres produits	0	0	0	0	0	0	0	0	0	0	-
4 Agriculture	1 631	1 604	1 570	1 558	1 556	1 564	1 565	1 548	1 535	1 535	-5.9
A Fermentation entérique	1 431	1 405	1 370	1 355	1 352	1 359	1 358	1 341	1 330	1 331	-7.0
B Gestion des déjections animales	168	168	168	169	170	172	175	174	175	174	3.0
C Rizières	8.6	8.9	9.9	10.7	11.3	10.5	9.5	9.1	8.3	7.7	-9.4
D Sols agricoles	23	23	23	23	23	23	23	23	23	23	0.2
E Brûlage de la savane	0	0	0	0	0	0	0	0	0	0	-
F Incinération des résidus de culture	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
5 Changement d'utilisation des sols et sylviculture	99	100	100	101	100	100	101	101	101	101	1.7
A Variation des stocks forestiers et des autres types de biomasse	0	0	0	0	0	0	0	0	0	0	-
B Conversion des forêts et des prairies	10.5	10.5	10.8	10.8	10.9	11.1	11.1	11.2	11.2	11.2	6.9
C Abandon des sols cultivés	0	0	0	0	0	0	0	0	0	0	-
D Puits et émissions de CO <sub>2</sub> des sols	0	0	0	0	0	0	0	0	0	0	-
E Autre	89	89	90	90	89	89	90	90	90	90	1.1
6 Déchets	892	950	1 005	1 045	1 081	1 124	1 114	931	913	831	-6.9
A Décharges	853	909	963	1 002	1 038	1 080	1 068	884	864	783	-8.2
B Traitement des eaux	12	12	13	13	13	13	13	13	13	13	8.6
C Incinération de déchets	15	16	16	16	16	16	17	18	18	18	15.0
D Autre	12	12	13	14	14	15	15	16	17	17	46.0
7 Autre	0	0	0	0	0	0	0	0	0	0	-
Memo											
Soutes internationales	0	0	0	0	0	0	0	0	0	0	-
Aviation	0	0	0	0	0	0	0	0	0	0	-
Marine	0	0	0	0	0	0	0	0	0	0	-

FRANCE (METROPOLE+DOM-TOM)

1990 - 1999

N<sub>2</sub>O (Gg)

source CITEPA / CORALIE format UNFCCC

mise à jour 07/11/2000

serre\_dec2000/N2O.xls

secteurs UNFCCC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	écart (%) 99 / 90
<b>Total national</b>	<b>306</b>	<b>305</b>	<b>294</b>	<b>281</b>	<b>287</b>	<b>292</b>	<b>295</b>	<b>298</b>	<b>272</b>	<b>254</b>	<b>-17.0</b>
<b>1 Energie</b>	<b>12</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>59.3</b>
<b>A Conso. de combustible (approche sectorielle)</b>	<b>12</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>59.2</b>
1 Industries de l'énergie	1.8	2.5	2.6	2.0	1.9	1.9	2.1	2.0	2.4	2.2	21.6
2 Industries manufacturières et construction	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.5	2.5	2.6	9.3
3 Transport	3.9	4.1	4.4	4.9	5.9	6.7	7.7	8.6	9.3	10.2	162.7
4 Autres secteurs	4.3	4.9	4.8	4.7	4.4	4.5	4.9	4.5	4.7	4.7	8.8
5 Autre	0	0	0	0	0	0	0	0	0	0	-
<b>B Emissions fugitives des combustibles</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
1 Combustibles solides	0	0	0	0	0	0	0	0	0	0	-
2 Combustibles liquides et gazeux	0	0	0	0	0	0	0	0	0	0	-
<b>2 Procédés industriels</b>	<b>90</b>	<b>90</b>	<b>84</b>	<b>75</b>	<b>79</b>	<b>82</b>	<b>80</b>	<b>81</b>	<b>54</b>	<b>36</b>	<b>-60.1</b>
A Produits minéraux	0	0	0	0	0	0	0	0	0	0	-
B Chimie	90	90	84	75	79	82	80	81	54	36	-60.1
C Métallurgie	0	0	0	0	0	0	0	0	0	0	-
D Autres productions	0	0	0	0	0	0	0	0	0	0	-
E Production d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
F Consommation d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>3 Utilisation de solvants et autres produits</b>	<b>1.9</b>	<b>1.9</b>	<b>1.9</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.9</b>
<b>4 Agriculture</b>	<b>181</b>	<b>179</b>	<b>173</b>	<b>169</b>	<b>170</b>	<b>172</b>	<b>174</b>	<b>177</b>	<b>176</b>	<b>175</b>	<b>-3.4</b>
A Fermentation entérique	0	0	0	0	0	0	0	0	0	0	-
B Gestion des déjections animales	10.5	10.3	10.1	10.1	10.0	10.1	10.2	10.1	10.1	10.0	-4.3
C Rizières	0	0	0	0	0	0	0	0	0	0	-
D Sols agricoles	171	168	163	159	160	162	164	166	166	165	-3.3
E Brûlage de la savane	0	0	0	0	0	0	0	0	0	0	-
F Incinération des résidus de culture	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>5 Changement d'utilisation des sols et sylviculture</b>	<b>17.8</b>	<b>17.9</b>	<b>18.0</b>	<b>18.0</b>	<b>17.9</b>	<b>17.9</b>	<b>18.0</b>	<b>18.0</b>	<b>18.0</b>	<b>18.0</b>	<b>1.1</b>
A Variation des stocks forestiers et des autres types de biomasse	0	0	0	0	0	0	0	0	0	0	-
B Conversion des forêts et des prairies	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	6.9
C Abandon des sols cultivés	0	0	0	0	0	0	0	0	0	0	-
D Puits et émissions de CO <sub>2</sub> des sols	0	0	0	0	0	0	0	0	0	0	-
E Autre	17.7	17.8	17.9	17.9	17.8	17.9	17.9	17.9	17.9	17.9	1.1
<b>6 Déchets</b>	<b>3.1</b>	<b>3.2</b>	<b>3.3</b>	<b>3.4</b>	<b>3.4</b>	<b>3.4</b>	<b>3.4</b>	<b>3.4</b>	<b>3.4</b>	<b>3.4</b>	<b>10.2</b>
A Décharges	0	0	0	0	0	0	0	0	0	0	-
B Traitement des eaux	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	8.6
C Incinération de déchets	1.2	1.2	1.3	1.4	1.4	1.4	1.4	1.3	1.3	1.3	12.8
D Autre	0	0	0	0	0	0	0	0	0	0	-
<b>7 Autre</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>Memo</b>											
<b>Soutes internationales</b>	<b>0.26</b>	<b>0.27</b>	<b>0.26</b>	<b>0.25</b>	<b>0.23</b>	<b>0.23</b>	<b>0.24</b>	<b>0.27</b>	<b>0.30</b>	<b>0.30</b>	<b>14.5</b>
Aviation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Marine	0.26	0.27	0.26	0.25	0.23	0.23	0.24	0.27	0.30	0.30	14.5

FRANCE (METROPOLE+DOM-TOM)

1990 - 1999

SO<sub>2</sub> (Gg)

source CITEPA / CORALIE format UNFCCC

mise à jour 07/11/2000

serre\_dec2000/SO2.xls

secteurs UNFCCC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	écart (%) 99 / 90
<b>Total national</b>	<b>1 321</b>	<b>1 437</b>	<b>1 261</b>	<b>1 106</b>	<b>1 051</b>	<b>994</b>	<b>973</b>	<b>829</b>	<b>867</b>	<b>741</b>	<b>-43.9</b>
<b>1 Energie</b>	<b>1 275</b>	<b>1 396</b>	<b>1 225</b>	<b>1 074</b>	<b>1 022</b>	<b>966</b>	<b>946</b>	<b>803</b>	<b>843</b>	<b>716</b>	<b>-43.9</b>
<b>A Conso. de combustible (approche sectorielle)</b>	<b>1 180</b>	<b>1 315</b>	<b>1 143</b>	<b>1 004</b>	<b>962</b>	<b>899</b>	<b>879</b>	<b>734</b>	<b>777</b>	<b>653</b>	<b>-44.7</b>
1 Industries de l'énergie	517	614	491	392	375	385	383	334	385	314	<b>-39.3</b>
2 Industries manufacturières et construction	351	380	332	298	305	281	278	246	229	210	<b>-40.3</b>
3 Transport	155	159	166	168	162	127	110	57	56	38	<b>-75.4</b>
4 Autres secteurs	157	162	154	145	120	106	107	96	107	92	<b>-41.7</b>
5 Autre	0	0	0	0	0	0	0	0	0	0	-
<b>B Emissions fugitives des combustibles</b>	<b>95</b>	<b>81</b>	<b>82</b>	<b>71</b>	<b>60</b>	<b>67</b>	<b>68</b>	<b>70</b>	<b>65</b>	<b>63</b>	<b>-34.3</b>
1 Combustibles solides	0	0	0	0	0	0	0	0	0	0	-
2 Combustibles liquides et gazeux	95	81	82	71	60	67	68	70	65	63	<b>-34.3</b>
<b>2 Procédés industriels</b>	<b>34</b>	<b>29</b>	<b>24</b>	<b>19</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>-50.9</b>
A Produits minéraux	0	0	0	0	0	0	0	0	0	0	-
B Chimie	31	26	20	15	13	13	13	13	13	13	<b>-59.4</b>
C Métallurgie	3.2	2.9	3.9	3.9	3.6	3.5	3.6	3.8	3.9	4.2	<b>30.3</b>
D Autres productions	0	0	0	0	0	0	0	0	0	0	-
E Production d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
F Consommation d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>3 Utilisation de solvants et autres produits</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	-
<b>4 Agriculture</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	-
A Fermentation entérique	0	0	0	0	0	0	0	0	0	0	-
B Gestion des déjections animales	0	0	0	0	0	0	0	0	0	0	-
C Rizières	0	0	0	0	0	0	0	0	0	0	-
D Sols agricoles	0	0	0	0	0	0	0	0	0	0	-
E Brûlage de la savane	0	0	0	0	0	0	0	0	0	0	-
F Incinération des résidus de culture	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>5 Changement d'utilisation des sols et sylviculture</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	-
A Variation des stocks forestiers et des autres types de biomasse	0	0	0	0	0	0	0	0	0	0	-
B Conversion des forêts et des prairies	0	0	0	0	0	0	0	0	0	0	-
C Abandon des sols cultivés	0	0	0	0	0	0	0	0	0	0	-
D Puits et émissions de CO <sub>2</sub> des sols	0	0	0	0	0	0	0	0	0	0	-
E Autre	0	0	0	0	0	0	0	0	0	0	-
<b>6 Déchets</b>	<b>11</b>	<b>12</b>	<b>12</b>	<b>13</b>	<b>13</b>	<b>12</b>	<b>10</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>-28.6</b>
A Décharges	0	0	0	0	0	0	0	0	0	0	-
B Traitement des eaux	0	0	0	0	0	0	0	0	0	0	-
C Incinération de déchets	11	12	12	13	13	12	10	9	8	8	<b>-28.6</b>
D Autre	0	0	0	0	0	0	0	0	0	0	-
<b>7 Autre</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	-
<b>Memo</b>											
<b>Sources internationales</b>	<b>154</b>	<b>155</b>	<b>147</b>	<b>145</b>	<b>124</b>	<b>126</b>	<b>129</b>	<b>145</b>	<b>163</b>	<b>165</b>	<b>7.6</b>
Aviation	2.7	2.6	3.1	3.3	3.4	3.3	3.6	3.7	3.9	4.4	<b>59.6</b>
Marine	151	152	144	142	121	123	125	141	159	161	<b>6.6</b>

FRANCE (METROPOLE+DOM-TOM)

1990 - 1999

NO<sub>x</sub> (Gg)

source CITEPA / CORALIE format UNFCCC

mise à jour 07/11/2000

serre\_dec2000/NOx.xls

secteurs UNFCCC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	écart (%) 99 / 90
<b>Total national</b>	<b>1 929</b>	<b>2 005</b>	<b>1 960</b>	<b>1 847</b>	<b>1 808</b>	<b>1 780</b>	<b>1 762</b>	<b>1 715</b>	<b>1 672</b>	<b>1 609</b>	<b>-16.6</b>
<b>1 Energie</b>	<b>1 885</b>	<b>1 963</b>	<b>1 921</b>	<b>1 810</b>	<b>1 773</b>	<b>1 745</b>	<b>1 728</b>	<b>1 682</b>	<b>1 641</b>	<b>1 578</b>	<b>-16.3</b>
<b>A Conso. de combustible (approche sectorielle)</b>	<b>1 880</b>	<b>1 958</b>	<b>1 915</b>	<b>1 805</b>	<b>1 768</b>	<b>1 740</b>	<b>1 723</b>	<b>1 677</b>	<b>1 636</b>	<b>1 574</b>	<b>-16.2</b>
1 Industries de l'énergie	157	205	177	131	134	145	153	143	182	165	5.6
2 Industries manufacturières et construction	242	244	221	222	229	225	238	260	254	260	7.5
3 Transport	1 108	1 120	1 142	1 109	1 076	1 022	967	915	853	803	-27.5
4 Autres secteurs	373	388	374	343	329	348	365	360	347	346	-7.3
5 Autre	0	0	0	0	0	0	0	0	0	0	-
<b>B Emissions fugitives des combustibles</b>	<b>5.7</b>	<b>5.6</b>	<b>6.4</b>	<b>4.7</b>	<b>4.6</b>	<b>5.1</b>	<b>5.4</b>	<b>5.4</b>	<b>4.9</b>	<b>4.2</b>	<b>-25.9</b>
1 Combustibles solides	0	0	0	0	0	0	0	0	0	0	-
2 Combustibles liquides et gazeux	5.7	5.6	6.4	4.7	4.6	5.1	5.4	5.4	4.9	4.2	-25.9
<b>2 Procédés industriels</b>	<b>22</b>	<b>20</b>	<b>16</b>	<b>13</b>	<b>11</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>-46.9</b>
A Produits minéraux	0	0	0	0	0	0	0	0	0	0	-
B Chimie	20	18	14	11	9	10	10	10	9	9	-53.9
C Métallurgie	2.2	2.1	2.1	2.0	2.2	2.3	2.3	2.6	2.6	2.6	17.9
D Autres productions	0	0	0	0	0	0	0	0	0	0	-
E Production d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
F Consommation d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>3 Utilisation de solvants et autres produits</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>4 Agriculture</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
A Fermentation entérique	0	0	0	0	0	0	0	0	0	0	-
B Gestion des déjections animales	0	0	0	0	0	0	0	0	0	0	-
C Rizières	0	0	0	0	0	0	0	0	0	0	-
D Sols agricoles	0	0	0	0	0	0	0	0	0	0	-
E Brûlage de la savane	0	0	0	0	0	0	0	0	0	0	-
F Incinération des résidus de culture	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>5 Changement d'utilisation des sols et sylviculture</b>	<b>2.6</b>	<b>2.6</b>	<b>2.7</b>	<b>2.7</b>	<b>2.7</b>	<b>2.7</b>	<b>2.7</b>	<b>2.8</b>	<b>2.8</b>	<b>2.8</b>	<b>6.9</b>
A Variation des stocks forestiers et des autres types de biomasse	0	0	0	0	0	0	0	0	0	0	-
B Conversion des forêts et des prairies	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	6.9
C Abandon des sols cultivés	0	0	0	0	0	0	0	0	0	0	-
D Puits et émissions de CO <sub>2</sub> des sols	0	0	0	0	0	0	0	0	0	0	-
E Autre	0	0	0	0	0	0	0	0	0	0	-
<b>6 Déchets</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>21</b>	<b>20</b>	<b>19</b>	<b>17</b>	<b>16</b>	<b>16</b>	<b>-12.5</b>
A Décharges	0	0	0	0	0	0	0	0	0	0	-
B Traitement des eaux	0	0	0	0	0	0	0	0	0	0	-
C Incinération de déchets	18	19	20	21	21	20	19	17	16	16	-12.5
D Autre	0	0	0	0	0	0	0	0	0	0	-
<b>7 Autre</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>Memo</b>											
<b>Soutes internationales</b>	<b>176</b>	<b>181</b>	<b>179</b>	<b>175</b>	<b>159</b>	<b>163</b>	<b>172</b>	<b>188</b>	<b>205</b>	<b>211</b>	<b>20.1</b>
Aviation	21	20	24	25	26	26	28	29	30	34	60.8
Marine	155	161	155	150	133	137	144	160	174	177	14.5

FRANCE (METROPOLE+DOM-TOM)

1990 - 1999

COVNM (Gg)

source CITEPA / CORALIE format UNFCCC

mise à jour 07/11/2000

serre\_dec2000COVNM.xls

secteurs UNFCCC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	écart (%) 99 / 90
<b>Total national</b>	<b>2 963</b>	<b>2 948</b>	<b>2 892</b>	<b>2 740</b>	<b>2 649</b>	<b>2 561</b>	<b>2 459</b>	<b>2 434</b>	<b>2 347</b>	<b>2 295</b>	<b>-22.5</b>
<b>1 Energie</b>	<b>1 669</b>	<b>1 681</b>	<b>1 647</b>	<b>1 573</b>	<b>1 432</b>	<b>1 350</b>	<b>1 290</b>	<b>1 204</b>	<b>1 134</b>	<b>1 069</b>	<b>-36.0</b>
<b>A Conso. de combustible (approche sectorielle)</b>	<b>1 496</b>	<b>1 522</b>	<b>1 502</b>	<b>1 438</b>	<b>1 309</b>	<b>1 235</b>	<b>1 176</b>	<b>1 090</b>	<b>1 028</b>	<b>973</b>	<b>-34.9</b>
1 Industries de l'énergie	3.6	4.2	4.6	4.8	4.7	4.5	4.3	4.3	4.8	4.4	23.9
2 Industries manufacturières et construction	21	21	19	20	21	21	23	26	25	26	23.9
3 Transport	1 151	1 127	1 131	1 077	987	904	825	760	700	648	-43.7
4 Autres secteurs	320	370	348	336	297	305	324	299	297	295	-7.9
5 Autre	0	0	0	0	0	0	0	0	0	0	-
<b>B Emissions fugitives des combustibles</b>	<b>173</b>	<b>159</b>	<b>145</b>	<b>135</b>	<b>122</b>	<b>115</b>	<b>114</b>	<b>113</b>	<b>107</b>	<b>95</b>	<b>-45.0</b>
1 Combustibles solides	1.1	1.0	1.0	0.9	0.9	0.9	0.8	1.0	0.8	0.8	-22.2
2 Combustibles liquides et gazeux	172	158	144	134	122	114	113	113	106	94	-45.2
<b>2 Procédés industriels</b>	<b>103</b>	<b>99</b>	<b>100</b>	<b>96</b>	<b>97</b>	<b>96</b>	<b>96</b>	<b>98</b>	<b>99</b>	<b>99</b>	<b>-4.2</b>
A Produits minéraux	13	14	14	14	14	14	13	14	14	14	5.6
B Chimie	45	42	41	38	39	38	38	39	39	40	-11.7
C Métallurgie	3.2	3.1	3.6	3.5	3.5	3.5	3.2	3.7	4.1	4.1	26.1
D Autres productions	42	40	41	40	40	41	41	42	41	42	-1.6
E Production d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
F Consommation d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>3 Utilisation de solvants et autres produits</b>	<b>704</b>	<b>677</b>	<b>664</b>	<b>619</b>	<b>623</b>	<b>626</b>	<b>621</b>	<b>624</b>	<b>634</b>	<b>625</b>	<b>-</b>
<b>4 Agriculture</b>	<b>21</b>	<b>20</b>	<b>19</b>	<b>18</b>	<b>20</b>	<b>20</b>	<b>18</b>	<b>20</b>	<b>19</b>	<b>20</b>	<b>-5.3</b>
A Fermentation entérique	0	0	0	0	0	0	0	0	0	0	-
B Gestion des déjections animales	0	0	0	0	0	0	0	0	0	0	-
C Rizières	0	0	0	0	0	0	0	0	0	0	-
D Sols agricoles	21	20	19	18	20	20	18	20	19	20	-5.3
E Brûlage de la savane	0	0	0	0	0	0	0	0	0	0	-
F Incinération des résidus de culture	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>5 Changement d'utilisation des sols et sylviculture</b>	<b>436</b>	<b>441</b>	<b>431</b>	<b>402</b>	<b>446</b>	<b>436</b>	<b>400</b>	<b>454</b>	<b>426</b>	<b>450</b>	<b>3.0</b>
A Variation des stocks forestiers et des autres types de biomasse	0	0	0	0	0	0	0	0	0	0	-
B Conversion des forêts et des prairies	0	0	0	0	0	0	0	0	0	0	-
C Abandon des sols cultivés	0	0	0	0	0	0	0	0	0	0	-
D Puits et émissions de CO <sub>2</sub> des sols	0	0	0	0	0	0	0	0	0	0	-
E Autre	436	441	431	402	446	436	400	454	426	450	3.0
<b>6 Déchets</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>34</b>	<b>35</b>	<b>33</b>	<b>16.0</b>
A Décharges	8.2	8.7	9.2	9.7	10.0	10.4	10.3	8.6	8.3	7.6	-7.4
B Traitement des eaux	3.0	3.2	3.1	3.3	2.7	2.9	2.8	3.6	3.7	3.3	9.6
C Incinération de déchets	10	10	10	10	10	10	10	11	11	11	9.7
D Autre	8	8	8	9	9	10	10	11	12	12	51.8
<b>7 Autre</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>Memo</b>											
<b>Soutes internationales</b>	<b>74</b>	<b>76</b>	<b>74</b>	<b>71</b>	<b>63</b>	<b>65</b>	<b>68</b>	<b>75</b>	<b>82</b>	<b>84</b>	<b>13.4</b>
Aviation	2.9	2.6	2.7	2.5	2.4	2.3	2.4	2.4	2.4	2.5	-12.4
Marine	71	73	71	68	61	63	66	73	80	81	14.5

FRANCE (METROPOLE+DOM-TOM)

1990 - 1999

CO (Gg)

source CITEPA / CORALIE format UNFCCC

mise à jour 07/11/2000

serre\_dec2000 CO.xls

secteurs UNFCCC	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (%)	écart / 90
<b>Total national</b>	<b>10 996</b>	<b>10 868</b>	<b>10 449</b>	<b>9 885</b>	<b>9 206</b>	<b>9 083</b>	<b>8 491</b>	<b>8 060</b>	<b>7 803</b>	<b>7 369</b>	<b>-33.0</b>
<b>1 Energie</b>	<b>9 517</b>	<b>9 714</b>	<b>9 350</b>	<b>8 865</b>	<b>7 910</b>	<b>7 556</b>	<b>7 279</b>	<b>6 665</b>	<b>6 440</b>	<b>6 144</b>	<b>-35.4</b>
<b>A Conso. de combustible (approche sectorielle)</b>	<b>9 512</b>	<b>9 709</b>	<b>9 345</b>	<b>8 860</b>	<b>7 906</b>	<b>7 551</b>	<b>7 275</b>	<b>6 660</b>	<b>6 436</b>	<b>6 140</b>	<b>-35.4</b>
1 Industries de l'énergie	16	19	18	16	17	15	18	16	18	17	1.5
2 Industries manufacturières et construction	841	805	761	716	792	767	745	819	837	817	-2.8
3 Transport	6 491	6 306	6 154	5 780	5 073	4 688	4 281	3 814	3 551	3 302	-49.1
4 Autres secteurs	2 163	2 579	2 413	2 348	2 023	2 080	2 231	2 012	2 030	2 004	-7.3
5 Autre	0	0	0	0	0	0	0	0	0	0	-
<b>B Emissions fugitives des combustibles</b>	<b>5.0</b>	<b>4.9</b>	<b>4.9</b>	<b>4.6</b>	<b>4.2</b>	<b>4.1</b>	<b>4.0</b>	<b>4.6</b>	<b>4.0</b>	<b>4.0</b>	<b>-19.4</b>
1 Combustibles solides	4.3	4.2	4.1	3.8	3.4	3.5	3.3	3.9	3.3	3.3	-22.2
2 Combustibles liquides et gazeux	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	-3.2
<b>2 Procédés industriels</b>	<b>1 129</b>	<b>788</b>	<b>740</b>	<b>678</b>	<b>953</b>	<b>1 181</b>	<b>840</b>	<b>1 007</b>	<b>959</b>	<b>830</b>	<b>-26.5</b>
A Produits minéraux	0	0	0	0	0	0	0	0	0	0	-
B Chimie	0	0	0	0	0	0	0	0	0	0	-
C Métallurgie	1 129	788	740	678	953	1 181	840	1 007	959	830	-26.5
D Autres productions	0	0	0	0	0	0	0	0	0	0	-
E Production d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
F Consommation d'halocarbures et SF <sub>6</sub>	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>3 Utilisation de solvants et autres produits</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>4 Agriculture</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
A Fermentation entérique	0	0	0	0	0	0	0	0	0	0	-
B Gestion des déjections animales	0	0	0	0	0	0	0	0	0	0	-
C Rizières	0	0	0	0	0	0	0	0	0	0	-
D Sols agricoles	0	0	0	0	0	0	0	0	0	0	-
E Brûlage de la savane	0	0	0	0	0	0	0	0	0	0	-
F Incinération des résidus de culture	0	0	0	0	0	0	0	0	0	0	-
G Autre	0	0	0	0	0	0	0	0	0	0	-
<b>5 Changement d'utilisation des sols et sylviculture</b>	<b>92</b>	<b>92</b>	<b>94</b>	<b>95</b>	<b>95</b>	<b>97</b>	<b>97</b>	<b>98</b>	<b>98</b>	<b>98</b>	<b>6.9</b>
A Variation des stocks forestiers et des autres types de biomasse	0	0	0	0	0	0	0	0	0	0	-
B Conversion des forêts et des prairies	92	92	94	95	95	97	97	98	98	98	6.9
C Abandon des sols cultivés	0	0	0	0	0	0	0	0	0	0	-
D Puits et émissions de CO <sub>2</sub> des sols	0	0	0	0	0	0	0	0	0	0	-
E Autre	0	0	0	0	0	0	0	0	0	0	-
<b>6 Déchets</b>	<b>258</b>	<b>274</b>	<b>265</b>	<b>248</b>	<b>248</b>	<b>250</b>	<b>275</b>	<b>289</b>	<b>305</b>	<b>297</b>	<b>15.0</b>
A Décharges	0	0	0	0	0	0	0	0	0	0	-
B Traitement des eaux	0	0	0	0	0	0	0	0	0	0	-
C Incinération de déchets	258	274	265	248	248	250	275	289	305	297	15.0
D Autre	0	0	0	0	0	0	0	0	0	0	-
<b>7 Autre</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>
<b>Memo</b>											
<b>Soutes internationales</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>11</b>	<b>7.0</b>
Aviation	7.9	7.2	7.6	7.4	7.3	7.2	7.5	7.5	7.8	8.3	5.1
Marine	2.1	2.2	2.1	2.0	1.8	1.9	2.0	2.2	2.4	2.4	14.5



#### 4.1 – Energie (secteur 1)

L'utilisation de l'énergie représente chaque année un peu plus de 76 % des émissions de CO<sub>2</sub> brutes et même près de 90 % si l'on y ajoute la biomasse. Ce niveau se situe dans le bas de la fourchette si l'on s'intéresse à la plupart des pays développés du fait de la part importante d'énergie nucléaire.

Cette catégorie est également largement prépondérante vis à vis des émissions de gaz à effet de serre indirect comme le SO<sub>2</sub> (96 %), les NO<sub>x</sub> (98 %), le CO (83 %) et à un degré moindre les COVNM (43 %) en 1999.

A l'inverse, cette catégorie contribue peu ou pas aux émissions des autres substances étudiées (CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC et SF<sub>6</sub>).

Le secteur des transports et principalement le transport routier ressort nettement quant aux émissions de CO<sub>2</sub> devant le secteur "résidentiel / tertiaire / commercial / institutionnel", l'industrie manufacturière et les industries de l'énergie. Le même trio, parfois dans un ordre différent, se retrouve bien placé quant aux émissions de NO<sub>x</sub> et de CO bien que la pénétration accrue des pots catalytiques et de véhicules moins polluants réduise progressivement la part des transports routiers depuis quelques années. La transformation d'énergie précède largement ces trois secteurs en ce qui concerne les rejets de SO<sub>2</sub>. Les émissions de CH<sub>4</sub> (extraction du charbon, distribution du gaz naturel) et les émissions de COVNM (stockage, évaporation) sont principalement des émissions diffuses.

Le secteur de la production d'électricité connaît des fluctuations significatives au cours de la période 1990 – 1999 consécutives aux conditions particulières rencontrées chaque année (conditions climatiques, disponibilité des centrales nucléaires et hydroélectriques).

Les émissions de CO<sub>2</sub> du transport routier sont en forte augmentation (+ 16 % entre 1990 et 1999) ce qui n'est pas le cas des autres substances (N<sub>2</sub>O excepté) compte tenu des actions réductrices mises en œuvre.

#### 4.2 – Procédés industriels (secteur 2)

Les émissions notables dans cette catégorie concernent le N<sub>2</sub>O (16 % des émissions totales en 1999 en équivalent CO<sub>2</sub> contre 19 % en 1990) qui provient en grande partie des productions des acides nitrique, adipique et glyoxylique.

Les procédés industriels regroupent également les sources de HFC, de PFC et de SF<sub>6</sub> qui sont commentées dans les sections 1.4 à 1.6 de la section « Résultats » du présent rapport.

En ce qui concerne les gaz à effet de serre indirect, il est à noter que les parts relatives les plus importantes dans les émissions en 1999 sont pour CO : 11 % (sidérurgie), pour NO<sub>x</sub> : 0,3 % (acide nitrique), pour COVNM : 1,4 % (agro-alimentaire et chimie organique) et pour SO<sub>2</sub> : 2 % (production d'acide sulfurique).

Ces émissions sont dans l'ensemble orientées à la baisse au cours de la période étudiée.

#### 4.3 – Utilisation des solvants et autres produits (secteur 3)

Cette catégorie concerne principalement les émissions de COVNM provenant de l'utilisation de solvants lors de l'application de peinture, du traitement de surface, etc.

Les émissions de CO<sub>2</sub> traduisent la transformation du carbone contenu dans les émissions de COVNM en CO<sub>2</sub> ultime. Cette conversion appliquée à tous les sous-secteurs à l'exception du sous-secteur 3C (fabrication et mise en œuvre de produits chimiques) se fait sur la base d'un contenu moyen en carbone de 85 %.

#### 4.4 – Agriculture (secteur 4)

L'agriculture est le secteur prépondérant quant aux émissions de CH<sub>4</sub> et de N<sub>2</sub>O (respectivement 54 % et 69 % des émissions nationales pour ces deux polluants en 1999).

La fermentation entérique (87 %) et les excréments animaux (11 %) constituent l'essentiel des sources émettrices de CH<sub>4</sub> de cette catégorie.

Les sols imputent pour 94 % dans les émissions agricoles de N<sub>2</sub>O. Ces émissions proviennent pour une très large part de l'épandage des engrais minéraux et des déjections animales. Le solde provient essentiellement du stockage des déjections animales. Ces émissions évoluent peu sur la période étudiée. En ce qui concerne le CO<sub>2</sub>, les sols agricoles sont traités dans le secteur 5 de l'UNFCCC (voir ci-dessous).

Enfin, les cultures sont émettrices de COVNM pour 20 Gg en 1999.

#### 4.5 – Changement d'utilisation des sols et sylviculture (secteur 5)

L'accroissement de la biomasse (en forêts et hors forêts) et la récolte forestière sont les postes prépondérants dans le calcul des puits et des émissions de CO<sub>2</sub> des changements d'utilisation des sols et de la sylviculture.

L'accroissement de la biomasse entraîne un stockage de CO<sub>2</sub> qui varie de 141 Tg en 1990 à 155 Tg en 1999. Dans le même temps, l'estimation des émissions de CO<sub>2</sub> provenant de la récolte forestière est de 70 Tg en 1999 contre 66 Tg en 1990. Ainsi, le puits résultant s'est accru de 14 Tg de CO<sub>2</sub> entre 1990 et 1999.

Pour sa part, le défrichement forestier (partie du bois de feu non comptabilisé dans la récolte forestière) induit un déstockage de CO<sub>2</sub> qui varie de 11,7 Tg en 1990 à 11,9 Tg en 1999.

Les changements d'utilisation des sols impliquent à la fois un déstockage de CO<sub>2</sub> (conversion des forêts et des prairies en terres agricoles) et un stockage de CO<sub>2</sub> (conversion des prairies et terres agricoles en forêts ainsi que des prairies en terres agricoles non cultivées). De ces deux phénomènes antagonistes résulte une émission de 3,4 Tg de CO<sub>2</sub> en 1999 contre 4 Tg en 1990.

Au bilan, les changements d'affectation des sols et la sylviculture conduisent à un puits de CO<sub>2</sub> qui augmente de plus de 14 Tg de CO<sub>2</sub> entre 1990 et 1999 (respectivement 146 et 160 Tg de CO<sub>2</sub>).

#### 4.6 – Déchets (secteur 6)

Le traitement des déchets ne représente au plus que 1 à 2 % des émissions de SO<sub>2</sub>, de NO<sub>x</sub>, de COVNM, de CO<sub>2</sub> et de N<sub>2</sub>O.

La mise en décharge est la principale source de CH<sub>4</sub> de cette catégorie qui est la plus importante après l'agriculture (28 % des émissions totales de CH<sub>4</sub> en 1999).

Les émissions de CH<sub>4</sub> ont chuté entre 1990 et 1999 (- 8 % sur la période) par suite du développement de la récupération du gaz de décharge et des actions engagées pour réduire les quantités de déchets mis en décharge.

Les émissions de CO provenant de l'incinération ne représentent qu'une petite part des émissions totales (entre 2,5 et 4 %).

#### 4.7 – Autres sources (secteur 7)

Aucune source n'est rapportée dans cette catégorie, toutes les sources ayant été assignées aussi spécifiquement que possible.

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#### 4.8 – Emissions hors total national (memo items)

Cette catégorie regroupe les émissions des sources définies hors du champ « national » dans le cadre de la convention et, pour mémoire, le CO<sub>2</sub> issu de la biomasse qui est comptabilisé implicitement dans le secteur 5.

La section 1 du chapitre « pour une bonne interprétation des résultats » précise les particularités de l'estimation du trafic maritime international.

Les trafics internationaux aériens et maritimes relatifs aux quantités de combustibles vendus en France représentent des émissions « internationales » non négligeables en ce qui concerne plusieurs des substances inventoriées.

Comparées aux émissions nationales, les quantités regroupées dans cet ensemble représentent 6 % pour le CO<sub>2</sub>, 13 % pour les NO<sub>x</sub>, 4 % pour les COVNM et 22 % pour le SO<sub>2</sub> en 1999.

Les tendances au cours de la période 1990 – 1999 semblent être orientées à la hausse en ce qui concerne le CO<sub>2</sub>, les NO<sub>x</sub>, le SO<sub>2</sub> et les COVNM, et stables pour le CO.

## *acronymes et abréviations*

CFC	Chlorofluorocarbures
CITEPA	Centre Interprofessionnel Technique d'Etudes de la Pollution Atmosphérique
CORALIE	COoRdination de la RéALisation des Inventaires d'Emissions
CORINAIR	CORe INventory or AIR emissions
COVNM	Composés Organiques Volatils Non Méthaniques
DOM	Département d'Outre-Mer
Gg	1 Gg (Gigagramme) = 1 000 Mg = 1 kt = 1 000 t
GIC	Grandes Installations de Combustion
GIEC	Groupe Intergouvernemental sur l'Evolution du Climat
HCFC	Hydrochlorofluorocarbures
HFC	Hydrofluorocarbures
Mg	1 Mg (Megagramme) = 1 t (tonne)
NEC	National Emission Ceiling / Plafond d'Emission National
PFC	Perfluorocarbures
PRG	Potentiel de Réchauffement Global
SNAP	Selected Nomenclature for Air Pollution / Nomenclature Spécifique pour la Pollution de l'Air
Tg	1 Tg (Teragramme) = 1 000 Gg = 1 000 000 Mg = 1000 kt = 1 000 000 t
TOM	Territoire d'Outre-Mer
UNFCCC	United Nations Framework Convention on Climate Change / Convention Cadre des Nations Unies sur le Changement Climatique

## *annexe 1 – résultats détaillés selon le format de l'UNFCCC*

Cette annexe contient les tables au format requis par l'UNFCCC (CRF) et pertinentes pour les années 1990, 1998 et 1999. L'année 1990 est fournie car elle constitue l'année de référence. L'année 1999 comportant un certain nombre de valeurs provisoires à la date du présent rapport, les tables du CRF sont fournies pour les deux dernières années de la période étudiée, à savoir 1998 et 1999.

Les résultats des années intermédiaires figurent dans les tables récapitulatives de l'année 1999.

Les modifications apportées lors de la dernière révision sont explicitées dans les tables relatives à l'année 1999 prévues à cet effet.

Les résultats concernent la France au sens métropole et outre-mer.

**1999**





**TABLE 1 SECTORAL REPORT FOR ENERGY**  
(Sheet 1 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
	(Gg)						
<b>Total Energy</b>	<b>383 597.80</b>	<b>371.44</b>	<b>19.71</b>	<b>1 578.44</b>	<b>6 144.21</b>	<b>1 068.52</b>	<b>715.71</b>
<b>A. Fuel Combustion Activities (Sectoral Approach)</b>	<b>379 591.37</b>	<b>154.16</b>	<b>19.70</b>	<b>1 574.23</b>	<b>6 140.17</b>	<b>973.42</b>	<b>653.20</b>
<b>1. Energy Industries</b>	<b>61 389.24</b>	<b>1.34</b>	<b>2.20</b>	<b>165.31</b>	<b>16.67</b>	<b>4.43</b>	<b>313.55</b>
a. Public Electricity and Heat Production	41 237.21	0.55	1.54	138.19	11.11	3.59	183.23
b. Petroleum Refining	15 537.01	0.62	0.57	20.14	3.49	0.63	113.89
c. Manufacture of Solid Fuels and Other Energy Industries	4 615.02	0.17	0.09	6.98	2.08	0.21	16.42
<b>2. Manufacturing Industries and Construction</b>	<b>77 212.63</b>	<b>3.84</b>	<b>2.57</b>	<b>260.04</b>	<b>817.46</b>	<b>25.99</b>	<b>209.77</b>
a. Iron and Steel	0.00	0.00	0.00				
b. Non-Ferrous Metals	0.00	0.00	0.00				
c. Chemicals	0.00	0.00	0.00				
d. Pulp, Paper and Print	0.00	0.00	0.00				
e. Food Processing, Beverages and Tobacco	0.00	0.00	0.00				
f. Other ( <i>please specify</i> )	77 212.63	3.84	2.57	260.04	817.46	25.99	209.77
2a, b, c, d, e gathered into 2f				260.04	817.46	25.99	209.77
<b>3. Transport</b>	<b>138 822.12</b>	<b>14.84</b>	<b>10.24</b>	<b>803.15</b>	<b>3 301.65</b>	<b>648.06</b>	<b>38.08</b>
a. Civil Aviation	6 067.55	0.00	0.00	14.90	6.29	1.81	1.93
b. Road Transportation	129 475.54	14.76	10.12	746.79	3 163.05	601.94	28.93
c. Railways	739.70	0.04	0.02	9.30	2.51	1.09	0.24
d. Navigation	2 039.36	0.01	0.07	25.67	129.62	42.33	6.98
e. Other Transportation ( <i>please specify</i> )	499.97	0.03	0.02	6.49	0.18	0.88	0.00
Pipeline compressor				6.49	0.18	0.88	0.00

**TABLE 1 SECTORAL REPORT FOR ENERGY**  
(Sheet 2 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NM VOC	SO <sub>2</sub>
	(Gg)						
<b>4. Other Sectors</b>	<b>102 167.38</b>	<b>134.13</b>	<b>4.70</b>	<b>345.73</b>	<b>2 004.38</b>	<b>294.95</b>	<b>91.80</b>
a. Commercial/Institutional	30 277.68	2.29	1.15	36.30	16.37	1.57	27.16
b. Residential	61 631.68	130.82	3.18	64.42	1 700.28	206.94	42.85
c. Agriculture/Forestry/Fisheries	10 258.02	1.02	0.36	245.01	287.73	86.44	21.79
<b>5. Other (please specify)<sup>(1)</sup></b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
a. Stationary 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Mobile 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00					
<b>B. Fugitive Emissions from Fuels</b>	<b>4 006.43</b>	<b>217.29</b>	<b>0.00</b>	<b>4.21</b>	<b>4.04</b>	<b>95.10</b>	<b>62.51</b>
<b>1. Solid Fuels</b>	<b>0.00</b>	<b>126.55</b>	<b>0.00</b>	<b>0.00</b>	<b>3.31</b>	<b>0.83</b>	<b>0.00</b>
a. Coal Mining	0.00	111.38	0.00	0.00	0.00	0.00	
b. Solid Fuel Transformation	0.00	1.93			3.31	0.83	
c. Other (please specify) 	0.00	13.23	0.00	0.00	0.00	0.00	0.00
Storage of solid fuel							
<b>2. Oil and Natural Gas</b>	<b>4 006.43</b>	<b>90.74</b>	<b>0.00</b>	<b>4.21</b>	<b>0.73</b>	<b>94.27</b>	<b>62.51</b>
a. Oil	3 169.80	0.24		4.11	0.73	91.37	44.02
b. Natural Gas	498.05	90.37				2.69	13.98
c. Venting and Flaring	338.58	0.13	0.00	0.10	0.00	0.21	4.51
Venting	0.00	0.00					
Flaring	338.58	0.13	0.00	0.10	0.00	0.21	4.51
d. Other (please specify) 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:<sup>(2)</sup></b>							
<b>International Bunkers</b>	<b>23 063.75</b>	<b>0.00</b>	<b>0.30</b>	<b>211.18</b>	<b>10.66</b>	<b>83.61</b>	<b>165.14</b>
Aviation	13 752.92	0.00	0.00	34.00	8.26	2.53	4.37
Marine	9 310.83	0.00	0.30	177.17	2.40	81.08	160.78
<b>Multilateral Operations</b>	0.00	0.00	0.00				
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>36 991.58</b>						

<sup>(1)</sup> Include military fuel use under this category.

<sup>(2)</sup> Please do not include in energy totals.



**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 1 of 4)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A. Fuel Combustion</b>	<b>5 787 103.93</b>	NCV				<b>379 591.37</b>	<b>154.16</b>	<b>19.70</b>
Liquid Fuels	3 235 411.83	NCV	73.32	6.18	4.22	237 231.80	20.00	13.64
Solid Fuels	407 937.05	NCV	107.59	3.38	3.60	43 890.86	1.38	1.47
Gaseous Fuels	1 250 602.86	NCV	56.99	2.77	2.50	71 266.11	3.46	3.13
Biomass	394 995.38	NCV	93.65	324.47	2.50 <sup>(3)</sup>	36 991.58	128.16	0.99
Other Fuels	498 156.82	NCV	54.61	2.32	0.97	27 202.60	1.15	0.48
<b>I.A.1. Energy Industries</b>	<b>710 321.69</b>	NCV				<b>61 389.24</b>	<b>1.34</b>	<b>2.20</b>
Liquid Fuels	324 857.25	NCV	69.72	2.44	2.50	22 648.50	0.79	0.81
Solid Fuels	306 482.22	NCV	105.90	1.07	3.96	32 457.11	0.33	1.21
Gaseous Fuels	39 359.52	NCV	57.00	2.55	2.50	2 243.55	0.10	0.10
Biomass	756.00	NCV	92.00	32.00	2.50 <sup>(3)</sup>	69.55	0.02	0.00
Other Fuels	38 866.70	NCV	103.95	2.42	1.93	4 040.08	0.09	0.08
<b>a. Public Electricity and Heat Production</b>	<b>436 450.86</b>	NCV				<b>41 237.21</b>	<b>0.55</b>	<b>1.54</b>
Liquid Fuels	98 159.60	NCV	77.46	1.81	2.50	7 603.29	0.18	0.25
Solid Fuels	300 082.03	NCV	104.97	0.84	3.99	31 499.09	0.25	1.20
Gaseous Fuels	37 048.24	NCV	57.00	2.56	2.50	2 111.75	0.09	0.09
Biomass	756.00	NCV	92.00	32.00	2.50 <sup>(3)</sup>	69.55	0.02	0.00
Other Fuels	405.00	NCV	56.99	0.30	2.49	23.08	0.00	0.00
<b>b. Petroleum Refining</b>	<b>229 433.68</b>	NCV				<b>15 537.01</b>	<b>0.62</b>	<b>0.57</b>
Liquid Fuels	225 402.21	NCV	66.30	2.71	2.50	14 944.21	0.61	0.56
Solid Fuels	1 720.19	NCV	267.99	2.50	2.50	461.00	0.00	0.00
Gaseous Fuels	2 311.28	NCV	57.02	2.51	2.51	131.80	0.01	0.01
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>c. Manufacture of Solid Fuels and Other Energy Industries</b>	<b>44 437.14</b>	NCV				<b>4 615.02</b>	<b>0.17</b>	<b>0.09</b>
Liquid Fuels	1 295.44	NCV	77.97	3.01	2.47	101.00	0.00	0.00
Solid Fuels	4 680.00	NCV	106.20	15.00	2.50	497.02	0.07	0.01
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels	38 461.70	NCV	104.44	2.45	1.93	4 017.00	0.09	0.07

<sup>(1)</sup> Activity data should be calculated using net calorific values (NCV) as specified by the IPCC Guidelines. If gross calorific values (GCV) were used, please indicate this by replacing "NCV" with "GCV" in this column.

<sup>(2)</sup> Accurate estimation of CH<sub>4</sub> and N<sub>2</sub>O emissions depends on combustion conditions, technology, and emission control policy, as well as fuel characteristics. Therefore, caution should be used when comparing the implied emission factors.

<sup>(3)</sup> Carbon dioxide emissions from biomass are reported under Memo Items. The content of the cells is not included in the totals.

**Note:** For the coverage of fuel categories, please refer to the IPCC Guidelines (Volume 1. Reporting Instructions - Common Reporting Framework, section 1.2, p. 1.19). If some derived gases (e.g. gas work gas, coke oven gas, blast gas, oxygen steel furnace gas, etc.) are considered, Parties should provide information on the allocation of these derived gases under the above fuel categories (liquid, solid, gaseous, biomass, other fuels) in the documentation box at the end of sheet 4 of this table.

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 2 of 4)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A.2 Manufacturing Industries and Construction</b>	<b>1 314 388.57</b>	<b>NCV</b>				<b>77 212.63</b>	<b>3.84</b>	<b>2.57</b>
Liquid Fuels	270 201.74	NCV	74.55	1.63	2.50	20 144.07	0.44	0.68
Solid Fuels	90 450.83	NCV	114.85	2.23	2.50	10 388.38	0.20	0.23
Gaseous Fuels	435 971.95	NCV	56.96	3.25	2.50	24 832.09	1.42	1.09
Biomass	75 824.68	NCV	100.67	11.81	2.50 <sup>(3)</sup>	7 633.09	0.90	0.19
Other Fuels	441 939.38	NCV	49.44	2.01	0.88	21 848.09	0.89	0.39
<b>a. Iron and Steel</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>b. Non-Ferrous Metals</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>c. Chemicals</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>d. Pulp, Paper and Print</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>e. Food Processing, Beverages and Tobacco</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>f. Other (please specify )</b>	<b>1 314 388.57</b>	<b>NCV</b>				<b>77 212.63</b>	<b>3.84</b>	<b>2.57</b>
Liquid Fuels	270 201.74	NCV	74.55	1.63	2.50	20 144.07	0.44	0.68
Solid Fuels	90 450.83	NCV	114.85	2.23	2.50	10 388.38	0.20	0.23
Gaseous Fuels	435 971.95	NCV	56.96	3.25	2.50	24 832.09	1.42	1.09
Biomass	75 824.68	NCV	100.67	11.81	2.50 <sup>(3)</sup>	7 633.09	0.90	0.19
Other Fuels	441 939.38	NCV	49.44	2.01	0.88	21 848.09	0.89	0.39

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 3 of 4)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>1.A.3 Transport</b>	<b>1 883 695.98</b>	NCV				<b>138 822.12</b>	<b>14.84</b>	<b>10.24</b>
Gasoline	732 836.33	NCV	72.26	15.11	8.49	52 955.27	11.08	6.22
Diesel	1 125 690.81	NCV	74.72	3.17	3.54	84 106.78	3.57	3.98
Natural Gas	8 771.40	NCV	57.00	3.00	2.50	499.97	0.03	0.02
Solid Fuels	0.00	NCV	0.00	0.00	0.00	0.00	0.00	0.00
Biomass	0.00	NCV	0.00	0.00	0.00 <sup>(3)</sup>	0.00	0.00	0.00
Other Fuels	16 397.44	NCV	76.85	10.27	1.06	1 260.10	0.17	0.02
a. Civil Aviation	84 753.06	NCV				6 067.55	0.00	0.00
Aviation Gasoline		NCV	0.00	0.00	0.00			
Jet Kerosene	84 753.06	NCV	71.59	0.00	0.00	6 067.55		
b. Road Transportation	1 752 989.52	NCV				129 475.54	14.76	10.12
Gasoline	648 083.27	NCV	72.35	17.09	9.60	46 887.72	11.08	6.22
Diesel Oil	1 095 430.25	NCV	74.70	3.21	3.56	81 832.98	3.52	3.90
Natural Gas		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels (please specify)	9 476.00	NCV				754.84	0.17	0.00
	9 476.00	NCV	79.66	17.76	0.00	754.84	0.17	
c. Railways	9 862.67	NCV				739.70	0.04	0.02
Solid Fuels		NCV	0.00	0.00	0.00			
Liquid Fuels	9 862.67	NCV	75.00	4.30	2.50	739.70	0.04	0.02
Other Fuels (please specify)	0.00	NCV				0.00	0.00	0.00
		NCV	0.00	0.00	0.00			
d. Navigation	27 319.33	NCV				2 039.36	0.01	0.07
Coal		NCV	0.00	0.00	0.00			
Residual Oil	1 419.44	NCV	78.00	0.00	2.50	110.72		0.00
Gas/Diesel Oil	18 978.46	NCV	75.00	0.55	2.50	1 423.38	0.01	0.05
Other Fuels (please specify)	6 921.44	NCV				505.26	0.00	0.02
	6 921.44	NCV	73.00	0.00	2.50	505.26		0.02
e. Other Transportation	8 771.40	NCV				499.97	0.03	0.02
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels	8 771.40	NCV	57.00	3.00	2.50	499.97	0.03	0.02

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 4 of 4)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A.4 Other Sectors</b>	<b>1 878 697.69</b>	NCV				<b>102 167.38</b>	<b>134.13</b>	<b>4.70</b>
Liquid Fuels	781 825.69	NCV	73.39	5.27	2.50	57 377.18	4.12	1.95
Solid Fuels	11 004.00	NCV	95.00	77.43	2.50	1 045.37	0.85	0.03
Gaseous Fuels	766 500.00	NCV	57.00	2.50	2.50	43 690.50	1.92	1.92
Biomass	318 414.70	NCV	91.98	399.62	2.50 <sup>(3)</sup>	29 288.94	127.24	0.80
Other Fuels	953.30	NCV	56.99	2.50	2.50	54.33	0.00	0.00
a. Commercial/Institutional	461 557.11	NCV				30 277.68	2.29	1.15
Liquid Fuels	229 098.11	NCV	74.27	6.52	2.50	17 016.17	1.49	0.57
Solid Fuels	1 450.90	NCV	95.00	27.58	2.50	137.83	0.04	0.00
Gaseous Fuels	230 163.20	NCV	57.00	2.50	2.50	13 119.30	0.58	0.58
Biomass	768.00	NCV	85.21	241.26	2.50 <sup>(3)</sup>	65.44	0.19	0.00
Other Fuels	76.90	NCV	56.96	2.47	2.47	4.38	0.00	0.00
b. Residential	1 273 993.09	NCV				61 631.68	130.82	3.18
Liquid Fuels	424 784.09	NCV	72.95	6.04	2.50	30 988.77	2.57	1.06
Solid Fuels	6 529.10	NCV	95.00	85.00	2.50	620.26	0.55	0.02
Gaseous Fuels	525 836.80	NCV	57.00	2.50	2.50	29 972.70	1.31	1.31
Biomass	315 966.70	NCV	92.00	400.00	2.50 <sup>(3)</sup>	29 068.94	126.39	0.79
Other Fuels	876.40	NCV	56.99	2.50	2.50	49.95	0.00	0.00
c. Agriculture/Forestry/Fisheries	143 147.50	NCV				10 258.02	1.02	0.36
Liquid Fuels	127 943.50	NCV	73.25	0.47	2.50	9 372.24	0.06	0.32
Solid Fuels	3 024.00	NCV	95.00	85.00	2.50	287.28	0.26	0.01
Gaseous Fuels	10 500.00	NCV	57.00	2.50	2.50	598.50	0.03	0.03
Biomass	1 680.00	NCV	92.00	400.00	2.50 <sup>(3)</sup>	154.56	0.67	0.00
Other Fuels		NCV	0.00	0.00	0.00			
<b>I.A.5 Other (Not elsewhere specified) <sup>(4)</sup></b>	<b>0.00</b>	NCV				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			

<sup>(4)</sup> Include military fuel use under this category.

**Documentation Box:**

1A3a - Civil aviation : the gasoline item is included within the jet kerosene item.

**TABLE 1.A(b) SECTORAL BACKGROUND DATA FOR ENERGY**  
**CO<sub>2</sub> from Fuel Combustion Activities - Reference Approach (IPCC Worksheet 1-1)**  
(Sheet 1 of 1)

France  
1999  
Submission

FUEL TYPES			Unit	Production	Imports	Exports	International bunkers	Stock change	Apparent consumption	Conversion factor <sup>(1)</sup> (TJ/Unit)	<sup>(1)</sup>	Apparent consumption (TJ)	Carbon emission factor (t C/TJ)	Carbon content (Gg C)	Carbon stored (Gg C)	Net carbon emissions (Gg C)	Fraction of carbon oxidized	Actual CO <sub>2</sub> emissions (Gg CO <sub>2</sub> )	
Liquid Fossil	Primary Fuels	Crude Oil		n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!	
		Orimulsion		n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!	
		Natural Gas Liquids		n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!	
	Secondary Fuels	Gasoline			n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!	
		Jet Kerosene			n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!	
		Other Kerosene			n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!	
		Shale Oil			n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!	
		Gas / Diesel Oil				n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
		Residual Fuel Oil				n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		LPG				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
		Ethane				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
		Naphtha				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
		Bitumen				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
		Lubricants				n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
		Petroleum Coke				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
Refinery Feedstocks				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!		
Other Oil				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!		
Liquid Fossil Totals												#VALEUR!		#####	0.00	#VALEUR!		#VALEUR!	
Solid Fossil	Primary Fuels	Anthracite <sup>(2)</sup>			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Coking Coal			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
		Other Bit. Coal			n.a.	n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Sub-bit. Coal			n.a.	n.a.	n.a.	n.a.	n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Lignite			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Oil Shale			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Peat			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
	Secondary Fuels	BKB & Patent Fuel				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Coke Oven/Gas Coke				n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
Solid Fuel Totals												#VALEUR!		#####	0.00	#VALEUR!		#VALEUR!	
Gaseous Fossil		Natural Gas (Dry)			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####	n.a.	#VALEUR!		#VALEUR!
Total												#VALEUR!		#####	0.00	#VALEUR!		#VALEUR!	
Biomass total												#VALEUR!		#####	0.00	#VALEUR!		#VALEUR!	
		Solid Biomass			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Liquid Biomass			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!
		Gas Biomass			n.a.	n.a.	n.a.		n.a.	#VALEUR!		NCV	#VALEUR!		#####		#VALEUR!		#VALEUR!

<sup>(1)</sup> To convert quantities expressed in natural units to energy units, use net calorific values (NCV). If gross calorific values (GCV) are used in this table, please indicate this by replacing "NCV" with "GCV" in this column.

<sup>(2)</sup> If Anthracite is not separately available, include with Other Bituminous Coal.

**TABLE 1.A(c) COMPARISON OF CO<sub>2</sub> EMISSIONS FROM FUEL COMBUSTION**  
(Sheet 1 of 1)

France  
1999  
Submission

FUEL TYPES	Reference approach		National approach <sup>(1)</sup>		Difference <sup>(2)</sup>	
	Energy consumption (PJ)	CO <sub>2</sub> emissions (Gg)	Energy consumption (PJ)	CO <sub>2</sub> emissions (Gg)	Energy consumption (%)	CO <sub>2</sub> emissions (%)
Liquid Fuels (excluding international bunkers)	#VALEUR!	#VALEUR!	3 235.41	237 231.80	#VALEUR!	#VALEUR!
Solid Fuels (excluding international bunkers)	#VALEUR!	#VALEUR!	407.94	43 890.86	#VALEUR!	#VALEUR!
Gaseous Fuels	#VALEUR!	#VALEUR!	1 250.60	71 266.11	#VALEUR!	#VALEUR!
Other <sup>(3)</sup>			498.16	27 202.60	-100.00	-100.00
<b>Total <sup>(3)</sup></b>	#VALEUR!	#VALEUR!	<b>5 392.11</b>	<b>379 591.37</b>	#VALEUR!	#VALEUR!

<sup>(1)</sup> "National approach" is used to indicate the approach (if different from the Reference approach) followed by the Party to estimate its CO<sub>2</sub> emissions from fuel combustion reported in the national GHG inventory.

<sup>(2)</sup> Difference of the Reference approach over the National approach (i.e. difference = 100% x ((RA-NA)/NA), where NA = National approach and RA = Reference approach).


<sup>(3)</sup> Emissions from biomass are not included.

**Note:** In addition to estimating CO<sub>2</sub> emissions from fuel combustion by sector, Parties should also estimate these emissions using the IPCC Reference approach, as found in the IPCC Guidelines, Worksheet 1-1(Volume 2. Workbook). The Reference approach is to assist in verifying the sectoral data. Parties should also complete the above tables to compare the alternative estimates, and if the emission estimates lie more than 2 percent apart, should explain the source of this difference in the documentation box provided.

Documentation Box:
Detailed data for the reference approach are not available at this time. The same method that previous years has been used for the sectoral approach.

**TABLE 1.A(d) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Feedstocks and Non-Energy Use of Fuels**  
**(Sheet 1 of 1)**

France  
1999  
Submission


FUEL TYPE <sup>(1)</sup>	ACTIVITY DATA AND RELATED INFORMATION		IMPLIED EMISSION FACTOR	ESTIMATE
	Fuel quantity  (TJ)	Fraction of carbon stored	Carbon emission factor  (t C/TJ)	of carbon stored in non energy use of fuels  (Gg C)
Naphtha <sup>(2)</sup>	n.a.	n.a.	0.00	n.a.
Lubricants	n.a.	n.a.	0.00	n.a.
Bitumen	n.a.	n.a.	0.00	n.a.
Coal Oils and Tars (from Coking Coal)	n.a.	n.a.	0.00	n.a.
Natural Gas <sup>(2)</sup>	n.a.	n.a.	0.00	n.a.
Gas/Diesel Oil <sup>(2)</sup>	n.a.	n.a.	0.00	n.a.
LPG <sup>(2)</sup>	n.a.	n.a.	0.00	n.a.
Butane <sup>(2)</sup>	n.a.	n.a.	0.00	n.a.
Ethane <sup>(2)</sup>	n.a.	n.a.	0.00	n.a.
Other (please specify) 				
			0.00	

<sup>(1)</sup> Where fuels are used in different industries, please enter in different rows.

<sup>(2)</sup> Enter these fuels when they are used as feedstocks.

**Note:** The table is consistent with the IPCC Guidelines. Parties that take into account the emissions associated with the use and disposal of these feedstocks could continue to use their methodology, and provide explanation notes in the documentation box below.

**Documentation box:** A fraction of energy carriers is stored in such products as plastics or asphalt. The non-stored fraction of the carbon in the energy carrier or product is oxidized, resulting in carbon dioxide emissions, either during the use of the energy carriers in the industrial production (e.g. fertilizer production), or during the use of the products (e.g. solvents, lubricants), or in both (e.g. monomers). To report associated emissions use the above table, filling an extra "Additional information" table, as shown below.

Associated CO <sub>2</sub> emissions (Gg)	Allocated under (Specify source category) <sup>(a)</sup> 
	e.g. Industrial Processes, Waste Incineration, etc.

Additional information <sup>(a)</sup>

CO <sub>2</sub> not emitted  (Gg CO <sub>2</sub> )	Subtracted from energy sector (specify source category)
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	

<sup>(a)</sup> The fuel lines continue from the table to the left.

**TABLE 1.B.1 SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fugitive Emissions from Solid Fuels**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTOR		EMISSIONS	
	Amount of fuel produced <sup>(1)</sup>	CH <sub>4</sub>	CO <sub>2</sub>	CH <sub>4</sub>	CO <sub>2</sub>
	(Mt)	(kg/t)	(kg/t)	(Gg)	(Gg)
<b>1. B. 1. a. Coal Mining and Handling</b>	5.09			111.38	0.00
i. Underground Mines <sup>(2)</sup>	4.23	26.18	0.00	110.67	0.00
Mining Activities		26.18	0.00	110.67	0.00
Post-Mining Activities		0.00	0.00		
ii. Surface Mines <sup>(2)</sup>	0.86	0.83	0.00	0.71	0.00
Mining Activities		0.83	0.00	0.71	0.00
Post-Mining Activities		0.00	0.00		
<b>1. B. 1. b. Solid Fuel Transformation</b>	5.52	0.35	0.00	1.93	0.00
<b>1. B. 1. c. Other (please specify) <sup>(3)</sup></b>				13.23	0.00
Post-Mining Activities	5.09	2.60	0.00	13.23	0.00

<sup>(1)</sup> Use the documentation box to specify whether the fuel amount is based on the run-of-mine (ROM) production or on the saleable production.

<sup>(2)</sup> Emissions both for Mining Activities and Post-Mining Activities are calculated with the activity data in lines Underground Mines and Surface Mines respectively.

<sup>(3)</sup> Please click on the button to enter any other solid fuel related activities resulting in fugitive emissions, such as emissions from abandoned mines and waste piles.

**Note:** There are no clear references to the coverage of 1.B.1.b. and 1.B.1.c. in the IPCC Guidelines. Make sure that the emissions entered here are not reported elsewhere. If they are reported under another source category, indicate this (IE) and make a reference in Table 9 (completeness) and/or in the documentation box.

Documentation box:
From CORINAIR system the post-mining activity is not split into both underground and surface mines, and has been therefore allocated into 1B1c - other.

**Additional information <sup>(a)</sup>**

Description	Value
Amount of CH <sub>4</sub> drained (recovered) and utilized or flared (Gg)	
Number of active underground mines	
Number of mines with drainage (recovery) systems	

<sup>(a)</sup> For underground mines.



**TABLE 1.B.2 SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fugitive Emissions from Oil and Natural Gas**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTORS			EMISSIONS		
	Description <sup>(1)</sup>	Unit	Value	CO <sub>2</sub> (kg/unit) <sup>(2)</sup>	CH <sub>4</sub> (kg/unit) <sup>(2)</sup>	N <sub>2</sub> O (kg/unit) <sup>(2)</sup>	CO <sub>2</sub> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
<b>1. B. 2. a. Oil <sup>(3)</sup></b>							<b>3 169.80</b>	<b>0.24</b>	
i. Exploration	(e.g. number of wells drilled)			0.00	0.00				
ii. Production <sup>(4)</sup>	PJ Produced	PJ	61.56	0.00	0.00		0.00		
iii. Transport	PJ Loaded	PJ	6 536.02	0.00	0.00		0.00		
iv. Refining / Storage	PJ Refined	PJ	3 617.09	876 340.04	66.35		3 169.80	0.24	
v. Distribution of oil products	PJ Refined	PJ	930.64	0.00	0.00		0.00		
vi. Other				0.00	0.00				
<b>1. B. 2. b. Natural Gas</b>							<b>498.05</b>	<b>90.37</b>	
Exploration				0.00	0.00				
i. Production <sup>(4)</sup> / Processing	PJ Production	PJ	184.64	2 697 411.18	709.49		498.05	0.13	
ii. Transmission	PJ Consumed	PJ	1 265.38	0.00	71 312.50		0.00	90.24	
Distribution	(e.g. PJ gas consumed)			0.00	0.00				
iii. Other Leakage	(e.g. PJ gas consumed)			0.00	0.00				
at industrial plants and power stations				0.00	0.00				
in residential and commercial sectors				0.00	0.00				
<b>1. B. 2. c. Venting <sup>(5)</sup></b>							<b>0.00</b>	<b>0.00</b>	
i. Oil	(e.g. PJ oil produced)			0.00	0.00				
ii. Gas	(e.g. PJ gas produced)			0.00	0.00				
iii. Combined				0.00	0.00				
<b>Flaring</b>							<b>338.58</b>	<b>0.13</b>	<b>0.00</b>
i. Oil	PJ Consumed	PJ	3 617.08	85 145.98	0.00	0.00	307.98		
ii. Gas				0.00	0.00	0.00	0.00		
iii. Combined	PJ Consumed	PJ	0.37	82 915 594.09	359 300.91	2 438.69	30.60	0.13	0.00
<b>1.B.2.d. Other (please specify) <sup>(6)</sup></b>							<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00	0.00			

**Additional information**

Description	Value	Unit
Pipelines length (km)		
Number of oil wells		
Number of gas wells		
Gas throughput <sup>(a)</sup>		
Oil throughput <sup>(a)</sup>		
Other relevant information (specify)		

<sup>(a)</sup> In the context of oil and gas production, throughput is a measure of the total production, such as barrels per day of oil, or cubic meters of gas per year. Specify the units of the reported value in the unit column. Take into account that these values should be consistent with the activity data reported under the production rows of the main table.

<sup>(1)</sup> Specify the activity data used and fill in the activity data description column, as given in the examples in brackets. Specify the unit of the activity data in the unit column. Use the document box to specify whether the fuel amount is based on the raw material production or on the saleable production. Note cases where more than one variable is used as activity data.

<sup>(2)</sup> The unit of the implied emission factor will depend on the units of the activity data used, and is therefore not specified in this column. The unit of the implied emission factor for each activity will be kg/unit of activity data.

<sup>(3)</sup> Use the category also to cover emissions from combined oil and gas production fields. Natural gas processing and distribution from these fields should be included under 1.B.2.b.ii and 1.B.2.b.iii, respectively.

<sup>(4)</sup> If using default emission factors these categories will include emissions from production other than venting and flaring.

<sup>(5)</sup> If using default emission factors, emissions from Venting and Flaring from all oil and gas production should be accounted for here. Parties using the IPCC software could report those emissions together, indicating so in the documentation box.

<sup>(6)</sup> For example, fugitive CO<sub>2</sub> emissions from production of geothermal power could be reported here.

**Documentation box:**

**TABLE 1.C SECTORAL BACKGROUND DATA FOR ENERGY**  
**International Bunkers and Multilateral Operations**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS			EMISSIONS		
	Consumption (TJ)	CO <sub>2</sub> (t/TJ)	CH <sub>4</sub> (kg/TJ)	N <sub>2</sub> O (kg/TJ)	CO <sub>2</sub> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
<b>Marine Bunkers</b>	<b>120 116.74</b>				<b>9 310.83</b>	<b>0.00</b>	<b>0.30</b>
Gasoline		0.00	0.00	0.00			
Gas/Diesel Oil	19 425.31	75.00	0.00	2.50	1 456.89		0.05
Residual Fuel Oil	100 691.44	78.00	0.00	2.50	7 853.94		0.25
Lubricants		0.00	0.00	0.00			
Coal		0.00	0.00	0.00			
Other ( <i>please specify</i> )	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00			
<b>Aviation Bunkers</b>	<b>192 104.26</b>				<b>13 752.92</b>	<b>0.00</b>	<b>0.00</b>
Jet Kerosene	192 104.26	71.59	0.00	0.00	13 752.92		
Gasoline		0.00	0.00	0.00			
<b>Multilateral Operations <sup>(1)</sup></b>							

<sup>(1)</sup> Parties may choose to report or not report the activity data and emission factors for multilateral operation consistent with the principle of confidentiality stated in the UNFCCC reporting guidelines on inventories. In any case, Parties should report the emissions from multilateral operations, where available, under the Memo Items section of the Summary tables and in the Sectoral report table for energy.

**Note:** In accordance with the IPCC Guidelines, international aviation and marine bunker fuel emissions from fuel sold to ships or aircraft engaged in international transport should be excluded from national totals and reported separately for informational purposes only.

**Documentation box:** Please explain how the consumption of international marine and aviation bunkers fuels was estimated and separated from the domestic consumption.

Aviation bunker : the fuel consumption for international aviation is deduced from the balance between the total aviation fuel sale and the estimation of the domestic traffic consumption which is calculated with a detailed approach (based on the individual aircraft movements and using ICAO, MEET and CORINAIR sources of information).  
Marine bunker : the UN-ECE definition for international marine traffic is considered. Thus a part from the French bunker is counted within the international marine bunker.




**Additional information**

Fuel consumption	Allocation <sup>(a)</sup> (percent)	
	Domestic	International
Marine	18.53	81.47
Aviation	30.61	69.39

<sup>(a)</sup> For calculating the allocation of fuel consumption, use the sums of fuel consumption by domestic navigation and aviation (Table 1.A(a)) and by international bunkers (Table 1.C).

**TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES**  
(Sheet 1 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
				P	A	P	A	P	A				
	(Gg)			CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>Total Industrial Processes</b>	<b>17 193.94</b>	<b>2.64</b>	<b>35.79</b>	<b>0.00</b>	<b>4 815.07</b>	<b>0.00</b>	<b>1 914.51</b>	<b>0.00</b>	<b>0.10</b>	<b>11.86</b>	<b>829.89</b>	<b>99.04</b>	<b>16.82</b>
<b>A. Mineral Products</b>	<b>10 371.09</b>	<b>0.00</b>	<b>0.00</b>							<b>0.00</b>	<b>0.00</b>	<b>13.68</b>	<b>0.00</b>
1. Cement Production	7 995.00												
2. Lime Production	1 532.33												
3. Limestone and Dolomite Use	0.00												
4. Soda Ash Production and Use	275.19												
5. Asphalt Roofing	0.00												
6. Road Paving with Asphalt	0.00											13.68	
7. Other ( <i>please specify</i> ) 	568.57	0.00	0.00							0.00	0.00	0.00	0.00
Glass processes / decarbonizing										0.00	0.00	0.00	0.00
<b>B. Chemical Industry</b>	<b>2 723.22</b>	<b>2.64</b>	<b>35.79</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9.30</b>	<b>0.00</b>	<b>39.52</b>	<b>12.63</b>
1. Ammonia Production	2 723.22	0.00								3.65		8.38	
2. Nitric Acid Production			12.91							4.95			
3. Adipic Acid Production			14.69							0.26			
4. Carbide Production	0.00	0.00											
5. Other ( <i>please specify</i> ) 	0.00	2.64	8.19	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	31.14	12.63
(cf. background table)										0.44	0.00	31.14	12.63
<b>C. Metal Production</b>	<b>3 443.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1 167.70</b>	<b>0.00</b>	<b>0.05</b>	<b>2.57</b>	<b>829.89</b>	<b>4.07</b>	<b>4.19</b>
1. Iron and Steel Production	2 720.27	0.00								2.48	811.81	2.18	0.57
2. Ferroalloys Production	0.00	0.00											
3. Aluminium Production	723.08	0.00					1 167.70			0.09	18.08	1.72	3.62
4. SF <sub>6</sub> Used in Aluminium and Magnesium Foundries									0.05				
5. Other ( <i>please specify</i> ) 	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00
Nickel production												0.17	

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines. A = Actual emissions based on Tier 2 approach of the IPCC Guidelines. This only applies in sectors where methods exist for both tiers.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

**TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES**  
(Sheet 2 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
				P	A	P	A	P	A				
	(Gg)			CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>D. Other Production</b>	656.28									0.00	0.00	41.76	0.00
1. Pulp and Paper												1.02	
2. Food and Drink <sup>(2)</sup>	656.28											40.74	
<b>E. Production of Halocarbons and SF<sub>6</sub></b>					640.91		84.70		0.00				
1. By-product Emissions					327.60		0.00		0.00				
Production of HCFC-22					327.60								
Other					0.00		0.00		0.00				
2. Fugitive Emissions					313.31		84.70		0.00				
3. Other ( <i>please specify</i> )					0.00		0.00		0.00				
<b>F. Consumption of Halocarbons and SF<sub>6</sub></b>				0.00	4 174.17	0.00	662.11	0.00	0.05				
1. Refrigeration and Air Conditioning Equipment					2 456.26		0.00		0.00				
2. Foam Blowing					0.00		0.00		0.00				
3. Fire Extinguishers					13.46		0.00		0.00				
4. Aerosols/ Metered Dose Inhalers					1 560.00		0.00		0.00				
5. Solvents					81.87		0.00		0.00				
6. Semiconductor Manufacture					62.58		527.40		0.01				
7. Electrical Equipment									0.04				
8. Other ( <i>please specify</i> )				0.00	0.00	0.00	134.72	0.00	0.00				
<b>G. Other (<i>please specify</i>)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(2)</sup> CO<sub>2</sub> from Food and Drink Production (e.g. gasification of water) can be of biogenic or non-biogenic origin. Only information on CO<sub>2</sub> emissions of non-biogenic origin should be reported.

**TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O**  
**(Sheet 1 of 2)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS <sup>(2)</sup>					
	Production/Consumption quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Description <sup>(1)</sup>	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	(2)	(Gg)	(2)	(Gg)	(2)
<b>A. Mineral Products</b>						<b>10 371.09</b>		<b>0.00</b>		<b>0.00</b>	
1. Cement Production	kt Production	15 990.00	0.50			7 995.00					
2. Lime Production	kt Production	3 482.57	0.44			1 532.33					
3. Limestone and Dolomite Use	kt Production		0.00			0.00					
4. Soda Ash						275.19					
Soda Ash Production	kt Production	1 506.00	0.18			275.19					
Soda Ash Use			0.00								
5. Asphalt Roofing	kt Production		0.00			0.00					
6. Road Paving with Asphalt	kt Production	39 556.16	0.00			0.00					
7. Other ( <i>please specify</i> )						568.57		0.00		0.00	
Glass Production	kt Production	5 685.72	0.10			568.57					
Batteries manufacturing	kt Production	188.80	0.00	0.00	0.00	0.00					
<b>B. Chemical Industry</b>						<b>2 723.22</b>		<b>2.64</b>		<b>35.79</b>	
1. Ammonia Production <sup>(3)</sup>	kt Production	1 745.66	1.56	0.00	0.00	2 723.22					
2. Nitric Acid Production	kt Production	2 750.00			0.00					12.91	
3. Adipic Acid Production	kt Production	197.16			0.07					14.69	
4. Carbide Production			0.00	0.00		0.00		0.00			
Silicon Carbide			0.00	0.00							
Calcium Carbide	kt Production		0.00	0.00		0.00					
5. Other ( <i>please specify</i> )						0.00		2.64		8.19	
Carbon Black	kt Production	264.00		0.01				2.64			
Ethylene	kt Production	3 084.00	0.00	0.00	0.00	0.00					
Dichloroethylene				0.00							
Styrene	kt Production	706.54		0.00							
Methanol				0.00							
Other	kt Production	11 736.11	0.00	0.00	0.00	0.00				8.19	

<sup>(1)</sup> Where the IPCC Guidelines provide options for activity data, e.g. cement or clinker for estimating the emissions from Cement Production, specify the activity data used (as shown in the example in brackets) in order to make the choice of emission factor more transparent and to facilitate comparisons of implied emission factors.

<sup>(2)</sup> Enter cases in which the final emissions are reduced with the quantities of emission recovery, oxidation, destruction, transformation. Adjusted emissions are reported and the quantitative information on recovery, oxidation, destruction, and transformation should be given in the additional columns provided.

<sup>(3)</sup> To avoid double counting make offsetting deductions from fuel consumption (e.g. natural gas) in Ammonia Production, first for feedstock use of the fuel, and then to a sequestering use of the feedstock.

**TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O**  
**(Sheet 2 of 2)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS <sup>(2)</sup>					
	Production/Consumption Quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Description <sup>(1)</sup>	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	(2)	(Gg)	(2)	(Gg)	(2)
<b>C. Metal Production <sup>(4)</sup></b>						<b>3 443.35</b>		<b>0.00</b>		<b>0.00</b>	
1. Iron and Steel Production			0.00			2 720.27		0.00			
Steel	kt Production	19 801.00	0.06			1 145.95					
Pig Iron	kt Production	13 932.00	0.09	0.00		1 253.88					
Sinter	kt Production	19 389.00	0.00	0.00		0.00					
Coke			0.00	0.00		0.00					
Other (please specify)						320.44		0.00			
Rolling mills, blast furnast charging	kt Production	18 228.00	0.02	0.00	0.00	320.44					
2. Ferroalloys Production	kt Production		0.00	0.00		0.00					
3. Aluminium Production	kt Production	451.93	1.60	0.00		723.08					
4. SF <sub>6</sub> Used in Aluminium and Magnesium Foundries											
5. Other (please specify)						0.00		0.00		0.00	
Nickel production	kt Production	11.60	0.00	0.00	0.00	0.00					
<b>D. Other Production</b>						<b>656.28</b>					
1. Pulp and Paper											
2. Food and Drink	kt Production	13 879.16	0.05			656.28					
<b>G. Other (please specify)</b>						<b>0.00</b>		<b>0.00</b>		<b>0.00</b>	
	kt Product	0.00	0.00	0.00	0.00	0.00					

<sup>(4)</sup> More specific information (e.g. data on virgin and recycled steel production) could be provided in the documentation box.

**Note:** In case of confidentiality of the activity data information, the entries should provide aggregate figures but there should be a note in the documentation box indicating this.

<b>Documentation box:</b>

**TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF<sub>6</sub>**  
(Sheet 1 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10mee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ca	Total HFCs <sup>(1)</sup>	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	C <sub>3</sub> F <sub>8</sub>	C <sub>4</sub> F <sub>10</sub>	c-C <sub>4</sub> F <sub>8</sub>	C <sub>5</sub> F <sub>12</sub>	C <sub>6</sub> F <sub>14</sub>	Total PFCs <sup>(1)</sup>	SF <sub>6</sub>
	(t) <sup>(2)</sup>																						
<b>Total Actual Emissions of Halocarbons (by chemical) and SF<sub>6</sub></b>	33.35	3.99	0.00	62.98	257.83	0.00	2 169.05	0.70	0.00	206.63	4.64	0.00	0.00		182.78	55.11	0.00	12.10	0.00	0.00	18.21		100.86
<b>C. Metal Production</b>															157.00	16.00							47.50
Aluminium Production															157.00	16.00							
SF <sub>6</sub> Used in Aluminium Foundries																							0.00
SF <sub>6</sub> Used in Magnesium Foundries																							47.50
<b>E. Production of Halocarbons and SF<sub>6</sub></b>	28.00	0.00	0.00	0.00	89.90	0.00	5.50	0.70	0.00	14.30	0.00	0.00	0.00		0.00	0.00	0.00	12.10	0.00	0.00	0.00		0.00
1. By-product Emissions	28.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production of HCFC-22	28.00																						
Other																							
2. Fugitive Emissions					89.90		5.50	0.70		14.30						0.00		12.10					
3. Other (please specify)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
<b>F(a). Consumption of Halocarbons and SF<sub>6</sub> (actual emissions - Tier 2)</b>	5.35	3.99	0.00	62.98	167.93	0.00	2 163.55	0.00	0.00	192.33	4.64	0.00	0.00		25.78	39.11	0.00	0.00	0.00	0.00	18.21		53.36
1. Refrigeration and Air Conditioning Equipment		3.99			167.93		963.55	0.00		192.33													
2. Foam Blowing																							
3. Fire Extinguishers											4.64												
4. Aerosols/Metered Dose Inhalers							1 200.00																
5. Solvents				62.98																			
6. Semiconductor Manufacture	5.35														25.78	39.11	0.00						6.26
7. Electrical Equipment																							44.70
8. Other (please specify)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	18.21		2.40
open applications																		0.00		0.00	5.50		2.40
closed applications																					12.71		
<b>G. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00

<sup>(1)</sup> Although shaded, the columns with HFCs and PFCs totals on sheet 1 are kept for consistency with sheet 2 of the table.

<sup>(2)</sup> Note that the units used in this table differ from those used in the rest of the Sectoral report tables, i.e. [t] instead of [Gg].

**Note:** Where information is confidential the entries should provide aggregate figures but there should be a note indicating this in the relevant documentation boxes of the Sectoral background data tables or as a comment to the corresponding cell.  
Gases with GWP not yet agreed upon by the COP, should be reported in Table 9 (Completeness), sheet 2.

**TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF<sub>6</sub>**  
(Sheet 2 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10nnee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ea	Total HFCs	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	C <sub>3</sub> F <sub>8</sub>	C <sub>4</sub> F <sub>10</sub>	c-C <sub>4</sub> F <sub>8</sub>	C <sub>3</sub> F <sub>12</sub>	C <sub>6</sub> F <sub>14</sub>	Total PFCs	SF <sub>6</sub>
	(t) <sup>(2)</sup>																						
<b>F(p). Total Potential Emissions of Halocarbons (by chemical) and SF<sub>6</sub></b> <sup>(3)</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production <sup>(4)</sup>																							
Import:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk																							
In products <sup>(5)</sup>																							
Export:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk																							
In products <sup>(5)</sup>																							
Destroyed amount																							
<b>GWP values used</b>	11700	650	150	1300	2800	1000	1300	140	300	3800	2900	6300	560		6500	9200	7000	7000	8700	7500	7400		23900
<b>Total Actual Emissions</b> <sup>(6)</sup> (Gg CO <sub>2</sub> eq.)	390.18	2.59	0.00	81.87	721.92	0.00	2 819.76	0.10	0.00	785.19	13.46	0.00	0.00	4 815.07	1 188.09	506.99	0.02	84.70	0.00	0.00	134.72	1 914.51	2 410.65
C. Metal Production															1 020.50	147.20						1 167.70	1 135.25
E. Production of Halocarbons and SF <sub>6</sub>	327.60	0.00	0.00	0.00	251.72	0.00	7.15	0.10	0.00	54.34	0.00	0.00	0.00	640.91	0.00	0.00	0.00	84.70	0.00	0.00	0.00	84.70	0.00
F(a). Consumption of Halocarbons and SF <sub>6</sub>	62.58	2.59	0.00	81.87	470.20	0.00	2 812.61	0.00	0.00	730.85	13.46	0.00	0.00	4 174.17	167.59	359.79	0.02	0.00	0.00	0.00	134.72	662.11	1 275.40
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Ratio of Potential/Actual Emissions from Consumption of Halocarbons and SF<sub>6</sub></b>																							
Actual emissions - F(a) (Gg CO <sub>2</sub> eq.)	62.58	2.59	0.00	81.87	470.20	0.00	2 812.61	0.00	0.00	730.85	13.46	0.00	0.00	4 174.17	167.59	359.79	0.02	0.00	0.00	0.00	134.72	662.11	1 275.40
Potential emissions - F(p) (7) (Gg CO <sub>2</sub> eq.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential/Actual emissions ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(3)</sup> Potential emissions of each chemical of halocarbons and SF<sub>6</sub> estimated using Tier 1a or Tier 1b of the IPCC Guidelines (Volume 3. Reference Manual, pp. 2.47-2.50). When potential emissions estimates are available in a disaggregated manner corresponding to the subsectors for actual emissions defined on sheet 1 of this table, these should be reported in an annex to sheet 2, using the format of sheet 1, sector F(a). Use Summary 3 of this common reporting format to indicate whether Tier 1a or Tier 1b was used.

<sup>(4)</sup> Production refers to production of new chemicals. Recycled substances could be included here, but it should be ensured that double counting of emissions is avoided. Relevant explanations should be provided as a comment to the corresponding cell.

<sup>(5)</sup> Relevant just for Tier 1b.

<sup>(6)</sup> Sums of the actual emissions of each chemical of halocarbons and SF<sub>6</sub> from the source categories given in sheet 1 of the table multiplied by the corresponding GWP values.

<sup>(7)</sup> Potential emissions of each chemical of halocarbons and SF<sub>6</sub> taken from row F(p) multiplied by the corresponding GWP values.

**Note:** As stated in the revised UNFCCC guidelines, Parties should report actual emissions of HFCs, PFCs and SF<sub>6</sub>, where data are available, providing disaggregated data by chemical and source category in units of mass and in CO<sub>2</sub> equivalents. Parties reporting actual emissions should also report potential emissions for the sources where the concept of potential emissions applies, for reasons of transparency and comparability.



**TABLE 2(II). C, E SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Metal Production; Production of Halocarbons and SF<sub>6</sub>**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>	EMISSIONS <sup>(2)</sup>	
	Description <sup>(1)</sup>	(t)	(kg/t)	(t)	(3)
<b>C. PFCs and SF<sub>6</sub> from Metal Production</b>					
PFCs from Aluminium Production					
CF <sub>4</sub>	Aluminium production	451 927.00	0.35	157.00	
C <sub>2</sub> F <sub>6</sub>	Aluminium production	451 927.00	0.04	16.00	
SF <sub>6</sub>				47.50	
Aluminium Foundries	(SF <sub>6</sub> consumption)		0.00		
Magnesium Foundries	(SF <sub>6</sub> consumption)	47.50	1 000.00	47.50	
<b>E. Production of Halocarbons and SF<sub>6</sub></b>					
<b>1. By-product Emissions</b>					
Production of HCFC-22					
HFC-23	HCFC-22 production	NA	0.00	28.00	
Other (specify chemical)					
			0.00		
<b>2. Fugitive Emissions</b>					
HFCs (specify chemical)					
HFC-125	HFC production	NA	0.00	89.90	
HFC-134a	HFC production	NA	0.00	5.50	
HFC-143a	HFC production	NA	0.00	14.30	
HFC-152a	HFC production	NA	0.00	0.70	
			0.00		
PFCs (specify chemical)					
C2F6	PFC production	NA	0.00	0.00	
C4F10	PFC production	NA	0.00	12.10	
			0.00		
SF <sub>6</sub>			0.00		
<b>3. Other (please specify)</b>					
			0.00		

<sup>(1)</sup> Specify the activity data used as shown in the examples within brackets. Where applying Tier 1b (for C), Tier 2 (for E) and country specific methods, specify any other relevant activity data used in the documentation box below.

<sup>(2)</sup> Emissions and implied emission factors are after recovery.

<sup>(3)</sup> Enter cases in which the final emissions are reported after subtracting the quantities of emission recovery, oxidation, destruction, transformation. Enter these quantities in the specified column and use the documentation box for further explanations.

**Note:** Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note in the documentation box indicating this.

<b>Documentation box:</b>
HFC and PFC production data are confidential. Only fugitive emissions are available.

**TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Consumption of Halocarbons and SF<sub>6</sub>**  
(Sheet 1 of 2)

France  
1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning <sup>(1)</sup>	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
(t)	(% per annum)	(t)							
1 Refrigeration									
Air Conditioning Equipment									
Domestic Refrigeration ( <i>Specify chemical</i> ) <sup>(2)</sup>									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-134a)	47.20	1 776.00	0.00	5.00%	0.01%		2.36	0.20	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
Commercial Refrigeration									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	238.70	497.40	0.00	5.00%	17.71%		11.94	88.10	0.00
(e.g. HFC-134a)	49.90	176.00	0.00	5.00%	4.66%		2.50	8.20	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	279.70	584.40	0.00	5.00%	17.64%		13.99	103.10	0.00
Transport Refrigeration									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	24.40	74.00	0.00	5.00%	26.89%		1.22	19.90	0.00
(e.g. HFC-134a)	101.10	300.10	0.00	5.00%	32.42%		5.06	97.30	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	28.80	87.40	0.00	5.00%	27.00%		1.44	23.60	0.00
Industrial Refrigeration									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	110.20	249.50	0.00	5.00%	14.83%		5.51	37.00	0.00
(e.g. HFC-134a)	80.80	367.90	0.00	5.00%	14.81%		4.04	54.50	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	130.10	294.30	0.00	5.00%	14.85%		6.51	43.70	0.00
Stationary Air-Conditioning									
(e.g. HFC-32)	21.80	28.10	0.00	5.00%	10.32%		1.09	2.90	0.00
(e.g. HFC-125)	23.30	30.00	0.00	5.00%	10.33%		1.17	3.10	0.00
(e.g. HFC-134a)	303.30	1 031.50	0.00	5.00%	11.91%		15.17	122.90	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
Mobile Air-Conditioning									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-134a)	1 524.60	2 590.50	0.00	5.00%	22.20%		76.23	575.10	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
2 Foam Blowing									
Hard Foam									
Soft Foam									








<sup>(1)</sup> Parties should use the documentation box to provide information on the amount of the chemical recovered (recovery efficiency) and other relevant information used in the emission estimation.

<sup>(2)</sup> Please click on the button to specify the chemical consumed, as given in the example. If needed, new rows could be added for reporting the disaggregated chemicals from a source by clicking on the corresponding button.

**Note:** Table 2.(II).F provides for reporting of the activity data and emission factors used to calculate actual emissions from consumption of halocarbons and SF<sub>6</sub> using the "bottom-up approach" (based on the total stock of equipment and estimated emission rates from this equipment). Some Parties may prefer to estimate their actual emissions following the alternative "top-down approach" (based on annual sales of equipment and/or gas). These Parties should provide the activity data used in the current format and any other relevant information in the documentation box at the end of Table2(II).Fs2. Data these Parties should provide includes (1) the amount of fluid used to fill new products, (2) the amount of fluid used to service existing products, (3) the amount of fluid originally used to fill retiring products (the total nameplate capacity of retiring products), (4) the product lifetime, and (5) the growth rate of product sales, if this has been used to calculate the amount of fluid originally used to fill retiring products. Alternatively, Parties may provide alternative formats with equivalent information. These formats may be considered for future versions of the common reporting format after the trial period.

**TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Consumption of Halocarbons and SF<sub>6</sub>**  
(Sheet 2 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA <i>Amount of fluid</i>			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning <sup>(1)</sup>	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
<b>3 Fire Extinguishers</b> 									
HFC-227ea	160.00	464.00	0.00	0.00	1.00	0.00	0.00	4.64	0.00
<b>4 Aerosols</b>									
Metered Dose Inhalers 									
Other 									
HFC-134a	1 200.00	1 200.00	0.00	0.00	100.00	0.00	0.00	1 200.00	0.00
<b>5 Solvents</b> 									
HFC-4310mee	78.00	62.98	0.00	0.00	100.00	0.00	0.00	62.98	0.00
<b>6 Semiconductors</b> 									
HFC-23	0.00	7.43	0.00	0.00	72.00	0.00	0.00	5.35	0.00
CF <sub>4</sub>	0.00	35.81	0.00	0.00	72.00	0.00	0.00	25.78	0.00
C <sub>2</sub> F <sub>6</sub>	0.00	54.32	0.00	0.00	72.00	0.00	0.00	39.11	0.00
C <sub>3</sub> F <sub>8</sub>	0.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00	0.00
SF <sub>6</sub>	0.00	8.70	0.00	0.00	72.00	0.00	0.00	6.26	0.00
<b>7 Electric Equipment</b> 									
SF <sub>6</sub>	360.00	890.00	0.00	5.00	3.00	0.00	18.00	26.70	0.00
<b>8 Other (please specify)</b> 									
C <sub>6</sub> F <sub>14</sub> (closed applications)	47.80	254.10	0.00	0.00	5.00	0.00	0.00	12.71	0.00
C <sub>4</sub> F <sub>10</sub>	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
C <sub>5</sub> F <sub>12</sub>	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
C <sub>6</sub> F <sub>14</sub> (open applications)	5.50	5.50	0.00	0.00	100.00	0.00	0.00	5.50	0.00
SF <sub>6</sub>	1.60	2.40	0.00	0.00	100.00	0.00	0.00	2.40	0.00

**Note:** Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note indicating this and explanations in the documentation box.

**Documentation box:**

Emissions from disposal are not informed. In most of cases no operating systems are at end of life in 1999. Otherwise those emissions are included into emissions from stocks.

**TABLE 3 SECTORAL REPORT FOR SOLVENT AND OTHER PRODUCT USE**  
(Sheet 1 of 1)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	N <sub>2</sub> O	NMVOC
	(Gg)		
<b>Total Solvent and Other Product Use</b>	<b>1 616.73</b>	<b>1.98</b>	<b>624.81</b>
<b>A. Paint Application</b>	<b>822.67</b>		<b>263.96</b>
<b>B. Degreasing and Dry Cleaning</b>	<b>135.68</b>		<b>43.53</b>
<b>C. Chemical Products, Manufacture and Processing</b>			<b>106.07</b>
<b>D. Other (please specify)</b>	658.38	1.98	211.25
Use of N <sub>2</sub> O for Anaesthesia	0.00	1.98	
Fire Extinguishers	0.00		
Aerosol Cans	0.00		
Other solvent/product use	658.38		211.25

Please account for the quantity of carbon released in the form of NMVOC in both the NMVOC and the CO<sub>2</sub> columns.

**Note:** The IPCC Guidelines do not provide methodologies for the calculation of emissions of N<sub>2</sub>O from Solvent and Other Product Use. If reporting such data, Parties should provide additional information (activity data and emission factors) used to make these estimates in the documentation box to Table 3.A-D.

**TABLE 3.A-D SECTORAL BACKGROUND DATA FOR SOLVENT AND OTHER PRODUCT USE**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS	
	Description	(kt)	CO <sub>2</sub> (t/t)	N <sub>2</sub> O (t/t)
<b>A. Paint Application</b>	kt Solvent	277.82	2.96	0.00
<b>B. Degreasing and Dry Cleaning</b>	kt Solvent	56.00	2.42	0.00
<b>C. Chemical Products, Manufacture and Processing</b>				
<b>D. Other (please specify)<sup>(1)</sup></b>				
<i>Use of N2O for Anaesthesia</i>	kt Consumed	1.98	0.00	1.00
<i>Fire Extinguishers</i>	kt Consumed	0.16	0.00	0.00
<i>Aerosol Cans</i>	kt Consumed	1.20	0.00	0.00
<i>Other solvent/product use</i>	kt Consumed	311.74	2.11	0.00

<sup>(1)</sup> Some probable sources are provided in brackets. Complement the list with other relevant sources. Make sure that the order is the same as in Table 3.

**Note:** The table follows the format of the IPCC Sectoral Report for Solvent and Other Product Use, although some of the source categories are not relevant to the direct GHG emissions.

<b>Documentation box:</b>






**TABLE 4 SECTORAL REPORT FOR AGRICULTURE**  
(Sheet 1 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC
CATEGORIES	(Gg)				
<b>Total Agriculture</b>	<b>1 534.82</b>	<b>175.04</b>	<b>0.00</b>	<b>0.00</b>	<b>19.81</b>
<b>A. Enteric Fermentation</b>	<b>1 330.58</b>				
1. Cattle	1 249.12				
Dairy Cattle	552.57				
Non-Dairy Cattle	696.55				
2. Buffalo					
3. Sheep	61.02				
4. Goats	6.66				
5. Camels and Llamas					
6. Horses	6.53				
7. Mules and Asses	0.15				
8. Swine	7.11				
9. Poultry					
10. Other ( <i>please specify</i> )	0.00				
<b>B. Manure Management</b>	<b>173.52</b>	<b>10.03</b>			<b>0.00</b>
1. Cattle	87.42				
Dairy Cattle	39.42				
Non-Dairy Cattle	48.00				
2. Buffalo					
3. Sheep	2.85				
4. Goats	0.37				
5. Camels and Llamas					
6. Horses	0.76				
7. Mules and Asses	0.03				
8. Swine	54.16				
9. Poultry	27.93				

**TABLE 4 SECTORAL REPORT FOR AGRICULTURE**  
(Sheet 2 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC
	(Gg)				
<b>B. Manure Management (continued)</b>					
10. Anaerobic Lagoons					
11. Liquid Systems		1.53			
12. Solid Storage and Dry Lot		6.27			
13. Other (please specify) 		2.23			0.00
		2.23			
<b>C. Rice Cultivation</b>	7.75				<b>0.00</b>
1. Irrigated	7.75				
2. Rainfed	0.00				
3. Deep Water	0.00				
4. Other (please specify) 	0.00				0.00
<b>D. Agricultural Soils <sup>(1)</sup></b>	<b>22.97</b>	<b>165.01</b>			<b>19.81</b>
1. Direct Soil Emissions	22.97	88.81			19.81
2. Animal Production		18.51			
3. Indirect Emissions		57.69			
4. Other (please specify) 	0.00	0.00			0.00
<b>E. Prescribed Burning of Savannas</b>	<b>0.00</b>	<b>0.00</b>			
<b>F. Field Burning of Agricultural Residues</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
1. Cereals	0.00	0.00			
2. Pulse	0.00	0.00			
3. Tuber and Root	0.00	0.00			
4. Sugar Cane	0.00	0.00			
5. Other (please specify) 	0.00	0.00	0.00	0.00	0.00
<b>G. Other (please specify) </b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

<sup>(1)</sup> See footnote 4 to Summary 1.A of this common reporting format. Parties which choose to report CO<sub>2</sub> emissions and removals from agricultural soils under 4.D. Agricultural Soils category of the sector Agriculture should indicate the amount [Gg] of these emissions or removals in the documentation box to Table 4.D. Additional information (activity data, implied emissions factors) should also be provided using the relevant documentation box to Table 4.D. This table is not modified for reporting the CO<sub>2</sub> emissions and removals for the sake of consistency with the IPCC tables (i.e. IPCC Sectoral Report for Agriculture).

**Note:** The IPCC Guidelines do not provide methodologies for the calculation of CH<sub>4</sub> emissions, CH<sub>4</sub> and N<sub>2</sub>O removals from agricultural soils, or CO<sub>2</sub> emissions from savanna burning or agricultural residues burning. If you have reported such data, you should provide additional information (activity data and emission factors) used to make these estimates using the relevant documentation boxes of the Sectoral background data tables.


**TABLE 4.A SECTORAL BACKGROUND DATA FOR AGRICULTURE**
**Enteric Fermentation**

(Sheet 1 of 1)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA <sup>(1)</sup> AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTORS
	Population size <sup>(2)</sup> (1000 head)	Average daily feed intake (MJ/day)	CH <sub>4</sub> conversion (%)	CH <sub>4</sub> (kg CH <sub>4</sub> /head/yr)
1. Cattle	20 532			60.84
Dairy Cattle <sup>(3)</sup>	6 739			82.00
Non-Dairy Cattle	13 793			50.50
2. Buffalo				0.00
3. Sheep	10 169			6.00
4. Goats	1 333			5.00
5. Camels and Llamas				0.00
6. Horses	363			18.00
7. Mules and Asses	15			10.00
8. Swine	7 107			1.00
9. Poultry				0.00
10. Other (please specify) 				
				0.00

<sup>(1)</sup> In the documentation boxes to all Sectoral background data tables for Agriculture, Parties should provide information on whether the activity data is one year or a 3-year average.

<sup>(2)</sup> Parties are encouraged to provide detailed livestock population data by animal type and region in a separate table below the documentation box. This consistent set of animal population statistics should be used to estimate CH<sub>4</sub> emissions from enteric fermentation, CH<sub>4</sub> and N<sub>2</sub>O from manure management, N<sub>2</sub>O direct emissions from soil and N<sub>2</sub>O emissions associated with manure production, as well as emissions from the use of manure as fuel, and sewage-related emissions reported in the waste sector.

<sup>(3)</sup> Including data on dairy heifers, if available.

<b>Documentation box:</b> To calculate methane emissions a specific method based on national expert data (emission factors) is used. Activity data is a one year average.
---

**Additional information (for Tier 2)<sup>(a)</sup>**

Disaggregated list of animals <sup>(b)</sup>		Dairy Cattle	Non-Dairy Cattle	Other (specify)	
Indicators:					
Weight	(kg)				
Feeding situation <sup>(c)</sup>					
Milk yield	(kg/day)				
Work	(hrs/day)				
Pregnant	(%)				
Digestibility of feed	(%)				

<sup>(a)</sup> Compare to Tables A-1 and A-2 of the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.31-4.34). These data are relevant if Parties do not have data on average feed intake.

<sup>(b)</sup> Disaggregate to the split actually used. Add columns to the table if necessary.

<sup>(c)</sup> Specify feeding situation as pasture, stall fed, confined, open range, etc.



**TABLE 4.B(a) SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**CH<sub>4</sub> Emissions from Manure Management**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS  CH <sub>4</sub>  (kg CH <sub>4</sub> /head/yr)
	Population size (1)  (1000 head)	Allocation by climate region (2)			Typical animal mass  (kg)	VS <sup>(3)</sup> daily excretion  (kg dm/head/yr)	CH <sub>4</sub> producing potential (Bo) <sup>(3)</sup>  (CH <sub>4</sub> m <sup>3</sup> /kg VS)
		Cool	Temperate	Warm			
		(%)					
1. Cattle	20 532						4.26
Dairy Cattle <sup>(4)</sup>	6 739						5.85
Non-Dairy Cattle	13 793						3.48
2. Buffalo							0.00
3. Sheep	10 169						0.28
4. Goats	1 333						0.28
5. Camels and Llamas							0.00
6. Horses	363						2.10
7. Mules and Asses	15						2.10
8. Swine	7 107						7.62
9. Poultry	328 577						0.09

<sup>(1)</sup> See footnote 1 to Table 4.A of this common reporting format.

<sup>(2)</sup> Climate regions are defined in terms of annual average temperature as follows: Cool=less than 15°C; Temperate=15°C to 25°C inclusive; and Warm=greater than 25°C (see Table 4.2 of the IPCC Guidelines (Volume 3, Reference Manual, p. 4.8)).

<sup>(3)</sup> VS=Volatile Solids; Bo=maximum methane producing capacity for manure IPCC Guidelines (Volume 3, Reference Manual, p.4.23 and p. 4.15.

<sup>(4)</sup> Including data on dairy heifers, if available.

**Documentation Box:**

To calculate methane emissions a specific method based on national expert data (emission factors) is used.

**Additional information (for Tier 2)**

Animal category <sup>(a)</sup>	Indicator	Climate region	Animal waste management system					
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range paddocks	Other
Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Non-Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Swine	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						

<sup>(a)</sup> Copy the above table as many times as necessary.

<sup>(b)</sup> MCF = Methane Conversion Factor (IPCC Guidelines, (Volume 3, Reference Manual, p. 4.9)). In the case of use of other climate region categorization, please replace the entries in the cells with the climate regions for which the MCFs are specified.

**TABLE 4.B(a) SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**CH<sub>4</sub> Emissions from Manure Management**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS  CH <sub>4</sub>  (kg CH <sub>4</sub> /head/yr)
	Population size (1)  (1000 head)	Allocation by climate region (2)			Typical animal mass  (kg)	VS <sup>(3)</sup> daily excretion  (kg dm/head/yr)	CH <sub>4</sub> producing potential (Bo) <sup>(3)</sup>  (CH <sub>4</sub> m <sup>3</sup> /kg VS)
		Cool	Temperate	Warm			
		(%)					
1. Cattle	20 532						4.26
Dairy Cattle <sup>(4)</sup>	6 739						5.85
Non-Dairy Cattle	13 793						3.48
2. Buffalo							0.00
3. Sheep	10 169						0.28
4. Goats	1 333						0.28
5. Camels and Llamas							0.00
6. Horses	363						2.10
7. Mules and Asses	15						2.10
8. Swine	7 107						7.62
9. Poultry	328 577						0.09

<sup>(1)</sup> See footnote 1 to Table 4.A of this common reporting format.

<sup>(2)</sup> Climate regions are defined in terms of annual average temperature as follows: Cool=less than 15°C; Temperate=15°C to 25°C inclusive; and Warm=greater than 25°C (see Table 4.2 of the IPCC Guidelines (Volume 3, Reference Manual, p. 4.8)).

<sup>(3)</sup> VS=Volatile Solids; Bo=maximum methane producing capacity for manure IPCC Guidelines (Volume 3, Reference Manual, p.4.23 and p. 4.15.

<sup>(4)</sup> Including data on dairy heifers, if available.

**Documentation Box:**

To calculate methane emissions a specific method based on national expert data (emission factors) is used.

**Additional information (for Tier 2)**


Animal category <sup>(a)</sup>	Indicator	Climate region	Animal waste management system					
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range paddock	Other
Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Non-Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Swine	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						

<sup>(a)</sup> Copy the above table as many times as necessary.

<sup>(b)</sup> MCF = Methane Conversion Factor (IPCC Guidelines, (Volume 3, Reference Manual, p. 4.9)). In the case of use of other climate region categorization, please replace the entries in the cells with the climate regions for which the MCFs are specified.

**TABLE 4.B(b) SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**N<sub>2</sub>O Emissions from Manure Management**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION								IMPLIED EMISSION FACTORS	
	Population size ( <sup>(1)</sup> (1000s)	Nitrogen excretion (kg N/head/yr)	Nitrogen excretion per animal waste management system (kg N/yr)						Emission factor per animal waste management system (kg N <sub>2</sub> O-N/kg N)	
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range and paddock	Other		
Non-Dairy Cattle	13 793	70.0	0.0	531 031 848.0	0.0	19 310 249.0	318 619 109.0	86 896 121.0	Anaerobic lagoon	0.000
Dairy Cattle	6 739	100.0	0.0	309 980 522.0	161 728 968.0	141 512 847.0	53 909 656.0	6 738 707.0	Liquid system	0.001
Sheep	10 169	20.0	0.0	0.0	0.0	13 370 666.0	581 623 988.0	73 538 665.0	Solid storage and dry lot	0.012
Swine	7 107	20.0	0.0	515 100 197.0	3 476 750.0	153 591 355.0	1 038 510.0	0.0	Other	0.002
Poultry	328 577	0.6	0.0	87 019 130.0	0.0	6 693 779.0	13 387 559.0	562 277 458.0		
Other (please specify) 										
Horses, goats, mules and asses	1 710	25.0	0.0	0.0	0.0	0.0	644 807 664.0	26 866 986.0		
<b>Total per AWMS<sup>(2)</sup></b>			<b>0.0</b>	<b>1 443 131 697.0</b>	<b>165 205 718.0</b>	<b>334 478 896.0</b>	<b>1 613 386 486.0</b>	<b>756 317 937.0</b>		

<sup>(1)</sup> See footnote 1 to Table 4.A of this common reporting format.

<sup>(2)</sup> AWMS - Animal Waste Management System.

<b>Documentation box:</b>

**TABLE 4.C SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Rice Cultivation**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR <sup>(1)</sup>	EMISSIONS
	Harvested area <sup>(2)</sup> (10 <sup>-9</sup> m <sup>2</sup> /yr)	Organic amendments added <sup>(3)</sup> :		CH <sub>4</sub> (g/m <sup>2</sup> )	CH <sub>4</sub> (Gg)
		type	(t/ha)		
<b>1. Irrigated</b>					<b>7.75</b>
Continuously Flooded	0.22			36.00	7.75
Intermittently Flooded		Single Aeration		0.00	
		Multiple Aeration		0.00	
<b>2. Rainfed</b>					<b>0.00</b>
Flood Prone				0.00	
Drought Prone				0.00	
<b>3. Deep Water</b>					<b>0.00</b>
Water Depth 50-100 cm				0.00	
Water Depth > 100 cm				0.00	
<b>4. Other (please specify)</b>					<b>0.00</b>
				0.00	
Upland Rice <sup>(4)</sup>					
Total <sup>(4)</sup>	0.22				

<sup>(1)</sup> The implied emission factor takes account of all relevant corrections for continuously flooded fields without organic amendment plus the correction for the organic amendments, if used, as well as of the effect of different soil characteristics, if taken into account, on methane emissions.

<sup>(2)</sup> Harvested area is the cultivated area multiplied by the number of cropping seasons per year.

<sup>(3)</sup> Specify dry weight or wet weight for organic amendments.

<sup>(4)</sup> These rows are included to allow comparison with the international statistics. Upland rice emissions are assumed to be zero and are ignored in the emission calculations.

**Documentation box:**

When disaggregating by more than one region within a country, provide additional information in the documentation box.

Where available, provide activity data and scaling factors by soil type and rice cultivar.

**TABLE 4.D SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Agricultural Soils<sup>(1)</sup>**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION		IMPLIED EMISSION FACTORS		EMISSIONS (Gg N <sub>2</sub> O)
	Description	Value	Unit		
<b>Direct Soil Emissions</b>	<b>N input to soils (kg N/yr)</b>				<b>88.81</b>
Synthetic Fertilizers	Use of synthetic fertilizers (kg N/yr)	2 505 254 406	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.011	44.29
Animal Wastes Applied to Soils	Nitrogen input from manure applied to soils (kg N/yr)	1 618 356 504	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.010	24.46
N-fixing Crops	Dry pulses and soybeans produced (kg dry biomass/yr)	7 963 963 825	(kg N <sub>2</sub> O-N/kg dry biomass) <sup>(2)</sup>	0.001	9.39
Crop Residue	Dry production of other crops (kg dry biomass/yr)	91 760 388 852	(kg N <sub>2</sub> O-N/kg dry biomass) <sup>(2)</sup>	0.000	10.68
Cultivation of Histosols	Area of cultivated organic soils (ha)		(kg N <sub>2</sub> O-N/ha) <sup>(2)</sup>	0.000	
<b>Animal Production</b>	<b>N excretion on pasture range and paddock (kg N/yr)</b>	<b>588 817 602</b>	<b>(kg N<sub>2</sub>O-N/kg N)<sup>(2)</sup></b>	<b>0.020</b>	<b>18.51</b>
<b>Indirect Emissions</b>					<b>57.69</b>
Atmospheric Deposition	Volatized N (NH <sub>3</sub> and NO <sub>x</sub> ) from fertilizers and animal wastes (kg N/yr)		(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.000	
Nitrogen Leaching and Run-off	N from fertilizers and animal wastes that is lost through leaching and run off (kg N/yr)	1 413 998 532	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.026	57.69
<b>Other (please specify)</b>					<b>0.00</b>
				0.000	

**Additional information**

Fraction <sup>(a)</sup>	Description	Value
Frac <sub>BURN</sub>	Fraction of crop residue burned	
Frac <sub>FUEL</sub>	Fraction of livestock N excretion in excrements burned for fuel	
Frac <sub>GASf</sub>	Fraction of synthetic fertilizer N applied to soils that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>	
Frac <sub>GASm</sub>	Fraction of livestock N excretion that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>	
Frac <sub>GRAZ</sub>	Fraction of livestock N excreted and deposited onto soil during grazing	
Frac <sub>LEACH</sub>	Fraction of N input to soils that is lost through leaching and runoff	
Frac <sub>NCRBF</sub>	Fraction of N in non-N-fixing crop	
Frac <sub>NCRO</sub>	Fraction of N in N-fixing crop	
Frac <sub>R</sub>	Fraction of crop residue removed from the field as crop	

<sup>(a)</sup> Use the fractions as specified in the IPCC Guidelines (Volume 3, Reference Manual, pp. 4.92 - 4.113).

<sup>(1)</sup> See footnote 4 to Summary 1.A. of this common reporting format. Parties which choose to report CO<sub>2</sub> emissions and removals from agricultural soils under 4.D. Agricultural Soils category should indicate the amount [Gg] of these emissions or removals and relevant additional information (activity data, implied emissions factors) in the documentation box.

<sup>(2)</sup> To convert from N<sub>2</sub>O-N to N<sub>2</sub>O emissions, multiply by 44/28.

**Documentation box:**

Atmospheric deposition is not taken into account because of a risk of double counting.

A specific document describing the methodology used to estimate N<sub>2</sub>O emissions from agriculture is available at CITEPA ("Méthodologie utilisée pour les inventaires de NH<sub>3</sub> et de N<sub>2</sub>O provenant des activités agricoles : évolution et perspectives").

**TABLE 4.E SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Prescribed Burning of Savannas**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION					IMPLIED EMISSION FACTORS		EMISSIONS	
	Area of savanna burned	Average aboveground biomass density	Fraction of savanna burned	Biomass burned	Nitrogen fraction in biomass	(kg/t dm)		(Gg)	
	(k ha/yr)	(t dm/ha)		(Gg dm)		CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O
(specify ecological zone)								0.00	0.00
						0.00	0.00		





**Additional information**

	Living	Dead
Fraction of aboveground biomass		
Fraction oxidized		
Carbon fraction		

**Documentation box:**

**TABLE 4.F SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Field Burning of Agricultural Residues**  
**(Sheet 1 of 1)**

France  
1999  
Submission






GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		EMISSIONS	
	Crop production (t)	Residue/ Crop ratio	Dry matter fraction	Fraction burned in fields	Biomass burned (Gg dm)	Nitrogen fraction in biomass of residues	CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O
							(kg/t dm)	(kg/t dm)	(Gg)	(Gg)
<b>1. Cereals</b>									<b>0.00</b>	<b>0.00</b>
Wheat							0.00	0.00		
Barley							0.00	0.00		
Maize							0.00	0.00		
Oats							0.00	0.00		
Rye							0.00	0.00		
Rice							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>2. Pulse <sup>(1)</sup></b>									<b>0.00</b>	<b>0.00</b>
Dry bean							0.00	0.00		
Peas							0.00	0.00		
Soybeans							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>3 Tuber and Root</b>									<b>0.00</b>	<b>0.00</b>
Potatoes							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>4 Sugar Cane</b>							<b>0.00</b>	<b>0.00</b>		
<b>5 Other (please specify) </b>									<b>0.00</b>	<b>0.00</b>
							0.00	0.00		

<sup>(1)</sup> To be used in Table 4.D of this common reporting format.

<b>Documentation Box:</b>

**TABLE 5 SECTORAL REPORT FOR LAND-USE CHANGE AND FORESTRY**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	Net CO <sub>2</sub> emissions/ removals	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO
	(Gg)						
<b>Total Land-Use Change and Forestry</b>	<b>91 195.00</b>	<b>-160 190.00</b>	<b>-68 995.00</b>	<b>100.80</b>	<b>17.99</b>	<b>2.79</b>	<b>98.29</b>
<b>A. Changes in Forest and Other Woody Biomass Stocks</b>	<b>70 066.00</b>	<b>-154 927.00</b>	<b>-84 861.00</b>				
1. Tropical Forests		-5 446.00	-5 446.00				
2. Temperate Forests	70 066.00	-149 481.00	-79 415.00				
3. Boreal Forests			0.00				
4. Grasslands/Tundra			0.00				
5. Other (please specify) 	0.00	0.00	0.00				
Harvested Wood <sup>(1)</sup>			0.00				
			0.00				
<b>B. Forest and Grassland Conversion <sup>(2)</sup></b>	<b>12 540.00</b>			<b>11.23</b>	<b>0.08</b>	<b>2.79</b>	<b>98.29</b>
1. Tropical Forests	609.00			0.82	0.01	0.20	7.18
2. Temperate Forests	11 931.00			10.41	0.07	2.59	91.11
3. Boreal Forests							
4. Grasslands/Tundra							
5. Other (please specify) 	0.00			0.00	0.00	0.00	0.00
<b>C. Abandonment of Managed Lands</b>	<b>0.00</b>	<b>-48.00</b>	<b>-48.00</b>				
1. Tropical Forests		-48.00	-48.00				
2. Temperate Forests			0.00				
3. Boreal Forests			0.00				
4. Grasslands/Tundra			0.00				
5. Other (please specify) 	0.00	0.00	0.00				
			0.00				
<b>D. CO<sub>2</sub> Emissions and Removals from Soil</b>	<b>8 589.00</b>	<b>-5 215.00</b>	<b>3 374.00</b>				
Cultivation of Mineral Soils			0.00				
Cultivation of Organic Soils			0.00				
Liming of Agricultural Soils			0.00				
Forest Soils			0.00				
Other (please specify) <sup>(3)</sup> 	8 589.00	-5 215.00	3 374.00				
	8 589.00	-5 215.00	3 374.00				
<b>E. Other (please specify) </b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>89.56</b>	<b>17.91</b>	<b>0.00</b>	<b>0.00</b>
Managed forests for CH <sub>4</sub> , N <sub>2</sub> O, NMVOC			0.00	89.56	17.91		

<sup>(1)</sup> Following the IPCC Guidelines, the harvested wood should be reported under Changes in Forest and Other Woody Biomass Stocks (Volume 3. Reference Manual, p.5.17).

<sup>(2)</sup> Include only the emissions of CO<sub>2</sub> from Forest and Grassland Conversion. Associated removals should be reported under section D.

<sup>(3)</sup> Include emissions from soils not reported under sections A, B and C.

**Note:** See footnote 4 to Summary 1.A of this common reporting format.



**TABLE 5.A SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE  
AND FORESTRY**  
**Changes in Forest and Other Woody Biomass Stocks**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES			ACTIVITY DATA		IMPLIED EMISSION FACTORS	ESTIMATES
			Area of forest/biomass stocks (kha)	Average annual growth rate (t dm/ha)	Implied carbon uptake factor (t C/ha)	Carbon uptake increment (Gg C)
Tropical	Plantations	<i>Acacia spp.</i>			0.00	
		<i>Eucalyptus spp.</i>			0.00	
		<i>Tectona grandis</i>			0.00	
		<i>Pinus spp</i>			0.00	
		<i>Pinus caribaea</i>			0.00	
		Mixed Hardwoods			0.00	
		Mixed Fast-Growing Hardwoods			0.00	
		Mixed Softwoods			0.00	
	Other Forests	Moist			0.00	
		Seasonal			0.00	
		Dry			0.00	
	Other (specify) <input type="checkbox"/>				0.00	
Temperate	Plantations	Forest	366.10	8.34	4.17	1 525.55
					0.00	
					0.00	
	Commercial	Evergreen	19 568.00	10 884 000.00	0.28	5 442.00
		Deciduous	13 091.00	7 864 000.00	0.30	3 932.00
	Other (specify) <input type="checkbox"/>				0.00	
Boreal					0.00	
			Number of trees (1000s of trees)	Annual growth rate (kt dm/1000 trees)	Carbon uptake factor (t C/tree)	Carbon uptake increment (Gg C)
Non-Forest Trees (specify type) <input type="checkbox"/>					0.00	0.00
					0.00	
Total annual growth increment (Gg C)						49 865.55
Gg CO <sub>2</sub>						182 840.35
			Amount of biomass removed (kt dm)	Carbon emission factor (t C/t dm)	Carbon release (Gg C)	
Total biomass removed in Commercial Harvest			18 832.80	0.50	9 415.77	
Traditional Fuelwood Consumed			19 584.10	0.50	9 792.05	
Total Other Wood Use				0.00		
Total Biomass Consumption from Stocks <sup>(1)</sup> (Gg C)						19 207.82
Other Changes in Carbon Stocks <sup>(2)</sup> (Gg C)						
Gg CO <sub>2</sub>						70 428.67
Net annual carbon uptake (+) or release (-) (Gg C)						30 657.73
Net CO <sub>2</sub> emissions (-) or removals (+) (Gg CO <sub>2</sub> )						112 411.68

<sup>(1)</sup> Make sure that the quantity of biomass burned off-site is subtracted from this total.

<sup>(2)</sup> The net annual carbon uptake/release is determined by comparing the annual biomass growth versus annual harvest, including the decay of forest products and slash left during harvest. The IPCC Guidelines recommend default assumption that all carbon removed in wood and other biomass from forests is oxidized in the year of removal. The emissions from decay could be included under Other Changes in Carbon Stocks.

**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology.

Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

**Documentation box:**

- 1) As regards the biomass stock item for the commercial harvest, data are compiled under the 1000 m3 unit;
- 2) Consequently to 1), the corresponding average annual growth item is expressed in t dm per annum;
- 3) Figures mentioned in 1) and 2) are temporary data, taken from 1998.

**TABLE 5.B SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**Forest and Grassland Conversion**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION							IMPLIED EMISSION FACTORS					EMISSIONS				
		On and off site burning				Decay of above-ground biomass <sup>(1)</sup>			Burning				Decay	Burning				Decay
		Area converted annually	Annual net loss of biomass	Quantity of biomass burned		Average area converted	Average annual net loss of biomass	Average quantity of biomass left to decay	On site			Off site		On site			Off site	
				On site	Off site				CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O			CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>		
		Vegetation types	(kha)	(kt dm)	(kt dm)	(kt dm)	(kha)	(t dm/ha)	(kt dm)	(t/ha)					(Gg)			
Tropical	Wet/Very Moist	0.80	228.00	114.00	114.00			229.20	235.00	1.03	0.01	261.11	0.00	188.00	0.82	0.01	208.89	420.00
	Moist, short dry season								0.00	0.00	0.00	0.00	0.00					
	Moist, long dry season								0.00	0.00	0.00	0.00	0.00					
	Dry								0.00	0.00	0.00	0.00	0.00					
	Montane Moist								0.00	0.00	0.00	0.00	0.00					
	Montane Dry								0.00	0.00	0.00	0.00	0.00					
Tropical Savanna/Grasslands									0.00	0.00	0.00	0.00	0.00					
Temperate	Coniferous								0.00	0.00	0.00	0.00	0.00					
	Broadleaf								0.00	0.00	0.00	0.00	0.00					
	Mixed Broadleaf/ Coniferous	80.10	6 508.00	1 302.00	5 206.00	80.10	81.00	6 508.00	29.79	0.13	0.00	119.16	148.95	2 386.00	10.40	0.07	9 545.00	11 931.00
Grasslands									0.00	0.00	0.00	0.00	0.00					
Boreal	Mixed Broadleaf/ Coniferous								0.00	0.00	0.00	0.00	0.00					
	Coniferous								0.00	0.00	0.00	0.00	0.00					
	Forest-tundra								0.00	0.00	0.00	0.00	0.00					
Grasslands/Tundra									0.00	0.00	0.00	0.00	0.00					
Other <i>(please specify)</i>									0.00	0.00	0.00	0.00	0.00					
									0.00	0.00	0.00	0.00	0.00					
Total														2 574.00	11.22	0.08	9 753.89	12 351.00

<sup>(1)</sup> Activity data are for default 10-year average. Specify the average decay time which is appropriate for the local conditions, if other than 10 years.

Emissions/Removals	On site	Off site
Immediate carbon release from burning	4.88	18.47
Total On site and Off site (Gg C)	23.35	
Delayed emissions from decay (Gg C)	23.39	
Total annual carbon release (Gg C)	46.74	
Total annual CO <sub>2</sub> emissions (Gg CO <sub>2</sub> )	24 678.89	

#### Additional information

Fractions	On site	Off site
Fraction of biomass burned (average)	0.20	0.80
Fraction which oxidizes during burning (average)		
Carbon fraction of aboveground biomass (average)		
Fraction left to decay (average)		
Nitrogen-carbon ratio	0.01	

**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

#### Documentation box:

Because of a certain lack of data, the average area converted item was calculated taking into account the 1992-1996 period only. This value was also used to fill in the area converted annually item, as a default value. It is emphasised that the CO<sub>2</sub> emissions due to the grassland conversion are included within item D.5, table 5, since such a conversion is considered as generating CO<sub>2</sub> emissions from soils only, according to the IPCC guidelines. As the French methodology used differs from the IPCC's, a specific document describing it is available at the CITEPA ("Evaluation des puits de CO<sub>2</sub> suivant la nouvelle méthode préconisée par le GIEC", CITEPA, June 1999). The average quantity of biomass left to decay regarding tropical wet vegetation is based on the annual production of harvest.

**TABLE 5.C SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**Abandonment of Managed Lands**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		ESTIMATES	
		Total area abandoned and regrowing <sup>(1)</sup>		Annual rate of aboveground biomass growth		Carbon fraction of aboveground biomass		Rate of aboveground biomass carbon uptake		Annual carbon uptake in aboveground biomass	
		first 20 years (kha)	>20 years (kha)	first 20 years (t dm/ha)	>20 years (t dm/ha)	first 20 years	>20 years	first 20 years (t C/ha/yr)	>20 years (t C/ha/yr)	first 20 years (Gg C/yr)	>20 years (Gg C/yr)
<b>Original natural ecosystems</b>											
Tropical	Wet/Very Moist							0.00	0.00		
	Moist, short dry season							0.00	0.00		
	Moist, long dry season							0.00	0.00		
	Dry							0.00	0.00		
	Montane Moist							0.00	0.00		
	Montane Dry							0.00	0.00		
Tropical Savanna/Grasslands								0.00	0.00		
Temperate	Mixed Broadleaf/Coniferous							0.00	0.00		
	Coniferous							0.00	0.00		
	Broadleaf							0.00	0.00		
Grasslands								0.00	0.00		
Boreal	Mixed Broadleaf/Coniferous							0.00	0.00		
	Coniferous							0.00	0.00		
	Forest-tundra							0.00	0.00		
Grasslands/Tundra								0.00	0.00		
Other (please specify)								0.00	0.00		
								0.00	0.00		
Total annual carbon uptake (Gg C)										0.00	
Total annual CO <sub>2</sub> removal (Gg CO <sub>2</sub> )										0.00	

<sup>(1)</sup> If lands are regenerating to grassland, then the default assumption is that no significant changes in above-ground biomass occur.

**Note:** Sectoral background data tables on Land-use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

<b>Documentation box:</b>											
This table cannot be fill up properly as the French methodology includes both the annual rate of aboveground biomass growth and the carbon fraction of aboveground biomass within 5.A table.											

**TABLE 5.D SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**CO<sub>2</sub> Emissions and Removals from Soil**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	ESTIMATES
	Land area (Mha)	Average annual rate of soil carbon uptake/removal (Mg C/ha/yr)	Net change in soil carbon in mineral soils (Tg C over 20 yr)
<b>Cultivation of Mineral Soils <sup>(1)</sup></b>			<b>0.00</b>
High Activity Soils		0.00	
Low Activity Soils		0.00	
Sandy		0.00	
Volcanic		0.00	
Wetland (Aquic)		0.00	
Other ( <i>please specify</i> )			0.00
		0.00	
	Land area (ha)	Annual loss rate (Mg C/ha/yr)	Carbon emissions from organic soils (Mg C/yr)
<b>Cultivation of Organic Soils</b>			<b>0.00</b>
<b>Cool Temperate</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
<b>Warm Temperate</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
<b>Tropical</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
	Total annual amount of lime (Mg)	Carbon conversion factor	Carbon emissions from liming (Mg C)
<b>Liming of Agricultural Soils</b>			<b>0.00</b>
Limestone Ca(CO <sub>3</sub> )		0.00	
Dolomite CaMg(CO <sub>3</sub> ) <sub>2</sub>		0.00	
Total annual net carbon emissions from agriculturally impacted soils (Gg C)			0.00
Total annual net CO <sub>2</sub> emissions from agriculturally impacted soils (Gg CO <sub>2</sub> )			0.00

**Additional information**

Year	Climate <sup>(a)</sup>	land-use/ management system <sup>(a)</sup>	Soil type					
			High activity soils	Low activity soils	Sandy	Volcanic	Wetland (Aquic)	Organic soil
20 years prior	(e.g. tropical, dry)	(e.g. savanna)						
		(e.g. irrigated cropping)						
Inventory year								

<sup>(a)</sup> These should represent the major types of land management systems per climate regions presented in the country as well as ecosystem types which were either converted to agriculture (e.g., forest, savanna, grassland) or have been derived from previous agricultural land-use (e.g., abandoned lands, reforested lands). Systems should also reflect differences in soil carbon stocks that can be related to differences in management (IPCC Guidelines (Volume 2. Workbook, Table 5-9, p. 5.26, and Appendix (pp. 5-31 - 5.38)).

<sup>(1)</sup> The information to be reported under Cultivation of Mineral Soils aggregates data per soil type over all land-use/management systems. This refers to land area data and to the emission estimates and implied emissions factors accordingly.




**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

**Documentation Box:**

Since the French methodology does not treat the carbon soil release or uptake in relation to the nature of the different soils, a specific document available at the CITEPA ("Evaluation des puits de CO<sub>2</sub> suivant la nouvelle méthode préconisée par le GIEC", CITEPA, June 1999) develops the background processing that leads to the results presented in table 5, section D.5.

**TABLE 6 SECTORAL REPORT FOR WASTE**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
	(Gg)						
<b>Total Waste</b>	<b>2 286.80</b>	<b>830.88</b>	<b>3.44</b>	<b>16.01</b>	<b>296.90</b>	<b>33.29</b>	<b>7.99</b>
<b>A. Solid Waste Disposal on Land</b>	<b>0.00</b>	<b>782.86</b>		<b>0.00</b>	<b>0.00</b>	<b>7.56</b>	
1. Managed Waste Disposal on Land	0.00	602.07				5.82	
2. Unmanaged Waste Disposal Sites	0.00	180.79				1.74	
3. Other ( <i>please specify</i> ) 	0.00	0.00		0.00	0.00	0.00	
<b>B. Wastewater Handling</b>		<b>13.41</b>	<b>2.14</b>	<b>0.00</b>	<b>0.00</b>	<b>3.33</b>	
1. Industrial Wastewater		0.00	1.07			3.33	
2. Domestic and Commercial Wastewater		13.41	1.07				
3. Other ( <i>please specify</i> ) 		0.00	0.00	0.00	0.00	0.00	
<b>C. Waste Incineration</b>	<b>2 286.80</b>	<b>17.50</b>	<b>1.30</b>	<b>16.01</b>	<b>296.90</b>	<b>10.84</b>	<b>7.99</b>
<b>D. Other (<i>please specify</i>)</b> 	<b>0.00</b>	<b>17.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>11.55</b>	<b>0.00</b>
Sludge spreading and biogas production (CH <sub>4</sub> and NMVOC)	0.00	17.11				11.55	

<sup>(1)</sup> Note that CO<sub>2</sub> from Waste Disposal and Incineration source categories should only be included if it stems from non-biological or inorganic waste sources.

**TABLE 6.A SECTORAL BACKGROUND DATA FOR WASTE**  
**Solid Waste Disposal**  
**(Sheet 1 of 1)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION				IMPLIED EMISSION FACTOR		EMISSIONS <sup>(1)</sup>	
	Annual MSW at the SWDS (Gg)	MCF	DOC degraded (Gg)	CH <sub>4</sub> recovery <sup>(2)</sup> (Gg)	CH <sub>4</sub> (t/t MSW)	CO <sub>2</sub> (t/t MSW)	CH <sub>4</sub> (Gg)	CO <sub>2</sub> <sup>(3)</sup> (Gg)
1 Managed Waste Disposal on Land	18 219.03	1.00	3 643.81	660.96	0.03	0.00	602.07	0.00
2 Unmanaged Waste Disposal Sites	0.00	0.50	0.00	0.00	0.00	0.00	180.79	0.00
- deep (>5 m)					0.00	0.00		
- shallow (<5 m)	0.00	0.50	0.00	0.00	0.00	0.00	180.79	0.00
3 Other ( <i>please specify</i> )							0.00	0.00
					0.00	0.00		0.00

**TABLE 6.C SECTORAL BACKGROUND DATA FOR WASTE**  
**Waste Incineration**  
**(Sheet 1 of 1)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA Amount of incinerated wastes (Gg)	IMPLIED EMISSION FACTOR			EMISSIONS		
		CO <sub>2</sub> (kg/t waste)	CH <sub>4</sub> (kg/t waste)	N <sub>2</sub> O (kg/t waste)	CO <sub>2</sub> <sup>(3)</sup> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
Waste Incineration ( <i>please specify</i> )	17 175.65				2 286.80	17.50	1.30
( <i>biogenic</i> ) <sup>(3)</sup>		0.00	0.00	0.00	13 998.32		
( <i>plastics and other non-biogenic waste</i> ) <sup>(3)</sup>		0.00	0.00	0.00	2 286.80		
Biogenic and non-biogenic	17 175.65	0.00	1.02	0.08		17.50	1.30

MSW - Municipal Solid Waste, SWDS - Solid Waste Disposal Site, MCF - Methane Correction Factor, DOC - Degradable Organic Carbon (IPCC Guidelines (Volume 3. Reference Manual, section 6.2.4)). MSW includes household waste, yard/garden waste, commercial/market waste and organic industrial solid waste. MSW should not include inorganic industrial waste such as construction or demolition materials.

<sup>(1)</sup> Actual emissions (after recovery).

<sup>(2)</sup> CH<sub>4</sub> recovered and flared or utilized.

<sup>(3)</sup> Under Waste Disposal, CO<sub>2</sub> emissions should be reported only when the disposed wastes are combusted at the disposal site which might constitute a management practice. CO<sub>2</sub> emissions from non-biogenic wastes are included in the totals, while the CO<sub>2</sub> emissions from biogenic wastes are not included in the totals.

<b>Documentation box:</b>
All relevant information used in calculation should be provided in the additional information box and in the documentation box.
Parties that use country specific models should note this with a brief rationale in the documentation box and fill the relevant cells only.
Table 6A: CH <sub>4</sub> emissions are calculated using a first order decay method based on tier 2. So even if no more wastes are dumped into unmanaged waste disposal sites (without any mechanical compacting) there is still some waste decomposition and CH <sub>4</sub> emissions.
Table 6C: 15% of the waste incineration CO <sub>2</sub> is considered as from biogenic waste.
Additional information: For MSW 3 CH <sub>4</sub> generation rate constants are used; k1 for 30% of the total wastes, k2 for 30% of the total wastes and k3 for 40% of the total wastes.
Some informations are not available at this time.

**Additional information**

Description	Value
Total population (1000s) <sup>(a)</sup>	60 882.00
Urban population (1000s) <sup>(a)</sup>	
Waste generation rate (kg/capita/day)	
Fraction of MSW disposed to SWDS	
Fraction of DOC in MSW	0.20
Fraction of wastes incinerated	
Fraction of wastes recycled	
CH <sub>4</sub> oxidation factor (b)	0.20
CH <sub>4</sub> fraction in landfill gas	0.50
Number of SWDS recovering CH <sub>4</sub>	
CH <sub>4</sub> generation rate constant (k) <sup>(c)</sup>	k1=0.7; k2=0.14; k3=0.04
Time lag considered (yr) <sup>(c)</sup>	t1/2=1 for k1; t1/2= 5 for k2; t1/2=15 for k3
Composition of landfilled waste (%)	
Paper and paperboard	NA
Food and garden waste	NA
Plastics	NA
Glass	NA
Textiles	NA
Other ( <i>specify</i> )	NA
other - inert	NA
other - organic	NA

<sup>(a)</sup> Specify whether total or urban population is used and the rationale for doing so.

<sup>(b)</sup> See IPCC Guidelines (Volume 3. Reference Manual, p. 6.9).

<sup>(c)</sup> For Parties using Tier 2 methods.

**TABLE 6.B SECTORAL BACKGROUND DATA FOR WASTE**  
**Wastewater Handling**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND RELATED INFORMATION <sup>(1)</sup>				IMPLIED EMISSION FACTOR			EMISSIONS <sup>(2)</sup>		
	Total organic product		CH <sub>4</sub> recovered and/or flared		CH <sub>4</sub>		N <sub>2</sub> O <sup>(3)</sup> (kg/kg DC)	CH <sub>4</sub>		N <sub>2</sub> O <sup>(3)</sup> (Gg)
	Wastewater	Sludge	Wastewater	Sludge	Wastewater (kg/kg DC)	Sludge (kg/kg DC)		Wastewater (Gg)	Sludge (Gg)	
Industrial Wastewater					0.00	0.00				1.0
Domestic and Commercial Wastewater					0.00	0.00		13.41		1.0
Other (please specify) <input type="checkbox"/>								0.00	0.00	0.0
					0.00	0.00				

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR	EMISSIONS
	Population <sup>(4)</sup> (1000s)	Protein consumption (protein in kg/person/yr)	N fraction (kg N/kg protein)		
N <sub>2</sub> O from human sewage <sup>(3)</sup>				0.00	

<sup>(1)</sup> DC - degradable organic component. DC indicators are COD (Chemical Oxygen Demand) for industrial wastewater and BOD (Biochemical Oxygen Demand) for Domestic/Commercial wastewater/sludge (IPCC Guidelines (Volume 3. Reference Manual, pp. 6.14, 6.18)).

<sup>(2)</sup> Actual emissions (after recovery).



<sup>(3)</sup> Parties using other methods for estimation of N<sub>2</sub>O emissions from human sewage or wastewater treatment should provide corresponding information on methods, activity data and emission factors used in the documentation box. Use the table to provide aggregate data.


<sup>(4)</sup> Specify whether total or urban population is used in the calculations and the rationale for doing so. Provide explanation in the documentation box.

<b>Documentation box:</b>
A specific method based on national expert data is used to calculate emissions from wastewater handling (emission factors are expressed per unit of inhabitant).

**Additional information**

	Domestic	Industrial
Total wastewater (m <sup>3</sup> ):		
Treated wastewater (%):		

Wastewater streams:	Wastewater output (m <sup>3</sup> )	DC (kgCOD/m <sup>3</sup> )
<b>Industrial wastewater</b>		
Iron and steel		
Non-ferrous		
Fertilizers		
Food and beverage		
Paper and pulp		
Organic chemicals		
Other (specify) 		
<b>DC (kg BOD/1000 person/yr)</b>		
<b>Domestic and Commercial</b>		
<b>Other</b> 		

Handling systems:	Industrial wastewater treated (%)	Ind. sludge treated (%)	Domestic wastewater treated (%)	Domestic sludge treated (%)
Aerobic				
Anaerobic				
Other (specify) 				

**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
(Sheet 1 of 3)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
		emissions	removals			P	A	P	A	P	A				
		(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>Total National Emissions and Removals</b>		<b>404 695.26</b>	<b>-68 995.00</b>	<b>2 840.58</b>	<b>253.94</b>	<b>0.00</b>	<b>4 815.07</b>	<b>0.00</b>	<b>1 914.51</b>	<b>0.00</b>	<b>0.10</b>	<b>1 609.11</b>	<b>7 369.28</b>	<b>2 295.15</b>	<b>740.52</b>
<b>1. Energy</b>		<b>383 597.80</b>		<b>371.44</b>	<b>19.71</b>							<b>1 578.44</b>	<b>6 144.21</b>	<b>1 068.52</b>	<b>715.71</b>
A. Fuel Combustion	Reference Approach <sup>(2)</sup>	#VALEUR!													
	Sectoral Approach <sup>(2)</sup>	379 591.37		154.16	19.70							1 574.23	6 140.17	973.42	653.20
1. Energy Industries		61 389.24		1.34	2.20							165.31	16.67	4.43	313.55
2. Manufacturing Industries and Construction		77 212.63		3.84	2.57							260.04	817.46	25.99	209.77
3. Transport		138 822.12		14.84	10.24							803.15	3 301.65	648.06	38.08
4. Other Sectors		102 167.38		134.13	4.70							345.73	2 004.38	294.95	91.80
5. Other		0.00		0.00	0.00							0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels		4 006.43		217.29	0.00							4.21	4.04	95.10	62.51
1. Solid Fuels		0.00		126.55	0.00							0.00	3.31	0.83	0.00
2. Oil and Natural Gas		4 006.43		90.74	0.00							4.21	0.73	94.27	62.51
<b>2. Industrial Processes</b>		<b>17 193.94</b>		<b>2.64</b>	<b>35.79</b>	<b>0.00</b>	<b>4 815.07</b>	<b>0.00</b>	<b>1 914.51</b>	<b>0.00</b>	<b>0.10</b>	<b>11.86</b>	<b>829.89</b>	<b>99.04</b>	<b>16.82</b>
A. Mineral Products		10 371.09		0.00	0.00							0.00	0.00	13.68	0.00
B. Chemical Industry		2 723.22		2.64	35.79	0.00	0.00	0.00	0.00	0.00	0.00	9.30	0.00	39.52	12.63
C. Metal Production		3 443.35		0.00	0.00				1 167.70		0.05	2.57	829.89	4.07	4.19
D. Other Production <sup>(3)</sup>		656.28										0.00	0.00	41.76	0.00
E. Production of Halocarbons and SF <sub>6</sub>							640.91		84.70		0.00				
F. Consumption of Halocarbons and SF <sub>6</sub>						0.00	4 174.17	0.00	662.11	0.00	0.05				
G. Other		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

<sup>(2)</sup> For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach. Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

<sup>(3)</sup> Other Production includes Pulp and Paper and Food and Drink Production.

**Note:** The numbering of footnotes to all tables containing more than one sheet continue to the next sheet. Common footnotes are given only once at the first point of reference.



**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**

(Sheet 2 of 3)

 France  
 1999  
 Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NM VOC	SO <sub>2</sub>
	emissions	removals			P	A	P	A	P	A				
	(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>3. Solvent and Other Product Use</b>	<b>1 616.73</b>			<b>1.98</b>									<b>624.81</b>	
<b>4. Agriculture</b>	<b>0.00</b>	<b>0.00</b>	<b>1 534.82</b>	<b>175.04</b>							0.00	0.00	19.81	0.00
A. Enteric Fermentation			1 330.58											
B. Manure Management			173.52	10.03									0.00	
C. Rice Cultivation			7.75										0.00	
D. Agricultural Soils	<sup>(4)</sup>	<sup>(4)</sup>	22.97	165.01									19.81	
E. Prescribed Burning of Savannas			0.00	0.00							0.00	0.00	0.00	
F. Field Burning of Agricultural Residues			0.00	0.00							0.00	0.00	0.00	
G. Other			0.00	0.00							0.00	0.00	0.00	
<b>5. Land-Use Change and Forestry</b>	<sup>(5)</sup> <b>0.00</b>	<sup>(5)</sup> <b>-68 995.00</b>	<b>100.80</b>	<b>17.99</b>							<b>2.79</b>	<b>98.29</b>	<b>449.68</b>	<b>0.00</b>
A. Changes in Forest and Other Woody Biomass Stocks	<sup>(5)</sup> 0.00	<sup>(5)</sup> -84 861.00												
B. Forest and Grassland Conversion	12 540.00		11.23	0.08							2.79	98.29		
C. Abandonment of Managed Lands	<sup>(5)</sup> 0.00	<sup>(5)</sup> -48.00												
D. CO <sub>2</sub> Emissions and Removals from Soil	<sup>(5)</sup> 3 374.00	<sup>(5)</sup> 0.00												
E. Other	<sup>(5)</sup> 0.00	<sup>(5)</sup> 0.00	89.56	17.91							0.00	0.00	449.68	
<b>6. Waste</b>	<b>2 286.80</b>		<b>830.88</b>	<b>3.44</b>							<b>16.01</b>	<b>296.90</b>	<b>33.29</b>	<b>7.99</b>
A. Solid Waste Disposal on Land	<sup>(6)</sup> 0.00		782.86									0.00	7.56	
B. Wastewater Handling			13.41	2.14							0.00	0.00	3.33	
C. Waste Incineration	<sup>(6)</sup> 2 286.80		17.50	1.30							16.01	296.90	10.84	7.99
D. Other	0.00		17.11	0.00							0.00	0.00	11.55	0.00
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	0.00													

<sup>(4)</sup> According to the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.2, 4.87), CO<sub>2</sub> emissions from agricultural soils are to be included under Land-Use Change and Forestry (LUCF). At the same time, the Summary Report 7A (Volume 1. Reporting Instructions, Tables.27) allows for reporting CO<sub>2</sub> emissions or removals from agricultural soils, either in the Agriculture sector, under D. Agricultural Soils or in the Land-Use Change and Forestry sector under D. Emissions and Removals from Soil. Parties may choose either way to report emissions or removals from this source in the common reporting format, but the way they have chosen to report should be clearly indicated, by inserting explanatory comments to the corresponding cells of Summary 1.A and Summary 1.B. Double-counting of these emissions or removals should be avoided. Parties should include these emissions or removals consistently in Table8(a) (Recalculation - Recalculated data) and Table10 (Emission trends).

<sup>(5)</sup> Please do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. "Net" emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(6)</sup> Note that CO<sub>2</sub> from Waste Disposal and Incineration source categories should only be included if it stems from non-biogenic or inorganic waste streams.

**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
**(Sheet 3 of 3)**

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	CH <sub>4</sub>	N <sub>2</sub> O	HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
					P	A	P	A	P	A				
	(Gg)					CO <sub>2</sub> equivalent (Gg)				(Gg)				
Memo Items: <sup>(7)</sup>														
International Bunkers	23 063.75		0.00	0.30							211.18	10.66	83.61	165.14
Aviation	13 752.92		0.00	0.00							34.00	8.26	2.53	4.37
Marine	9 310.83		0.00	0.30							177.17	2.40	81.08	160.78
Multilateral Operations	0.00		0.00	0.00							0.00	0.00	0.00	0.00
CO <sub>2</sub> Emissions from Biomass	36 991.58													

<sup>(7)</sup> Memo Items are not included in the national totals.

**SUMMARY 1.B SHORT SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7B)**

(Sheet 1 of 1)

 France  
 1999  
 Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
		emissions	removals			P	A	P	A	P	A				
		(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
Total National Emissions and Removals		404 695.26	-68 995.00	2 840.58	253.94	0.00	4 815.07	0.00	1 914.51	0.00	0.10	1 609.11	7 369.28	2 295.15	740.52
1. Energy		383 597.80		371.44	19.71							1 578.44	6 144.21	1 068.52	715.71
A. Fuel Combustion	Reference Approach <sup>(2)</sup>	#VALEUR!													
	Sectoral Approach <sup>(2)</sup>	379 591.37		154.16	19.70							1 574.23	6 140.17	973.42	653.20
B. Fugitive Emissions from Fuels		4 006.43		217.29	0.00							4.21	4.04	95.10	62.51
2. Industrial Processes		17 193.94		2.64	35.79	0.00	4 815.07	0.00	1 914.51	0.00	0.10	11.86	829.89	99.04	16.82
3. Solvent and Other Product Use		1 616.73			1.98							0.00	0.00	624.81	0.00
4. Agriculture <sup>(3)</sup>		0.00	0.00	1 534.82	175.04							0.00	0.00	19.81	0.00
5. Land-Use Change and Forestry		<sup>(4)</sup> 0.00	<sup>(4)</sup> -68 995.00	100.80	17.99							2.79	98.29	449.68	0.00
6. Waste		2 286.80		830.88	3.44							16.01	296.90	33.29	7.99
7. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Memo Items:															
International Bunkers		23 063.75		0.00	0.30							211.18	10.66	83.61	165.14
Aviation		13 752.92		0.00	0.00							34.00	8.26	2.53	4.37
Marine		9 310.83		0.00	0.30							177.17	2.40	81.08	160.78
Multilateral Operations		0.00		0.00	0.00							0.00	0.00	0.00	0.00
CO <sub>2</sub> Emissions from Biomass		36 991.58													

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

<sup>(2)</sup> For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in document box of Table 1.A(c). Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

<sup>(3)</sup> See footnote 4 to Summary 1.A.

<sup>(4)</sup> Please do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. "Net" emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

**SUMMARY 2 SUMMARY REPORT FOR CO<sub>2</sub> EQUIVALENT EMISSIONS**  
(Sheet 1 of 1)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>	Total
	CO <sub>2</sub> equivalent (Gg )						
<b>Total (Net Emissions)<sup>(1)</sup></b>	<b>335 700.26</b>	<b>59 652.26</b>	<b>78 721.07</b>	<b>4 815.07</b>	<b>1 914.51</b>	<b>2 410.65</b>	<b>483 213.83</b>
<b>1. Energy</b>	<b>383 597.80</b>	<b>7 800.34</b>	<b>6 108.77</b>				<b>397 506.91</b>
A. Fuel Combustion (Sectoral Approach)	379 591.37	3 237.27	6 108.49				388 937.13
1. Energy Industries	61 389.24	28.08	682.54				62 099.86
2. Manufacturing Industries and Construction	77 212.63	80.72	796.12				78 089.47
3. Transport	138 822.12	311.65	3 173.84				142 307.61
4. Other Sectors	102 167.38	2 816.81	1 455.99				106 440.19
5. Other	0.00	0.00	0.00				0.00
B. Fugitive Emissions from Fuels	4 006.43	4 563.08	0.28				8 569.78
1. Solid Fuels	0.00	2 657.52	0.00				2 657.52
2. Oil and Natural Gas	4 006.43	1 905.56	0.28				5 912.26
<b>2. Industrial Processes</b>	<b>17 193.94</b>	<b>55.44</b>	<b>11 093.35</b>	<b>4 815.07</b>	<b>1 914.51</b>	<b>2 410.65</b>	<b>37 482.96</b>
A. Mineral Products	10 371.09	0.00	0.00				10 371.09
B. Chemical Industry	2 723.22	55.44	11 093.35	0.00	0.00	0.00	13 872.01
C. Metal Production	3 443.35	0.00	0.00		1 167.70	1 135.25	5 746.30
D. Other Production	656.28						656.28
E. Production of Halocarbons and SF <sub>6</sub>				640.91	84.70	0.00	725.61
F. Consumption of Halocarbons and SF <sub>6</sub>				4 174.17	662.11	1 275.40	6 111.68
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>	<b>1 616.73</b>		<b>613.48</b>				<b>2 230.21</b>
<b>4. Agriculture</b>	<b>0.00</b>	<b>32 231.32</b>	<b>54 261.50</b>				<b>86 492.82</b>
A. Enteric Fermentation		27 942.27					27 942.27
B. Manure Management		3 643.95	3 109.02				6 752.97
C. Rice Cultivation		162.69					162.69
D. Agricultural Soils <sup>(2)</sup>		482.41	51 152.48				51 634.89
E. Prescribed Burning of Savannas		0.00	0.00				0.00
F. Field Burning of Agricultural Residues		0.00	0.00				0.00
G. Other		0.00	0.00				0.00
<b>5. Land-Use Change and Forestry<sup>(1)</sup></b>	<b>-68 995.00</b>	<b>2 116.77</b>	<b>5 576.86</b>				<b>-61 301.37</b>
<b>6. Waste</b>	<b>2 286.80</b>	<b>17 448.39</b>	<b>1 067.11</b>				<b>20 802.30</b>
A. Solid Waste Disposal on Land	0.00	16 440.05					16 440.05
B. Wastewater Handling		281.52	664.92				946.44
C. Waste Incineration	2 286.80	367.58	402.19				3 056.57
D. Other	0.00	359.25	0.00				359.25
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
							0.00
<b>Memo Items:</b>							
<b>International Bunkers</b>	<b>23 063.75</b>	<b>0.00</b>	<b>93.09</b>				<b>23 156.84</b>
Aviation	13 752.92	0.00	0.00				13 752.92
Marine	9 310.83	0.00	93.09				9 403.92
<b>Multilateral Operations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>				<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>36 991.58</b>						<b>36 991.58</b>

<sup>(1)</sup> For CO<sub>2</sub> emissions from Land-Use Change and Forestry the net emissions are to be reported. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	Net CO <sub>2</sub> emissions / removals	CH <sub>4</sub>	N <sub>2</sub> O	Total emissions
	CO <sub>2</sub> equivalent (Gg )					
<b>Land-Use Change and Forestry</b>						
A. Changes in Forest and Other Woody Biomass Stocks	70 066.00	-154 927.00	-84 861.00			-84 861.00
B. Forest and Grassland Conversion	12 540.00		12 540.00	235.91	23.87	12 799.78
C. Abandonment of Managed Lands	0.00	-48.00	-48.00			-48.00
D. CO <sub>2</sub> Emissions and Removals from Soil	8 589.00	-5 215.00	3 374.00			3 374.00
E. Other	0.00	0.00	0.00	1 880.85	5 552.99	7 433.84
Total CO <sub>2</sub> Equivalent Emissions from Land-Use Change and Forestry	91 195.00	-160 190.00	-68 995.00	2 116.77	5 576.86	-61 301.37

Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(a)</sup>	544 515.20
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(a)</sup>	483 213.83

<sup>(a)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

**SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED**  
(Sheet 1 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>	
	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>
<b>1. Energy</b>												
A. Fuel Combustion	C	CS	C	CS	C	CS						
1. Energy Industries	C	CS	C	CS	C	CS						
2. Manufacturing Industries and Construction	C	CS	C	CS	C	CS						
3. Transport	C /CS	C /M /CS	C /CS	C /M /CS	C /CS	C /M /CS						
4. Other Sectors	C	CS	C	CS	C	CS						
5. Other	C	CS	C	CS	C	CS						
B. Fugitive Emissions from Fuels	C	CS	C	CS	C	CS						
1. Solid Fuels	C	CS	C	CS	C	CS						
2. Oil and Natural Gas	C	CS	C	CS	C	CS						
<b>2. Industrial Processes</b>												
A. Mineral Products	C	CS	C	CS	C	CS						
B. Chemical Industry	C	CS	C	CS	C	CS/ PS						
C. Metal Production	C	CS	C	CS	C	CS						
D. Other Production	C	CS										
E. Production of Halocarbons and SF <sub>6</sub>							CS	CS	CS	CS		
F. Consumption of Halocarbons and SF <sub>6</sub>							CS/ T2	CS	CS/ T2	CS	CS/ T2	CS
G. Other												

<sup>(1)</sup> Use the following notation keys to specify the method applied: D (IPCC default), RA (Reference Approach), T1 (IPCC Tier 1), T1a, T1b, T1c (IPCC Tier 1a, Tier 1b and Tier 1c, respectively), T2 (IPCC Tier 2), T3 (IPCC Tier 3), C (CORINAIR), CS (Country Specific), M (Model). If using more than one method, enumerate the relevant methods. Explanations of any modifications to the default IPCC methods, as well as information on the proper use of methods per source category where more than one method is indicated, and explanations on the country specific methods, should be provided in the documentation box of the relevant Sectoral background data table.

<sup>(2)</sup> Use the following notation keys to specify the emission factor used: D (IPCC default), C (CORINAIR), CS (Country Specific), PS (Plant Specific), M (Model). Where a mix of emission factors has been used, use different notations in one and the same cells with further explanation in the documentation box of the relevant Sectoral background data table.

**SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED**  
(Sheet 2 of 2)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>	
	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>
<b>3. Solvent and Other Product Use</b>	C	CS										
<b>4. Agriculture</b>												
A. Enteric Fermentation			C	CS								
B. Manure Management			CS/ T2	CS	T2	T2						
C. Rice Cultivation			C	CS								
D. Agricultural Soils			CS/ T2	CS	T2	T2						
E. Prescribed Burning of Savannas												
F. Field Burning of Agricultural Residues												
G. Other												
<b>5. Land-Use Change and Forestry</b>												
A. Changes in Forest and Other Woody Biomass Stocks	CS	CS										
B. Forest and Grassland Conversion	CS	CS	CS	CS	CS	CS						
C. Abandonment of Managed Lands	CS	CS										
D. CO <sub>2</sub> Emissions and Removals from Soil	CS	CS										
E. Other												
<b>6. Waste</b>												
A. Solid Waste Disposal on Land			CS/ T2	CS/ T2								
B. Wastewater Handling			C	CS	C	CS						
C. Waste Incineration	C	CS/ PS	C	CS	C	CS						
D. Other												
<b>7. Other (please specify)</b>												

**TABLE 7 OVERVIEW TABLE<sup>(1)</sup> FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 1 of 3)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>Total National Emissions and Removals</b>	ALL	H	ALL	M	ALL	L	ALL	M	ALL	M	ALL	M	ALL	M	ALL	M	ALL	M	ALL	H
<b>1 Energy</b>		H		M		L								M		M		M		H
A. Fuel Combustion Activities																				
Reference Approach	ALL	H																		
Sectoral Approach	ALL	H	ALL	L	ALL	L							ALL	M	ALL	M	ALL	M	ALL	H
1. Energy Industries	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
2. Manufacturing Industries and Construction	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
3. Transport	ALL	H	ALL	L	ALL	L							ALL	M	ALL	M	ALL	M	ALL	H
4. Other Sectors	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
5. Other	NO		NO		NO								NO		NO		NO		NO	
B. Fugitive Emissions from Fuels																				
1. Solid Fuels	IE	H	ALL	M	NO															
2. Oil and Natural Gas	ALL	H	ALL	M	ALL	L							ALL	L	ALL	L	ALL	M	ALL	H
<b>2 Industrial Processes</b>																				
A. Mineral Products	ALL	H	NO		NO								NO		NO		ALL	L	NE	L
B. Chemical Industry	ALL	H	ALL	M	ALL	M	NO		NO				ALL	M	NO		ALL	M	ALL	H
C. Metal Production	ALL	H	ALL	M	NO				ALL	H	ALL	L	ALL	L	ALL	M	ALL	L	ALL	M
D. Other Production	ALL	H											NO		NO		ALL	M	NO	
E. Production of Halocarbons and SF <sub>6</sub>							ALL	M	ALL	M	NO									

<sup>(1)</sup> This table is intended to be used by Parties to summarize their own assessment of completeness (e.g. partial, full estimate, not estimated) and quality (high, medium, low) of major source/sink inventory estimates. The latter could be understood as a quality assessment of the uncertainty of the estimates. This table might change once the IPCC completes its work on managing uncertainties of GHG inventories. The title of the table was kept for consistency with the current table in the IPCC Guidelines.

**Note:** To fill in the table use the notation key as given in the IPCC Guidelines (Volume 1. Reporting Instructions, Tables. 37).

**TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 2 of 3)

France  
1999  
Submittor

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>2 Industrial Processes (continued)</b>																				
F. Consumption of Halocarbons and SF <sub>6</sub>																				
Potential <sup>(2)</sup>							NO		NO		NO									
Actual <sup>(3)</sup>							ALL	M	ALL	M	ALL	M								
G. Other	NO		NO		NO		NO		NO		NO		NO		NO		NO		NO	
<b>3 Solvent and Other Product Use</b>	ALL	H			ALL	L														
<b>4 Agriculture</b>													NO		NO		NO		NO	
A. Enteric Fermentation			ALL	M																
B. Manure Management			ALL	M													NO			
C. Rice Cultivation			ALL	L													NO			
D. Agricultural Soils	NO		ALL	L	ALL	L											NO			
E. Prescribed Burning of Savannas			NO		NO								NO		NO		NO		NO	
F. Field Burning of Agricultural Residues			NO		NO								NO		NO		NO		NO	
G. Other			NO		NO								NO		NO		NO		NO	
<b>5 Land-Use Change and Forestry</b>																				
A. Changes in Forest and Other Woody Biomass Stocks	ALL	L																		
B. Forest and Grassland Conversion	ALL	L	ALL	L	ALL	L							ALL	L	ALL	L	NO			

<sup>(2)</sup> Potential emissions based on Tier 1 approach of the IPCC Guidelines.

<sup>(3)</sup> Actual emissions based on Tier 2 approach of the IPCC Guidelines.



**TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 3 of 3)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>5 Land-Use Change and Forestry (continued)</b>																				
C. Abandonment of Managed Lands	ALL	L																		
D. CO <sub>2</sub> Emissions and Removals from Soil	ALL	L																		
E. Other	NO		ALL	L	ALL	L							NO		NO		ALL	L	NO	
<b>6 Waste</b>																				
A. Solid Waste Disposal on Land	ALL	M	ALL	L											NO		ALL	L		
B. Wastewater Handling			ALL	L	ALL	L							NO		NO		ALL	L		
C. Waste Incineration	ALL	M	ALL	L	ALL	L							ALL	L	ALL	L	ALL	L	ALL	L
D. Other	ALL	L	ALL	L	NO								NO		NO		NO		NO	
<b>7 Other (please specify)</b>	NO		NO		NO		NO		NO		NO		NO		NO		NO		NO	
<b>Memo Items:</b>																				
<b>International Bunkers</b>																				
Aviation	ALL	H	NO		ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
Marine	ALL	H	NO		ALL	L							ALL	M	ALL	L	ALL	L	ALL	M
<b>Multilateral Operations</b>																				
CO <sub>2</sub> Emissions from Biomass	ALL	M																		

**TABLE 8(a) RECALCULATION - RECALCULATED DATA**

Recalculated

year: 1998

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>		<b>343 077.21</b>	<b>342 660.12</b>	<b>-0.12</b>	<b>54 272.19</b>	<b>61 721.59</b>	<b>13.73</b>	<b>84 248.70</b>	<b>84 397.83</b>	<b>0.18</b>
<b>1. Energy</b>		<b>390 503.53</b>	<b>388 693.32</b>	<b>-0.46</b>	<b>8 332.38</b>	<b>8 138.85</b>	<b>-2.32</b>	<b>5 955.10</b>	<b>5 898.84</b>	<b>-0.94</b>
1.A.	Fuel Combustion Activities	386 358.57	384 548.79	-0.47	3 544.59	3 305.04	-6.76	5 930.30	5 898.53	-0.54
1.A.1.	Energy Industries	67 862.85	68 431.74	0.84	35.28	34.92	-1.03	737.80	744.90	0.96
1.A.2.	Manufacturing Industries and Construction	77 437.19	77 045.46	-0.51	91.56	89.13	-2.66	796.70	789.11	-0.95
1.A.3.	Transport	137 986.65	135 765.90	-1.61	358.89	319.04	-11.10	2 914.00	2 896.40	-0.60
1.A.4.	Other Sectors	103 071.89	103 305.69	0.23	3 059.07	2 861.97	-6.44	1 478.70	1 468.12	-0.72
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 144.96	4 144.53	-0.01	4 788.00	4 833.81	0.96	24.80	0.31	-98.75
1.B.1.	Solid fuel	0.00	0.00	0.00	2 795.10	2 795.08	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 144.96	4 144.53	-0.01	1 992.90	2 038.73	2.30	24.80	0.31	-98.75
<b>2. Industrial Processes</b>		<b>18 008.72</b>	<b>18 045.29</b>	<b>0.20</b>	<b>57.33</b>	<b>55.44</b>	<b>-3.30</b>	<b>16 092.10</b>	<b>16 602.66</b>	<b>3.17</b>
2.A.	Mineral Products	10 791.75	10 791.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	2 844.46	2 844.46	0.00	55.44	55.44	0.00	16 092.10	16 602.66	3.17
2.C.	Metal Production	3 796.21	3 832.90	0.97	1.89	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	576.30	576.18	-0.02						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1 962.08</b>	<b>1 647.42</b>	<b>-16.04</b>				<b>613.80</b>	<b>613.48</b>	<b>-0.05</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>32 232.90</b>	<b>32 245.38</b>	<b>0.04</b>	<b>54 928.90</b>	<b>54 642.38</b>	<b>-0.52</b>
4.A.	Enteric Fermentation				27 910.89	27 922.35	0.04			
4.B.	Manure Management				3 665.76	3 666.82	0.03	3 131.00	3 129.37	-0.05
4.C.	Rice Cultivation				173.67	173.65	-0.01	52.70		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	482.58	482.56	0.00	51 748.30	51 513.01	-0.45
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-69 783.00</b>	<b>-68 024.00</b>	<b>-2.52</b>	<b>2 116.80</b>	<b>2 116.77</b>	<b>0.00</b>	<b>5 573.80</b>	<b>5 576.86</b>	<b>0.05</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-85 539.00	-83 748.00	-2.09					0.00	
5.B.	Forest and Grassland Conversion	12 540.00	12 540.00	0.00	235.83	235.91	0.04	21.70	23.87	10.00
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 264.00	3 232.00	-0.98						
5.E.	Other	0.00	0.00	0.00	1 880.76	1 880.85	0.00	5 552.10	5 552.99	0.02

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated  
(Sheet 2 of 2)

year:

1998

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>6. Waste</b>		<b>2 385.88</b>	<b>2 298.09</b>	<b>-3.68</b>	<b>11 532.57</b>	<b>19 165.15</b>	<b>66.18</b>	<b>1 078.80</b>	<b>1 063.62</b>	<b>-1.41</b>
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	10 512.81	18 152.43	72.67			
6.B.	Wastewater Handling				281.19	278.91	-0.81	663.40	658.75	-0.70
6.C.	Waste Incineration	2 385.88	2 298.09	-3.68	379.05	374.57	-1.18	415.40	404.87	-2.54
6.D.	Other	0.00	0.00	0.00	359.31	359.25	-0.02	0.00	0.00	0.00
<b>7. Other (please specify)</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00		0.00	0.00		0.00
<b>Memo Items:</b>										
<b>International Bunkers</b>		<b>20 634.79</b>	<b>21 421.71</b>	<b>3.81</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>93.00</b>	<b>91.67</b>	<b>-1.43</b>
<b>Multilateral Operations</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>39 726.92</b>	<b>37 281.06</b>	<b>-6.16</b>						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total Actual Emissions</b>		<b>3 373.00</b>	<b>3 751.70</b>	<b>11.23</b>	<b>1 607.20</b>	<b>1 661.16</b>	<b>3.36</b>	<b>2 346.00</b>	<b>2 405.46</b>	<b>2.53</b>
2.C.3.	Aluminium Production				896.90	896.90	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	531.00	532.02	0.19	175.00	175.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	2 842.00	3 219.68	13.29	535.30	589.26	10.08	1 214.75	1 270.21	4.57
	Other		0.00	0.00		0.00	0.00	1 135.25	1 135.25	0.00
<b>Potential Emissions from Consumption of HFCs/PFCs and SF<sub>6</sub></b>										
					Previous submission		Latest submission	Difference <sup>(1)</sup>		
							CO <sub>2</sub> equivalent (Gg)	(%)		
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>					488 924.30		496 597.86	1.57		
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>					551 016.70		556 928.24	1.07		

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

**TABLE 8(a) RECALCULATION - RECALCULATED DATA**

Recalculated

year: 1997

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>		<b>323 023.28</b>	<b>321 489.30</b>	<b>-0.47</b>	<b>54 975.48</b>	<b>62 312.24</b>	<b>13.35</b>	<b>92 655.90</b>	<b>92 448.84</b>	<b>-0.22</b>
<b>1. Energy</b>		<b>369 236.16</b>	<b>368 100.05</b>	<b>-0.31</b>	<b>8 139.18</b>	<b>8 098.62</b>	<b>-0.50</b>	<b>5 480.80</b>	<b>5 459.40</b>	<b>-0.39</b>
1.A.	Fuel Combustion Activities	364 998.86	363 862.91	-0.31	3 296.37	3 255.78	-1.23	5 456.00	5 458.47	0.05
1.A.1.	Energy Industries	56 525.52	55 984.30	-0.96	35.91	35.89	-0.04	629.30	625.89	-0.54
1.A.2.	Manufacturing Industries and Construction	75 082.26	75 207.95	0.17	88.83	86.84	-2.24	765.70	766.61	0.12
1.A.3.	Transport	134 478.36	133 598.74	-0.65	369.18	335.88	-9.02	2 659.80	2 662.19	0.09
1.A.4.	Other Sectors	98 912.72	99 071.92	0.16	2 802.66	2 797.16	-0.20	1 404.30	1 403.78	-0.04
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 237.30	4 237.14	0.00	4 842.81	4 842.84	0.00	24.80	0.93	-96.25
1.B.1.	Solid fuel	0.00	0.00	0.00	2 886.45	2 886.51	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 237.30	4 237.14	0.00	1 956.36	1 956.33	0.00	24.80	0.93	-96.25
<b>2. Industrial Processes</b>		<b>17 549.57</b>	<b>17 610.35</b>	<b>0.35</b>	<b>54.81</b>	<b>52.92</b>	<b>-3.45</b>	<b>24 979.80</b>	<b>24 980.78</b>	<b>0.00</b>
2.A.	Mineral Products	10 186.47	10 186.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	2 888.79	2 888.79	0.00	52.92	52.92	0.00	24 979.80	24 980.78	0.00
2.C.	Metal Production	3 883.60	3 944.60	1.57	1.89	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	590.72	590.50	-0.04						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1 927.58</b>	<b>1 620.85</b>	<b>-15.91</b>				<b>613.80</b>	<b>613.48</b>	<b>-0.05</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>32 489.31</b>	<b>32 500.85</b>	<b>0.04</b>	<b>54 928.90</b>	<b>54 751.30</b>	<b>-0.32</b>
4.A.	Enteric Fermentation				28 154.70	28 165.54	0.04			
4.B.	Manure Management				3 661.35	3 662.28	0.03	3 140.30	3 140.31	0.00
4.C.	Rice Cultivation				190.68	190.54	-0.07	58.90		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	482.58	482.49	-0.02	51 732.80	51 611.00	-0.24
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-68 090.00</b>	<b>-68 090.00</b>	<b>0.00</b>	<b>2 116.80</b>	<b>2 116.77</b>	<b>0.00</b>	<b>5 573.80</b>	<b>5 576.86</b>	<b>0.05</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-83 880.00	-83 880.00	0.00						
5.B.	Forest and Grassland Conversion	12 540.00	12 540.00	0.00	235.83	235.91	0.04	21.70	23.87	10.00
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 298.00	3 298.00	0.00						
5.E.	Other	0.00	0.00	0.00	1 880.76	1 880.85	0.00	5 552.10	5 552.99	0.02

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1997

(Sheet 2 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>6. Waste</b>		<b>2 399.97</b>	<b>2 248.05</b>	<b>-6.33</b>	<b>12 175.38</b>	<b>19 543.08</b>	<b>60.51</b>	<b>1 075.70</b>	<b>1 067.02</b>	<b>-0.81</b>
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	11 186.91	18 556.61	65.88			
6.B.	Wastewater Handling				278.46	276.51	-0.70	657.20	653.10	-0.62
6.C.	Waste Incineration	2 399.97	2 248.05	-6.33	368.55	368.58	0.01	415.40	413.93	-0.35
6.D.	Other	0.00	0.00	0.00	341.46	341.37	-0.03	0.00	0.00	0.00
<b>7. Other (please specify)</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00		0.00	0.00		0.00
<b>Memo Items:</b>										
<b>International Bunkers</b>		<b>18 802.97</b>	<b>20 012.79</b>	<b>6.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>82.75</b>	<b>83.82</b>	<b>1.29</b>
<b>Multilateral Operations</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>36 806.82</b>	<b>36 404.96</b>	<b>-1.09</b>						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total Actual Emissions</b>		<b>3 037.85</b>	<b>3 094.93</b>	<b>1.88</b>	<b>1 432.00</b>	<b>1 471.26</b>	<b>2.74</b>	<b>2 407.00</b>	<b>2 443.86</b>	<b>1.53</b>
2.C.3.	Aluminium Production				687.30	687.30	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	438.85	438.85	0.00	175.00	175.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	2 599.00	2 656.08	2.20	569.70	608.96	6.89	1 271.75	1 308.61	2.90
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
<b>Potential Emissions from Consumption of HFCs/PFCs and SF<sub>6</sub></b>										

		Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>		477 531.51	483 260.43	1.20
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>		537 930.91	543 656.80	1.06

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year: 1996

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	(%)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	(%)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	(%)
<b>Total National Emissions and Removals</b>		<b>329 318.18</b>	<b>328 661.45</b>	<b>-0.20</b>	<b>57 059.10</b>	<b>67 611.28</b>	<b>18.49</b>	<b>91 614.30</b>	<b>91 392.05</b>	<b>-0.24</b>
<b>1. Energy</b>		<b>374 739.22</b>	<b>374 385.37</b>	<b>-0.09</b>	<b>9 166.92</b>	<b>9 188.74</b>	<b>0.24</b>	<b>5 344.40</b>	<b>5 305.08</b>	<b>-0.74</b>
1.A.	Fuel Combustion Activities	370 734.61	370 380.83	-0.10	3 640.14	3 661.92	0.60	5 322.70	5 304.77	-0.34
1.A.1.	Energy Industries	59 476.15	59 468.15	-0.01	42.84	42.86	0.05	651.00	654.58	0.55
1.A.2.	Manufacturing Industries and Construction	74 180.36	74 173.47	-0.01	93.66	90.19	-3.71	784.30	757.35	-3.44
1.A.3.	Transport	131 801.68	131 182.10	-0.47	384.30	354.44	-7.77	2 380.80	2 382.87	0.09
1.A.4.	Other Sectors	105 276.42	105 557.11	0.27	3 119.13	3 174.42	1.77	1 503.50	1 509.97	0.43
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 004.61	4 004.54	0.00	5 526.78	5 526.82	0.00	21.70	0.31	-98.57
1.B.1.	Solid fuel	0.00	0.00	0.00	3 377.01	3 376.95	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 004.61	4 004.54	0.00	2 149.98	2 149.87	-0.01	21.70	0.31	-98.57
<b>2. Industrial Processes</b>		<b>17 440.94</b>	<b>17 440.96</b>	<b>0.00</b>	<b>53.34</b>	<b>51.66</b>	<b>-3.15</b>	<b>24 769.00</b>	<b>24 768.52</b>	<b>0.00</b>
2.A.	Mineral Products	10 454.15	10 454.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	2 966.45	2 966.45	0.00	51.66	51.66	0.00	24 769.00	24 768.52	0.00
2.C.	Metal Production	3 391.08	3 391.09	0.00	1.68	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	629.26	629.27	0.00						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1 915.49</b>	<b>1 612.59</b>	<b>-15.81</b>				<b>613.80</b>	<b>613.48</b>	<b>-0.05</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>32 862.69</b>	<b>32 874.17</b>	<b>0.03</b>	<b>54 240.70</b>	<b>54 060.27</b>	<b>-0.33</b>
4.A.	Enteric Fermentation				28 513.80	28 524.54	0.04			
4.B.	Manure Management				3 665.76	3 666.42	0.02	3 155.80	3 157.04	0.04
4.C.	Rice Cultivation				199.92	199.88	-0.02	58.90		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	483.42	483.33	-0.02	51 022.90	50 903.23	-0.23
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-67 197.00</b>	<b>-67 197.00</b>	<b>0.00</b>	<b>2 113.23</b>	<b>2 113.15</b>	<b>0.00</b>	<b>5 573.80</b>	<b>5 576.24</b>	<b>0.04</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-82 995.00	-82 995.00	0.00		0.00				
5.B.	Forest and Grassland Conversion	12 343.00	12 343.00	0.00	232.26	232.30	0.02	21.70	23.25	7.14
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 503.00	3 503.00	0.00						
5.E.	Other	0.00	0.00	0.00	1 880.76	1 880.85	0.00	5 552.10	5 552.99	0.02

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1996

(Sheet 2 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
6. Waste		2 419.53	2 419.53	0.00	12 862.92	23 383.57	81.79	1 072.60	1 068.46	-0.39
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	11 902.59	22 424.85	88.40			
6.B.	Wastewater Handling				275.73	274.13	-0.58	651.00	647.47	-0.54
6.C.	Waste Incineration	2 419.53	2 419.53	0.00	360.15	360.18	0.01	421.60	420.99	-0.14
6.D.	Other	0.00	0.00	0.00	324.45	324.41	-0.01	0.00	0.00	0.00
7. Other (please specify)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				0.00	0.00		0.00	0.00		0.00
Memo Items:										
International Bunkers		17 832.73	18 808.36	5.47	0.00	0.00	0.00	75.77	75.72	-0.07
Multilateral Operations			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO <sub>2</sub> Emissions from Biomass		39 882.80	39 933.01	0.13						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
Total Actual Emissions		2 437.85	2 186.27	-10.32	1 391.50	1 410.03	1.33	2 371.00	2 387.49	0.70
2.C.3.	Aluminium Production				648.30	648.30	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	438.85	438.85	0.00	175.00	175.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	1 999.00	1 747.42	-12.59	568.20	586.73	3.26	1 235.75	1 252.24	1.33
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
Potential Emissions from Consumption of HFCs/PFCs and SF <sub>6</sub>										
					Previous submission		Latest submission	Difference <sup>(1)</sup>		
							CO <sub>2</sub> equivalent (Gg)	(%)		
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>					484 191.93		493 648.57	1.95		
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>					543 701.90		553 156.18	1.74		

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1995

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>		<b>318 201.40</b>	<b>316 844.92</b>	<b>-0.43</b>	<b>59 735.97</b>	<b>68 573.73</b>	<b>14.79</b>	<b>90 870.30</b>	<b>90 598.25</b>	<b>-0.30</b>
<b>1. Energy</b>		<b>360 755.42</b>	<b>359 235.41</b>	<b>-0.42</b>	<b>9 885.33</b>	<b>9 965.46</b>	<b>0.81</b>	<b>4 888.70</b>	<b>4 804.24</b>	<b>-1.73</b>
1.A.	Fuel Combustion Activities	356 884.59	355 364.76	-0.43	3 383.73	3 463.75	2.36	4 867.00	4 804.24	-1.29
1.A.1.	Energy Industries	55 168.72	55 168.59	0.00	45.99	45.89	-0.21	592.10	592.27	0.03
1.A.2.	Manufacturing Industries and Construction	73 519.32	73 392.83	-0.17	88.20	83.98	-4.79	787.40	742.75	-5.67
1.A.3.	Transport	131 313.90	129 656.94	-1.26	418.53	387.71	-7.36	2 117.30	2 086.19	-1.47
1.A.4.	Other Sectors	96 882.64	97 146.40	0.27	2 831.22	2 946.17	4.06	1 370.20	1 383.03	0.94
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	3 870.83	3 870.65	0.00	6 501.60	6 501.70	0.00	21.70	0.00	-100.00
1.B.1.	Solid fuel	0.00	0.00	0.00	4 431.63	4 431.60	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	3 870.83	3 870.65	0.00	2 070.18	2 070.11	0.00	21.70	0.00	-100.00
<b>2. Industrial Processes</b>		<b>18 703.13</b>	<b>18 703.14</b>	<b>0.00</b>	<b>56.07</b>	<b>54.39</b>	<b>-3.00</b>	<b>25 292.90</b>	<b>25 292.28</b>	<b>0.00</b>
2.A.	Mineral Products	10 686.20	10 686.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	2 826.27	2 826.27	0.00	54.39	54.39	0.00	25 292.90	25 292.28	0.00
2.C.	Metal Production	4 597.31	4 597.30	0.00	1.68	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	593.35	593.36	0.00						
2.G.	Other	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1 933.13</b>	<b>1 632.65</b>	<b>-15.54</b>				<b>610.70</b>	<b>610.99</b>	<b>0.05</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>32 834.97</b>	<b>32 846.42</b>	<b>0.03</b>	<b>53 459.50</b>	<b>53 271.41</b>	<b>-0.35</b>
4.A.	Enteric Fermentation				28 522.41	28 533.27	0.04			
4.B.	Manure Management				3 606.75	3 607.47	0.02	3 134.10	3 134.68	0.02
4.C.	Rice Cultivation				221.34	221.36	0.01	68.20		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	484.47	484.33	-0.03	50 254.10	50 136.73	-0.23
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-65 615.00</b>	<b>-65 151.00</b>	<b>-0.71</b>	<b>2 106.51</b>	<b>2 106.51</b>	<b>0.00</b>	<b>5 555.20</b>	<b>5 556.75</b>	<b>0.03</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-81 249.00	-81 249.00	0.00						
5.B.	Forest and Grassland Conversion	12 343.00	12 343.00	0.00	232.26	232.30	0.02	21.70	23.25	7.14
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 339.00	3 803.00	13.90						
5.E.	Other	0.00	0.00	0.00	1 874.25	1 874.21	0.00	5 533.50	5 533.50	0.00

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.



TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated  
(Sheet 2 of 2)

year:

1995

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
6. Waste		2 424.72	2 424.72	0.00	14 853.30	23 600.95	58.89	1 063.30	1 062.58	-0.07
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	13 929.72	22 678.11	62.80			
6.B.	Wastewater Handling				273.21	272.33	-0.32	644.80	643.22	-0.25
6.C.	Waste Incineration	2 424.72	2 424.72	0.00	342.09	342.21	0.03	418.50	419.36	0.21
6.D.	Other	0.00	0.00	0.00	308.28	308.30	0.01	0.00	0.00	0.00
7. Other (please specify)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				0.00	0.00		0.00	0.00		0.00
Memo Items:										
International Bunkers		16 896.45	17 729.67	4.93	0.00	0.00	0.00	72.81	72.16	-0.89
Multilateral Operations			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO <sub>2</sub> Emissions from Biomass		37 283.58	37 894.09	1.64						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
Total Actual Emissions		1 394.20	1 301.88	-6.62	1 350.50	1 350.42	-0.01	2 320.00	2 314.04	-0.26
2.C.3.	Aluminium Production				661.30	661.30	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	532.20	533.20	0.19	175.00	175.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	862.00	768.68	-10.83	514.20	514.12	-0.02	1 184.75	1 178.79	-0.50
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
Potential Emissions from Consumption of HFCs/PFCs and SF <sub>6</sub>										

		Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>		473 872.37	480 983.24	1.50
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>		531 825.66	538 470.98	1.25

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1994

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>		<b>310 357.78</b>	<b>308 214.92</b>	<b>-0.69</b>	<b>60 972.45</b>	<b>67 461.32</b>	<b>10.64</b>	<b>89 180.80</b>	<b>88 877.52</b>	<b>-0.34</b>
<b>1. Energy</b>		<b>355 270.14</b>	<b>353 431.60</b>	<b>-0.52</b>	<b>9 811.83</b>	<b>9 942.31</b>	<b>1.33</b>	<b>4 609.70</b>	<b>4 497.19</b>	<b>-2.44</b>
1.A.	Fuel Combustion Activities	350 813.80	348 975.73	-0.52	3 303.93	3 434.33	3.95	4 569.40	4 497.19	-1.58
1.A.1.	Energy Industries	52 438.57	52 438.72	0.00	48.30	48.41	0.23	582.80	582.99	0.03
1.A.2.	Manufacturing Industries and Construction	74 163.44	74 188.03	0.03	98.70	94.19	-4.57	806.00	743.14	-7.80
1.A.3.	Transport	129 435.69	127 572.38	-1.44	447.30	418.38	-6.47	1 841.40	1 813.64	-1.51
1.A.4.	Other Sectors	94 776.11	94 776.60	0.00	2 709.21	2 873.35	6.06	1 342.30	1 357.42	1.13
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 456.34	4 455.87	-0.01	6 507.90	6 507.98	0.00	37.20	0.00	-100.00
1.B.1.	Solid fuel	0.00	0.00	0.00	4 471.53	4 471.57	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 456.34	4 455.87	-0.01	2 036.37	2 036.41	0.00	37.20	0.00	-100.00
<b>2. Industrial Processes</b>		<b>18 228.26</b>	<b>18 228.26</b>	<b>0.00</b>	<b>50.82</b>	<b>49.35</b>	<b>-2.89</b>	<b>24 356.70</b>	<b>24 358.25</b>	<b>0.01</b>
2.A.	Mineral Products	10 938.08	10 938.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	2 821.54	2 821.54	0.00	49.35	49.35	0.00	24 356.70	24 358.25	0.01
2.C.	Metal Production	3 889.89	3 889.89	0.00	1.47	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	578.75	578.75	0.00						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1 921.61</b>	<b>1 617.28</b>	<b>-15.84</b>				<b>607.60</b>	<b>608.46</b>	<b>0.14</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>32 660.46</b>	<b>32 671.93</b>	<b>0.04</b>	<b>52 997.60</b>	<b>52 804.20</b>	<b>-0.36</b>
4.A.	Enteric Fermentation				28 375.83	28 386.64	0.04			
4.B.	Manure Management				3 563.70	3 564.58	0.02	3 115.50	3 114.46	-0.03
4.C.	Rice Cultivation				236.67	236.55	-0.05	71.30		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	484.26	484.16	-0.02	49 810.80	49 689.74	-0.24
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-67 495.00</b>	<b>-67 495.00</b>	<b>0.00</b>	<b>2 100.84</b>	<b>2 100.86</b>	<b>0.00</b>	<b>5 549.00</b>	<b>5 549.31</b>	<b>0.01</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-82 824.00	-82 824.00	0.00						
5.B.	Forest and Grassland Conversion	12 165.00	12 165.00	0.00	229.11	229.03	-0.04	21.70	22.94	5.71
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 212.00	3 212.00	0.00						
5.E.	Other	0.00	0.00	0.00	1 871.73	1 871.84	0.01	5 527.30	5 526.37	-0.02

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1994

(Sheet 2 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>6. Waste</b>		2 432.77	2 432.77	0.00	16 348.50	22 696.86	38.83	1 060.20	1 060.11	-0.01
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	15 443.61	21 792.15	41.11			
6.B.	Wastewater Handling				270.48	270.54	0.02	638.60	638.98	0.06
6.C.	Waste Incineration	2 432.77	2 432.77	0.00	341.04	341.16	0.03	421.60	421.13	-0.11
6.D.	Other	0.00	0.00	0.00	292.95	293.02	0.02	0.00	0.00	0.00
<b>7. Other (please specify)</b>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				0.00	0.00		0.00	0.00		0.00
<b>Memo Items:</b>										
<b>International Bunkers</b>		16 785.82	17 606.81	4.89	0.00	0.00	0.00	69.58	70.00	0.61
<b>Multilateral Operations</b>			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CO<sub>2</sub> Emissions from Biomass</b>		35 906.46	37 077.28	3.26						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
Total Actual Emissions		855.00	817.88	-4.34	1 389.00	1 390.48	0.11	2 293.00	2 287.60	-0.24
2.C.3.	Aluminium Production				761.50	761.50	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	611.00	607.57	-0.56	228.00	228.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	244.00	210.31	-13.81	399.50	400.98	0.37	1 157.75	1 152.35	-0.47
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
Potential Emissions from Consumption of HFCs/PFCs and SF <sub>6</sub>										
					Previous submission		Latest submission		Difference <sup>(1)</sup>	
					CO <sub>2</sub> equivalent (Gg)				(%)	
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>					465 048.03		469 049.71		0.86	
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>					524 893.19		528 894.54		0.76	

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year: 1993

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>		<b>315 199.86</b>	<b>313 795.05</b>	<b>-0.45</b>	<b>62 372.10</b>	<b>67 399.37</b>	<b>8.06</b>	<b>87 395.20</b>	<b>87 112.46</b>	<b>-0.32</b>
<b>1. Energy</b>		<b>359 712.86</b>	<b>358 601.42</b>	<b>-0.31</b>	<b>10 283.28</b>	<b>10 592.46</b>	<b>3.01</b>	<b>4 423.70</b>	<b>4 328.40</b>	<b>-2.15</b>
1.A.	Fuel Combustion Activities	355 118.02	354 006.58	-0.31	3 688.86	3 997.94	8.38	4 383.40	4 328.40	-1.25
1.A.1.	Energy Industries	56 160.69	56 160.68	0.00	49.77	49.90	0.27	632.40	629.95	-0.39
1.A.2.	Manufacturing Industries and Construction	70 782.33	70 782.17	0.00	81.27	83.63	2.90	768.80	710.48	-7.59
1.A.3.	Transport	127 671.97	126 280.02	-1.09	469.35	449.94	-4.13	1 553.10	1 521.39	-2.04
1.A.4.	Other Sectors	100 503.03	100 783.71	0.28	3 088.26	3 414.46	10.56	1 435.30	1 466.59	2.18
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 594.85	4 594.84	0.00	6 594.42	6 594.52	0.00	40.30	0.00	-100.00
1.B.1.	Solid fuel	0.00	0.00	0.00	4 378.50	4 378.53	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 594.85	4 594.84	0.00	2 215.92	2 215.98	0.00	40.30	0.00	-100.00
<b>2. Industrial Processes</b>		<b>17 179.62</b>	<b>17 179.63</b>	<b>0.00</b>	<b>44.52</b>	<b>43.09</b>	<b>-3.21</b>	<b>23 228.30</b>	<b>23 228.30</b>	<b>0.00</b>
2.A.	Mineral Products	10 631.71	10 631.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	2 809.98	2 809.98	0.00	43.05	43.09	0.10	23 228.30	23 228.30	0.00
2.C.	Metal Production	3 171.56	3 171.57	0.00	1.26	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	566.36	566.37	0.00						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1 908.48</b>	<b>1 615.11</b>	<b>-15.37</b>				<b>604.50</b>	<b>605.89</b>	<b>0.23</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>32 700.99</b>	<b>32 712.64</b>	<b>0.04</b>	<b>52 501.60</b>	<b>52 311.71</b>	<b>-0.36</b>
4.A.	Enteric Fermentation				28 435.47	28 446.14	0.04			
4.B.	Manure Management				3 557.61	3 558.33	0.02	3 118.60	3 117.07	-0.05
4.C.	Rice Cultivation				224.28	224.27	-0.01	68.20		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	483.84	483.90	0.01	49 314.80	49 194.64	-0.24
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-65 865.00</b>	<b>-65 865.00</b>	<b>0.00</b>	<b>2 110.50</b>	<b>2 110.50</b>	<b>0.00</b>	<b>5 583.10</b>	<b>5 583.10</b>	<b>0.00</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-81 506.00	-81 506.00	0.00						
5.B.	Forest and Grassland Conversion	12 066.00	12 066.00	0.00	227.22	227.22	0.00	21.70	22.94	5.71
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 623.00	3 623.00	0.00						
5.E.	Other	0.00	0.00	0.00	1 883.28	1 883.28	0.00	5 561.40	5 560.16	-0.02

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1993

(Sheet 2 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>6. Waste</b>		<b>2 263.90</b>	<b>2 263.89</b>	<b>0.00</b>	<b>17 233.02</b>	<b>21 940.68</b>	<b>27.32</b>	<b>1 054.00</b>	<b>1 055.05</b>	<b>0.10</b>
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	16 324.77	21 032.54	28.84			
6.B.	Wastewater Handling				268.80	268.79	-0.01	635.50	634.84	-0.10
6.C.	Waste Incineration	2 263.90	2 263.89	0.00	342.93	342.86	-0.02	418.50	420.21	0.41
6.D.	Other	0.00	0.00	0.00	296.52	296.50	-0.01	0.00	0.00	0.00
<b>7. Other (please specify)</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00		0.00	0.00		0.00
<b>Memo Items:</b>										
<b>International Bunkers</b>		<b>17 210.19</b>	<b>18 103.38</b>	<b>5.19</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>78.92</b>	<b>78.56</b>	<b>-0.46</b>
<b>Multilateral Operations</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>38 426.13</b>	<b>42 250.76</b>	<b>9.95</b>						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
Total Actual Emissions		804.48	804.01	-0.06	1 649.20	1 650.08	0.05	2 268.00	2 261.91	-0.27
2.C.3.	Aluminium Production				951.60	951.60	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	767.48	767.48	0.00	281.00	281.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	37.00	36.53	-1.27	416.60	417.48	0.21	1 132.75	1 126.66	-0.54
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
Potential Emissions from Consumption of HFCs/PFCs and SF <sub>6</sub>										
					Previous submission		Latest submission		Difference <sup>(1)</sup>	
					CO <sub>2</sub> equivalent (Gg)				(%)	
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>					469 688.84		473 022.88		0.71	
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>					527 860.24		531 194.28		0.63	

**TABLE 8(a) RECALCULATION - RECALCULATED DATA**

Recalculated

year: 1992

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>		<b>340 386.17</b>	<b>339 764.17</b>	<b>-0.18</b>	<b>62 690.46</b>	<b>66 752.39</b>	<b>6.48</b>	<b>91 512.00</b>	<b>91 277.21</b>	<b>-0.26</b>
<b>1. Energy</b>		<b>379 390.53</b>	<b>379 082.63</b>	<b>-0.08</b>	<b>10 161.06</b>	<b>10 513.01</b>	<b>3.46</b>	<b>4 445.40</b>	<b>4 395.52</b>	<b>-1.12</b>
1.A.	Fuel Combustion Activities	375 004.18	374 696.30	-0.08	3 714.90	4 066.87	9.47	4 408.20	4 395.52	-0.29
1.A.1.	Energy Industries	69 529.77	69 529.76	0.00	48.72	48.63	-0.17	799.80	798.66	-0.14
1.A.2.	Manufacturing Industries and Construction	75 551.64	75 551.51	0.00	82.11	86.79	5.70	768.80	736.16	-4.25
1.A.3.	Transport	126 846.41	126 257.94	-0.46	485.52	468.14	-3.58	1 382.60	1 367.65	-1.08
1.A.4.	Other Sectors	103 076.37	103 357.09	0.27	3 098.76	3 463.31	11.76	1 457.00	1 493.06	2.47
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 386.34	4 386.33	0.00	6 446.16	6 446.14	0.00	37.20	0.00	-100.00
1.B.1.	Solid fuel	0.00	0.00	0.00	4 197.48	4 197.42	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 386.34	4 386.33	0.00	2 248.68	2 248.72	0.00	37.20	0.00	-100.00
<b>2. Industrial Processes</b>		<b>17 940.02</b>	<b>17 940.03</b>	<b>0.00</b>	<b>49.98</b>	<b>48.64</b>	<b>-2.69</b>	<b>25 987.30</b>	<b>25 985.87</b>	<b>-0.01</b>
2.A.	Mineral Products	11 348.42	11 348.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	2 666.40	2 666.40	0.00	48.72	48.64	-0.17	25 987.30	25 985.87	-0.01
2.C.	Metal Production	3 248.87	3 248.88	0.00	1.47	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	676.32	676.33	0.00						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>2 047.61</b>	<b>1 733.49</b>	<b>-15.34</b>				<b>601.40</b>	<b>602.94</b>	<b>0.26</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>32 966.01</b>	<b>32 977.56</b>	<b>0.04</b>	<b>53 865.60</b>	<b>53 681.70</b>	<b>-0.34</b>
4.A.	Enteric Fermentation				28 752.57	28 763.18	0.04			
4.B.	Manure Management				3 524.43	3 525.24	0.02	3 131.00	3 132.84	0.06
4.C.	Rice Cultivation				208.53	208.47	-0.03	62.00		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	480.69	480.68	0.00	50 672.60	50 548.87	-0.24
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-61 246.00</b>	<b>-61 246.00</b>	<b>0.00</b>	<b>2 110.08</b>	<b>2 110.16</b>	<b>0.00</b>	<b>5 583.10</b>	<b>5 585.89</b>	<b>0.05</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-76 878.00	-76 878.00	0.00						
5.B.	Forest and Grassland Conversion	11 987.00	11 987.00	0.00	225.75	225.77	0.01	21.70	22.63	4.29
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 693.00	3 693.00	0.00						
5.E.	Other	0.00	0.00	0.00	1 884.33	1 884.39	0.00	5 564.50	5 563.26	-0.02

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1992

(Sheet 2 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>6. Waste</b>		<b>2 254.01</b>	<b>2 254.01</b>	<b>0.00</b>	<b>17 403.12</b>	<b>21 103.02</b>	<b>21.26</b>	<b>1 023.00</b>	<b>1 025.28</b>	<b>0.22</b>
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	16 516.50	20 216.53	22.40			
6.B.	Wastewater Handling				265.02	265.07	0.02	626.20	626.06	-0.02
6.C.	Waste Incineration	2 254.01	2 254.01	0.00	344.19	344.09	-0.03	399.90	399.21	-0.17
6.D.	Other	0.00	0.00	0.00	277.41	277.33	-0.03	0.00	0.00	0.00
<b>7. Other (please specify)</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00		0.00	0.00		0.00
<b>Memo Items:</b>										
<b>International Bunkers</b>		<b>17 287.20</b>	<b>17 988.16</b>	<b>4.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>82.69</b>	<b>81.56</b>	<b>-1.37</b>
<b>Multilateral Operations</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>38 304.87</b>	<b>42 904.59</b>	<b>12.01</b>						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total Actual Emissions</b>		<b>1 066.00</b>	<b>1 061.34</b>	<b>-0.44</b>	<b>2 149.10</b>	<b>2 146.71</b>	<b>-0.11</b>	<b>2 244.00</b>	<b>2 238.15</b>	<b>-0.26</b>
2.C.3.	Aluminium Production				1 390.30	1 390.30	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	1 039.00	1 034.04	-0.48	380.00	380.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	27.00	27.30	1.12	378.80	376.41	-0.63	1 108.75	1 102.90	-0.53
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
<b>Potential Emissions from Consumption of HFCs/PFCs and SF<sub>6</sub></b>										

		Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>		500 047.73	503 239.97	0.64
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>		553 600.55	556 789.92	0.58

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1991

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	(%)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	(%)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	(%)
<b>Total National Emissions and Removals</b>		<b>354 837.52</b>	<b>352 611.30</b>	<b>-0.63</b>	<b>63 512.82</b>	<b>66 465.66</b>	<b>4.65</b>	<b>94 931.30</b>	<b>94 682.75</b>	<b>-0.26</b>
<b>1. Energy</b>		<b>387 658.57</b>	<b>385 750.87</b>	<b>-0.49</b>	<b>10 340.61</b>	<b>10 685.96</b>	<b>3.34</b>	<b>4 392.70</b>	<b>4 325.10</b>	<b>-1.54</b>
1.A.	Fuel Combustion Activities	383 061.82	381 154.14	-0.50	3 966.06	4 311.23	8.70	4 355.50	4 325.10	-0.70
1.A.1.	Energy Industries	77 231.59	77 231.60	0.00	52.29	52.38	0.16	768.80	769.68	0.11
1.A.2.	Manufacturing Industries and Construction	77 956.09	77 955.92	0.00	77.70	80.01	2.97	793.60	755.92	-4.75
1.A.3.	Transport	123 991.37	121 771.21	-1.79	477.33	451.23	-5.47	1 308.20	1 278.27	-2.29
1.A.4.	Other Sectors	103 882.76	104 195.41	0.30	3 358.53	3 727.61	10.99	1 484.90	1 521.23	2.45
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 596.75	4 596.73	0.00	6 374.76	6 374.73	0.00	37.20	0.00	-100.00
1.B.1.	Solid fuel	0.00	0.00	0.00	4 021.92	4 022.01	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 596.75	4 596.73	0.00	2 352.63	2 352.72	0.00	37.20	0.00	-100.00
<b>2. Industrial Processes</b>		<b>19 421.05</b>	<b>19 421.05</b>	<b>0.00</b>	<b>48.51</b>	<b>47.12</b>	<b>-2.86</b>	<b>27 869.00</b>	<b>27 867.95</b>	<b>0.00</b>
2.A.	Mineral Products	12 443.08	12 443.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	3 035.78	3 035.78	0.00	47.04	47.12	0.18	27 869.00	27 867.95	0.00
2.C.	Metal Production	3 477.95	3 477.95	0.00	1.47	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	464.24	464.25	0.00						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>2 088.41</b>	<b>1 769.90</b>	<b>-15.25</b>				<b>598.30</b>	<b>599.60</b>	<b>0.22</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>33 678.12</b>	<b>33 689.80</b>	<b>0.03</b>	<b>55 530.30</b>	<b>55 346.92</b>	<b>-0.33</b>
4.A.	Enteric Fermentation				29 486.94	29 497.81	0.04			
4.B.	Manure Management				3 523.17	3 523.79	0.02	3 196.10	3 197.30	0.04
4.C.	Rice Cultivation				187.53	187.60	0.04	58.90		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	480.48	480.60	0.03	52 275.30	52 149.62	-0.24
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-56 488.00</b>	<b>-56 488.00</b>	<b>0.00</b>	<b>2 091.81</b>	<b>2 091.81</b>	<b>0.00</b>	<b>5 545.90</b>	<b>5 546.83</b>	<b>0.02</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-72 020.00	-72 020.00	0.00						
5.B.	Forest and Grassland Conversion	11 710.00	11 710.00	0.00	220.71	220.69	-0.01	21.70	22.32	2.86
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	3 870.00	3 870.00	0.00						
5.E.	Other	0.00	0.00	0.00	1 871.10	1 871.12	0.00	5 524.20	5 524.51	0.01

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.



TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1991

(Sheet 2 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>6. Waste</b>		<b>2 157.49</b>	<b>2 157.48</b>	<b>0.00</b>	<b>17 353.56</b>	<b>19 950.96</b>	<b>14.97</b>	<b>995.10</b>	<b>996.36</b>	<b>0.13</b>
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	16 490.46	19 087.66	15.75			
6.B.	Wastewater Handling				262.08	262.10	0.01	620.00	619.05	-0.15
6.C.	Waste Incineration	2 157.49	2 157.48	0.00	340.41	340.33	-0.02	378.20	377.31	-0.23
6.D.	Other	0.00	0.00	0.00	260.82	260.88	0.02	0.00	0.00	0.00
<b>7. Other (please specify)</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00		0.00	0.00		0.00
<b>Memo Items:</b>										
<b>International Bunkers</b>		<b>16 230.07</b>	<b>16 777.33</b>	<b>3.37</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>82.87</b>	<b>84.36</b>	<b>1.80</b>
<b>Multilateral Operations</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>40 978.45</b>	<b>45 267.48</b>	<b>10.47</b>						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total Actual Emissions</b>		<b>1 510.00</b>	<b>1 513.97</b>	<b>0.26</b>	<b>2 474.90</b>	<b>2 469.41</b>	<b>-0.22</b>	<b>2 222.00</b>	<b>2 216.21</b>	<b>-0.26</b>
2.C.3.	Aluminium Production				1 632.40	1 632.40	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	1 485.00	1 489.15	0.28	479.00	479.00	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	25.00	24.82	-0.73	363.50	358.01	-1.51	1 086.75	1 080.96	-0.53
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
<b>Potential Emissions from Consumption of HFCs/PFCs and SF<sub>6</sub></b>										

		Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>		519 488.54	519 959.30	0.09
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>		568 338.83	568 808.66	0.08

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year: 1990

(Sheet 1 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>		<b>327 972.83</b>	<b>325 872.52</b>	<b>-0.64</b>	<b>63 471.03</b>	<b>65 288.47</b>	<b>2.86</b>	<b>95 073.90</b>	<b>94 838.42</b>	<b>-0.25</b>
<b>1. Energy</b>		<b>362 028.34</b>	<b>360 251.17</b>	<b>-0.49</b>	<b>9 876.30</b>	<b>10 155.63</b>	<b>2.83</b>	<b>3 896.70</b>	<b>3 835.92</b>	<b>-1.56</b>
1.A.	Fuel Combustion Activities	357 722.50	355 945.32	-0.50	3 345.72	3 624.87	8.34	3 859.50	3 835.92	-0.61
1.A.1.	Energy Industries	65 495.23	65 495.21	0.00	46.41	46.33	-0.17	561.10	561.18	0.01
1.A.2.	Manufacturing Industries and Construction	76 919.45	76 919.30	0.00	80.43	82.38	2.42	759.50	728.65	-4.06
1.A.3.	Transport	121 281.83	119 156.27	-1.75	481.11	452.71	-5.90	1 230.70	1 208.05	-1.84
1.A.4.	Other Sectors	94 026.00	94 374.54	0.37	2 737.77	3 043.45	11.17	1 308.20	1 338.04	2.28
1.A.5.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.B.	Fugitive Emissions from Fuels	4 305.85	4 305.85	0.00	6 530.79	6 530.76	0.00	37.20	0.00	-100.00
1.B.1.	Solid fuel	0.00	0.00	0.00	4 331.46	4 331.42	0.00	0.00	0.00	0.00
1.B.2.	Oil and Natural Gas	4 305.85	4 305.85	0.00	2 199.33	2 199.34	0.00	37.20	0.00	-100.00
<b>2. Industrial Processes</b>		<b>21 253.83</b>	<b>21 253.84</b>	<b>0.00</b>	<b>54.81</b>	<b>53.42</b>	<b>-2.53</b>	<b>27 776.00</b>	<b>27 774.76</b>	<b>0.00</b>
2.A.	Mineral Products	13 015.94	13 015.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.B.	Chemical Industry	3 007.37	3 007.37	0.00	53.34	53.42	0.16	27 776.00	27 774.76	0.00
2.C.	Metal Production	4 549.52	4 549.52	0.00	1.47	0.00	-100.00	0.00	0.00	0.00
2.D.	Other Production	681.00	681.00	0.00						
2.G.	Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>2 175.07</b>	<b>1 851.92</b>	<b>-14.86</b>				<b>595.20</b>	<b>596.23</b>	<b>0.17</b>
<b>4. Agriculture</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>34 244.70</b>	<b>34 256.27</b>	<b>0.03</b>	<b>56 327.00</b>	<b>56 147.00</b>	<b>-0.32</b>
4.A.	Enteric Fermentation				30 046.80	30 057.62	0.04			
4.B.	Manure Management				3 536.82	3 537.42	0.02	3 248.80	3 249.22	0.01
4.C.	Rice Cultivation				179.76	179.61	-0.08	52.70		
4.D.	Agricultural Soils <sup>(2)</sup>	0.00	0.00	0.00	481.53	481.62	0.02	53 022.40	52 897.78	-0.24
4.E.	Prescribed Burning of Savannas				0.00	0.00	0.00	0.00	0.00	0.00
4.F.	Field Burning of Agricultural Residues				0.00	0.00	0.00	0.00	0.00	0.00
4.G.	Other				0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry (net)</b>		<b>-59 617.00</b>	<b>-59 617.00</b>	<b>0.00</b>	<b>2 081.31</b>	<b>2 081.39</b>	<b>0.00</b>	<b>5 514.90</b>	<b>5 515.83</b>	<b>0.02</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks	-75 330.00	-75 330.00	0.00						
5.B.	Forest and Grassland Conversion	11 710.00	11 710.00	0.00	220.71	220.69	-0.01	21.70	22.32	2.86
5.C.	Abandonment of Managed Lands	-48.00	-48.00	0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil	4 051.00	4 051.00	0.00						
5.E.	Other	0.00	0.00	0.00	1 860.81	1 860.71	-0.01	5 493.20	5 493.51	0.01

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

1990

(Sheet 2 of 2)

France

1999

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>6. Waste</b>		<b>2 132.59</b>	<b>2 132.59</b>	<b>0.00</b>	<b>17 213.70</b>	<b>18 741.75</b>	<b>8.88</b>	<b>967.20</b>	<b>968.68</b>	<b>0.15</b>
6.A.	Solid Waste Disposal on Land	0.00	0.00	0.00	16 389.03	17 917.02	9.32			
6.B.	Wastewater Handling				259.14	259.14	0.00	610.70	612.06	0.22
6.C.	Waste Incineration	2 132.59	2 132.59	0.00	319.62	319.57	-0.01	356.50	356.62	0.03
6.D.	Other	0.00	0.00	0.00	246.12	246.03	-0.04	0.00	0.00	0.00
<b>7. Other (please specify)</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00		0.00	0.00		0.00
<b>Memo Items:</b>										
<b>International Bunkers</b>		<b>15 984.60</b>	<b>16 754.60</b>	<b>4.82</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>82.81</b>	<b>81.32</b>	<b>-1.80</b>
<b>Multilateral Operations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>34 293.69</b>	<b>37 858.66</b>	<b>10.40</b>						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
Total Actual Emissions		2 253.00	2 252.62	-0.02	3 196.10	3 195.36	-0.02	2 200.00	2 194.86	-0.23
2.C.3.	Aluminium Production				2 293.70	2 293.70	0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>	2 230.00	2 230.06	0.00	559.60	559.60	0.00		0.00	0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>	23.00	22.57	-1.89	342.80	342.06	-0.22	1 064.75	1 059.61	-0.48
	Other		0.00	0.00			0.00	1 135.25	1 135.25	0.00
Potential Emissions from Consumption of HFCs/PFCs and SF <sub>6</sub>										
				Previous submission		Latest submission		Difference <sup>(1)</sup>		
				CO <sub>2</sub> equivalent (Gg)				(%)		
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>				494 166.86		493 642.25		-0.11		
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>				546 187.65		545 662.03		-0.10		

**TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION**  
(Sheet 1 of 1)

France  
1999  
Submission

Specify the sector and source/sink category <sup>(1)</sup> where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods <sup>(2)</sup>	Emission factors <sup>(2)</sup>	Activity data <sup>(2)</sup>	
1A1	Energy industries	CO2, CH4, N2O			Retroactive energy statistic review for years 1996 to 1998	
1A2	Manufacturing Industries and Construction	CO2, CH4, N2O			Complete review of biomass fuel consumption (new statistics for years 1990 to 1998)	
1A4	Other Sectors	CO2, CH4, N2O			Complete review of biomass fuel consumption (new statistics for years 1990 to 1998). Updating of district heating data for year 1997 and provisional updating for 1998. Because 1998 and 1999 data are not available at this time, 1997 figures are reported.	
1A3a	Civil aviation (1990-1998)	CO2	Improvements of the methodology resulting from a French working group on CO2 evaluation from air traffic, managed by the DGAC (Direction Générale de l'Aviation Civile).	General improvements for cruise calculation. Specific improvements for turboprop aircraft which was previously overestimated.	Decrease of the fuel consumption for the domestic aviation as a consequence of the methodology review.	
1A3b	Road transport (1990-1998)	CO2, CH4, N2O	Changes within the national road traffic statistics during the year 2000 from the transport Ministry for the years 1990-1999 in one hand, and in the other hand, energy balance based on fuel delivery instead of fuel sales.		Globally small decrease of the fuel consumption compared to the previous submission. At a more detailed level, increase of the heavy duty vehicles contribution and decrease of the motorcycles contribution.	
	Memo items : International aviation (1990-1998)	CO2	The international aviation fuel consumption is based on the balance between the total French aviation fuel sales and the calculated domestic aviation consumption.		Increase of the fuel consumption for the international aviation as a consequence of the decrease of the domestic aviation fuel consumption.	
1B2	Fugitive Emissions from Oil and Natural Gas	N2O	N2O emissions from this category are not included in the CRF. They were taken into account previously.			
2B	Chemical Industry	N2O	updating of emission data (direct input in 1998)			
2C1	Metal production	CH4	excluded from the CRF, taken into account previously.			
2F	Consumption of Halocarbons	HFCs			updating of activity data for the refrigeration and air conditioning sector (1994-1998)	

2F	Consumption of Halocarbons	PFCs			updating of activity data (1990-1998)	
2F	Consumption of Halocarbons	SF6			updating of activity data for the electrical equipments sector (1990-1998)	
3	Solvent use (1990-1998)	CO2	Within CRF, NMVOCs from category 3C are not converted into CO2, but they were converted previously.			Removal of 3C contribution within CRF compared to previous IPCC table 3 submission.
4C	Rice Cultivation	N2O	excluded from the CRF, taken into account previously.			
4D	Agricultural Soils	N2O	for Nitrogen leaching and run off (represents a minor source of N2O)	EF has been divided by 20 due to the improvement of knowledge.	Activity data have been approximately multiplied by 2 for all years. (new statistics)	
5A	Changes in Forest and Other Woody Biomass Stocks	CO2			updating of statistic data (1998)	
5B	Forest and Grassland Conversion	N2O	Using in the previous submission the "ReportER" software, some rounded figures were used in the previous table 5 (especially for oversea territories). The conversion in CO2 equivalent consequently makes some differences.			
5D	CO2 Emissions and Removals from Soils	CO2			updating of statistic data (1998)	
6A	Solid Waste Disposal on Land	CH4	Emissions are now calculated using the FOD method. The previous submission was based on tier 1 IPCC.			
6B	Wastewater Handling	CH4, N2O			updating of the population inventory in 1999	
6C	Waste Incineration	CO2, CH4, N2O			updating of activity data (1997-1998)	













<sup>(1)</sup> Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)).

<sup>(2)</sup> Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

<b>Documentation box:</b> Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.						
Some differences (< 0.5%) are due to rounded figures used in the previous submission.						

**TABLE 9 COMPLETENESS**  
(Sheet 1 of 2)

France  
1999  
Submission

Sources and sinks not reported (NE) <sup>(1)</sup>				
GHG	Sector <sup>(2)</sup>	Source/sink category <sup>(2)</sup>	Explanation	
CO <sub>2</sub> 				
CH <sub>4</sub> 	1A3. Transport	Civil Aviation	neglected	
	Transport	Marine national / international	neglected	
N <sub>2</sub> O 	4D. Agricultural Soils	Atmospheric Deposition	not included because of possible double counting	
	1A3. Transport	Civil Aviation	neglected	
HFCs 				
PFCs 				
SF <sub>6</sub> 	2. Industrial process	Consumption of SF6 from various minor applications (window insulation, tennis balls etc.) - neglected		
Sources and sinks reported elsewhere (IE) <sup>(3)</sup>				
GHG	Source/sink category	Allocation as per IPCC Guidelines	Allocation used by the Party	Explanation
CO <sub>2</sub> 	1A2a-e		1A2f	Not available in the national inventory database at this time
CH <sub>4</sub> 	1A2a-e		1A2f	Not available in the national inventory database at this time
N <sub>2</sub> O 	1A2a-e		1A2f	Not available in the national inventory database at this time
HFCs 				
PFCs 				
SF <sub>6</sub> 				

<sup>(1)</sup> Please, clearly indicate sources and sinks which are considered in the IPCC Guidelines but are not considered in the submitted inventory. Explain the reason for excluding these sources and sinks, in order to avoid arbitrary interpretations. An entry should be made for each source/sink category for which the indicator "NE" is entered in the sectoral tables.

<sup>(2)</sup> Indicate omitted source/sink following the IPCC source/sink category structure (e.g. sector: Waste, source category: Wastewater Handling).

<sup>(3)</sup> Please clearly indicate sources and sinks in the submitted inventory that are allocated to a sector other than that indicated by the IPCC Guidelines. Show the sector indicated in the IPCC Guidelines and the sector to which the source or sink is allocated in the submitted inventory. Explain the reason for reporting these sources and sinks in a different sector. An entry should be made for each source/sink for which the indicator "IE" is used in the sectoral tables.

TABLE 9 COMPLETENESS  
(Sheet 2 of 2)

France  
1999  
Submission

Additional GHG emissions reported <sup>(4)</sup>						
GHG	Source category	Emissions (Gg)	Estimated GWP value (100-year horizon)	Emissions CO <sub>2</sub> equivalent (Gg)	Reference to the data source of GWP value	Explanation

<sup>(4)</sup> Parties are encouraged to provide information on emissions of greenhouse gases whose GWP values have not yet been agreed upon by the COP. Please include such gases in this table if they are considered in the submitted inventory. Provide additional information on the estimation methods used.

**TABLE 10 EMISSIONS TRENDS (CO<sub>2</sub>)**  
(Sheet 1 of 5)

France  
1 999  
Submission

	Base year <sup>(1)</sup>	1 990	1 991	1 992	1 993	1 994	1 995	1 996	1 997	1 998	1 999
<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</b>											
<b>(Gg)</b>											
<b>1. Energy</b>	<b>0.00</b>	<b>360 251.17</b>	<b>385 750.87</b>	<b>379 082.63</b>	<b>358 601.42</b>	<b>353 431.60</b>	<b>359 235.41</b>	<b>374 385.37</b>	<b>368 100.05</b>	<b>388 693.32</b>	<b>383 597.80</b>
A. Fuel Combustion (Sectoral Approach)	0.00	355 945.32	381 154.14	374 696.30	354 006.58	348 975.73	355 364.76	370 380.83	363 862.91	384 548.79	379 591.37
1. Energy Industries		65 495.21	77 231.60	69 529.76	56 160.68	52 438.72	55 168.59	59 468.15	55 984.30	68 431.74	61 389.24
2. Manufacturing Industries and Construction		76 919.30	77 955.92	75 551.51	70 782.17	74 188.03	73 392.83	74 173.47	75 207.95	77 045.46	77 212.63
3. Transport		119 156.27	121 771.21	126 257.94	126 280.02	127 572.38	129 656.94	131 182.10	133 598.74	135 765.90	138 822.12
4. Other Sectors		94 374.54	104 195.41	103 357.09	100 783.71	94 776.60	97 146.40	105 557.11	99 071.92	103 305.69	102 167.38
5. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	0.00	4 305.85	4 596.73	4 386.33	4 594.84	4 455.87	3 870.65	4 004.54	4 237.14	4 144.53	4 006.43
1. Solid Fuels		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Oil and Natural Gas		4 305.85	4 596.73	4 386.33	4 594.84	4 455.87	3 870.65	4 004.54	4 237.14	4 144.53	4 006.43
<b>2. Industrial Processes</b>	<b>0.00</b>	<b>21 253.84</b>	<b>19 421.05</b>	<b>17 940.03</b>	<b>17 179.63</b>	<b>18 228.26</b>	<b>18 703.14</b>	<b>17 440.96</b>	<b>17 610.35</b>	<b>18 045.29</b>	<b>17 193.94</b>
A. Mineral Products		13 015.95	12 443.07	11 348.42	10 631.71	10 938.08	10 686.21	10 454.15	10 186.46	10 791.75	10 371.09
B. Chemical Industry		3 007.37	3 035.78	2 666.40	2 809.98	2 821.54	2 826.27	2 966.45	2 888.79	2 844.46	2 723.22
C. Metal Production		4 549.52	3 477.95	3 248.88	3 171.57	3 889.89	4 597.30	3 391.09	3 944.60	3 832.90	3 443.35
D. Other Production		681.00	464.25	676.33	566.37	578.75	593.36	629.27	590.50	576.18	656.28
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1 851.92</b>	<b>1 769.90</b>	<b>1 733.49</b>	<b>1 615.11</b>	<b>1 617.28</b>	<b>1 632.65</b>	<b>1 612.59</b>	<b>1 620.85</b>	<b>1 647.42</b>	<b>1 616.73</b>
<b>4. Agriculture</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
A. Enteric Fermentation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Manure Management		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Rice Cultivation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Agricultural Soils <sup>(2)</sup>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E. Prescribed Burning of Savannas		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F. Field Burning of Agricultural Residues		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry<sup>(3)</sup></b>	<b>0.00</b>	<b>-59 617.00</b>	<b>-56 488.00</b>	<b>-61 246.00</b>	<b>-65 865.00</b>	<b>-67 495.00</b>	<b>-65 151.00</b>	<b>-67 197.00</b>	<b>-68 090.00</b>	<b>-68 024.00</b>	<b>-68 995.00</b>
A. Changes in Forest and Other Woody Biomass Stocks		-75 330.00	-72 020.00	-76 878.00	-81 506.00	-82 824.00	-81 249.00	-82 995.00	-83 880.00	-83 748.00	-84 861.00
B. Forest and Grassland Conversion		11 710.00	11 710.00	11 987.00	12 066.00	12 165.00	12 343.00	12 343.00	12 540.00	12 540.00	12 540.00
C. Abandonment of Managed Lands		-48.00	-48.00	-48.00	-48.00	-48.00	-48.00	-48.00	-48.00	-48.00	-48.00
D. CO <sub>2</sub> Emissions and Removals from Soil		4 051.00	3 870.00	3 693.00	3 623.00	3 212.00	3 803.00	3 503.00	3 298.00	3 232.00	3 374.00
E. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>6. Waste</b>	<b>0.00</b>	<b>2 132.59</b>	<b>2 157.48</b>	<b>2 254.01</b>	<b>2 263.89</b>	<b>2 432.77</b>	<b>2 424.72</b>	<b>2 419.53</b>	<b>2 248.05</b>	<b>2 298.09</b>	<b>2 286.80</b>
A. Solid Waste Disposal on Land		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Waste-water Handling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Waste Incineration		2 132.59	2 157.48	2 254.01	2 263.89	2 432.77	2 424.72	2 419.53	2 248.05	2 298.09	2 286.80
D. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions/Removals with LUCF<sup>(4)</sup></b>	<b>0.00</b>	<b>325 872.52</b>	<b>352 611.30</b>	<b>339 764.17</b>	<b>313 795.05</b>	<b>308 214.92</b>	<b>316 844.92</b>	<b>328 661.45</b>	<b>321 489.30</b>	<b>342 660.12</b>	<b>335 700.26</b>
<b>Total Emissions without LUCF<sup>(4)</sup></b>	<b>0.00</b>	<b>385 489.52</b>	<b>409 099.30</b>	<b>401 010.17</b>	<b>379 660.05</b>	<b>375 709.92</b>	<b>381 995.92</b>	<b>395 858.45</b>	<b>389 579.30</b>	<b>410 684.12</b>	<b>404 695.26</b>
<b>Memo Items:</b>											
<b>International Bunkers</b>	<b>0</b>	<b>16 755</b>	<b>16 777</b>	<b>17 988</b>	<b>18 103</b>	<b>17 607</b>	<b>17 730</b>	<b>18 808</b>	<b>20 013</b>	<b>21 422</b>	<b>23 064</b>
Aviation		8 618	8 336	9 831	10 244	10 605	10 513	11 240	11 634	12 255	13 753
Marine		8 137	8 441	8 157	7 860	7 002	7 217	7 568	8 379	9 166	9 311
<b>Multilateral Operations</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>37 859</b>	<b>45 267</b>	<b>42 905</b>	<b>42 251</b>	<b>37 077</b>	<b>37 894</b>	<b>39 933</b>	<b>36 405</b>	<b>37 281</b>	<b>36 992</b>

<sup>(1)</sup> Fill in the base year adopted by the Party under the Convention, if different from 1990.

<sup>(2)</sup> See footnote 4 to Summary I.A of this common reporting format.

<sup>(3)</sup> Take the net emissions as reported in Summary I.A of this common reporting format. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(4)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO<sub>2</sub> emissions and removals from Land-Use Change and Forestry.



**TABLE 10 EMISSIONS TRENDS (CH<sub>4</sub>)**  
(Sheet 2 of 5)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Total Emissions</b>	<b>0.00</b>	<b>3 108.97</b>	<b>3 165.03</b>	<b>3 178.69</b>	<b>3 209.49</b>	<b>3 212.44</b>	<b>3 265.42</b>	<b>3 219.58</b>	<b>2 967.25</b>	<b>2 939.12</b>	<b>2 840.58</b>
<b>1. Energy</b>	<b>0.00</b>	<b>483.60</b>	<b>508.86</b>	<b>500.62</b>	<b>504.40</b>	<b>473.44</b>	<b>474.55</b>	<b>437.56</b>	<b>385.65</b>	<b>387.56</b>	<b>371.44</b>
A. Fuel Combustion (Sectoral Approach)	0.00	172.61	205.30	193.66	190.38	163.54	164.94	174.38	155.04	157.38	154.16
1. Energy Industries		2.21	2.49	2.32	2.38	2.31	2.19	2.04	1.71	1.66	1.34
2. Manufacturing Industries and Construction		3.92	3.81	4.13	3.98	4.49	4.00	4.29	4.14	4.24	3.84
3. Transport		21.56	21.49	22.29	21.43	19.92	18.46	16.88	15.99	15.19	14.84
4. Other Sectors		144.93	177.51	164.92	162.59	136.83	140.29	151.16	133.20	136.28	134.13
5. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	0.00	310.99	303.56	306.96	314.02	309.90	309.60	263.18	230.61	230.18	217.29
1. Solid Fuels		206.26	191.52	199.88	208.50	212.93	211.03	160.81	137.45	133.10	126.55
2. Oil and Natural Gas		104.73	112.03	107.08	105.52	96.97	98.58	102.37	93.16	97.08	90.74
<b>2. Industrial Processes</b>	<b>0.00</b>	<b>2.54</b>	<b>2.24</b>	<b>2.32</b>	<b>2.05</b>	<b>2.35</b>	<b>2.59</b>	<b>2.46</b>	<b>2.52</b>	<b>2.64</b>	<b>2.64</b>
A. Mineral Products		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Chemical Industry		2.54	2.24	2.32	2.05	2.35	2.59	2.46	2.52	2.64	2.64
C. Metal Production		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Other Production		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>4. Agriculture</b>	<b>0.00</b>	<b>1 631.25</b>	<b>1 604.28</b>	<b>1 570.36</b>	<b>1 557.74</b>	<b>1 555.81</b>	<b>1 564.12</b>	<b>1 565.44</b>	<b>1 547.66</b>	<b>1 535.49</b>	<b>1 534.82</b>
A. Enteric Fermentation		1 431.32	1 404.66	1 369.68	1 354.58	1 351.74	1 358.73	1 358.31	1 341.22	1 329.64	1 330.58
B. Manure Management		168.45	167.80	167.87	169.44	169.74	171.78	174.59	174.39	174.61	173.52
C. Rice Cultivation		8.55	8.93	9.93	10.68	11.26	10.54	9.52	9.07	8.27	7.75
D. Agricultural Soils		22.93	22.89	22.89	23.04	23.06	23.06	23.02	22.98	22.98	22.97
E. Prescribed Burning of Savannas		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F. Field Burning of Agricultural Residues		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry</b>	<b>0.00</b>	<b>99.11</b>	<b>99.61</b>	<b>100.48</b>	<b>100.50</b>	<b>100.04</b>	<b>100.31</b>	<b>100.63</b>	<b>100.80</b>	<b>100.80</b>	<b>100.80</b>
A. Changes in Forest and Other Woody Biomass Stocks		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Forest and Grassland Conversion		10.51	10.51	10.75	10.82	10.91	11.06	11.06	11.23	11.23	11.23
C. Abandonment of Managed Lands		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. CO <sub>2</sub> Emissions and Removals from Soil		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E. Other		88.61	89.10	89.73	89.68	89.14	89.25	89.56	89.56	89.56	89.56
<b>6. Waste</b>	<b>0.00</b>	<b>892.46</b>	<b>950.05</b>	<b>1 004.91</b>	<b>1 044.79</b>	<b>1 080.80</b>	<b>1 123.85</b>	<b>1 113.50</b>	<b>930.62</b>	<b>912.63</b>	<b>830.88</b>
A. Solid Waste Disposal on Land		853.19	908.94	962.69	1 001.55	1 037.72	1 079.91	1 067.85	883.65	864.40	782.86
B. Waste-water Handling		12.34	12.48	12.62	12.80	12.88	12.97	13.05	13.17	13.28	13.41
C. Waste Incineration		15.22	16.21	16.39	16.33	16.25	16.30	17.15	17.55	17.84	17.50
D. Other		11.72	12.42	13.21	14.12	13.95	14.68	15.45	16.26	17.11	17.11
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Aviation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marine		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Multilateral Operations</b>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CO<sub>2</sub> Emissions from Biomass</b>											

**TABLE 10 EMISSIONS TRENDS (N<sub>2</sub>O)**  
(Sheet 3 of 5)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Total Emissions</b>	<b>0.00</b>	<b>305.93</b>	<b>305.43</b>	<b>294.44</b>	<b>281.01</b>	<b>286.70</b>	<b>292.25</b>	<b>294.81</b>	<b>298.22</b>	<b>272.25</b>	<b>253.94</b>
<b>1. Energy</b>	<b>0.00</b>	<b>12.37</b>	<b>13.95</b>	<b>14.18</b>	<b>13.96</b>	<b>14.51</b>	<b>15.50</b>	<b>17.11</b>	<b>17.61</b>	<b>19.03</b>	<b>19.71</b>
A. Fuel Combustion (Sectoral Approach)	0.00	12.37	13.95	14.18	13.96	14.51	15.50	17.11	17.61	19.03	19.70
1. Energy Industries		1.81	2.48	2.58	2.03	1.88	1.91	2.11	2.02	2.40	2.20
2. Manufacturing Industries and Construction		2.35	2.44	2.37	2.29	2.40	2.40	2.44	2.47	2.55	2.57
3. Transport		3.90	4.12	4.41	4.91	5.85	6.73	7.69	8.59	9.34	10.24
4. Other Sectors		4.32	4.91	4.82	4.73	4.38	4.46	4.87	4.53	4.74	4.70
5. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Oil and Natural Gas		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>2. Industrial Processes</b>	<b>0.00</b>	<b>89.60</b>	<b>89.90</b>	<b>83.83</b>	<b>74.93</b>	<b>78.58</b>	<b>81.59</b>	<b>79.90</b>	<b>80.58</b>	<b>53.56</b>	<b>35.79</b>
A. Mineral Products		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Chemical Industry		89.60	89.90	83.83	74.93	78.58	81.59	79.90	80.58	53.56	35.79
C. Metal Production		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Other Production		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>		<b>1.92</b>	<b>1.93</b>	<b>1.94</b>	<b>1.95</b>	<b>1.96</b>	<b>1.97</b>	<b>1.98</b>	<b>1.98</b>	<b>1.98</b>	<b>1.98</b>
<b>4. Agriculture</b>	<b>0.00</b>	<b>181.12</b>	<b>178.54</b>	<b>173.17</b>	<b>168.75</b>	<b>170.34</b>	<b>171.84</b>	<b>174.39</b>	<b>176.62</b>	<b>176.27</b>	<b>175.04</b>
A. Enteric Fermentation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Manure Management		10.48	10.31	10.11	10.06	10.05	10.11	10.18	10.13	10.09	10.03
C. Rice Cultivation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Agricultural Soils		170.64	168.22	163.06	158.69	160.29	161.73	164.20	166.49	166.17	165.01
E. Prescribed Burning of Savannas		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F. Field Burning of Agricultural Residues		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>5. Land-Use Change and Forestry</b>	<b>0.00</b>	<b>17.79</b>	<b>17.89</b>	<b>18.02</b>	<b>18.01</b>	<b>17.90</b>	<b>17.93</b>	<b>17.99</b>	<b>17.99</b>	<b>17.99</b>	<b>17.99</b>
A. Changes in Forest and Other Woody Biomass Stocks		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Forest and Grassland Conversion		0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08
C. Abandonment of Managed Lands		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. CO <sub>2</sub> Emissions and Removals from Soil		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E. Other		17.72	17.82	17.95	17.94	17.83	17.85	17.91	17.91	17.91	17.91
<b>6. Waste</b>	<b>0.00</b>	<b>3.12</b>	<b>3.21</b>	<b>3.31</b>	<b>3.40</b>	<b>3.42</b>	<b>3.43</b>	<b>3.45</b>	<b>3.44</b>	<b>3.43</b>	<b>3.44</b>
A. Solid Waste Disposal on Land		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Waste-water Handling		1.97	2.00	2.02	2.05	2.06	2.07	2.09	2.11	2.13	2.14
C. Waste Incineration		1.15	1.22	1.29	1.36	1.36	1.35	1.36	1.34	1.31	1.30
D. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	<b>0.00</b>	<b>0.26</b>	<b>0.27</b>	<b>0.26</b>	<b>0.25</b>	<b>0.23</b>	<b>0.23</b>	<b>0.24</b>	<b>0.27</b>	<b>0.30</b>	<b>0.30</b>
Aviation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marine		0.26	0.27	0.26	0.25	0.23	0.23	0.24	0.27	0.30	0.30
<b>Multilateral Operations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>											

**TABLE 10 EMISSION TRENDS ( HFCs, PFCs and SF<sub>6</sub>)**  
(Sheet 4 of 5)

France  
1999  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Emissions of HFCs<sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>2 252.62</b>	<b>1 513.97</b>	<b>1 061.34</b>	<b>804.01</b>	<b>817.88</b>	<b>1 301.88</b>	<b>2 186.27</b>	<b>3 094.93</b>	<b>3 751.70</b>	<b>4 815.07</b>
HFC-23		0.17	0.11	0.07	0.04	0.03	0.02	0.01	0.01	0.02	0.03
HFC-32		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-41		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-43-10mee		0.00	0.00	0.00	0.01	0.01	0.02	0.04	0.04	0.04	0.06
HFC-125		0.01	0.02	0.03	0.05	0.06	0.08	0.11	0.14	0.18	0.26
HFC-134		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-134a		0.00	0.00	0.00	0.00	0.12	0.52	1.18	1.71	1.89	2.17
HFC-152a		0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
HFC-143		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-143a		0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.07	0.12	0.21
HFC-227ea		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-236fa		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFC-245ca		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions of PFCs<sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>3 195.36</b>	<b>2 469.41</b>	<b>2 146.71</b>	<b>1 650.08</b>	<b>1 390.48</b>	<b>1 350.42</b>	<b>1 410.03</b>	<b>1 471.26</b>	<b>1 661.16</b>	<b>1 914.51</b>
CF <sub>4</sub>		0.32	0.23	0.20	0.14	0.12	0.10	0.10	0.11	0.14	0.18
C <sub>2</sub> F <sub>6</sub>		0.08	0.06	0.05	0.04	0.03	0.03	0.04	0.05	0.05	0.06
C <sub>3</sub> F <sub>8</sub>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C <sub>4</sub> F <sub>10</sub>		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.01
c-C <sub>4</sub> F <sub>8</sub>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C <sub>5</sub> F <sub>12</sub>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C <sub>6</sub> F <sub>14</sub>		0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.01	0.02	0.02
<b>Emissions of SF<sub>6</sub><sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>2 194.86</b>	<b>2 216.21</b>	<b>2 238.15</b>	<b>2 261.91</b>	<b>2 287.60</b>	<b>2 314.04</b>	<b>2 387.49</b>	<b>2 443.86</b>	<b>2 405.46</b>	<b>2 410.65</b>
SF <sub>6</sub>		0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10

<sup>(5)</sup> Enter information on the actual emissions. Where estimates are only available for the potential emissions, specify this in a comment to the corresponding cell. Only in this row the emissions are expressed as CO<sub>2</sub> equivalent emissions in order to facilitate data flow among spreadsheets.

**TABLE 10 EMISSION TRENDS (SUMMARY)**  
(Sheet 5 of 5)

France  
1999  
Submission

GREENHOUSE GAS EMISSIONS	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO <sub>2</sub> equivalent (Gg)										
Net CO <sub>2</sub> emissions/removals	0.00	325 872.52	352 611.30	339 764.17	313 795.05	308 214.92	316 844.92	328 661.45	321 489.30	342 660.12	335 700.26
CO <sub>2</sub> emissions (without LUCF) <sup>(6)</sup>	0.00	385 489.52	409 099.30	401 010.17	379 660.05	375 709.92	381 995.92	395 858.45	389 579.30	410 684.12	404 695.26
CH <sub>4</sub>	0.00	65 288.47	66 465.66	66 752.39	67 399.37	67 461.32	68 573.73	67 611.28	62 312.24	61 721.59	59 652.26
N <sub>2</sub> O	0.00	94 838.42	94 682.75	91 277.21	87 112.46	88 877.52	90 598.25	91 392.05	92 448.84	84 397.83	78 721.07
HFCs	0.00	2 252.62	1 513.97	1 061.34	804.01	817.88	1 301.88	2 186.27	3 094.93	3 751.70	4 815.07
PFCs	0.00	3 195.36	2 469.41	2 146.71	1 650.08	1 390.48	1 350.42	1 410.03	1 471.26	1 661.16	1 914.51
SF <sub>6</sub>	0.00	2 194.86	2 216.21	2 238.15	2 261.91	2 287.60	2 314.04	2 387.49	2 443.86	2 405.46	2 410.65
<b>Total (with net CO<sub>2</sub> emissions/removals)</b>	<b>0.00</b>	<b>493 642.25</b>	<b>519 959.30</b>	<b>503 239.97</b>	<b>473 022.88</b>	<b>469 049.71</b>	<b>480 983.24</b>	<b>493 648.57</b>	<b>483 260.43</b>	<b>496 597.86</b>	<b>483 213.83</b>
<b>Total (without CO<sub>2</sub> from LUCF) <sup>(6)</sup></b>	<b>0.00</b>	<b>553 259.25</b>	<b>576 447.30</b>	<b>564 485.97</b>	<b>538 887.88</b>	<b>536 544.71</b>	<b>546 134.24</b>	<b>560 845.57</b>	<b>551 350.43</b>	<b>564 621.86</b>	<b>552 208.83</b>

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO <sub>2</sub> equivalent (Gg)										
1. Energy	0.00	374 242.72	400 761.93	393 991.16	373 522.28	367 871.10	374 005.11	388 879.19	381 658.06	402 731.02	397 506.91
2. Industrial Processes	0.00	56 724.87	53 535.71	49 420.74	45 167.02	47 131.81	49 016.15	48 244.93	49 654.10	42 521.70	37 482.96
3. Solvent and Other Product Use	0.00	2 448.15	2 369.50	2 336.44	2 221.00	2 225.75	2 243.63	2 226.07	2 234.33	2 260.90	2 230.21
4. Agriculture	0.00	90 403.27	89 036.71	86 659.26	85 024.35	85 476.13	86 117.83	86 934.43	87 252.16	86 887.76	86 492.82
5. Land-Use Change and Forestry <sup>(7)</sup>	0.00	-52 019.78	-48 849.36	-53 549.95	-58 171.40	-59 844.83	-57 487.74	-59 507.61	-60 396.37	-60 330.37	-61 301.37
6. Waste	0.00	21 843.03	23 104.80	24 382.31	25 259.63	26 189.75	27 088.25	26 871.56	22 858.15	22 526.86	20 802.30
7. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(6)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO<sub>2</sub> emissions and removals from Land-Use Change and Forestry.

<sup>(7)</sup> Net emissions.

**TABLE 11 CHECK LIST OF REPORTED INVENTORY INFORMATION<sup>(1)</sup>**

**Party:** France **Year:** 1999

Contact info:	Focal point for national GHG inventories:	CITEPA		
	Address:	10 rue du Faubourg Poissonnière - 75010 PARIS		
	Telephone:	33 (0)1 44836883	Fax: 33 (0)1 40220483	E-mail: <a href="mailto:jean-pierre.fontelle@citepa.org">jean-pierre.fontelle@citepa.org</a>
	Main institution preparing the inventory:	CITEPA		

General info:	Date of submission:	2000		
	Base years:	1990	PFCs, HFCs, SF <sub>6</sub> :	1990
	Year covered in the submission:	1990 - 1999		
	Gases covered:	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, PFCs, HFCs, SF <sub>6</sub> and NO <sub>x</sub> , CO, NMVOC, SO <sub>2</sub> .		
	Omissions in geographic coverage:	No		

<b>Tables:</b>		Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
	Sectoral report tables:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Sectoral background data tables:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Summary 1 (IPCC Summary tables):	IPCC Table 7A:		<input checked="" type="checkbox"/>	IPCC Table 7B:		<input checked="" type="checkbox"/>
	Summary 2 (CO <sub>2</sub> equivalent emissions):			<input checked="" type="checkbox"/>			
	Summary 3 (Methods/Emission factors):			<input checked="" type="checkbox"/>			
	Uncertainty:	IPCC Table 8A:		<input checked="" type="checkbox"/>	National information:		<input checked="" type="checkbox"/>
	Recalculation tables:			<input checked="" type="checkbox"/>			
	Completeness table:			<input checked="" type="checkbox"/>			
	Trend table:			<input checked="" type="checkbox"/>			

<b>CO<sub>2</sub></b>	Comparison of CO <sub>2</sub> from fuel combustion	Worksheet 1-1	Percentage of difference	Explanation of differences
		<input checked="" type="checkbox"/>	#VALEUR!	<input type="checkbox"/>

<b>Recalculation:</b>		Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
	CO <sub>2</sub>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	CH <sub>4</sub>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	N <sub>2</sub> O	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	HFCs, PFCs, SF <sub>6</sub>		<input checked="" type="checkbox"/>				
	Explanations:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Recalculation tables for all recalculated years:			<input checked="" type="checkbox"/>			
	Full CRF for the recalculated base year:			<input checked="" type="checkbox"/>			

<b>HFCs, PFCs, SF<sub>6</sub></b>		HFCs		PFCs		SF <sub>6</sub>	
	Disaggregation by species:	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Production of Halocarbons/SF <sub>6</sub> :	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	Consumption of Halocarbons/SF <sub>6</sub> :	Actual	Potential	Actual	Potential	Actual	Potential
	Potential/Actual emission ratio:	0.00		0.00		0.00	

Reference to National Inventory Report and/or national inventory web site: Inventaire des émissions de gaz à effet de serre en France au cours de la période 1990 - 1999 / Format UNFCCC, CITEPA december 2000 - Web site : [www.citepa.org](http://www.citepa.org)

CRF - Common Reporting Format.  
LUCF - Land-Use Change and Forestry.

<sup>(1)</sup> For each omission, give an explanation for the reasons by inserting a comment to the corresponding cell.

**1998**





**TABLE 1 SECTORAL REPORT FOR ENERGY**  
(Sheet 1 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
	(Gg)						
<b>Total Energy</b>	<b>388 693.32</b>	<b>387.57</b>	<b>19.03</b>	<b>1 640.91</b>	<b>6 440.18</b>	<b>1 134.10</b>	<b>842.70</b>
<b>A. Fuel Combustion Activities (Sectoral Approach)</b>	<b>384 548.79</b>	<b>157.39</b>	<b>19.03</b>	<b>1 636.00</b>	<b>6 436.14</b>	<b>1 027.59</b>	<b>777.34</b>
<b>1. Energy Industries</b>	<b>68 431.74</b>	<b>1.66</b>	<b>2.40</b>	<b>182.11</b>	<b>17.99</b>	<b>4.81</b>	<b>384.92</b>
a. Public Electricity and Heat Production	47 767.65	0.59	1.71	154.30	12.10	3.95	243.76
b. Petroleum Refining	15 788.34	0.64	0.60	20.40	3.52	0.64	123.26
c. Manufacture of Solid Fuels and Other Energy Industries	4 875.75	0.43	0.09	7.40	2.38	0.22	17.90
<b>2. Manufacturing Industries and Construction</b>	<b>77 045.46</b>	<b>4.25</b>	<b>2.55</b>	<b>253.65</b>	<b>837.05</b>	<b>25.08</b>	<b>229.08</b>
a. Iron and Steel	0.00	0.00	0.00				
b. Non-Ferrous Metals	0.00	0.00	0.00				
c. Chemicals	0.00	0.00	0.00				
d. Pulp, Paper and Print	0.00	0.00	0.00				
e. Food Processing, Beverages and Tobacco	0.00	0.00	0.00				
f. Other ( <i>please specify</i> )	77 045.46	4.25	2.55	253.65	837.05	25.08	229.08
2a, b, c, d, e gathered into 2f				253.65	837.05	25.08	229.08
<b>3. Transport</b>	<b>135 765.90</b>	<b>15.19</b>	<b>9.34</b>	<b>853.06</b>	<b>3 551.46</b>	<b>700.36</b>	<b>55.85</b>
a. Civil Aviation	6 080.04	0.00	0.00	14.94	6.22	1.79	1.93
b. Road Transportation	126 593.00	15.11	9.23	800.16	3 418.48	656.28	47.30
c. Railways	739.70	0.04	0.02	9.30	2.51	1.09	0.24
d. Navigation	1 885.92	0.01	0.06	23.45	124.08	40.38	6.38
e. Other Transportation ( <i>please specify</i> )	467.24	0.02	0.02	5.21	0.16	0.82	0.00
Pipeline compressor				5.21	0.16	0.82	0.00

**TABLE 1 SECTORAL REPORT FOR ENERGY**  
(Sheet 2 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NM VOC	SO <sub>2</sub>
	(Gg)						
<b>4. Other Sectors</b>	<b>103 305.69</b>	<b>136.28</b>	<b>4.74</b>	<b>347.19</b>	<b>2 029.64</b>	<b>297.33</b>	<b>107.48</b>
a. Commercial/Institutional	30 371.79	2.35	1.15	37.03	16.60	1.58	31.73
b. Residential	62 634.14	132.92	3.22	66.42	1 725.30	210.00	53.15
c. Agriculture/Forestry/Fisheries	10 299.76	1.02	0.36	243.74	287.74	85.76	22.60
<b>5. Other (please specify)<sup>(1)</sup></b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
a. Stationary 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Mobile 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00					
<b>B. Fugitive Emissions from Fuels</b>	<b>4 144.53</b>	<b>230.18</b>	<b>0.00</b>	<b>4.91</b>	<b>4.04</b>	<b>106.51</b>	<b>65.36</b>
<b>1. Solid Fuels</b>	<b>0.00</b>	<b>133.10</b>	<b>0.00</b>	<b>0.00</b>	<b>3.30</b>	<b>0.83</b>	<b>0.00</b>
a. Coal Mining	0.00	116.38	0.00	0.00	0.00	0.00	
b. Solid Fuel Transformation	0.00	1.93			3.30	0.83	
c. Other (please specify) 	0.00	14.79	0.00	0.00	0.00	0.00	0.00
Storage of solid fuel							
<b>2. Oil and Natural Gas</b>	<b>4 144.53</b>	<b>97.08</b>	<b>0.00</b>	<b>4.91</b>	<b>0.74</b>	<b>105.69</b>	<b>65.36</b>
a. Oil	3 212.90	0.31		4.80	0.74	102.60	51.12
b. Natural Gas	563.10	96.28				2.90	8.74
c. Venting and Flaring	368.53	0.50	0.00	0.11	0.00	0.19	5.50
Venting	0.00	0.00					
Flaring	368.53	0.50	0.00	0.11	0.00	0.19	5.50
d. Other (please specify) 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:<sup>(2)</sup></b>							
<b>International Bunkers</b>	<b>21 421.71</b>	<b>0.00</b>	<b>0.30</b>	<b>204.88</b>	<b>10.17</b>	<b>82.24</b>	<b>163.30</b>
Aviation	12 255.30	0.00	0.00	30.41	7.80	2.40	3.89
Marine	9 166.41	0.00	0.30	174.47	2.37	79.84	159.41
<b>Multilateral Operations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>				
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>37 281.06</b>						

<sup>(1)</sup> Include military fuel use under this category.

<sup>(2)</sup> Please do not include in energy totals.



**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 1 of 4)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A. Fuel Combustion</b>	<b>5 835 081.01</b>	NCV				<b>384 548.79</b>	<b>157.39</b>	<b>19.03</b>
Liquid Fuels	3 249 494.39	NCV	73.19	6.32	3.96	237 815.45	20.54	12.88
Solid Fuels	474 618.84	NCV	106.24	3.45	3.45	50 424.47	1.64	1.64
Gaseous Fuels	1 224 784.28	NCV	56.98	3.01	2.50	69 793.73	3.69	3.06
Biomass	399 730.55	NCV	93.27	326.45	2.50 <sup>(3)</sup>	37 281.06	130.49	1.00
Other Fuels	486 452.95	NCV	54.51	2.11	0.94	26 515.14	1.03	0.46
<b>I.A.1. Energy Industries</b>	<b>791 379.25</b>	NCV				<b>68 431.74</b>	<b>1.66</b>	<b>2.40</b>
Liquid Fuels	351 089.34	NCV	68.71	2.35	2.50	24 124.77	0.82	0.88
Solid Fuels	359 847.21	NCV	105.19	1.01	3.75	37 851.49	0.36	1.35
Gaseous Fuels	46 841.10	NCV	57.00	9.47	2.50	2 669.93	0.44	0.12
Biomass	756.00	NCV	92.01	32.00	2.50 <sup>(3)</sup>	69.56	0.02	0.00
Other Fuels	32 845.60	NCV	115.25	0.22	1.80	3 785.55	0.01	0.06
a. Public Electricity and Heat Production	504 958.03	NCV				47 767.65	0.59	1.71
Liquid Fuels	113 664.60	NCV	77.94	1.64	2.50	8 858.63	0.19	0.28
Solid Fuels	352 381.80	NCV	104.25	0.79	3.77	36 734.14	0.28	1.33
Gaseous Fuels	37 700.44	NCV	57.00	2.63	2.50	2 148.93	0.10	0.09
Biomass	756.00	NCV	92.01	32.00	2.50 <sup>(3)</sup>	69.56	0.02	0.00
Other Fuels	455.20	NCV	57.01	0.31	2.50	25.95	0.00	0.00
b. Petroleum Refining	239 736.17	NCV				15 788.34	0.64	0.60
Liquid Fuels	235 868.30	NCV	64.21	2.68	2.50	15 144.74	0.63	0.59
Solid Fuels	2 005.41	NCV	268.02	2.49	2.49	537.50	0.01	0.01
Gaseous Fuels	1 862.46	NCV	56.97	2.52	2.52	106.10	0.00	0.00
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
c. Manufacture of Solid Fuels and Other Energy Industries	46 685.04	NCV				4 875.75	0.43	0.09
Liquid Fuels	1 556.44	NCV	78.00	3.02	2.51	121.40	0.00	0.00
Solid Fuels	5 460.00	NCV	106.20	15.00	2.50	579.85	0.08	0.01
Gaseous Fuels	7 278.20	NCV	57.01	46.65	2.50	414.90	0.34	0.02
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels	32 390.40	NCV	116.07	0.21	1.79	3 759.60	0.01	0.06

<sup>(1)</sup> Activity data should be calculated using net calorific values (NCV) as specified by the IPCC Guidelines. If gross calorific values (GCV) were used, please indicate this by replacing "NCV" with "GCV" in this column.

<sup>(2)</sup> Accurate estimation of CH<sub>4</sub> and N<sub>2</sub>O emissions depends on combustion conditions, technology, and emission control policy, as well as fuel characteristics. Therefore, caution should be used when comparing the implied emission factors.

<sup>(3)</sup> Carbon dioxide emissions from biomass are reported under Memo Items. The content of the cells is not included in the totals.

**Note:** For the coverage of fuel categories, please refer to the IPCC Guidelines (Volume 1. Reporting Instructions - Common Reporting Framework, section 1.2, p. 1.19). If some derived gases (e.g. gas work gas, coke oven gas, blast gas, oxygen steel furnace gas, etc.) are considered, Parties should provide information on the allocation of these derived gases under the above fuel categories (liquid, solid, gaseous, biomass, other fuels) in the documentation box at the end of sheet 4 of this table.

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 2 of 4)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A.2 Manufacturing Industries and Construction</b>	<b>1 306 432.27</b>	<b>NCV</b>				<b>77 045.46</b>	<b>4.25</b>	<b>2.55</b>
Liquid Fuels	269 006.43	NCV	74.47	1.62	2.50	20 033.15	0.44	0.67
Solid Fuels	103 767.63	NCV	111.09	3.57	2.51	11 527.60	0.37	0.26
Gaseous Fuels	419 205.98	NCV	56.95	3.20	2.50	23 875.79	1.34	1.05
Biomass	75 826.55	NCV	98.67	15.96	2.50 <sup>(3)</sup>	7 481.88	1.21	0.19
Other Fuels	438 625.67	NCV	49.27	2.03	0.87	21 608.92	0.89	0.38
<b>a. Iron and Steel</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>b. Non-Ferrous Metals</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>c. Chemicals</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>d. Pulp, Paper and Print</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>e. Food Processing, Beverages and Tobacco</b>	<b>0.00</b>	<b>NCV</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>f. Other (please specify )</b>	<b>1 306 432.27</b>	<b>NCV</b>				<b>77 045.46</b>	<b>4.25</b>	<b>2.55</b>
Liquid Fuels	269 006.43	NCV	74.47	1.62	2.50	20 033.15	0.44	0.67
Solid Fuels	103 767.63	NCV	111.09	3.57	2.51	11 527.60	0.37	0.26
Gaseous Fuels	419 205.98	NCV	56.95	3.20	2.50	23 875.79	1.34	1.05
Biomass	75 826.55	NCV	98.67	15.96	2.50 <sup>(3)</sup>	7 481.88	1.21	0.19
Other Fuels	438 625.67	NCV	49.27	2.03	0.87	21 608.92	0.89	0.38

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 3 of 4)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS			
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
<b>I.A.3 Transport</b>	<b>1 842 919.45</b>	NCV					<b>135 765.90</b>	<b>15.19</b>	<b>9.34</b>
Gasoline	736 073.71	NCV	72.26	15.75	7.47		53 189.35	11.60	5.50
Diesel	1 084 926.87	NCV	74.72	3.18	3.51		81 060.46	3.45	3.81
Natural Gas	8 197.20	NCV	57.00	3.00	2.50		467.24	0.02	0.02
Solid Fuels	0.00	NCV	0.00	0.00	0.00		0.00	0.00	0.00
Biomass	0.00	NCV	0.00	0.00	0.00 <sup>(3)</sup>		0.00	0.00	0.00
Other Fuels	13 721.68	NCV	76.44	9.14	1.21		1 048.85	0.13	0.02
a. Civil Aviation	84 927.48	NCV					6 080.04	0.00	0.00
Aviation Gasoline		NCV	0.00	0.00	0.00				
Jet Kerosene	84 927.48	NCV	71.59	0.00	0.00		6 080.04		
b. Road Transportation	1 714 658.98	NCV					126 593.00	15.11	9.23
Gasoline	651 146.23	NCV	72.35	17.81	8.44		47 109.31	11.60	5.50
Diesel Oil	1 056 428.75	NCV	74.70	3.21	3.54		78 919.39	3.39	3.74
Natural Gas		NCV	0.00	0.00	0.00				
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>				
Other Fuels (please specify)	7 084.00	NCV					564.30	0.13	0.00
	7 084.00	NCV	79.66	17.69	0.00		564.30	0.13	
c. Railways	9 862.67	NCV					739.70	0.04	0.02
Solid Fuels		NCV	0.00	0.00	0.00				
Liquid Fuels	9 862.67	NCV	75.00	4.30	2.50		739.70	0.04	0.02
Other Fuels (please specify)	0.00	NCV					0.00	0.00	0.00
		NCV	0.00	0.00	0.00				
d. Navigation	25 273.12	NCV					1 885.92	0.01	0.06
Coal		NCV	0.00	0.00	0.00				
Residual Oil	1 232.14	NCV	78.00	0.00	2.50		96.11		0.00
Gas/Diesel Oil	17 403.30	NCV	75.00	0.60	2.50		1 305.26	0.01	0.04
Other Fuels (please specify)	6 637.68	NCV					484.55	0.00	0.02
	6 637.68	NCV	73.00	0.00	2.50		484.55		0.02
e. Other Transportation	8 197.20	NCV					467.24	0.02	0.02
Liquid Fuels		NCV	0.00	0.00	0.00				
Solid Fuels		NCV	0.00	0.00	0.00				
Gaseous Fuels	8 197.20	NCV	57.00	3.00	2.50		467.24	0.02	0.02

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 4 of 4)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A.4 Other Sectors</b>	<b>1 894 350.05</b>	NCV				<b>103 305.69</b>	<b>136.28</b>	<b>4.74</b>
Liquid Fuels	808 398.05	NCV	73.49	5.25	2.50	59 407.72	4.24	2.02
Solid Fuels	11 004.00	NCV	95.00	82.12	2.50	1 045.38	0.90	0.03
Gaseous Fuels	750 540.00	NCV	57.00	2.50	2.50	42 780.77	1.88	1.88
Biomass	323 148.00	NCV	92.00	400.00	2.50 <sup>(3)</sup>	29 729.62	129.26	0.81
Other Fuels	1 260.00	NCV	57.00	2.50	2.50	71.82	0.00	0.00
<b>a. Commercial/Institutional</b>	<b>461 218.41</b>	NCV				<b>30 371.79</b>	<b>2.35</b>	<b>1.15</b>
Liquid Fuels	233 617.41	NCV	74.35	6.44	2.50	17 369.71	1.51	0.58
Solid Fuels	1 450.90	NCV	95.00	63.13	2.50	137.83	0.09	0.00
Gaseous Fuels	225 305.40	NCV	57.00	2.50	2.50	12 842.40	0.56	0.56
Biomass	461.30	NCV	92.00	400.00	2.49 <sup>(3)</sup>	42.44	0.18	0.00
Other Fuels	383.40	NCV	56.99	2.50	2.50	21.85	0.00	0.00
<b>b. Residential</b>	<b>1 289 493.99</b>	NCV				<b>62 634.14</b>	<b>132.92</b>	<b>3.22</b>
Liquid Fuels	445 926.99	NCV	73.11	5.99	2.50	32 600.09	2.67	1.11
Solid Fuels	6 529.10	NCV	95.00	85.00	2.50	620.27	0.55	0.02
Gaseous Fuels	515 154.60	NCV	57.00	2.50	2.50	29 363.81	1.29	1.29
Biomass	321 006.70	NCV	92.00	400.00	2.50 <sup>(3)</sup>	29 532.62	128.40	0.80
Other Fuels	876.60	NCV	57.00	2.50	2.50	49.97	0.00	0.00
<b>c. Agriculture/Forestry/Fisheries</b>	<b>143 637.65</b>	NCV				<b>10 299.76</b>	<b>1.02</b>	<b>0.36</b>
Liquid Fuels	128 853.65	NCV	73.25	0.51	2.50	9 437.92	0.07	0.32
Solid Fuels	3 024.00	NCV	95.00	85.00	2.50	287.28	0.26	0.01
Gaseous Fuels	10 080.00	NCV	57.00	2.50	2.50	574.56	0.03	0.03
Biomass	1 680.00	NCV	92.00	400.00	2.50 <sup>(3)</sup>	154.56	0.67	0.00
Other Fuels		NCV	0.00	0.00	0.00			
<b>I.A.5 Other (Not elsewhere specified) <sup>(4)</sup></b>	<b>0.00</b>	NCV				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			

<sup>(4)</sup> Include military fuel use under this category.

**Documentation Box:**

1A3a - Civil aviation : the gasoline item is included within the jet kerosene item.

**TABLE 1.A(b) SECTORAL BACKGROUND DATA FOR ENERGY**  
**CO<sub>2</sub> from Fuel Combustion Activities - Reference Approach (IPCC Worksheet 1-1)**  
(Sheet 1 of 1)

France  
1998  
Submission

FUEL TYPES			Unit	Production	Imports	Exports	International bunkers	Stock change	Apparent consumption	Conversion factor <sup>(1)</sup> (TJ/Unit)	<sup>(1)</sup>	Apparent consumption (TJ)	Carbon emission factor (t C/TJ)	Carbon content (Gg C)	Carbon stored (Gg C)	Net carbon emissions (Gg C)	Fraction of carbon oxidized	Actual CO <sub>2</sub> emissions (Gg CO <sub>2</sub> )	
Liquid Fossil	Primary Fuels	Crude Oil	kt	1 698.00	90 340.00	0.00		-581.00	92 619.00	42.00	NCV	3 889 998.00	20.00	77 799.96		77 799.96	0.99	282 413.85	
		Orimulsion	kt	0.00	0.00	0.00		0.00	0.00	27.50	NCV	0.00	20.00	0.00		0.00	0.99	0.00	
		Natural Gas Liquids	kt	251.00	0.00	0.00		0.00	251.00	44.00	NCV	11 044.00	17.20	189.96		189.96	0.99	689.54	
	Secondary Fuels	Gasoline	kt		2 431.00	5 524.00	0.00		102.00	-3 195.00	44.00	NCV	-140 580.00	18.90	-2 656.96		-2 656.96	0.99	-9 644.77
		Jet Kerosene	kt		405.00	1 875.00	14.00		81.00	-1 565.00	44.00	NCV	-68 860.00	19.50	-1 342.77		-1 342.77	0.99	-4 874.26
		Other Kerosene	kt		54.00	10.00	0.00		0.00	44.00	NCV	1 936.00	19.60	37.95		37.95	0.99	137.74	
		Shale Oil	kt			0.00	0.00		0.00	0.00	NCV	0.00	20.00	0.00		0.00	0.99	0.00	
		Gas / Diesel Oil	kt			11 297.00	2 710.00	441.00	-873.00	9 019.00	42.00	NCV	378 798.00	20.20	7 651.72	1 664.56	5 987.16	0.99	21 733.39
		Residual Fuel Oil	kt		1 600.00	4 663.00		2 469.00	190.00	-5 722.00	40.00	NCV	-228 880.00	21.10	-4 829.37		-4 829.37	0.99	-17 530.61
		LPG	kt		1 557.00	1 282.00			18.00	257.00	46.00	NCV	11 822.00	17.20	203.34	479.47	-276.13	0.99	-1 002.36
		Ethane	kt			0.00	0.00		0.00	0.00	47.50	NCV	0.00	16.80	0.00	0.00	0.00	0.99	0.00
		Naphtha	kt		3 392.00	869.00			34.00	2 489.00	45.00	NCV	112 005.00	20.00	2 240.10	7 641.00	-5 400.90	0.99	-19 605.27
		Bitumen	kt		284.00	328.00			-1.00	-43.00	40.00	NCV	-1 720.00	22.00	-37.84	2 988.22	-3 026.06	0.99	-10 984.60
		Lubricants	kt			154.00	1 456.00	31.00	85.00	-1 418.00	40.00	NCV	-56 720.00	20.00	-1 134.40	782.88	-1 917.28	0.99	-6 959.73
		Petroleum Coke	kt			1 112.00	10.00		0.00	1 102.00	32.00	NCV	35 264.00	27.50	969.76		969.76	0.99	3 520.23
		Refinery Feedstocks	kt			83.00	1 391.00		61.00	-1 369.00	44.80	NCV	-61 331.20	20.00	-1 226.62		-1 226.62	0.99	-4 452.65
		Other Oil	kt			631.00	836.00		22.00	-227.00	40.00	NCV	-9 080.00	20.00	-181.60		-181.60	0.99	-659.21
Liquid Fossil Totals											3 873 695.80		77 683.22	13 556.13	64 127.09		232 781.32		
Solid Fossil	Primary Fuels	Anthracite <sup>(2)</sup>	kt						0.00		NCV	0.00	26.80	0.00		0.00	0.98	0.00	
		Coking Coal	kt	0.00	7 052.00	1.00		0.00	7 051.00	26.00	NCV	183 326.00	25.80	4 729.81	202.61	4 527.20	0.98	16 267.74	
		Other Bit. Coal	kt	5 375.00	17 724.00	64.00	0.00	878.00	22 157.00	26.00	NCV	576 082.00	25.80	14 862.92		14 862.92	0.98	53 407.41	
		Sub-bit. Coal	kt	0.00	0.00	0.00	0.00	0.00	0.00	26.00	NCV	0.00	26.20	0.00		0.00	0.98	0.00	
		Lignite	kt	737.00	32.00	0.00		320.00	449.00	17.00	NCV	7 633.00	27.60	210.67		210.67	0.98	757.01	
		Oil Shale	kt	0.00	0.00	0.00		0.00	0.00	9.40	NCV	0.00	29.10	0.00		0.00	0.98	0.00	
		Peat	kt	0.00	0.00	0.00		0.00	0.00	11.60	NCV	0.00	28.90	0.00		0.00	0.98	0.00	
	Secondary Fuels	BKB & Patent Fuel	kt		110.00	20.00		-9.00	99.00	32.00	NCV	3 168.00	25.80	81.73		81.73	0.98	293.70	
		Coke Oven/Gas Coke	kt			0.00	0.00		0.00	0.00	28.00	NCV	0.00	29.50	0.00		0.00	0.98	0.00
Solid Fuel Totals											770 209.00		19 885.13	202.61	19 682.52		70 725.86		
Gaseous Fossil		Natural Gas (Dry)	TJ	85 475.00	1 434 395	32 836.00		67 345.00	1 419 689.00	1.00	NCV	1 419 689.00	15.30	21 721.24	1 471.55	20 249.69	1.00	73 877.63	
Total											6 063 593.80		119 289.59	15 230.29	104 059.30		377 384.81		
Biomass total											408 159.00		12 102.17	0.00	12 102.17		43 487.14		
		Solid Biomass	TJ	397 878.00	0.00	0.00		0.00	397 878.00	1.00	NCV	397 878.00	29.90	11 896.55		11 896.55	0.98	42 748.28	
		Liquid Biomass	TJ	9 873.00	544.00	0.00		136.00	10 281.00	1.00	NCV	10 281.00	20.00	205.62		205.62	0.98	738.86	
		Gas Biomass	TJ		0.00	0.00		0.00	0.00	1.00	NCV	0.00	30.60	0.00		0.00	0.98	0.00	

<sup>(1)</sup> To convert quantities expressed in natural units to energy units, use net calorific values (NCV). If gross calorific values (GCV) are used in this table, please indicate this by replacing "NCV" with "GCV" in this column.

<sup>(2)</sup> If Anthracite is not separately available, include with Other Bituminous Coal.

**TABLE 1.A(c) COMPARISON OF CO<sub>2</sub> EMISSIONS FROM FUEL COMBUSTION**  
(Sheet 1 of 1)

France  
1998  
Submission

FUEL TYPES	Reference approach		National approach <sup>(1)</sup>		Difference <sup>(2)</sup>	
	Energy consumption (PJ)	CO <sub>2</sub> emissions (Gg)	Energy consumption (PJ)	CO <sub>2</sub> emissions (Gg)	Energy consumption (%)	CO <sub>2</sub> emissions (%)
Liquid Fuels (excluding international bunkers)	3 873.70	232 781.32	3 249.49	237 815.45	19.21	-2.12
Solid Fuels (excluding international bunkers)	770.21	70 725.86	474.62	50 424.47	62.28	40.26
Gaseous Fuels	1 419.69	73 877.63	1 224.78	69 793.73	15.91	5.85
Other <sup>(3)</sup>			486.45	26 515.14	-100.00	-100.00
<b>Total <sup>(3)</sup></b>	<b>6 063.59</b>	<b>377 384.81</b>	<b>5 435.35</b>	<b>384 548.79</b>	<b>11.56</b>	<b>-1.86</b>

<sup>(1)</sup> "National approach" is used to indicate the approach (if different from the Reference approach) followed by the Party to estimate its CO<sub>2</sub> emissions from fuel combustion reported in the national GHG inventory.

<sup>(2)</sup> Difference of the Reference approach over the National approach (i.e. difference = 100% x ((RA-NA)/NA), where NA = National approach and RA = Reference approach).

<sup>(3)</sup> Emissions from biomass are not included.

**Note:** In addition to estimating CO<sub>2</sub> emissions from fuel combustion by sector, Parties should also estimate these emissions using the IPCC Reference approach, as found in the IPCC Guidelines, Worksheet 1-1(Volume 2. Workbook). The Reference approach is to assist in verifying the sectoral data. Parties should also complete the above tables to compare the alternative estimates, and if the emission estimates lie more than 2 percent apart, should explain the source of this difference in the documentation box provided.


**Documentation Box:**

Anthracite is included with "other bituminous coal» and gaseous biomass is included in liquid biomass.

The reference approach is applied to the metropolitan area only. The apparent difference in fuel categories is due to different allocation of derived fuels between the reference approach and the sectoral approach. Difference are also due to maritime and air traffics which are differently counted in the sectoral and the reference approaches.


**TABLE 1.A(d) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Feedstocks and Non-Energy Use of Fuels**  
**(Sheet 1 of 1)**

France  
1998  
Submission

FUEL TYPE <sup>(1)</sup>	ACTIVITY DATA AND RELATED INFORMATION		IMPLIED EMISSION FACTOR	ESTIMATE
	Fuel quantity (TJ)	Fraction of carbon stored	Carbon emission factor (t C/TJ)	of carbon stored in non-energy use of fuels (Gg C)
Naphtha <sup>(2)</sup>	382 050.00	100.00	0.20	7 641.00
Lubricants	39 144.00	100.00	0.20	782.88
Bitumen	135 828.00	100.00	0.22	2 988.22
Coal Oils and Tars (from Coking Coal)	7 560.00	100.00	0.27	202.61
Natural Gas <sup>(2)</sup>	96 180.00	100.00	0.15	1 471.55
Gas/Diesel Oil <sup>(2)</sup>	82 404.00	100.00	0.20	1 664.56
LPG <sup>(2)</sup>	27 876.00	100.00	0.17	479.47
Butane <sup>(2)</sup>		100.00	0.00	
Ethane <sup>(2)</sup>	0.00	100.00	0.00	0.00
Other (please specify) 				
Wax and parafins	2 646.00	100.00	0.20	52.92
White spirit	5 712.00	100.00	0.20	114.24
Other petroleum products	6 642.30	100.00	0.20	132.85
Other PP (feed back)	-101 000.00	100.00	0.20	-2 020.00
			0.00	

- <sup>(1)</sup> Where fuels are used in different industries, please enter in different rows.  
<sup>(2)</sup> Enter these fuels when they are used as feedstocks.

**Note:** The table is consistent with the IPCC Guidelines. Parties that take into account the emissions associated with the use and disposal of these feedstocks could continue to use their methodology, and provide explanation notes in the documentation box below.

<b>Documentation box:</b> A fraction of energy carriers is stored in such products as plastics or asphalt. The non-stored fraction of the carbon in the energy carrier or product is oxidized, resulting in carbon dioxide emissions, either during the use of the energy carriers in the industrial production (e.g. fertilizer production), or during the use of the products (e.g. solvents, lubricants), or in both (e.g. monomers). To report associated emissions use the above table, filling an extra "Additional information" table, as shown below.		
Associated CO <sub>2</sub> emissions (Gg)	Allocated under (Specify source category) <sup>(a)</sup> 	<sup>(a)</sup> e.g. Industrial Processes, Waste Incineration, etc.
2 298.00	6C non-biogenic	
1 647.00	3A, B, D	
4 144.53	1B2	
Butane is included with LPG.		

**Additional information <sup>(a)</sup>**

CO <sub>2</sub> not emitted (Gg CO <sub>2</sub> )	Subtracted from energy sector (specify source category)
28 017.00	
2 870.56	
10 956.81	
742.90	
5 395.68	
6 103.39	
1 758.06	
0.00	
0.00	
194.04	
418.88	
487.12	
-7 406.67	
0.00	

<sup>(a)</sup> The fuel lines continue from the table to the left.

**TABLE 1.B.1 SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fugitive Emissions from Solid Fuels**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTOR		EMISSIONS	
	Amount of fuel produced <sup>(1)</sup>	CH <sub>4</sub>	CO <sub>2</sub>	CH <sub>4</sub>	CO <sub>2</sub>
	(Mt)	(kg/t)	(kg/t)	(Gg)	(Gg)
<b>1. B. 1. a. Coal Mining and Handling</b>	5.60			116.38	0.00
i. Underground Mines <sup>(2)</sup>	4.74	24.43	0.00	115.67	0.00
Mining Activities		24.43	0.00	115.67	0.00
Post-Mining Activities		0.00	0.00		
ii. Surface Mines <sup>(2)</sup>	0.86	0.83	0.00	0.71	0.00
Mining Activities		0.83	0.00	0.71	0.00
Post-Mining Activities		0.00	0.00		
<b>1. B. 1. b. Solid Fuel Transformation</b>	5.50	0.35	0.00	1.93	0.00
<b>1. B. 1. c. Other (please specify) <sup>(3)</sup></b>				14.79	0.00
Post-Mining Activities	5.60	2.64	0.00	14.79	0.00

<sup>(1)</sup> Use the documentation box to specify whether the fuel amount is based on the run-of-mine (ROM) production or on the saleable production.

<sup>(2)</sup> Emissions both for Mining Activities and Post-Mining Activities are calculated with the activity data in lines Underground Mines and Surface Mines respectively.

<sup>(3)</sup> Please click on the button to enter any other solid fuel related activities resulting in fugitive emissions, such as emissions from abandoned mines and waste piles.

**Note:** There are no clear references to the coverage of 1.B.1.b. and 1.B.1.c. in the IPCC Guidelines. Make sure that the emissions entered here are not reported elsewhere. If they are reported under another source category, indicate this (IE) and make a reference in Table 9 (completeness) and/or in the documentation box.

Documentation box:
From CORINAIR system the post-mining activity is not split into both underground and surface mines, and has been therefore allocated into 1B1c - other.

**Additional information <sup>(a)</sup>**

Description	Value
Amount of CH <sub>4</sub> drained (recovered) and utilized or flared (Gg)	
Number of active underground mines	
Number of mines with drainage (recovery) systems	

<sup>(a)</sup> For underground mines.



**TABLE 1.B.2 SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fugitive Emissions from Oil and Natural Gas**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTORS			EMISSIONS		
	Description <sup>(1)</sup>	Unit	Value	CO <sub>2</sub> (kg/unit) <sup>(2)</sup>	CH <sub>4</sub> (kg/unit) <sup>(2)</sup>	N <sub>2</sub> O (kg/unit) <sup>(2)</sup>	CO <sub>2</sub> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
<b>1. B. 2. a. Oil <sup>(3)</sup></b>							<b>3 212.90</b>	<b>0.31</b>	
i. Exploration	(e.g. number of wells drilled)			0.00	0.00				
ii. Production <sup>(4)</sup>	PJ Produced	PJ	68.36	0.00	0.00		0.00		
iii. Transport	PJ Loaded	PJ	6 875.90	0.00	0.00		0.00		
iv. Refining / Storage	PJ Refined	PJ	3 889.84	825 972.71	79.39		3 212.90	0.31	
v. Distribution of oil products	PJ Refined	PJ	915.44	0.00	0.00		0.00		
vi. Other				0.00	0.00				
<b>1. B. 2. b. Natural Gas</b>							<b>563.10</b>	<b>96.28</b>	
Exploration				0.00	0.00				
i. Production <sup>(4)</sup> / Processing	PJ Production	PJ	199.90	2 816 852.09	1 090.52		563.10	0.22	
ii. Transmission	PJ Consumed	PJ	1 267.58	0.00	75 781.25		0.00	96.06	
Distribution	(e.g. PJ gas consumed)			0.00	0.00				
iii. Other Leakage	(e.g. PJ gas consumed)			0.00	0.00				
at industrial plants and power stations				0.00	0.00				
in residential and commercial sectors				0.00	0.00				
<b>1. B. 2. c. Venting <sup>(5)</sup></b>							<b>0.00</b>	<b>0.00</b>	
i. Oil	(e.g. PJ oil produced)			0.00	0.00				
ii. Gas	(e.g. PJ gas produced)			0.00	0.00				
iii. Combined				0.00	0.00				
<b>Flaring</b>							<b>368.53</b>	<b>0.50</b>	<b>0.00</b>
i. Oil	PJ Consumed	PJ	3 889.83	86 875.26	0.00	0.00	337.93		
ii. Gas				0.00	0.00	0.00	0.00		
iii. Combined	PJ Consumed	PJ	0.54	56 951 423.79	923 692.54	1 861.16	30.60	0.50	0.00
<b>1.B.2.d. Other (please specify) <sup>(6)</sup></b>							<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00	0.00			

**Additional information**

Description	Value	Unit
Pipelines length (km)		
Number of oil wells		
Number of gas wells		
Gas throughput <sup>(a)</sup>		
Oil throughput <sup>(a)</sup>		
Other relevant information (specify)		

<sup>(a)</sup> In the context of oil and gas production, throughput is a measure of the total production, such as barrels per day of oil, or cubic meters of gas per year. Specify the units of the reported value in the unit column. Take into account that these values should be consistent with the activity data reported under the production rows of the main table.

<sup>(1)</sup> Specify the activity data used and fill in the activity data description column, as given in the examples in brackets. Specify the unit of the activity data in the unit column. Use the document box to specify whether the fuel amount is based on the raw material production or on the saleable production. Note cases where more than one variable is used as activity data.

<sup>(2)</sup> The unit of the implied emission factor will depend on the units of the activity data used, and is therefore not specified in this column. The unit of the implied emission factor for each activity will be kg/unit of activity data.

<sup>(3)</sup> Use the category also to cover emissions from combined oil and gas production fields. Natural gas processing and distribution from these fields should be included under 1.B.2.b.ii and 1.B.2.b.iii, respectively.

<sup>(4)</sup> If using default emission factors these categories will include emissions from production other than venting and flaring.

<sup>(5)</sup> If using default emission factors, emissions from Venting and Flaring from all oil and gas production should be accounted for here. Parties using the IPCC software could report those emissions together, indicating so in the documentation box.

<sup>(6)</sup> For example, fugitive CO<sub>2</sub> emissions from production of geothermal power could be reported here.

**Documentation box:**

**TABLE 1.C SECTORAL BACKGROUND DATA FOR ENERGY**  
**International Bunkers and Multilateral Operations**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS			EMISSIONS		
	Consumption (TJ)	CO <sub>2</sub> (t/TJ)	CH <sub>4</sub> (kg/TJ)	N <sub>2</sub> O (kg/TJ)	CO <sub>2</sub> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
<b>Marine Bunkers</b>	<b>118 286.56</b>				<b>9 166.41</b>	<b>0.00</b>	<b>0.30</b>
Gasoline		0.00	0.00	0.00			
Gas/Diesel Oil	19 981.62	75.00	0.00	2.50	1 498.62		0.05
Residual Fuel Oil	98 304.94	78.00	0.00	2.50	7 667.79		0.25
Lubricants		0.00	0.00	0.00			
Coal		0.00	0.00	0.00			
Other ( <i>please specify</i> )	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00			
<b>Aviation Bunkers</b>	<b>171 507.78</b>				<b>12 255.30</b>	<b>0.00</b>	<b>0.00</b>
Jet Kerosene	171 507.78	71.46	0.00	0.00	12 255.30		
Gasoline		0.00	0.00	0.00			
<b>Multilateral Operations <sup>(1)</sup></b>							

<sup>(1)</sup> Parties may choose to report or not report the activity data and emission factors for multilateral operation consistent with the principle of confidentiality stated in the UNFCCC reporting guidelines on inventories. In any case, Parties should report the emissions from multilateral operations, where available, under the Memo Items section of the Summary tables and in the Sectoral report table for energy.

**Note:** In accordance with the IPCC Guidelines, international aviation and marine bunker fuel emissions from fuel sold to ships or aircraft engaged in international transport should be excluded from national totals and reported separately for informational purposes only.

**Documentation box:** Please explain how the consumption of international marine and aviation bunkers fuels was estimated and separated from the domestic consumption.

Aviation bunker : the fuel consumption for international aviation is deduced from the balance between the total aviation fuel sale and the estimation of the domestic traffic consumption which is calculated with a detailed approach (based on the individual aircraft movements and using ICAO, MEET and CORINAIR sources of information).  
Marine bunker : the UN-ECE definition for international marine traffic is considered. Thus a part from the French bunker is counted within the international marine bunker.




**Additional information**

Fuel consumption	Allocation <sup>(a)</sup> (percent)	
	Domestic	International
Marine	17.60	82.40
Aviation	33.12	66.88

<sup>(a)</sup> For calculating the allocation of fuel consumption, use the sums of fuel consumption by domestic navigation and aviation (Table 1.A(a)) and by international bunkers (Table 1.C).

**TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES**  
(Sheet 1 of 2)

France  
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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
				P	A	P	A	P	A				
	(Gg)			CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>Total Industrial Processes</b>	<b>18 045.29</b>	<b>2.64</b>	<b>53.56</b>	<b>0.00</b>	<b>3 751.70</b>	<b>0.00</b>	<b>1 661.16</b>	<b>0.00</b>	<b>0.10</b>	<b>12.04</b>	<b>958.87</b>	<b>98.65</b>	<b>16.66</b>
<b>A. Mineral Products</b>	<b>10 791.75</b>	<b>0.00</b>	<b>0.00</b>							<b>0.00</b>	<b>0.00</b>	<b>13.68</b>	<b>0.00</b>
1. Cement Production	8 281.00												
2. Lime Production	1 539.06												
3. Limestone and Dolomite Use	0.00												
4. Soda Ash Production and Use	392.40												
5. Asphalt Roofing	0.00												
6. Road Paving with Asphalt	0.00											13.68	
7. Other ( <i>please specify</i> ) 	579.29	0.00	0.00							0.00	0.00	0.00	0.00
Glass processes / decarbonizing										0.00	0.00	0.00	0.00
<b>B. Chemical Industry</b>	<b>2 844.46</b>	<b>2.64</b>	<b>53.56</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9.41</b>	<b>0.00</b>	<b>39.49</b>	<b>12.72</b>
1. Ammonia Production	2 844.46	0.00								3.65		8.75	
2. Nitric Acid Production			12.96							4.97			
3. Adipic Acid Production			31.36							0.36			
4. Carbide Production	0.00	0.00											
5. Other ( <i>please specify</i> ) 	0.00	2.64	9.24	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	30.74	12.72
(cf. background table)										0.44	0.00	30.74	12.72
<b>C. Metal Production</b>	<b>3 832.90</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>896.90</b>	<b>0.00</b>	<b>0.05</b>	<b>2.63</b>	<b>958.87</b>	<b>4.06</b>	<b>3.94</b>
1. Iron and Steel Production	3 159.67	0.00								2.54	942.04	2.19	0.58
2. Ferroalloys Production	0.00	0.00											
3. Aluminium Production	673.23	0.00					896.90			0.08	16.83	1.74	3.37
4. SF <sub>6</sub> Used in Aluminium and Magnesium Foundries									0.05				
5. Other ( <i>please specify</i> ) 	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00
Nickel production												0.14	

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines. A = Actual emissions based on Tier 2 approach of the IPCC Guidelines. This only applies in sectors where methods exist for both tiers.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

**TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES**  
(Sheet 2 of 2)

France  
1998  
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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
				P	A	P	A	P	A				
	(Gg)			CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>D. Other Production</b>	576.18									0.00	0.00	41.42	0.00
1. Pulp and Paper												1.21	
2. Food and Drink <sup>(2)</sup>	576.18											40.21	
<b>E. Production of Halocarbons and SF<sub>6</sub></b>					532.02		175.00		0.00				
1. By-product Emissions					222.30		0.00		0.00				
Production of HCFC-22					222.30								
Other					0.00		0.00		0.00				
2. Fugitive Emissions					309.72		175.00		0.00				
3. Other ( <i>please specify</i> )					0.00		0.00		0.00				
<b>F. Consumption of Halocarbons and SF<sub>6</sub></b>				0.00	3 219.68	0.00	589.26	0.00	0.05				
1. Refrigeration and Air Conditioning Equipment					1 545.49		0.00		0.00				
2. Foam Blowing					0.00		0.00		0.00				
3. Fire Extinguishers					8.90		0.00		0.00				
4. Aerosols/ Metered Dose Inhalers					1 560.00		0.00		0.00				
5. Solvents					50.88		0.00		0.00				
6. Semiconductor Manufacture					54.41		458.61		0.01				
7. Electrical Equipment									0.04				
8. Other ( <i>please specify</i> )				0.00	0.00	0.00	130.65	0.00	0.00				
<b>G. Other (<i>please specify</i>)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(2)</sup> CO<sub>2</sub> from Food and Drink Production (e.g. gasification of water) can be of biogenic or non-biogenic origin. Only information on CO<sub>2</sub> emissions of non-biogenic origin should be reported.

**TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O**  
(Sheet 1 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS <sup>(2)</sup>					
	Production/Consumption quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Description <sup>(1)</sup>	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	(2)	(Gg)	(2)	(Gg)	(2)
<b>A. Mineral Products</b>						<b>10 791.75</b>		<b>0.00</b>		<b>0.00</b>	
1. Cement Production	kt Production	16 562.00	0.50			8 281.00					
2. Lime Production	kt Production	3 497.85	0.44			1 539.06					
3. Limestone and Dolomite Use	kt Production		0.00			0.00					
4. Soda Ash						392.40					
Soda Ash Production	kt Production	1 980.00	0.20			392.40					
Soda Ash Use			0.00								
5. Asphalt Roofing	kt Production		0.00			0.00					
6. Road Paving with Asphalt	kt Production	38 056.16	0.00			0.00					
7. Other (please specify)						579.29		0.00		0.00	
Glass Production	kt Production	5 792.91	0.10			579.29					
Batteries manufacturing	kt Production	190.00	0.00	0.00	0.00	0.00					
<b>B. Chemical Industry</b>						<b>2 844.46</b>		<b>2.64</b>		<b>53.56</b>	
1. Ammonia Production <sup>(3)</sup>	kt Production	1 823.37	1.56	0.00	0.00	2 844.46					
2. Nitric Acid Production	kt Production	2 760.00			0.00					12.96	
3. Adipic Acid Production	kt Production	185.16			0.17					31.36	
4. Carbide Production			0.00	0.00		0.00		0.00			
Silicon Carbide			0.00	0.00							
Calcium Carbide	kt Production		0.00	0.00		0.00					
5. Other (please specify)						0.00		2.64		9.24	
Carbon Black	kt Production	264.00		0.01				2.64			
Ethylene	kt Production	2 922.08	0.00	0.00	0.00	0.00					
Dichloroethylene				0.00							
Styrene	kt Production	714.39		0.00							
Methanol				0.00							
Other	kt Production	11 949.42	0.00	0.00	0.00	0.00				9.24	

<sup>(1)</sup> Where the IPCC Guidelines provide options for activity data, e.g. cement or clinker for estimating the emissions from Cement Production, specify the activity data used (as shown in the example in brackets) in order to make the choice of emission factor more transparent and to facilitate comparisons of implied emission factors.

<sup>(2)</sup> Enter cases in which the final emissions are reduced with the quantities of emission recovery, oxidation, destruction, transformation. Adjusted emissions are reported and the quantitative information on recovery, oxidation, destruction, and transformation should be given in the additional columns provided.

<sup>(3)</sup> To avoid double counting make offsetting deductions from fuel consumption (e.g. natural gas) in Ammonia Production, first for feedstock use of the fuel, and then to a sequestering use of the feedstock.

**TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O**  
**(Sheet 2 of 2)**

France  
1998  
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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS <sup>(2)</sup>					
	Production/Consumption Quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Description <sup>(1)</sup>	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	(2)	(Gg)	(2)	(Gg)	(2)
<b>C. Metal Production <sup>(4)</sup></b>						<b>3 832.90</b>		<b>0.00</b>		<b>0.00</b>	
1. Iron and Steel Production			0.00			3 159.67		0.00			
Steel	kt Production	20 125.00	0.06			1 176.22					
Pig Iron	kt Production	13 968.00	0.11	0.00		1 592.35					
Sinter	kt Production	19 389.00	0.00	0.00		0.00					
Coke			0.00	0.00		0.00					
Other (please specify)						391.10		0.00			
Rolling mills, blast furnast charging	kt Production	18 036.00	0.02	0.00	0.00	391.10					
2. Ferroalloys Production	kt Production		0.00	0.00		0.00					
3. Aluminium Production	kt Production	420.77	1.60	0.00		673.23					
4. SF <sub>6</sub> Used in Aluminium and Magnesium Foundries											
5. Other (please specify)						0.00		0.00		0.00	
Nickel production	kt Production	11.60	0.00	0.00	0.00	0.00					
<b>D. Other Production</b>						<b>576.18</b>					
1. Pulp and Paper											
2. Food and Drink	kt Production	13 054.60	0.04			576.18					
<b>G. Other (please specify)</b>						<b>0.00</b>		<b>0.00</b>		<b>0.00</b>	
	kt Product	0.00	0.00	0.00	0.00	0.00					

<sup>(4)</sup> More specific information (e.g. data on virgin and recycled steel production) could be provided in the documentation box.

**Note:** In case of confidentiality of the activity data information, the entries should provide aggregate figures but there should be a note in the documentation box indicating this.

<b>Documentation box:</b>

**TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF<sub>6</sub>**  
(Sheet 1 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10mee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ca	Total HFCs <sup>(1)</sup>	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	C <sub>3</sub> F <sub>8</sub>	C <sub>4</sub> F <sub>10</sub>	c-C <sub>4</sub> F <sub>8</sub>	C <sub>5</sub> F <sub>12</sub>	C <sub>6</sub> F <sub>14</sub>	Total PFCs <sup>(1)</sup>	SF <sub>6</sub>
	(t) <sup>(2)</sup>																						
<b>Total Actual Emissions of Halocarbons (by chemical) and SF<sub>6</sub></b>	23.65	0.79	0.00	39.14	179.94	0.00	1 888.61	0.70	0.00	119.89	3.07	0.00	0.00		143.42	46.01	0.00	25.00	0.00	0.00	17.66		100.65
<b>C. Metal Production</b>															121.00	12.00							47.50
Aluminium Production															121.00	12.00							
SF <sub>6</sub> Used in Aluminium Foundries																							0.00
SF <sub>6</sub> Used in Magnesium Foundries																							47.50
<b>E. Production of Halocarbons and SF<sub>6</sub></b>	19.00	0.00	0.00	0.00	89.70	0.00	2.00	0.70	0.00	14.70	0.00	0.00	0.00		0.00	0.00	0.00	25.00	0.00	0.00	0.00		0.00
1. By-product Emissions	19.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production of HCFC-22	19.00																						
Other																							
2. Fugitive Emissions					89.70		2.00	0.70		14.70						0.00		25.00					
3. Other (please specify)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
<b>F(a). Consumption of Halocarbons and SF<sub>6</sub> (actual emissions - Tier 2)</b>	4.65	0.79	0.00	39.14	90.24	0.00	1 886.61	0.00	0.00	105.19	3.07	0.00	0.00		22.42	34.01	0.00	0.00	0.00	0.00	17.66		53.15
1. Refrigeration and Air Conditioning Equipment		0.79			90.24		686.61	0.00		105.19													
2. Foam Blowing																							
3. Fire Extinguishers											3.07												
4. Aerosols/Metered Dose Inhalers							1 200.00																
5. Solvents				39.14																			
6. Semiconductor Manufacture	4.65														22.42	34.01	0.00						5.45
7. Electrical Equipment																							43.70
8. Other (please specify)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	17.66		4.00
open applications																		0.00		0.00	6.80		4.00
closed applications																					10.86		
<b>G. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00

<sup>(1)</sup> Although shaded, the columns with HFCs and PFCs totals on sheet 1 are kept for consistency with sheet 2 of the table.

<sup>(2)</sup> Note that the units used in this table differ from those used in the rest of the Sectoral report tables, i.e. [t] instead of [Gg].

**Note:** Where information is confidential the entries should provide aggregate figures but there should be a note indicating this in the relevant documentation boxes of the Sectoral background data tables or as a comment to the corresponding cell.  
Gases with GWP not yet agreed upon by the COP, should be reported in Table 9 (Completeness), sheet 2.

**TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF<sub>6</sub>**  
(Sheet 2 of 2)

France  
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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10nec	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ea	Total HFCs	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	C <sub>3</sub> F <sub>8</sub>	C <sub>4</sub> F <sub>10</sub>	c-C <sub>4</sub> F <sub>8</sub>	C <sub>3</sub> F <sub>12</sub>	C <sub>6</sub> F <sub>14</sub>	Total PFCs	SF <sub>6</sub>
	(t) <sup>(2)</sup>																						
<b>F(p). Total Potential Emissions of Halocarbons (by chemical) and SF<sub>6</sub></b> <sup>(3)</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production <sup>(4)</sup>																							
Import:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk																							
In products <sup>(5)</sup>																							
Export:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk																							
In products <sup>(5)</sup>																							
Destroyed amount																							
<b>GWP values used</b>	11700	650	150	1300	2800	1000	1300	140	300	3800	2900	6300	560		6500	9200	7000	7000	8700	7500	7400		23900
<b>Total Actual Emissions</b> <sup>(6)</sup> (Gg CO <sub>2</sub> eq.)	276.71	0.51	0.00	50.88	503.82	0.00	2 455.19	0.10	0.00	455.58	8.90	0.00	0.00	3 751.70	932.23	423.26	0.02	175.00	0.00	0.00	130.65	1 661.16	2 405.46
C. Metal Production															786.50	110.40						896.90	1 135.25
E. Production of Halocarbons and SF <sub>6</sub>	222.30	0.00	0.00	0.00	251.16	0.00	2.60	0.10	0.00	55.86	0.00	0.00	0.00	532.02	0.00	0.00	0.00	175.00	0.00	0.00	0.00	175.00	0.00
F(a). Consumption of Halocarbons and SF <sub>6</sub>	54.41	0.51	0.00	50.88	252.66	0.00	2 452.59	0.00	0.00	399.72	8.90	0.00	0.00	3 219.68	145.73	312.86	0.02	0.00	0.00	0.00	130.65	589.26	1 270.21
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Ratio of Potential/Actual Emissions from Consumption of Halocarbons and SF<sub>6</sub></b>																							
Actual emissions - F(a) (Gg CO <sub>2</sub> eq.)	54.41	0.51	0.00	50.88	252.66	0.00	2 452.59	0.00	0.00	399.72	8.90	0.00	0.00	3 219.68	145.73	312.86	0.02	0.00	0.00	0.00	130.65	589.26	1 270.21
Potential emissions - F(p) (7) (Gg CO <sub>2</sub> eq.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential/Actual emissions ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(3)</sup> Potential emissions of each chemical of halocarbons and SF<sub>6</sub> estimated using Tier 1a or Tier 1b of the IPCC Guidelines (Volume 3. Reference Manual, pp. 2.47-2.50). When potential emissions estimates are available in a disaggregated manner corresponding to the subsectors for actual emissions defined on sheet 1 of this table, these should be reported in an annex to sheet 2, using the format of sheet 1, sector F(a). Use Summary 3 of this common reporting format to indicate whether Tier 1a or Tier 1b was used.

<sup>(4)</sup> Production refers to production of new chemicals. Recycled substances could be included here, but it should be ensured that double counting of emissions is avoided. Relevant explanations should be provided as a comment to the corresponding cell.

<sup>(5)</sup> Relevant just for Tier 1b.

<sup>(6)</sup> Sums of the actual emissions of each chemical of halocarbons and SF<sub>6</sub> from the source categories given in sheet 1 of the table multiplied by the corresponding GWP values.

<sup>(7)</sup> Potential emissions of each chemical of halocarbons and SF<sub>6</sub> taken from row F(p) multiplied by the corresponding GWP values.

**Note:** As stated in the revised UNFCCC guidelines, Parties should report actual emissions of HFCs, PFCs and SF<sub>6</sub>, where data are available, providing disaggregated data by chemical and source category in units of mass and in CO<sub>2</sub> equivalents. Parties reporting actual emissions should also report potential emissions for the sources where the concept of potential emissions applies, for reasons of transparency and comparability.



**TABLE 2(II). C, E SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Metal Production; Production of Halocarbons and SF<sub>6</sub>**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>	EMISSIONS <sup>(2)</sup>	
	Description <sup>(1)</sup>	(t)	(kg/t)	(t)	(3)
<b>C. PFCs and SF<sub>6</sub> from Metal Production</b>					
PFCs from Aluminium Production					
CF <sub>4</sub>	Aluminium production	420 770.00	0.29	121.00	
C <sub>2</sub> F <sub>6</sub>	Aluminium production	420 770.00	0.03	12.00	
SF <sub>6</sub>				47.50	
Aluminium Foundries	(SF <sub>6</sub> consumption)		0.00		
Magnesium Foundries	(SF <sub>6</sub> consumption)	47.50	1 000.00	47.50	
<b>E. Production of Halocarbons and SF<sub>6</sub></b>					
<b>1. By-product Emissions</b>					
Production of HCFC-22					
HFC-23	HCFC-22 production	NA	0.00	19.00	
Other (specify chemical)					
			0.00		
<b>2. Fugitive Emissions</b>					
HFCs (specify chemical)					
HFC-125	HFC production	NA	0.00	89.70	
HFC-134a	HFC production	NA	0.00	2.00	
HFC-143a	HFC production	NA	0.00	14.70	
HFC-152a	HFC production	NA	0.00	0.70	
			0.00		
PFCs (specify chemical)					
C2F6	PFC production	NA	0.00	0.00	
C4F10	PFC production	NA	0.00	25.00	
			0.00		
SF <sub>6</sub>			0.00		
<b>3. Other (please specify)</b>					
			0.00		

<sup>(1)</sup> Specify the activity data used as shown in the examples within brackets. Where applying Tier 1b (for C), Tier 2 (for E) and country specific methods, specify any other relevant activity data used in the documentation box below.

<sup>(2)</sup> Emissions and implied emission factors are after recovery.

<sup>(3)</sup> Enter cases in which the final emissions are reported after subtracting the quantities of emission recovery, oxidation, destruction, transformation. Enter these quantities in the specified column and use the documentation box for further explanations.









**Note:** Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note in the documentation box indicating this.

<b>Documentation box:</b>
HFC and PFC production data are confidential. Only fugitive emissions are available.

**TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Consumption of Halocarbons and SF<sub>6</sub>**  
(Sheet 1 of 2)

France  
1998

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	Amount of fluid		Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
		In operating systems (average annual stocks)	Remained in products at decommissioning <sup>(1)</sup>						
(t)	(% per annum)			(t)					
1 Refrigeration									
Air Conditioning Equipment									
Domestic Refrigeration (Specify chemical) <sup>(2)</sup> 									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-134a)	47.60	1 506.00	0.00	5.00%	0.01%		2.38	0.20	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
Commercial Refrigeration 									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	146.50	258.70	0.00	5.00%	17.39%		7.33	45.00	0.00
(e.g. HFC-134a)	40.40	127.30	0.00	5.00%	3.53%		2.02	4.50	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	172.20	304.70	0.00	5.00%	17.36%		8.61	52.90	0.00
Transport Refrigeration 									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	18.90	49.80	0.00	5.00%	25.10%		0.95	12.50	0.00
(e.g. HFC-134a)	97.90	166.80	0.00	5.00%	43.35%		4.90	72.30	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	22.40	58.90	0.00	5.00%	24.96%		1.12	14.70	0.00
Industrial Refrigeration 									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	57.00	139.40	0.00	5.00%	14.85%		2.85	20.70	0.00
(e.g. HFC-134a)	104.20	288.10	0.00	5.00%	14.75%		5.21	42.50	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	67.20	164.30	0.00	5.00%	14.91%		3.36	24.50	0.00
Stationary Air-Conditioning 									
(e.g. HFC-32)	5.80	5.30	0.00	5.00%	9.43%		0.29	0.50	0.00
(e.g. HFC-125)	6.30	5.80	0.00	5.00%	10.34%		0.32	0.60	0.00
(e.g. HFC-134a)	316.50	746.90	0.00	5.00%	12.00%		15.83	89.60	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
Mobile Air-Conditioning 									
(e.g. HFC-32)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-125)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-134a)	925.60	1 716.00	0.00	5.00%	23.36%		46.28	400.90	0.00
(e.g. HFC-152a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
(e.g. HFC-143a)	0.00	0.00	0.00	5.00%	0.00%		0.00	0.00	0.00
2 Foam Blowing									
Hard Foam 									
Soft Foam 									








<sup>(1)</sup> Parties should use the documentation box to provide information on the amount of the chemical recovered (recovery efficiency) and other relevant information used in the emission estimation.

<sup>(2)</sup> Please click on the button to specify the chemical consumed, as given in the example. If needed, new rows could be added for reporting the disaggregated chemicals from a source by clicking on the corresponding button.

**Note:** Table 2.(II).F provides for reporting of the activity data and emission factors used to calculate actual emissions from consumption of halocarbons and SF<sub>6</sub> using the "bottom-up approach" (based on the total stock of equipment and estimated emission rates from this equipment). Some Parties may prefer to estimate their actual emissions following the alternative "top-down approach" (based on annual sales of equipment and/or gas). These Parties should provide the activity data used in the current format and any other relevant information in the documentation box at the end of Table2(II).Fs2. Data these Parties should provide includes (1) the amount of fluid used to fill new products, (2) the amount of fluid used to service existing products, (3) the amount of fluid originally used to fill retiring products (the total nameplate capacity of retiring products), (4) the product lifetime, and (5) the growth rate of product sales, if this has been used to calculate the amount of fluid originally used to fill retiring products. Alternatively, Parties may provide alternative formats with equivalent information. These formats may be considered for future versions of the common reporting format

**TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Consumption of Halocarbons and SF<sub>6</sub>**  
(Sheet 2 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA <i>Amount of fluid</i>			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning <sup>(1)</sup>	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
<b>3 Fire Extinguishers</b> 									
HFC-227ea	120.00	307.00	0.00	0.00	1.00	0.00	0.00	3.07	0.00
<b>4 Aerosols</b>									
Metered Dose Inhalers 									
Other 									
HFC-134a	1 200.00	1 200.00	0.00	0.00	100.00	0.00	0.00	1 200.00	0.00
<b>5 Solvents</b> 									
HFC-4310mee	48.00	39.14	0.00	0.00	100.00	0.00	0.00	39.14	0.00
<b>6 Semiconductors</b> 									
HFC-23	0.00	6.46	0.00	0.00	72.00	0.00	0.00	4.65	0.00
CF <sub>4</sub>	0.00	31.14	0.00	0.00	72.00	0.00	0.00	22.42	0.00
C <sub>2</sub> F <sub>6</sub>	0.00	47.23	0.00	0.00	72.00	0.00	0.00	34.01	0.00
C <sub>3</sub> F <sub>8</sub>	0.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00	0.00
SF <sub>6</sub>	0.00	7.57	0.00	0.00	72.00	0.00	0.00	5.45	0.00
<b>7 Electric Equipment</b> 									
SF <sub>6</sub>	358.00	860.00	0.00	5.00	3.00	0.00	17.90	25.80	0.00
<b>8 Other (please specify)</b> 									
C <sub>6</sub> F <sub>14</sub> (closed applications)	54.20	217.10	0.00	0.00	5.00	0.00	0.00	10.86	0.00
C <sub>4</sub> F <sub>10</sub>	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
C <sub>5</sub> F <sub>12</sub>	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
C <sub>6</sub> F <sub>14</sub> (open applications)	6.80	6.80	0.00	0.00	100.00	0.00	0.00	6.80	0.00
SF <sub>6</sub>	3.20	4.00	0.00	0.00	100.00	0.00	0.00	4.00	0.00

**Note:** Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note indicating this and explanations in the documentation box.

**Documentation box:**

Emissions from disposal are not informed. In most of cases no operating systems are at end of life in 1998. Otherwise those emissions are included into emissions from stocks.

**TABLE 3 SECTORAL REPORT FOR SOLVENT AND OTHER PRODUCT USE**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	N <sub>2</sub> O	NM VOC
	(Gg)		
<b>Total Solvent and Other Product Use</b>	<b>1 647.42</b>	<b>1.98</b>	<b>633.92</b>
<b>A. Paint Application</b>	<b>848.12</b>		<b>272.12</b>
<b>B. Degreasing and Dry Cleaning</b>	<b>135.68</b>		<b>43.53</b>
<b>C. Chemical Products, Manufacture and Processing</b>			<b>105.33</b>
<b>D. Other (please specify)</b>	663.62	1.98	212.93
Use of N <sub>2</sub> O for Anaesthesia	0.00	1.98	
Fire Extinguishers	0.00		
Aerosol Cans	0.00		
Other solvent/product use	663.62		212.93

Please account for the quantity of carbon released in the form of NMVOC in both the NMVOC and the CO<sub>2</sub> columns.

**Note:** The IPCC Guidelines do not provide methodologies for the calculation of emissions of N<sub>2</sub>O from Solvent and Other Product Use. If reporting such data, Parties should provide additional information (activity data and emission factors) used to make these estimates in the documentation box to Table 3.A-D.

**TABLE 3.A-D SECTORAL BACKGROUND DATA FOR SOLVENT AND OTHER PRODUCT USE**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS	
	Description	(kt)	CO <sub>2</sub> (t/t)	N <sub>2</sub> O (t/t)
<b>A. Paint Application</b>	kt Solvent	285.42	2.97	0.00
<b>B. Degreasing and Dry Cleaning</b>	kt Solvent	56.00	2.42	0.00
<b>C. Chemical Products, Manufacture and Processing</b>				
<b>D. Other (please specify)<sup>(1)</sup></b>				
<i>Use of N2O for Anaesthesia</i>	kt Consumed	1.98	0.00	1.00
<i>Fire Extinguishers</i>	kt Consumed	0.12	0.00	0.00
<i>Aerosol Cans</i>	kt Consumed	1.20	0.00	0.00
<i>Other solvent/product use</i>	kt Consumed	314.25	2.11	0.00

<sup>(1)</sup> Some probable sources are provided in brackets. Complement the list with other relevant sources. Make sure that the order is the same as in Table 3.

**Note:** The table follows the format of the IPCC Sectoral Report for Solvent and Other Product Use, although some of the source categories are not relevant to the direct GHG emissions.

<b>Documentation box:</b>






**TABLE 4 SECTORAL REPORT FOR AGRICULTURE**  
(Sheet 1 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC
CATEGORIES	(Gg)				
<b>Total Agriculture</b>	<b>1 535.49</b>	<b>176.27</b>	<b>0.00</b>	<b>0.00</b>	<b>18.97</b>
<b>A. Enteric Fermentation</b>	<b>1 329.64</b>				
1. Cattle	1 247.49				
Dairy Cattle	555.02				
Non-Dairy Cattle	692.47				
2. Buffalo					
3. Sheep	61.68				
4. Goats	6.69				
5. Camels and Llamas					
6. Horses	6.50				
7. Mules and Asses	0.14				
8. Swine	7.14				
9. Poultry					
10. Other ( <i>please specify</i> )	0.00				
<b>B. Manure Management</b>	<b>174.61</b>	<b>10.09</b>			<b>0.00</b>
1. Cattle	87.31				
Dairy Cattle	39.60				
Non-Dairy Cattle	47.72				
2. Buffalo					
3. Sheep	2.88				
4. Goats	0.37				
5. Camels and Llamas					
6. Horses	0.76				
7. Mules and Asses	0.03				
8. Swine	54.37				
9. Poultry	28.88				

**TABLE 4 SECTORAL REPORT FOR AGRICULTURE**  
(Sheet 2 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC
	(Gg)				
<b>B. Manure Management (continued)</b>					
10. Anaerobic Lagoons					
11. Liquid Systems		1.53			
12. Solid Storage and Dry Lot		6.29			
13. Other (please specify) 		2.27			0.00
		2.27			
<b>C. Rice Cultivation</b>	8.27				<b>0.00</b>
1. Irrigated	8.27				
2. Rainfed	0.00				
3. Deep Water	0.00				
4. Other (please specify) 	0.00				0.00
<b>D. Agricultural Soils <sup>(1)</sup></b>	<b>22.98</b>	<b>166.17</b>			<b>18.97</b>
1. Direct Soil Emissions	22.98	91.02			18.97
2. Animal Production		18.52			
3. Indirect Emissions		56.63			
4. Other (please specify) 	0.00	0.00			0.00
<b>E. Prescribed Burning of Savannas</b>	<b>0.00</b>	<b>0.00</b>			
<b>F. Field Burning of Agricultural Residues</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
1. Cereals	0.00	0.00			
2. Pulse	0.00	0.00			
3. Tuber and Root	0.00	0.00			
4. Sugar Cane	0.00	0.00			
5. Other (please specify) 	0.00	0.00	0.00	0.00	0.00
<b>G. Other (please specify) </b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

<sup>(1)</sup> See footnote 4 to Summary 1.A of this common reporting format. Parties which choose to report CO<sub>2</sub> emissions and removals from agricultural soils under 4.D. Agricultural Soils category of the sector Agriculture should indicate the amount [Gg] of these emissions or removals in the documentation box to Table 4.D. Additional information (activity data, implied emissions factors) should also be provided using the relevant documentation box to Table 4.D. This table is not modified for reporting the CO<sub>2</sub> emissions and removals for the sake of consistency with the IPCC tables (i.e. IPCC Sectoral Report for Agriculture).

**Note:** The IPCC Guidelines do not provide methodologies for the calculation of CH<sub>4</sub> emissions, CH<sub>4</sub> and N<sub>2</sub>O removals from agricultural soils, or CO<sub>2</sub> emissions from savanna burning or agricultural residues burning. If you have reported such data, you should provide additional information (activity data and emission factors) used to make these estimates using the relevant documentation boxes of the Sectoral background data tables.

**TABLE 4.A SECTORAL BACKGROUND DATA FOR AGRICULTURE**


**Enteric Fermentation**

(Sheet 1 of 1)

France

1998

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA <sup>(1)</sup> AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTORS
	Population size <sup>(2)</sup> (1000 head)	Average daily feed intake (MJ/day)	CH <sub>4</sub> conversion (%)	CH <sub>4</sub> (kg CH <sub>4</sub> /head/yr)
1. Cattle	20 481			60.91
Dairy Cattle <sup>(3)</sup>	6 769			82.00
Non-Dairy Cattle	13 712			50.50
2. Buffalo				0.00
3. Sheep	10 279			6.00
4. Goats	1 339			5.00
5. Camels and Llamas				0.00
6. Horses	361			18.00
7. Mules and Asses	14			10.00
8. Swine	7 135			1.00
9. Poultry				0.00
10. Other (please specify) 				
				0.00

<sup>(1)</sup> In the documentation boxes to all Sectoral background data tables for Agriculture, Parties should provide information on whether the activity data is one year or a 3-year average.

<sup>(2)</sup> Parties are encouraged to provide detailed livestock population data by animal type and region in a separate table below the documentation box. This consistent set of animal population statistics should be used to estimate CH<sub>4</sub> emissions from enteric fermentation, CH<sub>4</sub> and N<sub>2</sub>O from manure management, N<sub>2</sub>O direct emissions from soil and N<sub>2</sub>O emissions associated with manure production, as well as emissions from the use of manure as fuel, and sewage-related emissions reported in the waste sector.

<sup>(3)</sup> Including data on dairy heifers, if available.

<b>Documentation box:</b> To calculate methane emissions a specific method based on national expert data (emission factors) is used. Activity data is a one year average.
---

**Additional information (for Tier 2)<sup>(a)</sup>**

Disaggregated list of animals <sup>(b)</sup>		Dairy Cattle	Non-Dairy Cattle	Other (specify)	
Indicators:					
Weight	(kg)				
Feeding situation <sup>(c)</sup>					
Milk yield	(kg/day)				
Work	(hrs/day)				
Pregnant	(%)				
Digestibility of feed	(%)				

<sup>(a)</sup> Compare to Tables A-1 and A-2 of the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.31-4.34). These data are relevant if Parties do not have data on average feed intake.

<sup>(b)</sup> Disaggregate to the split actually used. Add columns to the table if necessary.

<sup>(c)</sup> Specify feeding situation as pasture, stall fed, confined, open range, etc.



**TABLE 4.B(a) SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**CH<sub>4</sub> Emissions from Manure Management**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS  CH <sub>4</sub>  (kg CH <sub>4</sub> /head/yr)
	Population size (1)  (1000 head)	Allocation by climate region (2)			Typical animal mass  (kg)	VS <sup>(3)</sup> daily excretion  (kg dm/head/yr)	CH <sub>4</sub> producing potential (Bo) <sup>(3)</sup>  (CH <sub>4</sub> m <sup>3</sup> /kg VS)
		Cool	Temperate	Warm			
		(%)					
1. Cattle	20 481						4.26
Dairy Cattle <sup>(4)</sup>	6 769						5.85
Non-Dairy Cattle	13 712						3.48
2. Buffalo							0.00
3. Sheep	10 279						0.28
4. Goats	1 339						0.28
5. Camels and Llamas							0.00
6. Horses	361						2.10
7. Mules and Asses	14						2.10
8. Swine	7 135						7.62
9. Poultry	339 799						0.09

<sup>(1)</sup> See footnote 1 to Table 4.A of this common reporting format.

<sup>(2)</sup> Climate regions are defined in terms of annual average temperature as follows: Cool=less than 15°C; Temperate=15°C to 25°C inclusive; and Warm=greater than 25°C (see Table 4.2 of the IPCC Guidelines (Volume 3, Reference Manual, p. 4.8)).

<sup>(3)</sup> VS=Volatile Solids; Bo=maximum methane producing capacity for manure IPCC Guidelines (Volume 3, Reference Manual, p.4.23 and p. 4.15.

<sup>(4)</sup> Including data on dairy heifers, if available.

**Documentation Box:**

To calculate methane emissions a specific method based on national expert data (emission factors) is used.

**Additional information (for Tier 2)**

Animal category <sup>(a)</sup>	Indicator	Climate region	Animal waste management system					
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range paddocks	Other
Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Non-Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Swine	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						

<sup>(a)</sup> Copy the above table as many times as necessary.

<sup>(b)</sup> MCF = Methane Conversion Factor (IPCC Guidelines, (Volume 3, Reference Manual, p. 4.9)). In the case of use of other climate region categorization, please replace the entries in the cells with the climate regions for which the MCFs are specified.

**TABLE 4.B(b) SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**N<sub>2</sub>O Emissions from Manure Management**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION								IMPLIED EMISSION FACTORS	
	Population size ( <sup>(1)</sup> (1000s)	Nitrogen excretion (kg N/head/yr)	Nitrogen excretion per animal waste management system (kg N/yr)						Emission factor per animal waste management system	
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range and paddock	Other	(kg N <sub>2</sub> O-N/kg N)	
Non-Dairy Cattle	13 712	70.0	0.0	527 921 125.0	0.0	19 197 132.0	316 752 675.0	86 387 093.0	Anaerobic lagoon	0.000
Dairy Cattle	6 769	100.0	0.0	311 353 070.0	162 445 080.0	142 139 445.0	54 148 360.0	6 768 545.0	Liquid system	0.001
Sheep	10 279	20.0	0.0	0.0	0.0	13 430 342.0	584 219 894.0	73 219 894.0	Solid storage and dry lot	0.012
Swine	7 135	20.0	0.0	517 397 723.0	3 476 750.0	154 277 629.0	1 038 510.0	0.0	Other	0.002
Poultry	339 799	0.6	0.0	87 407 024.0	0.0	6 723 617.0	13 447 235.0	564 783 850.0		
Other ( <i>please specify</i> )										
Horses, goats, mules and asses	1 714	25.0	0.0	0.0	0.0	0.0	647 672 112.0	26 986 338.0		
<b>Total per AWMS<sup>(2)</sup></b>			<b>0.0</b>	<b>1 444 078 942.0</b>	<b>165 921 830.0</b>	<b>335 768 165.0</b>	<b>1 617 278 786.0</b>	<b>758 145 720.0</b>		

<sup>(1)</sup> See footnote 1 to Table 4.A of this common reporting format.

<sup>(2)</sup> AWMS - Animal Waste Management System.

<b>Documentation box:</b>

**TABLE 4.C SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Rice Cultivation**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR <sup>(1)</sup>	EMISSIONS
	Harvested area <sup>(2)</sup> (10 <sup>-9</sup> m <sup>2</sup> /yr)	Organic amendments added <sup>(3)</sup> :		CH <sub>4</sub> (g/m <sup>2</sup> )	CH <sub>4</sub> (Gg)
		type	(t/ha)		
<b>1. Irrigated</b>					<b>8.27</b>
Continuously Flooded	0.23			36.00	8.27
Intermittently Flooded		Single Aeration		0.00	
		Multiple Aeration		0.00	
<b>2. Rainfed</b>					<b>0.00</b>
Flood Prone				0.00	
Drought Prone				0.00	
<b>3. Deep Water</b>					<b>0.00</b>
Water Depth 50-100 cm				0.00	
Water Depth > 100 cm				0.00	
<b>4. Other (please specify)</b>					<b>0.00</b>
				0.00	
Upland Rice <sup>(4)</sup>					
Total <sup>(4)</sup>	0.23				

<sup>(1)</sup> The implied emission factor takes account of all relevant corrections for continuously flooded fields without organic amendment plus the correction for the organic amendments, if used, as well as of the effect of different soil characteristics, if taken into account, on methane emissions.

<sup>(2)</sup> Harvested area is the cultivated area multiplied by the number of cropping seasons per year.

<sup>(3)</sup> Specify dry weight or wet weight for organic amendments.

<sup>(4)</sup> These rows are included to allow comparison with the international statistics. Upland rice emissions are assumed to be zero and are ignored in the emission calculations.

**Documentation box:**

When disaggregating by more than one region within a country, provide additional information in the documentation box.

Where available, provide activity data and scaling factors by soil type and rice cultivar.

**TABLE 4.D SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Agricultural Soils<sup>(1)</sup>**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION		IMPLIED EMISSION FACTORS		EMISSIONS (Gg N <sub>2</sub> O)
	Description	Value	Unit		
<b>Direct Soil Emissions</b>	<b>N input to soils (kg N/yr)</b>				<b>91.02</b>
Synthetic Fertilizers	Use of synthetic fertilizers (kg N/yr)	2 517 674 271	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.011	44.51
Animal Wastes Applied to Soils	Nitrogen input from manure applied to soils (kg N/yr)	1 624 699 142	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.010	25.56
N-fixing Crops	Dry pulses and soybeans produced (kg dry biomass/yr)	8 434 420 336	(kg N <sub>2</sub> O-N/kg dry biomass) <sup>(2)</sup>	0.001	9.94
Crop Residue	Dry production of other crops (kg dry biomass/yr)	94 280 928 547	(kg N <sub>2</sub> O-N/kg dry biomass) <sup>(2)</sup>	0.000	11.01
Cultivation of Histosols	Area of cultivated organic soils (ha)		(kg N <sub>2</sub> O-N/ha) <sup>(2)</sup>	0.000	
<b>Animal Production</b>	<b>N excretion on pasture range and paddock (kg N/yr)</b>	<b>589 313 740</b>	<b>(kg N<sub>2</sub>O-N/kg N)<sup>(2)</sup></b>	<b>0.020</b>	<b>18.52</b>
<b>Indirect Emissions</b>					<b>56.63</b>
Atmospheric Deposition	Volatized N (NH <sub>3</sub> and NO <sub>x</sub> ) from fertilizers and animal wastes (kg N/yr)		(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.000	
Nitrogen Leaching and Run-off	N from fertilizers and animal wastes that is lost through leaching and run off (kg N/yr)	1 419 976 986	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.025	56.63
<b>Other (please specify)</b>					<b>0.00</b>
				0.000	

**Additional information**

Fraction <sup>(a)</sup>	Description	Value
Frac <sub>BURN</sub>	Fraction of crop residue burned	
Frac <sub>FUEL</sub>	Fraction of livestock N excretion in excrements burned for fuel	
Frac <sub>GASf</sub>	Fraction of synthetic fertilizer N applied to soils that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>	
Frac <sub>GASm</sub>	Fraction of livestock N excretion that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>	
Frac <sub>GRAZ</sub>	Fraction of livestock N excreted and deposited onto soil during grazing	
Frac <sub>LEACH</sub>	Fraction of N input to soils that is lost through leaching and runoff	
Frac <sub>NCRBF</sub>	Fraction of N in non-N-fixing crop	
Frac <sub>NCRO</sub>	Fraction of N in N-fixing crop	
Frac <sub>R</sub>	Fraction of crop residue removed from the field as crop	

<sup>(a)</sup> Use the fractions as specified in the IPCC Guidelines (Volume 3, Reference Manual, pp. 4.92 - 4.113).

<sup>(1)</sup> See footnote 4 to Summary 1.A. of this common reporting format. Parties which choose to report CO<sub>2</sub> emissions and removals from agricultural soils under 4.D. Agricultural Soils category should indicate the amount [Gg] of these emissions or removals and relevant additional information (activity data, implied emissions factors) in the documentation box.

<sup>(2)</sup> To convert from N<sub>2</sub>O-N to N<sub>2</sub>O emissions, multiply by 44/28.

**Documentation box:**

Atmospheric deposition is not taken into account because of a risk of double counting.

A specific document describing the methodology used to estimate N<sub>2</sub>O emissions from agriculture is available at CITEPA ("Méthodologie utilisée pour les inventaires de NH<sub>3</sub> et N<sub>2</sub>O provenant des activités agricoles: évolution et perspectives").

**TABLE 4.E SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Prescribed Burning of Savannas**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION					IMPLIED EMISSION FACTORS		EMISSIONS	
	Area of savanna burned	Average aboveground biomass density	Fraction of savanna burned	Biomass burned	Nitrogen fraction in biomass	(kg/t dm)		(Gg)	
	(k ha/yr)	(t dm/ha)		(Gg dm)		CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O
(specify ecological zone)								0.00	0.00
						0.00	0.00		





**Additional information**

	Living	Dead
Fraction of aboveground biomass		
Fraction oxidized		
Carbon fraction		

**Documentation box:**

**TABLE 4.F SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Field Burning of Agricultural Residues**  
**(Sheet 1 of 1)**

France  
1998  
Submission






GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		EMISSIONS	
	Crop production (t)	Residue/ Crop ratio	Dry matter fraction	Fraction burned in fields	Biomass burned (Gg dm)	Nitrogen fraction in biomass of residues	CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O
							(kg/t dm)	(kg/t dm)	(Gg)	(Gg)
<b>1. Cereals</b>									<b>0.00</b>	<b>0.00</b>
Wheat							0.00	0.00		
Barley							0.00	0.00		
Maize							0.00	0.00		
Oats							0.00	0.00		
Rye							0.00	0.00		
Rice							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>2. Pulse <sup>(1)</sup></b>									<b>0.00</b>	<b>0.00</b>
Dry bean							0.00	0.00		
Peas							0.00	0.00		
Soybeans							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>3 Tuber and Root</b>									<b>0.00</b>	<b>0.00</b>
Potatoes							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>4 Sugar Cane</b>							<b>0.00</b>	<b>0.00</b>		
<b>5 Other (please specify) </b>									<b>0.00</b>	<b>0.00</b>
							0.00	0.00		

<sup>(1)</sup> To be used in Table 4.D of this common reporting format.

<b>Documentation Box:</b>

**TABLE 5 SECTORAL REPORT FOR LAND-USE CHANGE AND FORESTRY**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	Net CO <sub>2</sub> emissions/ removals	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO
	(Gg)						
<b>Total Land-Use Change and Forestry</b>	<b>91 050.00</b>	<b>-159 074.00</b>	<b>-68 024.00</b>	<b>100.80</b>	<b>17.99</b>	<b>2.79</b>	<b>98.29</b>
<b>A. Changes in Forest and Other Woody Biomass Stocks</b>	<b>70 066.00</b>	<b>-153 814.00</b>	<b>-83 748.00</b>				
1. Tropical Forests		-5 446.00	-5 446.00				
2. Temperate Forests	70 066.00	-148 368.00	-78 302.00				
3. Boreal Forests			0.00				
4. Grasslands/Tundra			0.00				
5. Other (please specify) 	0.00	0.00	0.00				
Harvested Wood <sup>(1)</sup>			0.00				
			0.00				
<b>B. Forest and Grassland Conversion <sup>(2)</sup></b>	<b>12 540.00</b>			<b>11.23</b>	<b>0.08</b>	<b>2.79</b>	<b>98.29</b>
1. Tropical Forests	609.00			0.82	0.01	0.20	7.18
2. Temperate Forests	11 931.00			10.41	0.07	2.59	91.11
3. Boreal Forests							
4. Grasslands/Tundra							
5. Other (please specify) 	0.00			0.00	0.00	0.00	0.00
<b>C. Abandonment of Managed Lands</b>	<b>0.00</b>	<b>-48.00</b>	<b>-48.00</b>				
1. Tropical Forests		-48.00	-48.00				
2. Temperate Forests			0.00				
3. Boreal Forests			0.00				
4. Grasslands/Tundra			0.00				
5. Other (please specify) 	0.00	0.00	0.00				
			0.00				
<b>D. CO<sub>2</sub> Emissions and Removals from Soil</b>	<b>8 444.00</b>	<b>-5 212.00</b>	<b>3 232.00</b>				
Cultivation of Mineral Soils			0.00				
Cultivation of Organic Soils			0.00				
Liming of Agricultural Soils			0.00				
Forest Soils			0.00				
Other (please specify) <sup>(3)</sup> 	8 444.00	-5 212.00	3 232.00				
	8 444.00	-5 212.00	3 232.00				
<b>E. Other (please specify) </b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>89.56</b>	<b>17.91</b>	<b>0.00</b>	<b>0.00</b>
Managed forests for CH <sub>4</sub> , N <sub>2</sub> O, NMVOC			0.00	89.56	17.91		

<sup>(1)</sup> Following the IPCC Guidelines, the harvested wood should be reported under Changes in Forest and Other Woody Biomass Stocks (Volume 3. Reference Manual, p.5.17).

<sup>(2)</sup> Include only the emissions of CO<sub>2</sub> from Forest and Grassland Conversion. Associated removals should be reported under section D.

<sup>(3)</sup> Include emissions from soils not reported under sections A, B and C.

**Note:** See footnote 4 to Summary 1.A of this common reporting format.

**TABLE 5.A SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE  
AND FORESTRY**  
**Changes in Forest and Other Woody Biomass Stocks**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES			ACTIVITY DATA		IMPLIED EMISSION FACTORS	ESTIMATES
			Area of forest/biomass stocks (kha)	Average annual growth rate (t dm/ha)	Implied carbon uptake factor (t C/ha)	Carbon uptake increment (Gg C)
Tropical	Plantations	<i>Acacia spp.</i>			0.00	
		<i>Eucalyptus spp.</i>			0.00	
		<i>Tectona grandis</i>			0.00	
		<i>Pinus spp</i>			0.00	
		<i>Pinus caribaea</i>			0.00	
		Mixed Hardwoods			0.00	
		Mixed Fast-Growing Hardwoods			0.00	
		Mixed Softwoods			0.00	
	Other Forests	Moist			0.00	
		Seasonal			0.00	
		Dry			0.00	
	Other (specify) <input type="checkbox"/>				0.00	
Temperate	Plantations	Forest	366.10	8.34	4.17	1 525.55
					0.00	
					0.00	
	Commercial	Evergreen	19 568.00	10 884 000.00	0.28	5 442.00
		Deciduous	13 091.00	7 864 000.00	0.30	3 932.00
	Other (specify) <input type="checkbox"/>				0.00	
Boreal					0.00	
			Number of trees (1000s of trees)	Annual growth rate (kt dm/1000 trees)	Carbon uptake factor (t C/tree)	Carbon uptake increment (Gg C)
Non-Forest Trees (specify type) <input type="checkbox"/>					0.00	0.00
					0.00	
Total annual growth increment (Gg C)						49 562.55
Gg CO <sub>2</sub>						181 729.35
			Amount of biomass removed (kt dm)	Carbon emission factor (t C/t dm)	Carbon release (Gg C)	
Total biomass removed in Commercial Harvest			18 748.00	0.50	9 373.50	
Traditional Fuelwood Consumed			19 470.00	0.50	9 735.00	
Total Other Wood Use				0.00		
Total Biomass Consumption from Stocks <sup>(1)</sup> (Gg C)						19 108.50
Other Changes in Carbon Stocks <sup>(2)</sup> (Gg C)						
Gg CO <sub>2</sub>						70 064.50
Net annual carbon uptake (+) or release (-) (Gg C)						30 454.05
Net CO <sub>2</sub> emissions (-) or removals (+) (Gg CO <sub>2</sub> )						111 664.85

<sup>(1)</sup> Make sure that the quantity of biomass burned off-site is subtracted from this total.

<sup>(2)</sup> The net annual carbon uptake/release is determined by comparing the annual biomass growth versus annual harvest, including the decay of forest products and slash left during harvest. The IPCC Guidelines recommend default assumption that all carbon removed in wood and other biomass from forests is oxidized in the year of removal. The emissions from decay could be included under Other Changes in Carbon Stocks.

**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology.

Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

**Documentation box:**

- As regards the biomass stock item for the commercial harvest, data are compiled under the 1000 m3 unit;
- Consequently to 1), the corresponding average annual growth item is expressed in t dm per annum;



**TABLE 5.B SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**Forest and Grassland Conversion**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION							IMPLIED EMISSION FACTORS					EMISSIONS				
		On and off site burning				Decay of above-ground biomass <sup>(1)</sup>												
		Area converted annually	Annual net loss of biomass	Quantity of biomass burned		Average area converted	Average annual net loss of biomass	Average quantity of biomass left to decay	Burning			Decay	Burning			Decay		
				On site	Off site				On site		Off site		On site		Off site			
									CO <sub>2</sub>	CH <sub>4</sub>			N <sub>2</sub> O	CO <sub>2</sub>			CO <sub>2</sub>	CO <sub>2</sub>
Vegetation types		(kha)	(kt dm)	(kt dm)	(kt dm)	(kha)	(t dm/ha)	(kt dm)	(t/ha)					(Gg)				
Tropical	Wet/Very Moist	0.80	228.00	114.00	114.00			229.20	235.00	1.03	0.01	261.11	0.00	188.00	0.82	0.01	208.89	420.00
	Moist, short dry season								0.00	0.00	0.00	0.00	0.00					
	Moist, long dry season								0.00	0.00	0.00	0.00	0.00					
	Dry								0.00	0.00	0.00	0.00	0.00					
	Montane Moist								0.00	0.00	0.00	0.00	0.00					
	Montane Dry								0.00	0.00	0.00	0.00	0.00					
Tropical Savanna/Grasslands									0.00	0.00	0.00	0.00	0.00					
Temperate	Coniferous								0.00	0.00	0.00	0.00	0.00					
	Broadleaf								0.00	0.00	0.00	0.00	0.00					
	Mixed Broadleaf/Coniferous	80.10	6 508.00	1 302.00	5 206.00	80.10	81.00	6 508.00	29.79	0.13	0.00	119.16	148.95	2 386.00	10.40	0.07	9 545.00	11 931.00
Grasslands									0.00	0.00	0.00	0.00	0.00					
Boreal	Mixed Broadleaf/Coniferous								0.00	0.00	0.00	0.00	0.00					
	Coniferous								0.00	0.00	0.00	0.00	0.00					
	Forest-tundra								0.00	0.00	0.00	0.00	0.00					
Grasslands/Tundra									0.00	0.00	0.00	0.00	0.00					
Other <i>(please specify)</i>									0.00	0.00	0.00	0.00	0.00					
									0.00	0.00	0.00	0.00	0.00					
Total														2 574.00	11.22	0.08	9 753.89	12 351.00

<sup>(1)</sup> Activity data are for default 10-year average. Specify the average decay time which is appropriate for the local conditions, if other than 10 years.

Emissions/Removals	On site	Off site
Immediate carbon release from burning	4.88	18.47
Total On site and Off site (Gg C)	23.35	
Delayed emissions from decay (Gg C)	23.39	
Total annual carbon release (Gg C)	46.74	
Total annual CO <sub>2</sub> emissions (Gg CO <sub>2</sub> )	24 678.89	

#### Additional information

Fractions	On site	Off site
Fraction of biomass burned (average)	0.20	0.80
Fraction which oxidizes during burning (average)		
Carbon fraction of aboveground biomass (average)		
Fraction left to decay (average)		
Nitrogen-carbon ratio	0.01	

**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

#### Documentation box:

Because of a certain lack of data, the average area converted item was calculated taking into account the 1992-1996 period only. This value was also used to fill in the area converted annually item, as a default value. It is emphasised that the CO<sub>2</sub> emissions due to the grassland conversion are included within item D.5, table 5, since such a conversion is considered as generating CO<sub>2</sub> emissions from soils only, according to the IPCC guidelines. As the French methodology used differs from the IPCC's, a specific document describing it is available at the CITEPA ("Evaluation des puits de CO<sub>2</sub> suivant la nouvelle méthode préconisée par le GIEC", CITEPA, June 1999). The average quantity of biomass left to decay regarding tropical wet vegetation is based on the annual production of harvest.

**TABLE 5.C SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**Abandonment of Managed Lands**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		ESTIMATES	
		Total area abandoned and regrowing <sup>(1)</sup>		Annual rate of aboveground biomass growth		Carbon fraction of aboveground biomass		Rate of aboveground biomass carbon uptake		Annual carbon uptake in aboveground biomass	
		first 20 years (kha)	>20 years (kha)	first 20 years (t dm/ha)	>20 years (t dm/ha)	first 20 years	>20 years	first 20 years (t C/ha/yr)	>20 years (t C/ha/yr)	first 20 years (Gg C/yr)	>20 years (Gg C/yr)
<b>Original natural ecosystems</b>											
Tropical	Wet/Very Moist							0.00	0.00		
	Moist, short dry season							0.00	0.00		
	Moist, long dry season							0.00	0.00		
	Dry							0.00	0.00		
	Montane Moist							0.00	0.00		
	Montane Dry							0.00	0.00		
Tropical Savanna/Grasslands								0.00	0.00		
Temperate	Mixed Broadleaf/Coniferous							0.00	0.00		
	Coniferous							0.00	0.00		
	Broadleaf							0.00	0.00		
Grasslands								0.00	0.00		
Boreal	Mixed Broadleaf/Coniferous							0.00	0.00		
	Coniferous							0.00	0.00		
	Forest-tundra							0.00	0.00		
Grasslands/Tundra								0.00	0.00		
Other (please specify)								0.00	0.00		
								0.00	0.00		
Total annual carbon uptake (Gg C)										0.00	
Total annual CO <sub>2</sub> removal (Gg CO <sub>2</sub> )										0.00	

<sup>(1)</sup> If lands are regenerating to grassland, then the default assumption is that no significant changes in above-ground biomass occur.

**Note:** Sectoral background data tables on Land-use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

<b>Documentation box:</b>											
This table cannot be fill up properly as the French methodology includes both the annual rate of aboveground biomass growth and the carbon fraction of aboveground biomass within 5.A table.											

**TABLE 5.D SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**CO<sub>2</sub> Emissions and Removals from Soil**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	ESTIMATES
	Land area (Mha)	Average annual rate of soil carbon uptake/removal (Mg C/ha/yr)	Net change in soil carbon in mineral soils (Tg C over 20 yr)
<b>Cultivation of Mineral Soils <sup>(1)</sup></b>			<b>0.00</b>
High Activity Soils		0.00	
Low Activity Soils		0.00	
Sandy		0.00	
Volcanic		0.00	
Wetland (Aquic)		0.00	
Other (please specify)			0.00
		0.00	
	Land area (ha)	Annual loss rate (Mg C/ha/yr)	Carbon emissions from organic soils (Mg C/yr)
<b>Cultivation of Organic Soils</b>			<b>0.00</b>
<b>Cool Temperate</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
<b>Warm Temperate</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
<b>Tropical</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
	Total annual amount of lime (Mg)	Carbon conversion factor	Carbon emissions from liming (Mg C)
<b>Liming of Agricultural Soils</b>			<b>0.00</b>
Limestone Ca(CO <sub>3</sub> )		0.00	
Dolomite CaMg(CO <sub>3</sub> ) <sub>2</sub>		0.00	
Total annual net carbon emissions from agriculturally impacted soils (Gg C)			0.00
Total annual net CO <sub>2</sub> emissions from agriculturally impacted soils (Gg CO <sub>2</sub> )			0.00

**Additional information**

Year	Climate <sup>(a)</sup>	land-use/ management system <sup>(a)</sup>	Soil type					
			High activity soils	Low activity soils	Sandy	Volcanic	Wetland (Aquic)	Organic soil
20 years prior	(e.g. tropical, dry)	(e.g. savanna)						
		(e.g. irrigated cropping)						
Inventory year								

<sup>(a)</sup> These should represent the major types of land management systems per climate regions presented in the country as well as ecosystem types which were either converted to agriculture (e.g., forest, savanna, grassland) or have been derived from previous agricultural land-use (e.g., abandoned lands, reforested lands). Systems should also reflect differences in soil carbon stocks that can be related to differences in management (IPCC Guidelines (Volume 2. Workbook, Table 5-9, p. 5.26, and Appendix (pp. 5-31 - 5.38)).

<sup>(1)</sup> The information to be reported under Cultivation of Mineral Soils aggregates data per soil type over all land-use/management systems. This refers to land area data and to the emission estimates and implied emissions factors accordingly.




**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

**Documentation Box:**

Since the French methodology does not treat the carbon soil release or uptake in relation to the nature of the different soils, a specific document available at the CITEPA ("Evaluation des puits de CO<sub>2</sub> suivant la nouvelle méthode préconisée par le GIEC", CITEPA, June 1999) develops the background processing that leads to the results presented in table 5, section D.5.

**TABLE 6 SECTORAL REPORT FOR WASTE**  
(Sheet 1 of 1)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
	(Gg)						
<b>Total Waste</b>	<b>2 298.09</b>	<b>912.63</b>	<b>3.43</b>	<b>16.15</b>	<b>305.29</b>	<b>34.72</b>	<b>8.06</b>
<b>A. Solid Waste Disposal on Land</b>	<b>0.00</b>	<b>864.40</b>		<b>0.00</b>	<b>0.00</b>	<b>8.35</b>	
1. Managed Waste Disposal on Land	0.00	663.73				6.41	
2. Unmanaged Waste Disposal Sites	0.00	200.68				1.94	
3. Other ( <i>please specify</i> ) 	0.00	0.00		0.00	0.00	0.00	
<b>B. Wastewater Handling</b>		<b>13.28</b>	<b>2.13</b>	<b>0.00</b>	<b>0.00</b>	<b>3.68</b>	
1. Industrial Wastewater		0.00	1.06			3.68	
2. Domestic and Commercial Wastewater		13.28	1.06				
3. Other ( <i>please specify</i> ) 		0.00	0.00	0.00	0.00	0.00	
<b>C. Waste Incineration</b>	<b>2 298.09</b>	<b>17.84</b>	<b>1.31</b>	<b>16.15</b>	<b>305.29</b>	<b>11.14</b>	<b>8.06</b>
<b>D. Other (<i>please specify</i>)</b> 	<b>0.00</b>	<b>17.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>11.55</b>	<b>0.00</b>
Sludge spreading and biogas production (CH <sub>4</sub> and NMVOC)	0.00	17.11				11.55	

<sup>(1)</sup> Note that CO<sub>2</sub> from Waste Disposal and Incineration source categories should only be included if it stems from non-biological or inorganic waste sources.

**TABLE 6.A SECTORAL BACKGROUND DATA FOR WASTE**  
**Solid Waste Disposal**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION				IMPLIED EMISSION FACTOR		EMISSIONS <sup>(1)</sup>	
	Annual MSW at the SWDS (Gg)	MCF	DOC degraded (Gg)	CH <sub>4</sub> recovery <sup>(2)</sup> (Gg)	CH <sub>4</sub> (t /t MSW)	CO <sub>2</sub> (t /t MSW)	CH <sub>4</sub> (Gg)	CO <sub>2</sub> <sup>(3)</sup> (Gg)
1 Managed Waste Disposal on Land	24 181.81	1.00	4 836.36	486.24	0.03	0.00	663.73	0.00
2 Unmanaged Waste Disposal Sites	645.51	0.50	129.10	0.00	0.31	0.00	200.68	0.00
- deep (>5 m)					0.00	0.00		
- shallow (<5 m)	645.51	0.50	129.10	0.00	0.31	0.00	200.68	0.00
3 Other (please specify)					0.00	0.00	0.00	0.00

**TABLE 6.C SECTORAL BACKGROUND DATA FOR WASTE**  
**Waste Incineration**  
**(Sheet 1 of 1)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA Amount of incinerated wastes (Gg)	IMPLIED EMISSION FACTOR			EMISSIONS		
		CO <sub>2</sub> (kg/t waste)	CH <sub>4</sub> (kg/t waste)	N <sub>2</sub> O (kg/t waste)	CO <sub>2</sub> <sup>(3)</sup> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
Waste Incineration (please specify)	17 389.62				2 298.09	17.84	1.31
(biogenic) <sup>(3)</sup>		0.00	0.00	0.00	14 248.96		
(plastics and other non-biogenic waste) <sup>(3)</sup>		0.00	0.00	0.00	2 298.09		
Biogenic and non-biogenic	17 389.62	0.00	1.03	0.08		17.84	1.31

MSW - Municipal Solid Waste, SWDS - Solid Waste Disposal Site, MCF - Methane Correction Factor, DOC - Degradable Organic Carbon (IPCC Guidelines (Volume 3. Reference Manual, section 6.2.4)). MSW includes household waste, yard/garden waste, commercial/market waste and organic industrial solid waste. MSW should not include inorganic industrial waste such as construction or demolition materials.

<sup>(1)</sup> Actual emissions (after recovery).

<sup>(2)</sup> CH<sub>4</sub> recovered and flared or utilized.

<sup>(3)</sup> Under Waste Disposal, CO<sub>2</sub> emissions should be reported only when the disposed wastes are combusted at the disposal site which might constitute a management practice. CO<sub>2</sub> emissions from non-biogenic wastes are included in the totals, while the CO<sub>2</sub> emissions from biogenic wastes are not included in the totals.

**Documentation box:**

All relevant information used in calculation should be provided in the additional information box and in the documentation box.

Parties that use country specific models should note this with a brief rationale in the documentation box and fill the relevant cells only.

Table 6A: CH<sub>4</sub> emissions are calculated using a first order decay method based on tier 2.

Table 6C: 15% of the waste incineration CO<sub>2</sub> is considered as from biogenic waste.

Additional information: For MSW 3 CH<sub>4</sub> generation rate constants are used; k1 for 30% of the total wastes, k2 for 30% of the total wastes and k3 for 40% of the total wastes.

**Additional information**

Description	Value
Total population (1000s) <sup>(a)</sup>	60 607.00
Urban population (1000s) <sup>(a)</sup>	
Waste generation rate (kg/capita/day)	1.90
Fraction of MSW disposed to SWDS	0.60
Fraction of DOC in MSW	0.20
Fraction of wastes incinerated	0.26
Fraction of wastes recycled	0.08
CH <sub>4</sub> oxidation factor (b)	0.20
CH <sub>4</sub> fraction in landfill gas	0.50
Number of SWDS recovering CH <sub>4</sub>	
CH <sub>4</sub> generation rate constant (k) <sup>(c)</sup>	k <sub>1</sub> =0.7; k <sub>2</sub> =0.14; k <sub>3</sub> =0.0
Time lag considered (yr) <sup>(c)</sup>	t <sub>1/2</sub> =1 for k <sub>1</sub> ; t <sub>1/2</sub> = 5 for k <sub>2</sub> ; t <sub>1/2</sub> =15 for k <sub>3</sub>
Composition of landfilled waste (%)	
Paper and paperboard	NA
Food and garden waste	NA
Plastics	NA
Glass	NA
Textiles	NA
Other (specify)	NA
other - inert	NA
other - organic	NA

<sup>(a)</sup> Specify whether total or urban population is used and the rationale for doing so.

<sup>(b)</sup> See IPCC Guidelines (Volume 3. Reference Manual, p. 6.9).

<sup>(c)</sup> For Parties using Tier 2 methods.

**TABLE 6.B SECTORAL BACKGROUND DATA FOR WASTE**  
**Wastewater Handling**  
**(Sheet 1 of 1)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND RELATED INFORMATION <sup>(1)</sup>				IMPLIED EMISSION FACTOR			EMISSIONS <sup>(2)</sup>			
	Total organic product		CH <sub>4</sub> recovered and/or flared		CH <sub>4</sub>		N <sub>2</sub> O <sup>(3)</sup>	CH <sub>4</sub>		N <sub>2</sub> O <sup>(3)</sup>	
	Wastewater	Sludge	Wastewater	Sludge	Wastewater (kg/kg DC)	Sludge (kg/kg DC)		(kg/kg DC)	Wastewater (Gg)		Sludge (Gg)
	(Gg DC <sup>(1)</sup> /yr)		(Gg)							(Gg)	
Industrial Wastewater					0.00	0.00				1.06	
Domestic and Commercial Wastewater					0.00	0.00		13.28		1.06	
Other (please specify) <input type="checkbox"/>								0.00	0.00	0.00	
					0.00	0.00					

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR	EMISSIONS
	Population <sup>(4)</sup> (1000s)	Protein consumption (protein in kg/person/yr)	N fraction (kg N/kg protein)	N <sub>2</sub> O (kg N <sub>2</sub> O-N/kg sewage N produced)	N <sub>2</sub> O (Gg)
N <sub>2</sub> O from human sewage <sup>(3)</sup>				0.00	

<sup>(1)</sup> DC - degradable organic component. DC indicators are COD (Chemical Oxygen Demand) for industrial wastewater and BOD (Biochemical Oxygen Demand) for Domestic/Commercial wastewater/sludge (IPCC Guidelines (Volume 3. Reference Manual, pp. 6.14, 6.18)).



<sup>(2)</sup> Actual emissions (after recovery).


<sup>(3)</sup> Parties using other methods for estimation of N<sub>2</sub>O emissions from human sewage or wastewater treatment should provide corresponding information on methods, activity data and emission factors used in the documentation box. Use the table to provide aggregate data.

<sup>(4)</sup> Specify whether total or urban population is used in the calculations and the rationale for doing so. Provide explanation in the documentation box.

<b>Documentation box:</b>
A specific method based on national expert data is used to calculate emissions from wastewater handling (emission factors are expressed per unit of inhabitant).

Additional information		Domestic	Industrial
Total wastewater (m <sup>3</sup> ):			
Treated wastewater (%):			

Wastewater streams:	Wastewater output (m <sup>3</sup> )	DC (kgCOD/m <sup>3</sup> )
<b>Industrial wastewater</b>		
Iron and steel		
Non-ferrous		
Fertilizers		
Food and beverage		
Paper and pulp		
Organic chemicals		
Other (specify) 		
DC (kg BOD/1000 person/yr)		
<b>Domestic and Commercial</b>		
<b>Other</b> 		

Handling systems:	Industrial wastewater treated (%)	Ind. sludge treated (%)	Domestic wastewater treated (%)	Domestic sludge treated (%)
Aerobic				
Anaerobic				
Other (specify) 				

**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
(Sheet 1 of 3)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
		emissions	removals			P	A	P	A	P	A				
		(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>Total National Emissions and Removals</b>		<b>410 684.12</b>	<b>-68 024.00</b>	<b>2 939.13</b>	<b>272.26</b>	<b>0.00</b>	<b>3 751.70</b>	<b>0.00</b>	<b>1 661.16</b>	<b>0.00</b>	<b>0.10</b>	<b>1 671.89</b>	<b>7 802.64</b>	<b>2 346.55</b>	<b>867.42</b>
<b>1. Energy</b>		<b>388 693.32</b>		<b>387.57</b>	<b>19.03</b>							<b>1 640.91</b>	<b>6 440.18</b>	<b>1 134.10</b>	<b>842.70</b>
A. Fuel Combustion	Reference Approach <sup>(2)</sup>	377 384.81													
	Sectoral Approach <sup>(2)</sup>	384 548.79		157.39	19.03							1 636.00	6 436.14	1 027.59	777.34
1. Energy Industries		68 431.74		1.66	2.40							182.11	17.99	4.81	384.92
2. Manufacturing Industries and Construction		77 045.46		4.25	2.55							253.65	837.05	25.08	229.08
3. Transport		135 765.90		15.19	9.34							853.06	3 551.46	700.36	55.85
4. Other Sectors		103 305.69		136.28	4.74							347.19	2 029.64	297.33	107.48
5. Other		0.00		0.00	0.00							0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels		4 144.53		230.18	0.00							4.91	4.04	106.51	65.36
1. Solid Fuels		0.00		133.10	0.00							0.00	3.30	0.83	0.00
2. Oil and Natural Gas		4 144.53		97.08	0.00							4.91	0.74	105.69	65.36
<b>2. Industrial Processes</b>		<b>18 045.29</b>		<b>2.64</b>	<b>53.56</b>	<b>0.00</b>	<b>3 751.70</b>	<b>0.00</b>	<b>1 661.16</b>	<b>0.00</b>	<b>0.10</b>	<b>12.04</b>	<b>958.87</b>	<b>98.65</b>	<b>16.66</b>
A. Mineral Products		10 791.75		0.00	0.00							0.00	0.00	13.68	0.00
B. Chemical Industry		2 844.46		2.64	53.56	0.00	0.00	0.00	0.00	0.00	0.00	9.41	0.00	39.49	12.72
C. Metal Production		3 832.90		0.00	0.00				896.90		0.05	2.63	958.87	4.06	3.94
D. Other Production <sup>(3)</sup>		576.18										0.00	0.00	41.42	0.00
E. Production of Halocarbons and SF <sub>6</sub>							532.02		175.00		0.00				
F. Consumption of Halocarbons and SF <sub>6</sub>						0.00	3 219.68	0.00	589.26	0.00	0.05				
G. Other		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

<sup>(2)</sup> For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach. Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

<sup>(3)</sup> Other Production includes Pulp and Paper and Food and Drink Production.

**Note:** The numbering of footnotes to all tables containing more than one sheet continue to the next sheet. Common footnotes are given only once at the first point of reference.

**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
(Sheet 2 of 3)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NM VOC	SO <sub>2</sub>
	emissions	removals			P	A	P	A	P	A				
	(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>3. Solvent and Other Product Use</b>	<b>1 647.42</b>			<b>1.98</b>									<b>633.92</b>	
<b>4. Agriculture</b>	<b>0.00</b>	<b>0.00</b>	<b>1 535.49</b>	<b>176.27</b>							0.00	0.00	18.97	0.00
A. Enteric Fermentation			1 329.64											
B. Manure Management			174.61	10.09									0.00	
C. Rice Cultivation			8.27										0.00	
D. Agricultural Soils	<sup>(4)</sup>	<sup>(4)</sup>	22.98	166.17									18.97	
E. Prescribed Burning of Savannas			0.00	0.00							0.00	0.00	0.00	
F. Field Burning of Agricultural Residues			0.00	0.00							0.00	0.00	0.00	
G. Other			0.00	0.00							0.00	0.00	0.00	
<b>5. Land-Use Change and Forestry</b>	<sup>(5)</sup> <b>0.00</b>	<sup>(5)</sup> <b>-68 024.00</b>	<b>100.80</b>	<b>17.99</b>							<b>2.79</b>	<b>98.29</b>	<b>426.18</b>	<b>0.00</b>
A. Changes in Forest and Other Woody Biomass Stocks	<sup>(5)</sup> 0.00	<sup>(5)</sup> -83 748.00												
B. Forest and Grassland Conversion	12 540.00		11.23	0.08							2.79	98.29		
C. Abandonment of Managed Lands	<sup>(5)</sup> 0.00	<sup>(5)</sup> -48.00												
D. CO <sub>2</sub> Emissions and Removals from Soil	<sup>(5)</sup> 3 232.00	<sup>(5)</sup> 0.00												
E. Other	<sup>(5)</sup> 0.00	<sup>(5)</sup> 0.00	89.56	17.91							0.00	0.00	426.18	
<b>6. Waste</b>	<b>2 298.09</b>		<b>912.63</b>	<b>3.43</b>							<b>16.15</b>	<b>305.29</b>	<b>34.72</b>	<b>8.06</b>
A. Solid Waste Disposal on Land	<sup>(6)</sup> 0.00		864.40									0.00	8.35	
B. Wastewater Handling			13.28	2.13							0.00	0.00	3.68	
C. Waste Incineration	<sup>(6)</sup> 2 298.09		17.84	1.31							16.15	305.29	11.14	8.06
D. Other	0.00		17.11	0.00							0.00	0.00	11.55	0.00
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	0.00													

<sup>(4)</sup> According to the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.2, 4.87), CO<sub>2</sub> emissions from agricultural soils are to be included under Land-Use Change and Forestry (LUCF). At the same time, the Summary Report 7A (Volume 1. Reporting Instructions, Tables.27) allows for reporting CO<sub>2</sub> emissions or removals from agricultural soils, either in the Agriculture sector, under D. Agricultural Soils or in the Land-Use Change and Forestry sector under D. Emissions and Removals from Soil. Parties may choose either way to report emissions or removals from this source in the common reporting format, but the way they have chosen to report should be clearly indicated, by inserting explanatory comments to the corresponding cells of Summary 1.A and Summary 1.B. Double-counting of these emissions or removals should be avoided. Parties should include these emissions or removals consistently in Table8(a) (Recalculation - Recalculated data) and Table10 (Emission trends).

<sup>(5)</sup> Please do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. "Net" emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(6)</sup> Note that CO<sub>2</sub> from Waste Disposal and Incineration source categories should only be included if it stems from non-biogenic or inorganic waste streams.



**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
**(Sheet 3 of 3)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	CH <sub>4</sub>	N <sub>2</sub> O	HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
					P	A	P	A	P	A				
	(Gg)					CO <sub>2</sub> equivalent (Gg)				(Gg)				
Memo Items: <sup>(7)</sup>														
International Bunkers	21 421.71		0.00	0.30							204.88	10.17	82.24	163.30
Aviation	12 255.30		0.00	0.00							30.41	7.80	2.40	3.89
Marine	9 166.41		0.00	0.30							174.47	2.37	79.84	159.41
Multilateral Operations	0.00		0.00	0.00							0.00	0.00	0.00	0.00
CO <sub>2</sub> Emissions from Biomass	37 281.06													

<sup>(7)</sup> Memo Items are not included in the national totals.

**SUMMARY 1.B SHORT SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7B)**

(Sheet 1 of 1)

 France  
 1998  
 Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
		emissions	removals			P	A	P	A	P	A				
		(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>Total National Emissions and Removals</b>		<b>410 684.12</b>	<b>-68 024.00</b>	<b>2 939.13</b>	<b>272.26</b>	<b>0.00</b>	<b>3 751.70</b>	<b>0.00</b>	<b>1 661.16</b>	<b>0.00</b>	<b>0.10</b>	<b>1 671.89</b>	<b>7 802.64</b>	<b>2 346.55</b>	<b>867.42</b>
<b>1. Energy</b>		<b>388 693.32</b>		<b>387.57</b>	<b>19.03</b>							<b>1 640.91</b>	<b>6 440.18</b>	<b>1 134.10</b>	<b>842.70</b>
A. Fuel Combustion	Reference Approach <sup>(2)</sup>	377 384.81													
	Sectoral Approach <sup>(2)</sup>	384 548.79		157.39	19.03							1 636.00	6 436.14	1 027.59	777.34
B. Fugitive Emissions from Fuels		4 144.53		230.18	0.00							4.91	4.04	106.51	65.36
<b>2. Industrial Processes</b>		<b>18 045.29</b>		<b>2.64</b>	<b>53.56</b>	<b>0.00</b>	<b>3 751.70</b>	<b>0.00</b>	<b>1 661.16</b>	<b>0.00</b>	<b>0.10</b>	<b>12.04</b>	<b>958.87</b>	<b>98.65</b>	<b>16.66</b>
<b>3. Solvent and Other Product Use</b>		<b>1 647.42</b>			<b>1.98</b>							<b>0.00</b>	<b>0.00</b>	<b>633.92</b>	<b>0.00</b>
<b>4. Agriculture <sup>(3)</sup></b>		<b>0.00</b>	<b>0.00</b>	<b>1 535.49</b>	<b>176.27</b>							<b>0.00</b>	<b>0.00</b>	<b>18.97</b>	<b>0.00</b>
<b>5. Land-Use Change and Forestry</b>	<sup>(4)</sup>	<b>0.00</b>	<b>(4) -68 024.00</b>	<b>100.80</b>	<b>17.99</b>							<b>2.79</b>	<b>98.29</b>	<b>426.18</b>	<b>0.00</b>
<b>6. Waste</b>		<b>2 298.09</b>		<b>912.63</b>	<b>3.43</b>							<b>16.15</b>	<b>305.29</b>	<b>34.72</b>	<b>8.06</b>
<b>7. Other</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Memo Items:</b>															
<b>International Bunkers</b>		<b>21 421.71</b>		<b>0.00</b>	<b>0.30</b>							<b>204.88</b>	<b>10.17</b>	<b>82.24</b>	<b>163.30</b>
Aviation		12 255.30		0.00	0.00							30.41	7.80	2.40	3.89
Marine		9 166.41		0.00	0.30							174.47	2.37	79.84	159.41
<b>Multilateral Operations</b>		<b>0.00</b>		<b>0.00</b>	<b>0.00</b>							<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>		<b>37 281.06</b>													

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

<sup>(2)</sup> For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in document box of Table 1.A(c). Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

<sup>(3)</sup> See footnote 4 to Summary 1.A.

<sup>(4)</sup> Please do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. "Net" emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

SUMMARY 2 SUMMARY REPORT FOR CO<sub>2</sub> EQUIVALENT EMISSIONS

France

(Sheet 1 of 1)

1998

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>	Total
	CO <sub>2</sub> equivalent (Gg )						
<b>Total (Net Emissions)<sup>(1)</sup></b>	<b>342 660.12</b>	<b>61 721.66</b>	<b>84 399.20</b>	<b>3 751.70</b>	<b>1 661.16</b>	<b>2 405.46</b>	<b>496 599.29</b>
<b>1. Energy</b>	<b>388 693.32</b>	<b>8 138.92</b>	<b>5 900.21</b>				<b>402 732.45</b>
A. Fuel Combustion (Sectoral Approach)	384 548.79	3 305.11	5 899.90				393 753.80
1. Energy Industries	68 431.74	34.92	744.90				69 211.55
2. Manufacturing Industries and Construction	77 045.46	89.19	790.47				77 925.13
3. Transport	135 765.90	319.04	2 896.40				138 981.34
4. Other Sectors	103 305.69	2 861.97	1 468.12				107 635.78
5. Other	0.00	0.00	0.00				0.00
B. Fugitive Emissions from Fuels	4 144.53	4 833.81	0.31				8 978.65
1. Solid Fuels	0.00	2 795.08	0.00				2 795.08
2. Oil and Natural Gas	4 144.53	2 038.73	0.31				6 183.57
<b>2. Industrial Processes</b>	<b>18 045.29</b>	<b>55.44</b>	<b>16 602.66</b>	<b>3 751.70</b>	<b>1 661.16</b>	<b>2 405.46</b>	<b>42 521.70</b>
A. Mineral Products	10 791.75	0.00	0.00				10 791.75
B. Chemical Industry	2 844.46	55.44	16 602.66	0.00	0.00	0.00	19 502.56
C. Metal Production	3 832.90	0.00	0.00		896.90	1 135.25	5 865.05
D. Other Production	576.18						576.18
E. Production of Halocarbons and SF <sub>6</sub>				532.02	175.00	0.00	707.02
F. Consumption of Halocarbons and SF <sub>6</sub>				3 219.68	589.26	1 270.21	5 079.15
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>	<b>1 647.42</b>		<b>613.48</b>				<b>2 260.90</b>
<b>4. Agriculture</b>	<b>0.00</b>	<b>32 245.38</b>	<b>54 642.38</b>				<b>86 887.76</b>
A. Enteric Fermentation		27 922.35					27 922.35
B. Manure Management		3 666.82	3 129.37				6 796.19
C. Rice Cultivation		173.65					173.65
D. Agricultural Soils <sup>(2)</sup>		482.56	51 513.01				51 995.57
E. Prescribed Burning of Savannas		0.00	0.00				0.00
F. Field Burning of Agricultural Residues		0.00	0.00				0.00
G. Other		0.00	0.00				0.00
<b>5. Land-Use Change and Forestry<sup>(1)</sup></b>	<b>-68 024.00</b>	<b>2 116.77</b>	<b>5 576.86</b>				<b>-60 330.37</b>
<b>6. Waste</b>	<b>2 298.09</b>	<b>19 165.15</b>	<b>1 063.62</b>				<b>22 526.86</b>
A. Solid Waste Disposal on Land	0.00	18 152.43					18 152.43
B. Wastewater Handling		278.91	658.75				937.66
C. Waste Incineration	2 298.09	374.57	404.87				3 077.53
D. Other	0.00	359.25	0.00				359.25
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
							0.00
<b>Memo Items:</b>							
<b>International Bunkers</b>	<b>21 421.71</b>	<b>0.00</b>	<b>91.67</b>				<b>21 513.38</b>
Aviation	12 255.30	0.00	0.00				12 255.30
Marine	9 166.41	0.00	91.67				9 258.08
<b>Multilateral Operations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>				<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>37 281.06</b>						<b>37 281.06</b>

<sup>(1)</sup> For CO<sub>2</sub> emissions from Land-Use Change and Forestry the net emissions are to be reported. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	Net CO <sub>2</sub> emissions / removals	CH <sub>4</sub>	N <sub>2</sub> O	Total emissions
	CO <sub>2</sub> equivalent (Gg )					
<b>Land-Use Change and Forestry</b>						
A. Changes in Forest and Other Woody Biomass Stocks	70 066.00	-153 814.00	-83 748.00			-83 748.00
B. Forest and Grassland Conversion	12 540.00		12 540.00	235.91	23.87	12 799.78
C. Abandonment of Managed Lands	0.00	-48.00	-48.00			-48.00
D. CO <sub>2</sub> Emissions and Removals from Soil	8 444.00	-5 212.00	3 232.00			3 232.00
E. Other	0.00	0.00	0.00	1 880.85	5 552.99	7 433.84
Total CO <sub>2</sub> Equivalent Emissions from Land-Use Change and Forestry	91 050.00	-159 074.00	-68 024.00	2 116.77	5 576.86	-60 330.37

Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(a)</sup>	556 929.67
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(a)</sup>	496 599.29

<sup>(a)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

**SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED**  
(Sheet 1 of 2)

France  
1998  
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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>	
	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>
<b>1. Energy</b>												
A. Fuel Combustion	C	CS	C	CS	C	CS						
1. Energy Industries	C	CS	C	CS	C	CS						
2. Manufacturing Industries and Construction	C	CS	C	CS	C	CS						
3. Transport	C /CS	C /M /CS	C /CS	C /M /CS	C /CS	C /M /CS						
4. Other Sectors	C	CS	C	CS	C	CS						
5. Other	C	CS	C	CS	C	CS						
B. Fugitive Emissions from Fuels	C	CS	C	CS	C	CS						
1. Solid Fuels	C	CS	C	CS	C	CS						
2. Oil and Natural Gas	C	CS	C	CS	C	CS						
<b>2. Industrial Processes</b>												
A. Mineral Products	C	CS	C	CS	C	CS						
B. Chemical Industry	C	CS	C	CS	C	CS/ PS						
C. Metal Production	C	CS	C	CS	C	CS						
D. Other Production	C	CS										
E. Production of Halocarbons and SF <sub>6</sub>							CS	CS	CS	CS		
F. Consumption of Halocarbons and SF <sub>6</sub>							CS/ T2	CS	CS/ T2	CS	CS/ T2	CS
G. Other												

<sup>(1)</sup> Use the following notation keys to specify the method applied: D (IPCC default), RA (Reference Approach), T1 (IPCC Tier 1), T1a, T1b, T1c (IPCC Tier 1a, Tier 1b and Tier 1c, respectively), T2 (IPCC Tier 2), T3 (IPCC Tier 3), C (CORINAIR), CS (Country Specific), M (Model). If using more than one method, enumerate the relevant methods. Explanations of any modifications to the default IPCC methods, as well as information on the proper use of methods per source category where more than one method is indicated, and explanations on the country specific methods, should be provided in the documentation box of the relevant Sectoral background data table.

<sup>(2)</sup> Use the following notation keys to specify the emission factor used: D (IPCC default), C (CORINAIR), CS (Country Specific), PS (Plant Specific), M (Model). Where a mix of emission factors has been used, use different notations in one and the same cells with further explanation in the documentation box of the relevant Sectoral background data table.

**SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED**  
(Sheet 2 of 2)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>	
	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>
<b>3. Solvent and Other Product Use</b>	C	CS										
<b>4. Agriculture</b>												
A. Enteric Fermentation			C	CS								
B. Manure Management			CS/ T2	CS	T2	T2						
C. Rice Cultivation			C	CS								
D. Agricultural Soils			CS/ T2	CS	T2	T2						
E. Prescribed Burning of Savannas												
F. Field Burning of Agricultural Residues												
G. Other												
<b>5. Land-Use Change and Forestry</b>												
A. Changes in Forest and Other Woody Biomass Stocks	CS	CS										
B. Forest and Grassland Conversion	CS	CS	CS	CS	CS	CS						
C. Abandonment of Managed Lands	CS	CS										
D. CO <sub>2</sub> Emissions and Removals from Soil	CS	CS										
E. Other												
<b>6. Waste</b>												
A. Solid Waste Disposal on Land			CS/ T2	CS/ T2								
B. Wastewater Handling			C	CS	C	CS						
C. Waste Incineration	C	CS/ PS	C	CS	C	CS						
D. Other												
<b>7. Other (please specify)</b>												

**TABLE 7 OVERVIEW TABLE<sup>(1)</sup> FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 1 of 3)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>Total National Emissions and Removals</b>	ALL	H	ALL	M	ALL	L	ALL	M	ALL	M	ALL	M	ALL	M	ALL	M	ALL	M	ALL	H
<b>1 Energy</b>		H		M		L								M		M		M		H
A. Fuel Combustion Activities																				
Reference Approach	ALL	H																		
Sectoral Approach	ALL	H	ALL	L	ALL	L							ALL	M	ALL	M	ALL	M	ALL	H
1. Energy Industries	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
2. Manufacturing Industries and Construction	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
3. Transport	ALL	H	ALL	L	ALL	L							ALL	M	ALL	M	ALL	M	ALL	H
4. Other Sectors	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
5. Other	NO		NO		NO								NO		NO		NO		NO	
B. Fugitive Emissions from Fuels																				
1. Solid Fuels	IE	H	ALL	M	NO															
2. Oil and Natural Gas	ALL	H	ALL	M	ALL	L							ALL	L	ALL	L	ALL	M	ALL	H
<b>2 Industrial Processes</b>																				
A. Mineral Products	ALL	H	NO		NO								NO		NO		ALL	L	NE	L
B. Chemical Industry	ALL	H	ALL	M	ALL	M	NO		NO				ALL	M	NO		ALL	M	ALL	H
C. Metal Production	ALL	H	ALL	M	NO				ALL	H	ALL	L	ALL	L	ALL	M	ALL	L	ALL	M
D. Other Production	ALL	H											NO		NO		ALL	M	NO	
E. Production of Halocarbons and SF <sub>6</sub>							ALL	M	ALL	M	NO									

<sup>(1)</sup> This table is intended to be used by Parties to summarize their own assessment of completeness (e.g. partial, full estimate, not estimated) and quality (high, medium, low) of major source/sink inventory estimates. The latter could be understood as a quality assessment of the uncertainty of the estimates. This table might change once the IPCC completes its work on managing uncertainties of GHG inventories. The title of the table was kept for consistency with the current table in the IPCC Guidelines.

**Note:** To fill in the table use the notation key as given in the IPCC Guidelines (Volume 1. Reporting Instructions, Tables. 37).

**TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 2 of 3)

France  
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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>2 Industrial Processes (continued)</b>																				
F. Consumption of Halocarbons and SF <sub>6</sub>																				
Potential <sup>(2)</sup>							NO		NO		NO									
Actual <sup>(3)</sup>							ALL	M	ALL	M	ALL	M								
G. Other	NO		NO		NO		NO		NO		NO		NO		NO		NO		NO	
<b>3 Solvent and Other Product Use</b>	ALL	H			ALL	L														
<b>4 Agriculture</b>													NO		NO		NO		NO	
A. Enteric Fermentation			ALL	M																
B. Manure Management			ALL	M													NO			
C. Rice Cultivation			ALL	L													NO			
D. Agricultural Soils	NO		ALL	L	ALL	L											NO			
E. Prescribed Burning of Savannas			NO		NO								NO		NO		NO		NO	
F. Field Burning of Agricultural Residues			NO		NO								NO		NO		NO		NO	
G. Other			NO		NO								NO		NO		NO		NO	
<b>5 Land-Use Change and Forestry</b>																				
A. Changes in Forest and Other Woody Biomass Stocks	ALL	L																		
B. Forest and Grassland Conversion	ALL	L	ALL	L	ALL	L							ALL	L	ALL	L	NO			

<sup>(2)</sup> Potential emissions based on Tier 1 approach of the IPCC Guidelines.

<sup>(3)</sup> Actual emissions based on Tier 2 approach of the IPCC Guidelines.

**TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 3 of 3)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>5 Land-Use Change and Forestry (continued)</b>																				
C. Abandonment of Managed Lands	ALL	L																		
D. CO <sub>2</sub> Emissions and Removals from Soil	ALL	L																		
E. Other	NO		ALL	L	ALL	L							NO		NO		ALL	L	NO	
<b>6 Waste</b>																				
A. Solid Waste Disposal on Land	ALL	M	ALL	L											NO		ALL	L		
B. Wastewater Handling			ALL	L	ALL	L							NO		NO		ALL	L		
C. Waste Incineration	ALL	M	ALL	L	ALL	L							ALL	L	ALL	L	ALL	L	ALL	L
D. Other	ALL	L	ALL	L	NO								NO		NO		NO		NO	
<b>7 Other (please specify)</b>	NO		NO		NO		NO		NO		NO		NO		NO		NO		NO	
<b>Memo Items:</b>																				
<b>International Bunkers</b>																				
Aviation	ALL	H	NO		ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
Marine	ALL	H	NO		ALL	L							ALL	M	ALL	L	ALL	L	ALL	M
<b>Multilateral Operations</b>																				
CO <sub>2</sub> Emissions from Biomass	ALL	M																		



**TABLE 8(a) RECALCULATION - RECALCULATED DATA**

Recalculated

year:

(Sheet 1 of 2)

France

1998

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
<b>1. Energy</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
1.A.	Fuel Combustion Activities			0.00			0.00			0.00
1.A.1.	Energy Industries			0.00			0.00			0.00
1.A.2.	Manufacturing Industries and Construction			0.00			0.00			0.00
1.A.3.	Transport			0.00			0.00			0.00
1.A.4.	Other Sectors			0.00			0.00			0.00
1.A.5.	Other			0.00			0.00			0.00
1.B.	Fugitive Emissions from Fuels			0.00			0.00			0.00
1.B.1.	Solid fuel			0.00			0.00			0.00
1.B.2.	Oil and Natural Gas			0.00			0.00			0.00
<b>2. Industrial Processes</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
2.A.	Mineral Products			0.00			0.00			0.00
2.B.	Chemical Industry			0.00			0.00			0.00
2.C.	Metal Production			0.00			0.00			0.00
2.D.	Other Production			0.00			0.00			0.00
2.G.	Other			0.00			0.00			0.00
<b>3. Solvent and Other Product Use</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
<b>4. Agriculture</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
4.A.	Enteric Fermentation						0.00			
4.B.	Manure Management						0.00			0.00
4.C.	Rice Cultivation						0.00			
4.D.	Agricultural Soils <sup>(2)</sup>			0.00			0.00			0.00
4.E.	Prescribed Burning of Savannas						0.00			0.00
4.F.	Field Burning of Agricultural Residues						0.00			0.00
4.G.	Other						0.00			0.00
<b>5. Land-Use Change and Forestry (net)</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks			0.00						
5.B.	Forest and Grassland Conversion			0.00			0.00			0.00
5.C.	Abandonment of Managed Lands			0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil			0.00						
5.E.	Other			0.00			0.00			0.00

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.

All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

0

(Sheet 2 of 2)

France

1998

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
6. Waste				0.00			0.00			0.00
6.A.	Solid Waste Disposal on Land			0.00			0.00			0.00
6.B.	Wastewater Handling						0.00			0.00
6.C.	Waste Incineration			0.00			0.00			0.00
6.D.	Other			0.00			0.00			0.00
7. Other (please specify)				0.00			0.00			0.00
				0.00			0.00			0.00
Memo Items:										
International Bunkers				0.00			0.00			0.00
Multilateral Operations				0.00			0.00			0.00
CO <sub>2</sub> Emissions from Biomass				0.00						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
Total Actual Emissions				0.00			0.00			0.00
2.C.3.	Aluminium Production						0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>			0.00			0.00			0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>			0.00			0.00			0.00
	Other			0.00			0.00			0.00
Potential Emissions from Consumption of HFCs/PFCs and SF <sub>6</sub>										
				Previous submission			Latest submission			Difference <sup>(1)</sup>
				CO <sub>2</sub> equivalent (Gg)			CO <sub>2</sub> equivalent (Gg)			(%)
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>										0.00
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>										0.00

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

**TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION**  
**(Sheet 1 of 1)**

France  
1998  
Submission

Specify the sector and source/sink category <sup>(1)</sup> where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods <sup>(2)</sup>	Emission factors <sup>(2)</sup>	Activity data <sup>(2)</sup>	

<sup>(1)</sup> Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

<sup>(2)</sup> Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

<b>Documentation box:</b> Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

**TABLE 9 COMPLETENESS**  
(Sheet 1 of 2)

France  
1998  
Submission

Sources and sinks not reported (NE) <sup>(1)</sup>				
GHG	Sector <sup>(2)</sup>	Source/sink category <sup>(2)</sup>	Explanation	
CO <sub>2</sub>				
CH <sub>4</sub>	1A3. Transport	Civil Aviation	neglected	
	1A3 Transport	Marine national / international	neglected	
N <sub>2</sub> O	4D. Agricultural Soils	Atmospheric Deposition	not included because of possible double counting	
	1A3. Transport	Civil Aviation	neglected	
HFCs				
PFCs				
SF <sub>6</sub>	2. Industrial process	Consumption of SF6 from various minor applications (window insulation, tennis balls etc.) - neglected		
Sources and sinks reported elsewhere (IE) <sup>(3)</sup>				
GHG	Source/sink category	Allocation as per IPCC Guidelines	Allocation used by the Party	Explanation
CO <sub>2</sub>	1A2a-e		1A2f	Not available in the national inventory database at this time
CH <sub>4</sub>	1A2a-e		1A2f	Not available in the national inventory database at this time
N <sub>2</sub> O	1A2a-e		1A2f	Not available in the national inventory database at this time
HFCs				
PFCs				
SF <sub>6</sub>				

<sup>(1)</sup> Please, clearly indicate sources and sinks which are considered in the IPCC Guidelines but are not considered in the submitted inventory. Explain the reason for excluding these sources and sinks, in order to avoid arbitrary interpretations. An entry should be made for each source/sink category for which the indicator "NE" is entered in the sectoral tables.

<sup>(2)</sup> Indicate omitted source/sink following the IPCC source/sink category structure (e.g. sector: Waste, source category: Wastewater Handling).

<sup>(3)</sup> Please clearly indicate sources and sinks in the submitted inventory that are allocated to a sector other than that indicated by the IPCC Guidelines. Show the sector indicated in the IPCC Guidelines and the sector to which the source or sink is allocated in the submitted inventory. Explain the reason for reporting these sources and sinks in a different sector. An entry should be made for each source/sink for which the indicator "IE" is used in the sectoral tables.

TABLE 9 COMPLETENESS  
(Sheet 2 of 2)

France  
1998  
Submission

Additional GHG emissions reported <sup>(4)</sup>						
GHG	Source category	Emissions (Gg)	Estimated GWP value (100-year horizon)	Emissions CO <sub>2</sub> equivalent (Gg)	Reference to the data source of GWP value	Explanation

<sup>(4)</sup> Parties are encouraged to provide information on emissions of greenhouse gases whose GWP values have not yet been agreed upon by the COP. Please include such gases in this table if they are considered in the submitted inventory. Provide additional information on the estimation methods used.

**TABLE 10 EMISSIONS TRENDS (CO<sub>2</sub>)**  
(Sheet 1 of 5)

France  
1998  
Submission

	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</b>	<b>(Gg)</b>										
<b>1. Energy</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Fuel Combustion (Sectoral Approach)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Energy Industries											
2. Manufacturing Industries and Construction											
3. Transport											
4. Other Sectors											
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels											
2. Oil and Natural Gas											
<b>2. Industrial Processes</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other											
<b>3. Solvent and Other Product Use</b>											
<b>4. Agriculture</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Enteric Fermentation											
B. Manure Management											
C. Rice Cultivation											
D. Agricultural Soils <sup>(2)</sup>											
E. Prescribed Burning of Savannas											
F. Field Burning of Agricultural Residues											
G. Other											
<b>5. Land-Use Change and Forestry <sup>(3)</sup></b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Changes in Forest and Other Woody Biomass Stocks											
B. Forest and Grassland Conversion											
C. Abandonment of Managed Lands											
D. CO <sub>2</sub> Emissions and Removals from Soil											
E. Other											
<b>6. Waste</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Solid Waste Disposal on Land											
B. Waste-water Handling											
C. Waste Incineration											
D. Other											
<b>7. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions/Removals with LUCF <sup>(4)</sup></b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions without LUCF <sup>(4)</sup></b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aviation											
Marine											
<b>Multilateral Operations</b>											
<b>CO<sub>2</sub> Emissions from Biomass</b>											

<sup>(1)</sup> Fill in the base year adopted by the Party under the Convention, if different from 1990.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

<sup>(3)</sup> Take the net emissions as reported in Summary 1.A of this common reporting format. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(4)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO<sub>2</sub> emissions and removals from Land-Use Change and Forestry.

**TABLE 10 EMISSIONS TRENDS (CH<sub>4</sub>)**  
(Sheet 2 of 5)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Total Emissions</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1. Energy</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Fuel Combustion (Sectoral Approach)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Energy Industries											
2. Manufacturing Industries and Construction											
3. Transport											
4. Other Sectors											
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels											
2. Oil and Natural Gas											
<b>2. Industrial Processes</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other											
<b>3. Solvent and Other Product Use</b>											
<b>4. Agriculture</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Enteric Fermentation											
B. Manure Management											
C. Rice Cultivation											
D. Agricultural Soils											
E. Prescribed Burning of Savannas											
F. Field Burning of Agricultural Residues											
G. Other											
<b>5. Land-Use Change and Forestry</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Changes in Forest and Other Woody Biomass Stocks											
B. Forest and Grassland Conversion											
C. Abandonment of Managed Lands											
D. CO <sub>2</sub> Emissions and Removals from Soil											
E. Other											
<b>6. Waste</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Solid Waste Disposal on Land											
B. Waste-water Handling											
C. Waste Incineration											
D. Other											
<b>7. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aviation											
Marine											
<b>Multilateral Operations</b>											
<b>CO<sub>2</sub> Emissions from Biomass</b>											

**TABLE 10 EMISSIONS TRENDS (N<sub>2</sub>O)**  
(Sheet 3 of 5)

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Total Emissions</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1. Energy</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Fuel Combustion (Sectoral Approach)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Energy Industries											
2. Manufacturing Industries and Construction											
3. Transport											
4. Other Sectors											
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels											
2. Oil and Natural Gas											
<b>2. Industrial Processes</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other											
<b>3. Solvent and Other Product Use</b>											
<b>4. Agriculture</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Enteric Fermentation											
B. Manure Management											
C. Rice Cultivation											
D. Agricultural Soils											
E. Prescribed Burning of Savannas											
F. Field Burning of Agricultural Residues											
G. Other											
<b>5. Land-Use Change and Forestry</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Changes in Forest and Other Woody Biomass Stocks											
B. Forest and Grassland Conversion											
C. Abandonment of Managed Lands											
D. CO <sub>2</sub> Emissions and Removals from Soil											
E. Other											
<b>6. Waste</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Solid Waste Disposal on Land											
B. Waste-water Handling											
C. Waste Incineration											
D. Other											
<b>7. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aviation											
Marine											
<b>Multilateral Operations</b>											
<b>CO<sub>2</sub> Emissions from Biomass</b>											



**TABLE 10 EMISSION TRENDS ( HFCs, PFCs and SF<sub>6</sub>)**  
**(Sheet 4 of 5)**

France  
1998  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Emissions of HFCs<sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
HFC-23											
HFC-32											
HFC-41											
HFC-43-10mee											
HFC-125											
HFC-134											
HFC-134a											
HFC-152a											
HFC-143											
HFC-143a											
HFC-227ea											
HFC-236fa											
HFC-245ca											
<b>Emissions of PFCs<sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
CF <sub>4</sub>											
C <sub>2</sub> F <sub>6</sub>											
C <sub>3</sub> F <sub>8</sub>											
C <sub>4</sub> F <sub>10</sub>											
c-C <sub>4</sub> F <sub>8</sub>											
C <sub>5</sub> F <sub>12</sub>											
C <sub>6</sub> F <sub>14</sub>											
<b>Emissions of SF<sub>6</sub><sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
SF <sub>6</sub>											

<sup>(5)</sup> Enter information on the actual emissions. Where estimates are only available for the potential emissions, specify this in a comment to the corresponding cell. Only in this row the emissions are expressed as CO<sub>2</sub> equivalent emissions in order to facilitate data flow among spreadsheets.

**TABLE 10 EMISSION TRENDS (SUMMARY)**  
(Sheet 5 of 5)

France  
1998  
Submission

GREENHOUSE GAS EMISSIONS	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO <sub>2</sub> equivalent (Gg)										
Net CO <sub>2</sub> emissions/removals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO <sub>2</sub> emissions (without LUCF) <sup>(6)</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH <sub>4</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N <sub>2</sub> O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SF <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total (with net CO<sub>2</sub> emissions/removals)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total (without CO<sub>2</sub> from LUCF) <sup>(6)</sup></b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO <sub>2</sub> equivalent (Gg)										
1. Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Industrial Processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Solvent and Other Product Use	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Land-Use Change and Forestry <sup>(7)</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(6)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO<sub>2</sub> emissions and removals from Land-Use Change and Forestry.

<sup>(7)</sup> Net emissions.

**TABLE 11 CHECK LIST OF REPORTED INVENTORY INFORMATION<sup>(1)</sup>**

**Party:** France **Year:** 1998

Contact info:	Focal point for national GHG inventories:	CITEPA		
	Address:	10 rue du Faubourg Poissonnière - 75010 PARIS		
	Telephone:	33 (0)1 44836883	Fax: 33 (0)1 40220483	E-mail: <a href="mailto:jean-pierre.fontelle@citepa.org">jean-pierre.fontelle@citepa.org</a>
	Main institution preparing the inventory:	CITEPA		

General info:	Date of submission:	2000		
	Base years:	1990	PFCs, HFCs, SF <sub>6</sub> :	1990
	Year covered in the submission:	1998		
	Gases covered:	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, PFCs, HFCs, SF <sub>6</sub> and NO <sub>x</sub> , CO, NMVOC, SO <sub>2</sub> .		
	Omissions in geographic coverage:	No		

<b>Tables:</b>		Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
	Sectoral report tables:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Sectoral background data tables:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Summary 1 (IPCC Summary tables):	IPCC Table 7A:		<input checked="" type="checkbox"/>	IPCC Table 7B:		<input checked="" type="checkbox"/>
	Summary 2 (CO <sub>2</sub> equivalent emissions):			<input checked="" type="checkbox"/>			
	Summary 3 (Methods/Emission factors):			<input checked="" type="checkbox"/>			
	Uncertainty:	IPCC Table 8A:		<input checked="" type="checkbox"/>	National information:		<input checked="" type="checkbox"/>
	Recalculation tables:			<input type="checkbox"/>			
	Completeness table:			<input checked="" type="checkbox"/>			
	Trend table:			<input type="checkbox"/>			

<b>CO<sub>2</sub></b>	Comparison of CO <sub>2</sub> from fuel combustion	Worksheet 1-1	Percentage of difference	Explanation of differences
		<input checked="" type="checkbox"/>	-1.86	<input checked="" type="checkbox"/>

<b>Recalculation:</b>		Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
	CO <sub>2</sub>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	CH <sub>4</sub>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	N <sub>2</sub> O	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	HFCs, PFCs, SF <sub>6</sub>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explanations:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recalculation tables for all recalculated years:			<input type="checkbox"/>			
	Full CRF for the recalculated base year:			<input type="checkbox"/>			

<b>HFCs, PFCs, SF<sub>6</sub>:</b>		HFCs		PFCs		SF <sub>6</sub>	
	Disaggregation by species:	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Production of Halocarbons/SF <sub>6</sub> :	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	Consumption of Halocarbons/SF <sub>6</sub> :	Actual	Potential	Actual	Potential	Actual	Potential
	Potential/Actual emission ratio:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		0.00		0.00		0.00	

Reference to National Inventory Report and/or national inventory web site: Inventaire des émissions de gaz à effet de serre en France au cours de la période 1990 - 1999 / Format UNFCCC, CITEPA december 2000 - Web site : [www.citepa.org](http://www.citepa.org)

CRF - Common Reporting Format.  
LUCF - Land-Use Change and Forestry.

<sup>(1)</sup> For each omission, give an explanation for the reasons by inserting a comment to the corresponding cell.

**1990**





**TABLE 1 SECTORAL REPORT FOR ENERGY**  
(Sheet 1 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NM VOC	SO <sub>2</sub>
	(Gg)						
<b>Total Energy</b>	<b>360 251.17</b>	<b>483.60</b>	<b>12.38</b>	<b>1 885.35</b>	<b>9 516.78</b>	<b>1 669.06</b>	<b>1 275.34</b>
<b>A. Fuel Combustion Activities (Sectoral Approach)</b>	<b>355 945.32</b>	<b>172.61</b>	<b>12.38</b>	<b>1 879.67</b>	<b>9 511.77</b>	<b>1 496.05</b>	<b>1 180.16</b>
<b>1. Energy Industries</b>	<b>65 495.21</b>	<b>2.21</b>	<b>1.81</b>	<b>156.59</b>	<b>16.43</b>	<b>3.58</b>	<b>516.84</b>
a. Public Electricity and Heat Production	45 606.34	0.46	1.18	130.16	10.05	2.54	353.86
b. Petroleum Refining	13 238.83	0.54	0.50	16.34	3.04	0.55	136.65
c. Manufacture of Solid Fuels and Other Energy Industries	6 650.04	1.21	0.13	10.09	3.34	0.49	26.33
<b>2. Manufacturing Industries and Construction</b>	<b>76 919.30</b>	<b>3.92</b>	<b>2.36</b>	<b>241.94</b>	<b>840.91</b>	<b>20.98</b>	<b>351.35</b>
a. Iron and Steel	0.00	0.00	0.00				
b. Non-Ferrous Metals	0.00	0.00	0.00				
c. Chemicals	0.00	0.00	0.00				
d. Pulp, Paper and Print	0.00	0.00	0.00				
e. Food Processing, Beverages and Tobacco	0.00	0.00	0.00				
f. Other ( <i>please specify</i> )	76 919.30	3.92	2.36	241.94	840.91	20.98	351.35
2a, b, c, d, e gathered into 2f				241.94	840.91	20.98	351.35
<b>3. Transport</b>	<b>119 156.27</b>	<b>21.56</b>	<b>3.90</b>	<b>1 108.13</b>	<b>6 491.34</b>	<b>1 151.12</b>	<b>154.55</b>
a. Civil Aviation	4 540.76	0.00	0.00	11.38	6.55	2.02	1.44
b. Road Transportation	111 400.40	21.47	3.79	1 052.93	6 394.08	1 117.39	142.58
c. Railways	1 070.02	0.06	0.04	13.45	3.64	1.58	2.04
d. Navigation	1 908.08	0.01	0.06	26.10	86.99	29.70	8.49
e. Other Transportation ( <i>please specify</i> )	237.01	0.01	0.01	4.27	0.08	0.42	0.00
Pipeline compressor				4.27	0.08	0.42	0.00

**TABLE 1 SECTORAL REPORT FOR ENERGY**  
(Sheet 2 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NM VOC	SO <sub>2</sub>
	(Gg)						
<b>4. Other Sectors</b>	<b>94 374.54</b>	<b>144.93</b>	<b>4.32</b>	<b>373.01</b>	<b>2 163.09</b>	<b>320.37</b>	<b>157.41</b>
a. Commercial/Institutional	26 528.76	2.51	0.97	33.62	16.34	1.29	45.71
b. Residential	57 135.01	141.36	2.98	60.84	1 806.26	219.60	82.49
c. Agriculture/Forestry/Fisheries	10 710.77	1.05	0.37	278.55	340.50	99.48	29.22
<b>5. Other (please specify)<sup>(1)</sup></b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
a. Stationary 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Mobile 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00					
<b>B. Fugitive Emissions from Fuels</b>	<b>4 305.85</b>	<b>310.99</b>	<b>0.00</b>	<b>5.68</b>	<b>5.01</b>	<b>173.02</b>	<b>95.18</b>
<b>1. Solid Fuels</b>	<b>0.00</b>	<b>206.26</b>	<b>0.00</b>	<b>0.00</b>	<b>4.26</b>	<b>1.06</b>	<b>0.00</b>
a. Coal Mining	0.00	169.93	0.00	0.00	0.00	0.00	
b. Solid Fuel Transformation	0.00	2.48			4.26	1.06	
c. Other (please specify) 	0.00	33.84	0.00	0.00	0.00	0.00	0.00
Storage of solid fuel							
<b>2. Oil and Natural Gas</b>	<b>4 305.85</b>	<b>104.73</b>	<b>0.00</b>	<b>5.68</b>	<b>0.75</b>	<b>171.96</b>	<b>95.18</b>
a. Oil	3 224.89	0.31		5.61	0.75	168.15	52.58
b. Natural Gas	784.22	104.06				3.65	38.69
c. Venting and Flaring	296.74	0.36	0.00	0.07	0.00	0.15	3.91
Venting	0.00	0.00					
Flaring	296.74	0.36	0.00	0.07	0.00	0.15	3.91
d. Other (please specify) 	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:<sup>(2)</sup></b>							
<b>International Bunkers</b>	<b>16 754.60</b>	<b>0.00</b>	<b>0.26</b>	<b>175.90</b>	<b>9.96</b>	<b>73.71</b>	<b>153.51</b>
Aviation	8 617.73	0.00	0.00	21.14	7.86	2.89	2.74
Marine	8 136.87	0.00	0.26	154.76	2.10	70.82	150.78
<b>Multilateral Operations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>				
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>37 858.66</b>						

<sup>(1)</sup> Include military fuel use under this category.

<sup>(2)</sup> Please do not include in energy totals.

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 1 of 4)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A. Fuel Combustion</b>	<b>5 340 118.71</b>	NCV				<b>355 945.32</b>	<b>172.61</b>	<b>12.38</b>
Liquid Fuels	3 015 429.63	NCV	73.24	9.03	2.45	220 842.83	27.22	7.38
Solid Fuels	515 074.04	NCV	103.23	8.74	2.51	53 169.67	4.50	1.29
Gaseous Fuels	886 257.22	NCV	56.98	3.26	2.50	50 499.86	2.89	2.22
Biomass	406 844.04	NCV	93.05	335.90	2.50 <sup>(3)</sup>	37 858.66	136.66	1.02
Other Fuels	516 513.78	NCV	60.86	2.60	0.92	31 432.96	1.34	0.48
<b>I.A.1. Energy Industries</b>	<b>735 434.31</b>	NCV				<b>65 495.21</b>	<b>2.21</b>	<b>1.81</b>
Liquid Fuels	301 317.14	NCV	69.45	2.29	2.50	20 926.34	0.69	0.75
Solid Fuels	366 438.33	NCV	104.73	1.25	2.50	38 375.76	0.46	0.92
Gaseous Fuels	27 777.34	NCV	57.00	37.58	2.50	1 583.31	1.04	0.07
Biomass	186.30	NCV	92.00	31.99	2.52 <sup>(3)</sup>	17.14	0.01	0.00
Other Fuels	39 715.20	NCV	116.07	0.21	1.79	4 609.80	0.01	0.07
<b>a. Public Electricity and Heat Production</b>	<b>472 901.19</b>	NCV				<b>45 606.34</b>	<b>0.46</b>	<b>1.18</b>
Liquid Fuels	103 615.78	NCV	77.76	1.48	2.50	8 057.68	0.15	0.26
Solid Fuels	351 842.72	NCV	103.92	0.75	2.50	36 565.05	0.26	0.88
Gaseous Fuels	17 256.39	NCV	57.00	2.40	2.50	983.61	0.04	0.04
Biomass	186.30	NCV	92.00	31.99	2.52 <sup>(3)</sup>	17.14	0.01	0.00
Other Fuels		NCV	0.00	0.00	0.00			
<b>b. Petroleum Refining</b>	<b>198 037.92</b>	NCV				<b>13 238.83</b>	<b>0.54</b>	<b>0.50</b>
Liquid Fuels	195 951.37	NCV	64.98	2.71	2.50	12 732.16	0.53	0.49
Solid Fuels	1 837.61	NCV	268.00	2.50	2.50	492.48	0.00	0.00
Gaseous Fuels	248.94	NCV	57.00	2.49	2.49	14.19	0.00	0.00
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
<b>c. Manufacture of Solid Fuels and Other Energy Industries</b>	<b>64 495.20</b>	NCV				<b>6 650.04</b>	<b>1.21</b>	<b>0.13</b>
Liquid Fuels	1 750.00	NCV	78.00	3.00	2.50	136.50	0.01	0.00
Solid Fuels	12 758.00	NCV	103.33	15.00	2.50	1 318.23	0.19	0.03
Gaseous Fuels	10 272.00	NCV	57.00	97.54	2.50	585.51	1.00	0.03
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels	39 715.20	NCV	116.07	0.21	1.79	4 609.80	0.01	0.07

<sup>(1)</sup> Activity data should be calculated using net calorific values (NCV) as specified by the IPCC Guidelines. If gross calorific values (GCV) were used, please indicate this by replacing "NCV" with "GCV" in this column.

<sup>(2)</sup> Accurate estimation of CH<sub>4</sub> and N<sub>2</sub>O emissions depends on combustion conditions, technology, and emission control policy, as well as fuel characteristics. Therefore, caution should be used when comparing the implied emission factors.

<sup>(3)</sup> Carbon dioxide emissions from biomass are reported under Memo Items. The content of the cells is not included in the totals.

**Note:** For the coverage of fuel categories, please refer to the IPCC Guidelines (Volume 1. Reporting Instructions - Common Reporting Framework, section 1.2, p. 1.19). If some derived gases (e.g. gas work gas, coke oven gas, blast gas, oxygen steel furnace gas, etc.) are considered, Parties should provide information on the allocation of these derived gases under the above fuel categories (liquid, solid, gaseous, biomass, other fuels) in the documentation box at the end of sheet 4 of this table.

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 2 of 4)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A.2 Manufacturing Industries and Construction</b>	<b>1 254 116.26</b>	NCV				<b>76 919.30</b>	<b>3.92</b>	<b>2.36</b>
Liquid Fuels	288 645.06	NCV	75.07	2.62	2.51	21 667.64	0.76	0.72
Solid Fuels	102 291.61	NCV	101.58	2.05	2.54	10 391.22	0.21	0.26
Gaseous Fuels	327 011.09	NCV	56.95	1.58	2.50	18 622.82	0.52	0.82
Biomass	67 450.14	NCV	98.47	17.06	2.50 <sup>(3)</sup>	6 642.14	1.15	0.17
Other Fuels	468 718.36	NCV	55.98	2.75	0.83	26 237.62	1.29	0.39
a. Iron and Steel	0.00	NCV				0.00	0.00	0.00
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
b. Non-Ferrous Metals	0.00	NCV				0.00	0.00	0.00
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
c. Chemicals	0.00	NCV				0.00	0.00	0.00
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
d. Pulp, Paper and Print	0.00	NCV				0.00	0.00	0.00
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
e. Food Processing, Beverages and Tobacco	0.00	NCV				0.00	0.00	0.00
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			
f. Other (please specify )	1 254 116.26	NCV				76 919.30	3.92	2.36
Liquid Fuels	288 645.06	NCV	75.07	2.62	2.51	21 667.64	0.76	0.72
Solid Fuels	102 291.61	NCV	101.58	2.05	2.54	10 391.22	0.21	0.26
Gaseous Fuels	327 011.09	NCV	56.95	1.58	2.50	18 622.82	0.52	0.82
Biomass	67 450.14	NCV	98.47	17.06	2.50 <sup>(3)</sup>	6 642.14	1.15	0.17
Other Fuels	468 718.36	NCV	55.98	2.75	0.83	26 237.62	1.29	0.39



**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 3 of 4)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS			
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
<b>1.A.3 Transport</b>	<b>1 624 066.73</b>	NCV					<b>119 156.27</b>	<b>21.56</b>	<b>3.90</b>
Gasoline	876 339.51	NCV	72.29	21.56	1.65		63 353.57	18.89	1.45
Diesel	736 715.80	NCV	74.72	3.55	3.30		55 050.08	2.61	2.43
Natural Gas	4 158.00	NCV	57.00	3.00	2.50		237.01	0.01	0.01
Solid Fuels	0.00	NCV	0.00	0.00	0.00		0.00	0.00	0.00
Biomass	0.00	NCV	0.00	0.00	0.00 <sup>(3)</sup>		0.00	0.00	0.00
Other Fuels	6 853.42	NCV	75.23	5.90	1.66		515.61	0.04	0.01
a. Civil Aviation	63 426.35	NCV					4 540.76	0.00	0.00
Aviation Gasoline		NCV	0.00	0.00	0.00				
Jet Kerosene	63 426.35	NCV	71.59	0.00	0.00		4 540.76		
b. Road Transportation	1 516 706.59	NCV					111 400.40	21.47	3.79
Gasoline	812 913.16	NCV	72.35	23.24	1.78		58 812.81	18.89	1.45
Diesel Oil	701 493.58	NCV	74.70	3.62	3.34		52 404.39	2.54	2.34
Natural Gas		NCV	0.00	0.00	0.00				
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>				
Other Fuels (please specify)	2 299.86	NCV					183.20	0.04	0.00
	2 299.86	NCV	79.66	17.58	0.00		183.20	0.04	
c. Railways	14 266.98	NCV					1 070.02	0.06	0.04
Solid Fuels		NCV	0.00	0.00	0.00				
Liquid Fuels	14 266.98	NCV	75.00	4.30	2.50		1 070.02	0.06	0.04
Other Fuels (please specify)	0.00	NCV					0.00	0.00	0.00
		NCV	0.00	0.00	0.00				
d. Navigation	25 508.80	NCV					1 908.08	0.01	0.06
Coal		NCV	0.00	0.00	0.00				
Residual Oil	1 341.69	NCV	78.00	0.00	2.50		104.65		0.00
Gas/Diesel Oil	19 613.56	NCV	75.00	0.62	2.50		1 471.02	0.01	0.05
Other Fuels (please specify)	4 553.56	NCV					332.41	0.00	0.01
	4 553.56	NCV	73.00	0.00	2.50		332.41		0.01
e. Other Transportation	4 158.00	NCV					237.01	0.01	0.01
Liquid Fuels		NCV	0.00	0.00	0.00				
Solid Fuels		NCV	0.00	0.00	0.00				
Gaseous Fuels	4 158.00	NCV	57.00	3.00	2.50		237.01	0.01	0.01

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fuel Combustion Activities - Sectoral Approach**  
**(Sheet 4 of 4)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>			EMISSIONS		
	Consumption		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
	(TJ)	(1)	(t/TJ)	(kg/TJ)	(kg/TJ)	(Gg)	(Gg)	(Gg)
<b>I.A.4 Other Sectors</b>	<b>1 726 501.41</b>	NCV				<b>94 374.54</b>	<b>144.93</b>	<b>4.32</b>
Liquid Fuels	812 412.11	NCV	73.66	5.26	2.50	59 845.20	4.27	2.03
Solid Fuels	46 344.10	NCV	95.00	82.67	2.50	4 402.69	3.83	0.12
Gaseous Fuels	527 310.80	NCV	57.00	2.50	2.50	30 056.72	1.32	1.32
Biomass	339 207.60	NCV	91.98	399.47	2.50 <sup>(3)</sup>	31 199.38	135.50	0.85
Other Fuels	1 226.80	NCV	57.00	2.50	2.50	69.93	0.00	0.00
a. Commercial/Institutional	387 802.95	NCV				26 528.76	2.51	0.97
Liquid Fuels	239 375.95	NCV	74.47	6.56	2.50	17 825.75	1.57	0.60
Solid Fuels	7 345.90	NCV	95.00	70.31	2.50	697.86	0.52	0.02
Gaseous Fuels	140 441.10	NCV	57.00	2.50	2.50	8 005.15	0.35	0.35
Biomass	640.00	NCV	79.94	118.14	2.50 <sup>(3)</sup>	51.16	0.08	0.00
Other Fuels		NCV	0.00	0.00	0.00			
b. Residential	1 191 811.18	NCV				57 135.01	141.36	2.98
Liquid Fuels	438 286.88	NCV	73.12	6.06	2.50	32 046.83	2.66	1.10
Solid Fuels	35 260.20	NCV	95.00	85.00	2.50	3 349.72	3.00	0.09
Gaseous Fuels	380 149.70	NCV	57.00	2.50	2.50	21 668.53	0.95	0.95
Biomass	336 887.60	NCV	92.00	400.00	2.50 <sup>(3)</sup>	30 993.66	134.76	0.84
Other Fuels	1 226.80	NCV	57.00	2.50	2.50	69.93	0.00	0.00
c. Agriculture/Forestry/Fisheries	146 887.29	NCV				10 710.77	1.05	0.37
Liquid Fuels	134 749.29	NCV	74.01	0.33	2.50	9 972.62	0.05	0.34
Solid Fuels	3 738.00	NCV	95.00	85.00	2.50	355.11	0.32	0.01
Gaseous Fuels	6 720.00	NCV	57.00	2.50	2.50	383.04	0.02	0.02
Biomass	1 680.00	NCV	92.00	400.00	2.50 <sup>(3)</sup>	154.56	0.67	0.00
Other Fuels		NCV	0.00	0.00	0.00			
<b>I.A.5 Other (Not elsewhere specified) <sup>(4)</sup></b>	<b>0.00</b>	NCV				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Liquid Fuels		NCV	0.00	0.00	0.00			
Solid Fuels		NCV	0.00	0.00	0.00			
Gaseous Fuels		NCV	0.00	0.00	0.00			
Biomass		NCV	0.00	0.00	0.00 <sup>(3)</sup>			
Other Fuels		NCV	0.00	0.00	0.00			

<sup>(4)</sup> Include military fuel use under this category.

**Documentation Box:**

1A3a - Civil aviation : the gasoline item is included within the jet kerosene item.

**TABLE 1.A(b) SECTORAL BACKGROUND DATA FOR ENERGY**  
**CO<sub>2</sub> from Fuel Combustion Activities - Reference Approach (IPCC Worksheet 1-1)**  
**(Sheet 1 of 1)**

France  
1990  
Submission

FUEL TYPES			Unit	Production	Imports	Exports	International bunkers	Stock change	Apparent consumption	Conversion factor <sup>(1)</sup> (TJ/Unit)	<sup>(1)</sup>	Apparent consumption (TJ)	Carbon emission factor (t C/TJ)	Carbon content (Gg C)	Carbon stored (Gg C)	Net carbon emissions (Gg C)	Fraction of carbon oxidized	Actual CO <sub>2</sub> emissions (Gg CO <sub>2</sub> )	
Liquid Fossil	Primary Fuels	Crude Oil	kt	3 024.00	69 566.00	0.00		-308.00	72 898.00	42.00	NCV	3 061 716.00	20.00	61 234.32		61 234.32	0.99	222 280.58	
		Orimulsion	kt	0.00	0.00	0.00		0.00	0.00	27.50	NCV	0.00	20.00	0.00		0.00	0.99	0.00	
		Natural Gas Liquids	kt	446.00	0.00	0.00		0.00	446.00	44.00	NCV	19 624.00	17.20	337.53		337.53	0.99	1 225.24	
	Secondary Fuels	Gasoline	kt		4 404.00	3 040.00	0.00		-404.00	1 768.00	44.00	NCV	77 792.00	18.90	1 470.27		1 470.27	0.99	5 337.08
		Jet Kerosene	kt		945.00	782.00	0.00		-103.00	266.00	44.00	NCV	11 704.00	19.50	228.23		228.23	0.99	828.47
		Other Kerosene	kt		62.00	7.00	0.00	0.00	1.00	54.00	44.00	NCV	2 376.00	19.60	46.57		46.57	0.99	169.05
		Shale Oil	kt			0.00	0.00		0.00	0.00	36.00	NCV	0.00	20.00	0.00		0.00	0.99	0.00
		Gas / Diesel Oil	kt			11 185.00	3 911.00	311.00	146.00	6 817.00	42.00	NCV	286 314.00	20.20	5 783.54	1 049.47	4 734.07	0.99	17 184.68
		Residual Fuel Oil	kt		398.00	3 108.00		2 262.00	424.00	-5 396.00	40.00	NCV	-215 840.00	21.10	-4 554.22		-4 554.22	0.99	-16 531.83
		LPG	kt		1 493.00	765.00			94.00	634.00	46.00	NCV	29 164.00	17.20	501.62	469.97	31.65	0.99	114.89
		Ethane	kt			0.00	0.00		0.00	0.00	47.50	NCV	0.00	16.80	0.00	0.00	0.00	0.99	0.00
		Naphtha	kt		3 591.00	513.00			-16.00	3 094.00	45.00	NCV	139 230.00	20.00	2 784.60	6 390.90	-3 606.30	0.99	-13 090.87
		Bitumen	kt		385.00	306.00			23.00	56.00	40.00	NCV	2 240.00	22.00	49.28	2 650.56	-2 601.28	0.99	-9 442.65
		Lubricants	kt		199.00	1 048.00		41.00	271.00	-1 161.00	40.00	NCV	-46 440.00	20.00	-928.80	772.00	-1 700.80	0.99	-6 173.90
		Petroleum Coke	kt		1 360.00	0.00			0.00	1 360.00	32.00	NCV	43 520.00	27.50	1 196.80		1 196.80	0.99	4 344.38
		Refinery Feedstocks	kt		6 007.00	299.00			-104.00	5 812.00	44.80	NCV	260 377.60	20.00	5 207.55		5 207.55	0.99	18 903.41
		Other Oil	kt			424.00	638.00		219.00	-433.00	40.00	NCV	-17 320.00	20.00	-346.40		-346.40	0.99	-1 257.43
Liquid Fossil Totals														73 010.89	11 332.90	61 677.99		223 891.11	
Solid Fossil	Primary Fuels	Anthracite <sup>(2)</sup>	kt						0.00		NCV	0.00	26.80	0.00		0.00	0.98	0.00	
		Coking Coal	kt	7 848.00	0.00	0.00		0.00	7 848.00	26.00	NCV	204 048.00	25.80	5 264.44	270.14	4 994.30	0.98	17 946.18	
		Other Bit. Coal	kt	9 378.00	11 541.00	585.00	0.00	-1 212.00	21 546.00	26.00	NCV	560 196.00	25.80	14 453.06		14 453.06	0.98	51 934.65	
		Sub-bit. Coal	kt	0.00	0.00	0.00	0.00	0.00	0.00	26.00	NCV	0.00	26.20	0.00		0.00	0.98	0.00	
		Lignite	kt	2 333.00	69.00	0.00		-308.00	2 710.00	17.00	NCV	46 070.00	27.60	1 271.53		1 271.53	0.98	4 569.04	
		Oil Shale	kt	0.00	0.00	0.00		0.00	0.00	9.40	NCV	0.00	29.10	0.00		0.00	0.98	0.00	
		Peat	kt	0.00	0.00	0.00		0.00	0.00	11.60	NCV	0.00	28.90	0.00		0.00	0.98	0.00	
	Secondary Fuels	BKB & Patent Fuel	kt		178.00	14.00		-3.00	167.00	32.00	NCV	5 344.00	25.80	137.88		137.88	0.98	495.43	
		Coke Oven/Gas Coke	kt			0.00	0.00		0.00	0.00	28.00	NCV	0.00	29.50	0.00		0.00	0.98	0.00
Solid Fuel Totals												815 658.00		21 126.90	270.14	20 856.76		74 945.30	
Gaseous Fossil		Natural Gas (Dry)	TJ	117 032.00	1 147 554	13 817.00		-39 755.00	1 290 524.00	1.00	NCV	1 290 524.00	15.30	19 745.02	1 246.64	18 498.38	1.00	67 488.25	
Total												5 760 639.60		113 882.81	12 849.68	101 033.13		366 324.65	
Biomass total												361 263.00		10 776.57	0.00	10 776.57		38 723.80	
		Solid Biomass	TJ	358 718.00	0.00	0.00		0.00	358 718.00	1.00	NCV	358 718.00	29.90	10 725.67		10 725.67	0.98	38 540.90	
		Liquid Biomass	TJ	2 545.00	0.00	0.00		0.00	2 545.00	1.00	NCV	2 545.00	20.00	50.90		50.90	0.98	182.90	
		Gas Biomass	TJ		0.00	0.00		0.00	0.00	1.00	NCV	0.00	30.60	0.00		0.00	0.98	0.00	

<sup>(1)</sup> To convert quantities expressed in natural units to energy units, use net calorific values (NCV). If gross calorific values (GCV) are used in this table, please indicate this by replacing "NCV" with "GCV" in this column.

<sup>(2)</sup> If Anthracite is not separately available, include with Other Bituminous Coal.

**TABLE 1.A(c) COMPARISON OF CO<sub>2</sub> EMISSIONS FROM FUEL COMBUSTION**  
**(Sheet 1 of 1)**

France  
1990  
Submission

FUEL TYPES	Reference approach		National approach <sup>(1)</sup>		Difference <sup>(2)</sup>	
	Energy consumption (PJ)	CO <sub>2</sub> emissions (Gg)	Energy consumption (PJ)	CO <sub>2</sub> emissions (Gg)	Energy consumption (%)	CO <sub>2</sub> emissions (%)
Liquid Fuels (excluding international bunkers)	3 654.46	223 891.11	3 015.43	220 842.83	21.19	1.38
Solid Fuels (excluding international bunkers)	815.66	74 945.30	515.07	53 169.67	58.36	40.95
Gaseous Fuels	1 290.52	67 488.25	886.26	50 499.86	45.62	33.64
Other <sup>(3)</sup>			516.51	31 432.96	-100.00	-100.00
<b>Total <sup>(3)</sup></b>	<b>5 760.64</b>	<b>366 324.65</b>	<b>4 933.27</b>	<b>355 945.32</b>	<b>16.77</b>	<b>2.92</b>

<sup>(1)</sup> "National approach" is used to indicate the approach (if different from the Reference approach) followed by the Party to estimate its CO<sub>2</sub> emissions from fuel combustion reported in the national GHG inventory.

<sup>(2)</sup> Difference of the Reference approach over the National approach (i.e. difference = 100% x ((RA-NA)/NA), where NA = National approach and RA = Reference approach).

<sup>(3)</sup> Emissions from biomass are not included.

**Note:** In addition to estimating CO<sub>2</sub> emissions from fuel combustion by sector, Parties should also estimate these emissions using the IPCC Reference approach, as found in the IPCC Guidelines, Worksheet 1-1(Volume 2. Workbook). The Reference approach is to assist in verifying the sectoral data. Parties should also complete the above tables to compare the alternative estimates, and if the emission estimates lie more than 2 percent apart, should explain the source of this difference in the documentation box provided.


**Documentation Box:**

Anthracite is included with "other bituminous coal» and gaseous biomass is included in liquid biomass.

The reference approach is applied to the metropolitan area only. The apparent difference in fuel categories is due to different allocation of derived fuels between the reference approach and the sectoral approach. Difference are also due to maritime and air traffics which are differently counted in the sectoral and the reference approaches.

**TABLE 1.A(d) SECTORAL BACKGROUND DATA FOR ENERGY**  
**Feedstocks and Non-Energy Use of Fuels**  
**(Sheet 1 of 1)**

France  
1990  
Submission

FUEL TYPE <sup>(1)</sup>	ACTIVITY DATA AND RELATED INFORMATION		IMPLIED EMISSION FACTOR	ESTIMATE
	Fuel quantity	Fraction of carbon stored	Carbon emission factor	of carbon stored in non energy use of fuels
	(TJ)		(t C/TJ)	(Gg C)
Naphtha <sup>(2)</sup>	319 545.00	100.00	0.20	6 390.90
Lubricants	38 600.00	100.00	0.20	772.00
Bitumen	120 480.00	100.00	0.22	2 650.56
Coal Oils and Tars (from Coking Coal)	10 080.00	100.00	0.27	270.14
Natural Gas <sup>(2)</sup>	81 480.00	100.00	0.15	1 246.64
Gas/Diesel Oil <sup>(2)</sup>	51 954.00	100.00	0.20	1 049.47
LPG <sup>(2)</sup>	27 324.00	100.00	0.17	469.97
Butane <sup>(2)</sup>		100.00	0.00	
Ethane <sup>(2)</sup>	0.00	100.00	0.00	0.00
Other (please specify) 				
Wax and paraffins	3 560.00	100.00	0.20	71.20
White spirit	6 880.00	100.00	0.20	137.60
Other petroleum products	-107 040.00	100.00	0.20	-2 140.80

Additional information <sup>(a)</sup>


CO <sub>2</sub> not emitted (Gg CO <sub>2</sub> )	Subtracted from energy sector (specify source category)
23 433.30	
2 830.67	
9 718.72	
990.51	
4 571.01	
3 848.06	
1 723.22	
0.00	
0.00	
261.07	
504.53	
-7 849.60	

- <sup>(1)</sup> Where fuels are used in different industries, please enter in different rows.  
<sup>(2)</sup> Enter these fuels when they are used as feedstocks.

<sup>(a)</sup> The fuel lines continue from the table to the left.

**Note:** The table is consistent with the IPCC Guidelines. Parties that take into account the emissions associated with the use and disposal of these feedstocks could continue to use their methodology, and provide explanation notes in the documentation box below.

**Documentation box:** A fraction of energy carriers is stored in such products as plastics or asphalt. The non-stored fraction of the carbon in the energy carrier or product is oxidized, resulting in carbon dioxide emissions, either during the use of the energy carriers in the industrial production (e.g. fertilizer production), or during the use of the products (e.g. solvents, lubricants), or in both (e.g. monomers). To report associated emissions use the above table, filling an extra "Additional information" table, as shown below.

Associated CO <sub>2</sub> emissions (Gg)	Allocated under (Specify source category) <sup>(a)</sup>	<div>  <div> <div>e.g. Industrial Processes, Waste Incineration, etc.</div> </div> </div>
2 132.59	6C non-biogenic	
1 851.92	3A, B, D	
4 305.85	1B2	

**TABLE 1.B.1 SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fugitive Emissions from Solid Fuels**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTOR		EMISSIONS	
	Amount of fuel produced <sup>(1)</sup>	CH <sub>4</sub>	CO <sub>2</sub>	CH <sub>4</sub>	CO <sub>2</sub>
	(Mt)	(kg/t)	(kg/t)	(Gg)	(Gg)
<b>1. B. 1. a. Coal Mining and Handling</b>	12.82			169.93	0.00
i. Underground Mines <sup>(2)</sup>	10.83	15.55	0.00	168.50	0.00
Mining Activities		15.55	0.00	168.50	0.00
Post-Mining Activities		0.00	0.00		
ii. Surface Mines <sup>(2)</sup>	1.99	0.72	0.00	1.43	0.00
Mining Activities		0.72	0.00	1.43	0.00
Post-Mining Activities		0.00	0.00		
<b>1. B. 1. b. Solid Fuel Transformation</b>	7.09	0.35	0.00	2.48	0.00
<b>1. B. 1. c. Other (please specify) <sup>(3)</sup></b>				33.84	0.00
Post-Mining Activities	12.82	2.64	0.00	33.84	0.00

<sup>(1)</sup> Use the documentation box to specify whether the fuel amount is based on the run-of-mine (ROM) production or on the saleable production.

<sup>(2)</sup> Emissions both for Mining Activities and Post-Mining Activities are calculated with the activity data in lines Underground Mines and Surface Mines respectively.

<sup>(3)</sup> Please click on the button to enter any other solid fuel related activities resulting in fugitive emissions, such as emissions from abandoned mines and waste piles.

**Note:** There are no clear references to the coverage of 1.B.1.b. and 1.B.1.c. in the IPCC Guidelines. Make sure that the emissions entered here are not reported elsewhere. If they are reported under another source category, indicate this (IE) and make a reference in Table 9 (completeness) and/or in the documentation box.

Documentation box:
From CORINAIR system the post-mining activity is not split into both underground and surface mines, and has been therefore allocated into 1B1c - other.

**Additional information <sup>(a)</sup>**

Description	Value
Amount of CH <sub>4</sub> drained (recovered) and utilized or flared (Gg)	
Number of active underground mines	
Number of mines with drainage (recovery) systems	

<sup>(a)</sup> For underground mines.

**TABLE 1.B.2 SECTORAL BACKGROUND DATA FOR ENERGY**  
**Fugitive Emissions from Oil and Natural Gas**  
(Sheet 1 of 1)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTORS			EMISSIONS		
	Description <sup>(1)</sup>	Unit	Value	CO <sub>2</sub> (kg/unit) <sup>(2)</sup>	CH <sub>4</sub> (kg/unit) <sup>(2)</sup>	N <sub>2</sub> O (kg/unit) <sup>(2)</sup>	CO <sub>2</sub> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
<b>1. B. 2. a. Oil <sup>(3)</sup></b>							<b>3 224.89</b>	<b>0.31</b>	
i. Exploration	(e.g. number of wells drilled)			0.00	0.00				
ii. Production <sup>(4)</sup>	PJ Produced	PJ	120.96	0.00	0.00		0.00		
iii. Transport	PJ Loaded	PJ	5 789.70	0.00	0.00		0.00		
iv. Refining / Storage	PJ Refined	PJ	3 193.64	1 009 785.71	96.69		3 224.89	0.31	
v. Distribution of oil products	PJ Refined	PJ	1 012.05	0.00	0.00		0.00		
vi. Other				0.00	0.00				
<b>1. B. 2. b. Natural Gas</b>							<b>784.22</b>	<b>104.06</b>	
Exploration				0.00	0.00				
i. Production <sup>(4)</sup> / Processing	PJ Production	PJ	266.78	2 939 531.61	1 870.43		784.22	0.50	
ii. Transmission	PJ Consumed	PJ	929.34	0.00	111 437.50		0.00	103.56	
Distribution	(e.g. PJ gas consumed)			0.00	0.00				
iii. Other Leakage	(e.g. PJ gas consumed)			0.00	0.00				
at industrial plants and power stations				0.00	0.00				
in residential and commercial sectors				0.00	0.00				
<b>1. B. 2. c. Venting <sup>(5)</sup></b>							<b>0.00</b>	<b>0.00</b>	
i. Oil	(e.g. PJ oil produced)			0.00	0.00				
ii. Gas	(e.g. PJ gas produced)			0.00	0.00				
iii. Combined				0.00	0.00				
<b>Flaring</b>							<b>296.74</b>	<b>0.36</b>	<b>0.00</b>
i. Oil	PJ Consumed	PJ	3 193.64	85 714.16	0.00	0.00	273.74		
ii. Gas				0.00	0.00	0.00	0.00		
iii. Combined	PJ Consumed	PJ	0.51	44 843 049.33	699 941.51	0.00	23.00	0.36	
<b>1.B.2.d. Other (please specify) <sup>(6)</sup></b>							<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
				0.00	0.00	0.00			

**Additional information**

Description	Value	Unit
Pipelines length (km)		
Number of oil wells		
Number of gas wells		
Gas throughput <sup>(a)</sup>		
Oil throughput <sup>(a)</sup>		
Other relevant information (specify)		

<sup>(a)</sup> In the context of oil and gas production, throughput is a measure of the total production, such as barrels per day of oil, or cubic meters of gas per year. Specify the units of the reported value in the unit column. Take into account that these values should be consistent with the activity data reported under the production rows of the main table.

<sup>(1)</sup> Specify the activity data used and fill in the activity data description column, as given in the examples in brackets. Specify the unit of the activity data in the unit column. Use the document box to specify whether the fuel amount is based on the raw material production or on the saleable production. Note cases where more than one variable is used as activity data.

<sup>(2)</sup> The unit of the implied emission factor will depend on the units of the activity data used, and is therefore not specified in this column. The unit of the implied emission factor for each activity will be kg/unit of activity data.

<sup>(3)</sup> Use the category also to cover emissions from combined oil and gas production fields. Natural gas processing and distribution from these fields should be included under 1.B.2.b.ii and 1.B.2.b.iii, respectively.

<sup>(4)</sup> If using default emission factors these categories will include emissions from production other than venting and flaring.

<sup>(5)</sup> If using default emission factors, emissions from Venting and Flaring from all oil and gas production should be accounted for here. Parties using the IPCC software could report those emissions together, indicating so in the documentation box.

<sup>(6)</sup> For example, fugitive CO<sub>2</sub> emissions from production of geothermal power could be reported here.

**Documentation box:**

**TABLE 1.C SECTORAL BACKGROUND DATA FOR ENERGY**  
**International Bunkers and Multilateral Operations**  
(Sheet 1 of 1)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS			EMISSIONS		
	Consumption (TJ)	CO <sub>2</sub> (t/TJ)	CH <sub>4</sub> (kg/TJ)	N <sub>2</sub> O (kg/TJ)	CO <sub>2</sub> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
<b>Marine Bunkers</b>	<b>104 918.78</b>				<b>8 136.87</b>	<b>0.00</b>	<b>0.26</b>
Gasoline		0.00	0.00	0.00			
Gas/Diesel Oil	15 604.30	75.00	0.00	2.50	1 170.33		0.04
Residual Fuel Oil	89 314.49	78.00	0.00	2.50	6 966.54		0.22
Lubricants		0.00	0.00	0.00			
Coal		0.00	0.00	0.00			
Other ( <i>please specify</i> )	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00			
<b>Aviation Bunkers</b>	<b>120 374.80</b>				<b>8 617.73</b>	<b>0.00</b>	<b>0.00</b>
Jet Kerosene	120 374.80	71.59	0.00	0.00	8 617.73		
Gasoline		0.00	0.00	0.00			
<b>Multilateral Operations <sup>(1)</sup></b>							

<sup>(1)</sup> Parties may choose to report or not report the activity data and emission factors for multilateral operation consistent with the principle of confidentiality stated in the UNFCCC reporting guidelines on inventories. In any case, Parties should report the emissions from multilateral operations, where available, under the Memo Items section of the Summary tables and in the Sectoral report table for energy.

**Note:** In accordance with the IPCC Guidelines, international aviation and marine bunker fuel emissions from fuel sold to ships or aircraft engaged in international transport should be excluded from national totals and reported separately for informational purposes only.

<b>Documentation box:</b> Please explain how the consumption of international marine and aviation bunkers fuels was estimated and separated from the domestic consumption.
Aviation bunker : the fuel consumption for international aviation is deduced from the balance between the total aviation fuel sale and the estimation of the domestic traffic consumption which is calculated with a detailed approach (based on the individual aircraft movements and using ICAO, MEET and CORINAIR sources of information).
Marine bunker : the UN-ECE definition for international marine traffic is considered. Thus a part from the French bunker is counted within the international marine bunker.

**Additional information**




Fuel consumption	Allocation <sup>(a)</sup> (percent)	
	Domestic	International
Marine	19.56	80.44
Aviation	34.51	65.49

<sup>(a)</sup> For calculating the allocation of fuel consumption, use the sums of fuel consumption by domestic navigation and aviation (Table 1.A(a)) and by international bunkers (Table 1.C).



**TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES**  
(Sheet 1 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
				P	A	P	A	P	A				
	(Gg)			CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>Total Industrial Processes</b>	<b>21 253.84</b>	<b>2.54</b>	<b>89.60</b>	<b>0.00</b>	<b>2 252.62</b>	<b>0.00</b>	<b>3 195.36</b>	<b>0.00</b>	<b>0.09</b>	<b>22.36</b>	<b>1 129.14</b>	<b>103.39</b>	<b>34.30</b>
<b>A. Mineral Products</b>	<b>13 015.95</b>	<b>0.00</b>	<b>0.00</b>							<b>0.00</b>	<b>0.00</b>	<b>12.96</b>	<b>0.00</b>
1. Cement Production	10 427.00												
2. Lime Production	1 694.79												
3. Limestone and Dolomite Use	0.00												
4. Soda Ash Production and Use	398.93												
5. Asphalt Roofing	0.00												
6. Road Paving with Asphalt	0.00											12.96	
7. Other ( <i>please specify</i> ) 	495.23	0.00	0.00							0.00	0.00	0.00	0.00
Glass processes / decarbonizing										0.00	0.00	0.00	0.00
<b>B. Chemical Industry</b>	<b>3 007.37</b>	<b>2.54</b>	<b>89.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>20.18</b>	<b>0.00</b>	<b>44.77</b>	<b>31.08</b>
1. Ammonia Production	3 007.37	0.00								3.18		9.25	
2. Nitric Acid Production			25.60							16.12			
3. Adipic Acid Production			57.54							0.44			
4. Carbide Production	0.00	0.00											
5. Other ( <i>please specify</i> ) 	0.00	2.54	6.46	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	35.52	31.08
(cf. background table)										0.44	0.00	35.52	31.08
<b>C. Metal Production</b>	<b>4 549.52</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2 293.70</b>	<b>0.00</b>	<b>0.05</b>	<b>2.18</b>	<b>1 129.14</b>	<b>3.23</b>	<b>3.22</b>
1. Iron and Steel Production	4 008.53	0.00								2.11	1 116.10	1.78	0.61
2. Ferroalloys Production	0.00	0.00											
3. Aluminium Production	540.99	0.00					2 293.70			0.07	13.04	1.38	2.61
4. SF <sub>6</sub> Used in Aluminium and Magnesium Foundries									0.05				
5. Other ( <i>please specify</i> ) 	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
Nickel production												0.07	

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines. A = Actual emissions based on Tier 2 approach of the IPCC Guidelines. This only applies in sectors where methods exist for both tiers.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

**TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES**  
(Sheet 2 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
				P	A	P	A	P	A				
	(Gg)			CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>D. Other Production</b>	681.00									0.00	0.00	42.42	0.00
1. Pulp and Paper												0.81	
2. Food and Drink <sup>(2)</sup>	681.00											41.61	
<b>E. Production of Halocarbons and SF<sub>6</sub></b>					2 230.06		559.60		0.00				
1. By-product Emissions					1 942.20		0.00		0.00				
Production of HCFC-22					1 942.20								
Other					0.00		0.00		0.00				
2. Fugitive Emissions					287.86		559.60		0.00				
3. Other ( <i>please specify</i> )					0.00		0.00		0.00				
<b>F. Consumption of Halocarbons and SF<sub>6</sub></b>				0.00	22.57	0.00	342.06	0.00	0.04				
1. Refrigeration and Air Conditioning Equipment					0.00		0.00		0.00				
2. Foam Blowing					0.00		0.00		0.00				
3. Fire Extinguishers					0.00		0.00		0.00				
4. Aerosols/ Metered Dose Inhalers					0.00		0.00		0.00				
5. Solvents					0.00		0.00		0.00				
6. Semiconductor Manufacture					22.57		159.57		0.00				
7. Electrical Equipment									0.04				
8. Other ( <i>please specify</i> )				0.00	0.00	0.00	182.48	0.00	0.00				
<b>G. Other (<i>please specify</i>)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(2)</sup> CO<sub>2</sub> from Food and Drink Production (e.g. gasification of water) can be of biogenic or non-biogenic origin. Only information on CO<sub>2</sub> emissions of non-biogenic origin should be reported.

**TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O**  
(Sheet 1 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS <sup>(2)</sup>					
	Production/Consumption quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Description <sup>(1)</sup>	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	(2)	(Gg)	(2)	(Gg)	(2)
<b>A. Mineral Products</b>						<b>13 015.95</b>		<b>0.00</b>		<b>0.00</b>	
1. Cement Production	kt Production	20 854.00	0.50			10 427.00					
2. Lime Production	kt Production	3 851.80	0.44			1 694.79					
3. Limestone and Dolomite Use	kt Production		0.00			0.00					
4. Soda Ash						398.93					
Soda Ash Production	kt Production	2 067.00	0.19			398.93					
Soda Ash Use			0.00								
5. Asphalt Roofing	kt Production		0.00			0.00					
6. Road Paving with Asphalt	kt Production	36 064.41	0.00			0.00					
7. Other (please specify)						495.23		0.00		0.00	
Glass Production	kt Production	4 952.25	0.10			495.23					
Batteries manufacturing	kt Production	153.00	0.00	0.00	0.00	0.00					
<b>B. Chemical Industry</b>						<b>3 007.37</b>		<b>2.54</b>		<b>89.60</b>	
1. Ammonia Production <sup>(3)</sup>	kt Production	1 927.80	1.56	0.00	0.00	3 007.37					
2. Nitric Acid Production	kt Production	3 200.00			0.01					25.60	
3. Adipic Acid Production	kt Production	184.50			0.31					57.54	
4. Carbide Production			0.00	0.00		0.00		0.00			
Silicon Carbide			0.00	0.00							
Calcium Carbide	kt Production		0.00	0.00		0.00					
5. Other (please specify)						0.00		2.54		6.46	
Carbon Black	kt Production	254.40		0.01				2.54			
Ethylene	kt Production	2 255.09	0.00	0.00	0.00	0.00					
Dichloroethylene				0.00							
Styrene	kt Production	503.70		0.00							
Methanol				0.00							
Other	kt Production	12 845.81	0.00	0.00	0.00	0.00				6.46	

<sup>(1)</sup> Where the IPCC Guidelines provide options for activity data, e.g. cement or clinker for estimating the emissions from Cement Production, specify the activity data used (as shown in the example in brackets) in order to make the choice of emission factor more transparent and to facilitate comparisons of implied emission factors.

<sup>(2)</sup> Enter cases in which the final emissions are reduced with the quantities of emission recovery, oxidation, destruction, transformation. Adjusted emissions are reported and the quantitative information on recovery, oxidation, destruction, and transformation should be given in the additional columns provided.

<sup>(3)</sup> To avoid double counting make offsetting deductions from fuel consumption (e.g. natural gas) in Ammonia Production, first for feedstock use of the fuel, and then to a sequestering use of the feedstock.

**TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O**  
**(Sheet 2 of 2)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS <sup>(2)</sup>					
	Production/Consumption Quantity		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Description <sup>(1)</sup>	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	(2)	(Gg)	(2)	(Gg)	(2)
<b>C. Metal Production <sup>(4)</sup></b>						<b>4 549.52</b>		<b>0.00</b>		<b>0.00</b>	
1. Iron and Steel Production			0.00			4 008.53		0.00			
Steel	kt Production	19 073.00	0.08			1 488.53					
Pig Iron	kt Production	14 400.00	0.14	0.00		2 016.00					
Sinter	kt Production	22 000.00	0.00	0.00		0.00					
Coke			0.00	0.00		0.00					
Other (please specify)						504.00		0.00			
Rolling mills, blast furnast charging	kt Production	16 848.00	0.03	0.00	0.00	504.00					
2. Ferroalloys Production	kt Production		0.00	0.00		0.00					
3. Aluminium Production	kt Production	325.90	1.66	0.00		540.99					
4. SF <sub>6</sub> Used in Aluminium and Magnesium Foundries											
5. Other (please specify)						0.00		0.00		0.00	
Nickel production	kt Production	8.50	0.00	0.00	0.00	0.00					
<b>D. Other Production</b>						<b>681.00</b>					
1. Pulp and Paper											
2. Food and Drink	kt Production	14 079.91	0.05			681.00					
<b>G. Other (please specify)</b>						<b>0.00</b>		<b>0.00</b>		<b>0.00</b>	
	kt Product	0.00	0.00	0.00	0.00	0.00					

<sup>(4)</sup> More specific information (e.g. data on virgin and recycled steel production) could be provided in the documentation box.

**Note:** In case of confidentiality of the activity data information, the entries should provide aggregate figures but there should be a note in the documentation box indicating this.

<b>Documentation box:</b>

**TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF<sub>6</sub>**  
(Sheet 1 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10mee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ca	Total HFCs <sup>(1)</sup>	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	C <sub>3</sub> F <sub>8</sub>	C <sub>4</sub> F <sub>10</sub>	c-C <sub>4</sub> F <sub>8</sub>	C <sub>5</sub> F <sub>12</sub>	C <sub>6</sub> F <sub>14</sub>	Total PFCs <sup>(1)</sup>	SF <sub>6</sub>
	(t) <sup>(2)</sup>																						
<b>Total Actual Emissions of Halocarbons (by chemical) and SF<sub>6</sub></b>	167.93	0.00	0.00	0.00	11.70	0.00	0.00	11.70	0.00	66.70	0.00	0.00	0.00		317.22	80.53	0.00	30.00	0.00	0.00	24.66		91.84
<b>C. Metal Production</b>															309.00	31.00							47.50
Aluminium Production															309.00	31.00							
SF <sub>6</sub> Used in Aluminium Foundries																							0.00
SF <sub>6</sub> Used in Magnesium Foundries																							47.50
<b>E. Production of Halocarbons and SF<sub>6</sub></b>	166.00	0.00	0.00	0.00	11.70	0.00	0.00	11.70	0.00	66.70	0.00	0.00	0.00		0.00	38.00	0.00	30.00	0.00	0.00	0.00		0.00
1. By-product Emissions	166.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production of HCFC-22	166.00																						
Other																							
2. Fugitive Emissions					11.70		0.00	11.70		66.70						38.00		30.00					
3. Other (please specify)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
<b>F(a). Consumption of Halocarbons and SF<sub>6</sub> (actual emissions - Tier 2)</b>	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		8.22	11.53	0.00	0.00	0.00	0.00	24.66		44.34
1. Refrigeration and Air Conditioning Equipment		0.00			0.00		0.00	0.00		0.00													
2. Foam Blowing																							
3. Fire Extinguishers											0.00												
4. Aerosols/Metered Dose Inhalers							0.00																
5. Solvents				0.00																			
6. Semiconductor Manufacture	1.93														8.22	11.53	0.00						2.44
7. Electrical Equipment																							37.10
8. Other (please specify)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	24.66		4.80
open applications																		0.00		0.00	24.60		4.80
closed applications																					0.06		
<b>G. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00

<sup>(1)</sup> Although shaded, the columns with HFCs and PFCs totals on sheet 1 are kept for consistency with sheet 2 of the table.

<sup>(2)</sup> Note that the units used in this table differ from those used in the rest of the Sectoral report tables, i.e. [t] instead of [Gg].

**Note:** Where information is confidential the entries should provide aggregate figures but there should be a note indicating this in the relevant documentation boxes of the Sectoral background data tables or as a comment to the corresponding cell.

Gases with GWP not yet agreed upon by the COP, should be reported in Table 9 (Completeness), sheet 2.

**TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF<sub>6</sub>**  
(Sheet 2 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10nec	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ea	Total HFCs	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	C <sub>3</sub> F <sub>8</sub>	C <sub>4</sub> F <sub>10</sub>	c-C <sub>4</sub> F <sub>8</sub>	C <sub>3</sub> F <sub>12</sub>	C <sub>6</sub> F <sub>14</sub>	Total PFCs	SF <sub>6</sub>
	(t) <sup>(2)</sup>																						
<b>F(p). Total Potential Emissions of Halocarbons (by chemical) and SF<sub>6</sub></b> <sup>(3)</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production <sup>(4)</sup>																							
Import:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk																							
In products <sup>(5)</sup>																							
Export:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk																							
In products <sup>(5)</sup>																							
Destroyed amount																							
<b>GWP values used</b>	11700	650	150	1300	2800	1000	1300	140	300	3800	2900	6300	560		6500	9200	7000	7000	8700	7500	7400		23900
<b>Total Actual Emissions</b> <sup>(6)</sup> (Gg CO <sub>2</sub> eq.)	1 964.77	0.00	0.00	0.00	32.76	0.00	0.00	1.64	0.00	253.46	0.00	0.00	0.00	2 252.62	2 061.94	740.91	0.02	210.00	0.00	0.00	182.48	3 195.36	2 194.86
C. Metal Production															2 008.50	285.20						2 293.70	1 135.25
E. Production of Halocarbons and SF <sub>6</sub>	1 942.20	0.00	0.00	0.00	32.76	0.00	0.00	1.64	0.00	253.46	0.00	0.00	0.00	2 230.06	0.00	349.60	0.00	210.00	0.00	0.00	0.00	559.60	0.00
F(a). Consumption of Halocarbons and SF <sub>6</sub>	22.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.57	53.44	106.11	0.02	0.00	0.00	0.00	182.48	342.06	1 059.61
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Ratio of Potential/Actual Emissions from Consumption of Halocarbons and SF<sub>6</sub></b>																							
Actual emissions - F(a) (Gg CO <sub>2</sub> eq.)	22.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.57	53.44	106.11	0.02	0.00	0.00	0.00	182.48	342.06	1 059.61
Potential emissions - F(p) (7) (Gg CO <sub>2</sub> eq.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential/Actual emissions ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(3)</sup> Potential emissions of each chemical of halocarbons and SF<sub>6</sub> estimated using Tier 1a or Tier 1b of the IPCC Guidelines (Volume 3. Reference Manual, pp. 2.47-2.50). When potential emissions estimates are available in a disaggregated manner corresponding to the subsectors for actual emissions defined on sheet 1 of this table, these should be reported in an annex to sheet 2, using the format of sheet 1, sector F(a). Use Summary 3 of this common reporting format to indicate whether Tier 1a or Tier 1b was used.

<sup>(4)</sup> Production refers to production of new chemicals. Recycled substances could be included here, but it should be ensured that double counting of emissions is avoided. Relevant explanations should be provided as a comment to the corresponding cell.

<sup>(5)</sup> Relevant just for Tier 1b.

<sup>(6)</sup> Sums of the actual emissions of each chemical of halocarbons and SF<sub>6</sub> from the source categories given in sheet 1 of the table multiplied by the corresponding GWP values.

<sup>(7)</sup> Potential emissions of each chemical of halocarbons and SF<sub>6</sub> taken from row F(p) multiplied by the corresponding GWP values.

**Note:** As stated in the revised UNFCCC guidelines, Parties should report actual emissions of HFCs, PFCs and SF<sub>6</sub>, where data are available, providing disaggregated data by chemical and source category in units of mass and in CO<sub>2</sub> equivalents. Parties reporting actual emissions should also report potential emissions for the sources where the concept of potential emissions applies, for reasons of transparency and comparability.

**TABLE 2(II). C, E SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Metal Production; Production of Halocarbons and SF<sub>6</sub>**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS <sup>(2)</sup>	EMISSIONS <sup>(2)</sup>	
	Description <sup>(1)</sup>	(t)		(t)	(3)
<b>C. PFCs and SF<sub>6</sub> from Metal Production</b>					
PFCs from Aluminium Production					
CF <sub>4</sub>	Aluminium production	325 900.00	0.95	309.00	
C <sub>2</sub> F <sub>6</sub>	Aluminium production	325 900.00	0.10	31.00	
SF <sub>6</sub>				47.50	
Aluminium Foundries	(SF <sub>6</sub> consumption)		0.00		
Magnesium Foundries	(SF <sub>6</sub> consumption)	47.50	1 000.00	47.50	
<b>E. Production of Halocarbons and SF<sub>6</sub></b>					
<b>1. By-product Emissions</b>					
Production of HCFC-22					
HFC-23	HCFC-22 production	NA	0.00	166.00	
Other (specify chemical)					
			0.00		
<b>2. Fugitive Emissions</b>					
HFCs (specify chemical)					
HFC-125	HFC production	NA	0.00	11.70	
HFC-134a	HFC production	NA	0.00	0.00	
HFC-143a	HFC production	NA	0.00	66.70	
HFC-152a	HFC production	NA	0.00	11.70	
			0.00		
PFCs (specify chemical)					
C2F6	PFC production	NA	0.00	38.00	
C4F10	PFC production	NA	0.00	30.00	
			0.00		
SF <sub>6</sub>			0.00		
<b>3. Other (please specify)</b>					
			0.00		

<sup>(1)</sup> Specify the activity data used as shown in the examples within brackets. Where applying Tier 1b (for C), Tier 2 (for E) and country specific methods, specify any other relevant activity data used in the documentation box below.

<sup>(2)</sup> Emissions and implied emission factors are after recovery.

<sup>(3)</sup> Enter cases in which the final emissions are reported after subtracting the quantities of emission recovery, oxidation, destruction, transformation. Enter these quantities in the specified column and use the documentation box for further explanations.

**Note:** Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note in the documentation box indicating this.

<b>Documentation box:</b>
HFC and PFC production data are confidential. Only fugitive emissions are available.

**TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Consumption of Halocarbons and SF<sub>6</sub>**  
(Sheet 1 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA <i>Amount of fluid</i>			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning <sup>(1)</sup>	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
1 Refrigeration									
Air Conditioning Equipment									
Domestic Refrigeration (Specify chemical) <sup>(2)</sup>									
(e.g. HFC-32)									
(e.g. HFC-125)									
(e.g. HFC-134a)									
(e.g. HFC-152a)									
(e.g. HFC-143a)									
Commercial Refrigeration									
(e.g. HFC-32)									
(e.g. HFC-125)									
(e.g. HFC-134a)									
(e.g. HFC-152a)									
(e.g. HFC-143a)									
Transport Refrigeration									
(e.g. HFC-32)									
(e.g. HFC-125)									
(e.g. HFC-134a)									
(e.g. HFC-152a)									
(e.g. HFC-143a)									
Industrial Refrigeration									
(e.g. HFC-32)									
(e.g. HFC-125)									
(e.g. HFC-134a)									
(e.g. HFC-152a)									
(e.g. HFC-143a)									
Stationary Air-Conditioning									
(e.g. HFC-32)									
(e.g. HFC-125)									
(e.g. HFC-134a)									
(e.g. HFC-152a)									
(e.g. HFC-143a)									
Mobile Air-Conditioning									
(e.g. HFC-32)									
(e.g. HFC-125)									
(e.g. HFC-134a)									
(e.g. HFC-152a)									
(e.g. HFC-143a)									
2 Foam Blowing									
Hard Foam									
Soft Foam									








<sup>(1)</sup> Parties should use the documentation box to provide information on the amount of the chemical recovered (recovery efficiency) and other relevant information used in the emission estimation.  
<sup>(2)</sup> Please click on the button to specify the chemical consumed, as given in the example. If needed, new rows could be added for reporting the disaggregated chemicals from a source by clicking on the corresponding button.

**Note:** Table 2(II).F provides for reporting of the activity data and emission factors used to calculate actual emissions from consumption of halocarbons and SF<sub>6</sub> using the "bottom-up approach" (based on the total stock of equipment and estimated emission rates from this equipment). Some Parties may prefer to estimate their actual emissions following the alternative "top-down approach" (based on annual sales of equipment and/or gas). These Parties should provide the activity data used in the current format and any other relevant information in the documentation box at the end of Table 2(II).Fs2. Data these Parties should provide includes (1) the amount of fluid used to fill new products, (2) the amount of fluid used to service existing products, (3) the amount of fluid originally used to fill retiring products (the total nameplate capacity of retiring products), (4) the product lifetime, and (5) the growth rate of product sales, if this has been used to calculate the amount of fluid originally used to fill retiring products. Alternatively, Parties may provide alternative formats with equivalent information. These formats may be considered for future versions of the common reporting format after the trial period.



**TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES**  
**Consumption of Halocarbons and SF<sub>6</sub>**  
(Sheet 2 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA <i>Amount of fluid</i>			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning <sup>(1)</sup>	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
<b>3 Fire Extinguishers</b> 									
HFC-227ea	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
<b>4 Aerosols</b>									
Metered Dose Inhalers 									
Other 									
HFC-134a	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
<b>5 Solvents</b> 									
HFC-4310mee	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
<b>6 Semiconductors</b> 									
HFC-23	0.00	2.68	0.00	0.00	72.00	0.00	0.00	1.93	0.00
CF <sub>4</sub>	0.00	11.42	0.00	0.00	72.00	0.00	0.00	8.22	0.00
C <sub>2</sub> F <sub>6</sub>	0.00	16.02	0.00	0.00	72.00	0.00	0.00	11.53	0.00
C <sub>3</sub> F <sub>8</sub>	0.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00	0.00
SF <sub>6</sub>	0.00	3.38	0.00	0.00	72.00	0.00	0.00	2.44	0.00
<b>7 Electric Equipment</b> 									
SF <sub>6</sub>	280.00	770.00	0.00	5.00	3.00	0.00	14.00	23.10	0.00
<b>8 Other (please specify)</b> 									
C <sub>6</sub> F <sub>14</sub> (closed applications)	1.20	1.20	0.00	0.00	5.00	0.00	0.00	0.06	0.00
C <sub>4</sub> F <sub>10</sub>	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
C <sub>5</sub> F <sub>12</sub>	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
C <sub>6</sub> F <sub>14</sub> (open applications)	24.60	24.60	0.00	0.00	100.00	0.00	0.00	24.60	0.00
SF <sub>6</sub>	4.80	4.80	0.00	0.00	100.00	0.00	0.00	4.80	0.00

**Note:** Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note indicating this and explanations in the documentation box.

<b>Documentation box:</b>

**TABLE 3 SECTORAL REPORT FOR SOLVENT AND OTHER PRODUCT USE**  
(Sheet 1 of 1)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	N <sub>2</sub> O	NM VOC
	(Gg)		
<b>Total Solvent and Other Product Use</b>	<b>1 851.92</b>	<b>1.92</b>	<b>704.35</b>
<b>A. Paint Application</b>	<b>919.56</b>		<b>295.05</b>
<b>B. Degreasing and Dry Cleaning</b>	<b>251.80</b>		<b>80.79</b>
<b>C. Chemical Products, Manufacture and Processing</b>			<b>110.15</b>
<b>D. Other (please specify)</b>	680.56	1.92	218.36
Use of N <sub>2</sub> O for Anaesthesia	0.00	1.92	
Fire Extinguishers	0.00		
Aerosol Cans	0.00		
Other solvent/product use	680.56		218.36

Please account for the quantity of carbon released in the form of NMVOC in both the NMVOC and the CO<sub>2</sub> columns.

**Note:** The IPCC Guidelines do not provide methodologies for the calculation of emissions of N<sub>2</sub>O from Solvent and Other Product Use. If reporting such data, Parties should provide additional information (activity data and emission factors) used to make these estimates in the documentation box to Table 3.A-D.

**TABLE 3.A-D SECTORAL BACKGROUND DATA FOR SOLVENT AND OTHER PRODUCT USE**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS	
	Description	(kt)	CO <sub>2</sub> (t/t)	N <sub>2</sub> O (t/t)
A. Paint Application	kt Solvent	306.40	3.00	0.00
B. Degreasing and Dry Cleaning	kt Solvent	89.35	2.82	0.00
C. Chemical Products, Manufacture and Processing				
D. Other (please specify) <sup>(1)</sup>				
Use of N2O for Anaesthesia	kt Consumed	1.92	0.00	1.00
Fire Extinguishers	kt Consumed		0.00	0.00
Aerosol Cans	kt Consumed		0.00	0.00
Other solvent/product use	kt Consumed	287.26	2.37	0.00

<sup>(1)</sup> Some probable sources are provided in brackets. Complement the list with other relevant sources. Make sure that the order is the same as in Table 3.

**Note:** The table follows the format of the IPCC Sectoral Report for Solvent and Other Product Use, although some of the source categories are not relevant to the direct GHG emissions.

<b>Documentation box:</b>






**TABLE 4 SECTORAL REPORT FOR AGRICULTURE**  
(Sheet 1 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC
CATEGORIES	(Gg)				
<b>Total Agriculture</b>	<b>1 631.25</b>	<b>181.12</b>	<b>0.00</b>	<b>0.00</b>	<b>20.92</b>
<b>A. Enteric Fermentation</b>	<b>1 431.32</b>				
1. Cattle	1 342.74				
Dairy Cattle	639.56				
Non-Dairy Cattle	703.19				
2. Buffalo					
3. Sheep	69.33				
4. Goats	6.95				
5. Camels and Llamas					
6. Horses	6.04				
7. Mules and Asses	0.13				
8. Swine	6.13				
9. Poultry					
10. Other ( <i>please specify</i> )	0.00				
<b>B. Manure Management</b>	<b>168.45</b>	<b>10.48</b>			<b>0.00</b>
1. Cattle	94.08				
Dairy Cattle	45.63				
Non-Dairy Cattle	48.46				
2. Buffalo					
3. Sheep	3.24				
4. Goats	0.39				
5. Camels and Llamas					
6. Horses	0.70				
7. Mules and Asses	0.03				
8. Swine	46.68				
9. Poultry	23.32				

**TABLE 4 SECTORAL REPORT FOR AGRICULTURE**  
(Sheet 2 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC
	(Gg)				
<b>B. Manure Management (continued)</b>					
10. Anaerobic Lagoons					
11. Liquid Systems		1.59			
12. Solid Storage and Dry Lot		6.84			
13. Other (please specify) 		2.05			0.00
		2.05			
<b>C. Rice Cultivation</b>	8.55				<b>0.00</b>
1. Irrigated	8.55				
2. Rainfed	0.00				
3. Deep Water	0.00				
4. Other (please specify) 	0.00				0.00
<b>D. Agricultural Soils <sup>(1)</sup></b>	<b>22.93</b>	<b>170.64</b>			<b>20.92</b>
1. Direct Soil Emissions	22.93	93.16			20.92
2. Animal Production		19.62			
3. Indirect Emissions		57.86			
4. Other (please specify) 	0.00	0.00			0.00
<b>E. Prescribed Burning of Savannas</b>	<b>0.00</b>	<b>0.00</b>			
<b>F. Field Burning of Agricultural Residues</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
1. Cereals	0.00	0.00			
2. Pulse	0.00	0.00			
3. Tuber and Root	0.00	0.00			
4. Sugar Cane	0.00	0.00			
5. Other (please specify) 	0.00	0.00	0.00	0.00	0.00
<b>G. Other (please specify) </b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

<sup>(1)</sup> See footnote 4 to Summary 1.A of this common reporting format. Parties which choose to report CO<sub>2</sub> emissions and removals from agricultural soils under 4.D. Agricultural Soils category of the sector Agriculture should indicate the amount [Gg] of these emissions or removals in the documentation box to Table 4.D. Additional information (activity data, implied emissions factors) should also be provided using the relevant documentation box to Table 4.D. This table is not modified for reporting the CO<sub>2</sub> emissions and removals for the sake of consistency with the IPCC tables (i.e. IPCC Sectoral Report for Agriculture).

**Note:** The IPCC Guidelines do not provide methodologies for the calculation of CH<sub>4</sub> emissions, CH<sub>4</sub> and N<sub>2</sub>O removals from agricultural soils, or CO<sub>2</sub> emissions from savanna burning or agricultural residues burning. If you have reported such data, you should provide additional information (activity data and emission factors) used to make these estimates using the relevant documentation boxes of the Sectoral background data tables.

**TABLE 4.A SECTORAL BACKGROUND DATA FOR AGRICULTURE**


**Enteric Fermentation**

(Sheet 1 of 1)

France

1990

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA <sup>(1)</sup> AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTORS
	Population size <sup>(2)</sup> (1000 head)	Average daily feed intake (MJ/day)	CH <sub>4</sub> conversion (%)	CH <sub>4</sub> (kg CH <sub>4</sub> /head/yr)
1. Cattle	21 724			61.81
Dairy Cattle <sup>(3)</sup>	7 799			82.00
Non-Dairy Cattle	13 925			50.50
2. Buffalo				0.00
3. Sheep	11 554			6.00
4. Goats	1 390			5.00
5. Camels and Llamas				0.00
6. Horses	336			18.00
7. Mules and Asses	13			10.00
8. Swine	6 127			1.00
9. Poultry				0.00
10. Other (please specify) 				
				0.00

<sup>(1)</sup> In the documentation boxes to all Sectoral background data tables for Agriculture, Parties should provide information on whether the activity data is one year or a 3-year average.

<sup>(2)</sup> Parties are encouraged to provide detailed livestock population data by animal type and region in a separate table below the documentation box. This consistent set of animal population statistics should be used to estimate CH<sub>4</sub> emissions from enteric fermentation, CH<sub>4</sub> and N<sub>2</sub>O from manure management, N<sub>2</sub>O direct emissions from soil and N<sub>2</sub>O emissions associated with manure production, as well as emissions from the use of manure as fuel, and sewage-related emissions reported in the waste sector.

<sup>(3)</sup> Including data on dairy heifers, if available.

Documentation box:
To calculate methane emissions a specific method based on national expert data (emission factors) is used. Activity data is a one year average.

**Additional information (for Tier 2)<sup>(a)</sup>**

Disaggregated list of animals <sup>(b)</sup>		Dairy Cattle	Non-Dairy Cattle	Other (specify)	
Indicators:					
Weight	(kg)				
Feeding situation <sup>(c)</sup>					
Milk yield	(kg/day)				
Work	(hrs/day)				
Pregnant	(%)				
Digestibility of feed	(%)				

<sup>(a)</sup> Compare to Tables A-1 and A-2 of the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.31-4.34). These data are relevant if Parties do not have data on average feed intake.

<sup>(b)</sup> Disaggregate to the split actually used. Add columns to the table if necessary.

<sup>(c)</sup> Specify feeding situation as pasture, stall fed, confined, open range, etc.

**TABLE 4.B(a) SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**CH<sub>4</sub> Emissions from Manure Management**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS  CH <sub>4</sub>  (kg CH <sub>4</sub> /head/yr)	
	Population size ( <sup>1</sup> )  (1000 head)	Allocation by climate region ( <sup>2</sup> )			Typical animal mass  (kg)	VS( <sup>3</sup> ) daily excretion  (kg dm/head/yr)		CH <sub>4</sub> producing potential (Bo)( <sup>3</sup> )  (CH <sub>4</sub> m <sup>3</sup> /kg VS)
		Cool	Temperate	Warm				
1. Cattle	21 724						4.33	
Dairy Cattle <sup>(4)</sup>	7 799						5.85	
Non-Dairy Cattle	13 925						3.48	
2. Buffalo							0.00	
3. Sheep	11 554						0.28	
4. Goats	1 390						0.28	
5. Camels and Llamas							0.00	
6. Horses	336						2.10	
7. Mules and Asses	13						2.10	
8. Swine	6 127						7.62	
9. Poultry	274 400						0.08	

<sup>(1)</sup> See footnote 1 to Table 4.A of this common reporting format.

<sup>(2)</sup> Climate regions are defined in terms of annual average temperature as follows: Cool=less than 15°C; Temperate=15°C to 25°C inclusive; and Warm=greater than 25°C (see Table 4.2 of the IPCC Guidelines (Volume 3, Reference Manual, p. 4.8)).

<sup>(3)</sup> VS=Volatile Solids; Bo=maximum methane producing capacity for manure IPCC Guidelines (Volume 3, Reference Manual, p.4.23 and p. 4.15.

<sup>(4)</sup> Including data on dairy heifers, if available.

**Documentation Box:**

To calculate methane emissions a specific method based on national expert data (emission factors) is used.

**Additional information (for Tier 2)**


Animal category <sup>(a)</sup>	Indicator	Climate region	Animal waste management system					
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range paddock	Other
Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Non-Dairy Cattle	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
Swine	Allocation <sup>(b)</sup>	Cool						
		Temperate						
		Warm						
	MCF <sup>(b)</sup>	Cool						
		Temperate						
		Warm						

<sup>(a)</sup> Copy the above table as many times as necessary.

<sup>(b)</sup> MCF = Methane Conversion Factor (IPCC Guidelines, (Volume 3, Reference Manual, p. 4.9)). In the case of use of other climate region categorization, please replace the entries in the cells with the climate regions for which the MCFs are specified.

**TABLE 4.B(b) SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**N<sub>2</sub>O Emissions from Manure Management**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION								IMPLIED EMISSION FACTORS	
	Population size ( <sup>(1)</sup> (1000s)	Nitrogen excretion (kg N/head/yr)	Nitrogen excretion per animal waste management system (kg N/yr)						Emission factor per animal waste management system (kg N <sub>2</sub> O-N/kg N)	
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range and paddock	Other		
Non-Dairy Cattle	13 925	70.0	0.0	536 094 059.0	0.0	19 494 329.0	321 656 435.0	87 724 482.0	Anaerobic lagoon	0.000
Dairy Cattle	7 799	100.0	0.0	358 775 298.0	187 187 112.0	163 788 723.0	62 395 704.0	7 799 463.0	Liquid system	0.001
Sheep	11 554	20.0	0.0	0.0	0.0	15 471 403.0	673 006 022.0	85 092 715.0	Solid storage and dry lot	0.011
Swine	6 127	20.0	0.0	595 750 093.0	4 094 922.0	177 633 623.0	1 223 158.0	0.0	Other	0.002
Poultry	274 400	0.6	0.0	100 610 343.0	0.0	7 739 257.0	15 478 514.0	650 097 603.0		
Other (please specify) 										
Horses, goats, mules and asses	1 738	25.0	0.0	0.0	0.0	0.0	745 441 584.0	31 060 066.0		
<b>Total per AWMS<sup>(2)</sup></b>			<b>0.0</b>	<b>1 591 229 793.0</b>	<b>191 282 034.0</b>	<b>384 127 335.0</b>	<b>1 819 201 417.0</b>	<b>861 774 329.0</b>		

<sup>(1)</sup> See footnote 1 to Table 4.A of this common reporting format.

<sup>(2)</sup> AWMS - Animal Waste Management System.

<b>Documentation box:</b>



**TABLE 4.C SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Rice Cultivation**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR <sup>(1)</sup>	EMISSIONS
	Harvested area <sup>(2)</sup> (10 <sup>-9</sup> m <sup>2</sup> /yr)	Organic amendments added <sup>(3)</sup> :		CH <sub>4</sub> (g/m <sup>2</sup> )	CH <sub>4</sub> (Gg)
		type	(t/ha)		
<b>1. Irrigated</b>					<b>8.55</b>
Continuously Flooded	0.24			36.00	8.55
Intermittently Flooded		Single Aeration		0.00	
		Multiple Aeration		0.00	
<b>2. Rainfed</b>					<b>0.00</b>
Flood Prone				0.00	
Drought Prone				0.00	
<b>3. Deep Water</b>					<b>0.00</b>
Water Depth 50-100 cm				0.00	
Water Depth > 100 cm				0.00	
<b>4. Other (please specify)</b>					<b>0.00</b>
				0.00	
Upland Rice <sup>(4)</sup>					
Total <sup>(4)</sup>	0.24				

<sup>(1)</sup> The implied emission factor takes account of all relevant corrections for continuously flooded fields without organic amendment plus the correction for the organic amendments, if used, as well as of the effect of different soil characteristics, if taken into account, on methane emissions.

<sup>(2)</sup> Harvested area is the cultivated area multiplied by the number of cropping seasons per year.

<sup>(3)</sup> Specify dry weight or wet weight for organic amendments.

<sup>(4)</sup> These rows are included to allow comparison with the international statistics. Upland rice emissions are assumed to be zero and are ignored in the emission calculations.

<b>Documentation box:</b> When disaggregating by more than one region within a country, provide additional information in the documentation box. Where available, provide activity data and scaling factors by soil type and rice cultivar.

**TABLE 4.D SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Agricultural Soils<sup>(1)</sup>**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION		IMPLIED EMISSION FACTORS		EMISSIONS (Gg N <sub>2</sub> O)
	Description	Value	Unit		
<b>Direct Soil Emissions</b>	<b>N input to soils (kg N/yr)</b>				<b>93.16</b>
Synthetic Fertilizers	Use of synthetic fertilizers (kg N/yr)	2 595 933 612	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.011	45.89
Animal Wastes Applied to Soils	Nitrogen input from manure applied to soils (kg N/yr)	1 673 605 014	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.010	26.32
N-fixing Crops	Dry pulses and soybeans produced (kg dry biomass/yr)	8 635 893 183	(kg N <sub>2</sub> O-N/kg dry biomass) <sup>(2)</sup>	0.001	10.18
Crop Residue	Dry production of other crops (kg dry biomass/yr)	91 941 008 891	(kg N <sub>2</sub> O-N/kg dry biomass) <sup>(2)</sup>	0.000	10.76
Cultivation of Histosols	Area of cultivated organic soils (ha)		(kg N <sub>2</sub> O-N/ha) <sup>(2)</sup>	0.000	
<b>Animal Production</b>	<b>N excretion on pasture range and paddock (kg N/yr)</b>	<b>624 377 781</b>	<b>(kg N<sub>2</sub>O-N/kg N)<sup>(2)</sup></b>	<b>0.020</b>	<b>19.62</b>
<b>Indirect Emissions</b>					<b>57.86</b>
Atmospheric Deposition	Volatized N (NH <sub>3</sub> and NO <sub>x</sub> ) from fertilizers and animal wastes (kg N/yr)		(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.000	
Nitrogen Leaching and Run-off	N from fertilizers and animal wastes that is lost through leaching and run off (kg N/yr)	1 468 649 839	(kg N <sub>2</sub> O-N/kg N) <sup>(2)</sup>	0.025	57.86
<b>Other (please specify)</b>					<b>0.00</b>
				0.000	

**Additional information**

Fraction <sup>(a)</sup>	Description	Value
Frac <sub>BURN</sub>	Fraction of crop residue burned	
Frac <sub>FUEL</sub>	Fraction of livestock N excretion in excrements burned for fuel	
Frac <sub>GASf</sub>	Fraction of synthetic fertilizer N applied to soils that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>	
Frac <sub>GASm</sub>	Fraction of livestock N excretion that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>	
Frac <sub>GRAZ</sub>	Fraction of livestock N excreted and deposited onto soil during grazing	
Frac <sub>LEACH</sub>	Fraction of N input to soils that is lost through leaching and runoff	
Frac <sub>NCRBF</sub>	Fraction of N in non-N-fixing crop	
Frac <sub>NCRO</sub>	Fraction of N in N-fixing crop	
Frac <sub>R</sub>	Fraction of crop residue removed from the field as crop	

<sup>(a)</sup> Use the fractions as specified in the IPCC Guidelines (Volume 3, Reference Manual, pp. 4.92 - 4.113).

<sup>(1)</sup> See footnote 4 to Summary 1.A. of this common reporting format. Parties which choose to report CO<sub>2</sub> emissions and removals from agricultural soils under 4.D. Agricultural Soils category should indicate the amount [Gg] of these emissions or removals and relevant additional information (activity data, implied emissions factors) in the documentation box.

<sup>(2)</sup> To convert from N<sub>2</sub>O-N to N<sub>2</sub>O emissions, multiply by 44/28.

**Documentation box:**

Atmospheric deposition is not taken into account because of a risk of double counting.

A specific document describing the methodology used to estimate N<sub>2</sub>O emissions from agriculture is available at CITEPA ("Méthodologie utilisée pour les inventaires de NH<sub>3</sub> et N<sub>2</sub>O provenant des activités agricoles: perspectives et évolutions").

**TABLE 4.E SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Prescribed Burning of Savannas**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION					IMPLIED EMISSION FACTORS		EMISSIONS	
	Area of savanna burned	Average aboveground biomass density	Fraction of savanna burned	Biomass burned	Nitrogen fraction in biomass	(kg/t dm)		(Gg)	
	(k ha/yr)	(t dm/ha)		(Gg dm)		CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O
(specify ecological zone)								0.00	0.00
						0.00	0.00		





Additional information

	Living	Dead
Fraction of aboveground biomass		
Fraction oxidized		
Carbon fraction		

Documentation box:

**TABLE 4.F SECTORAL BACKGROUND DATA FOR AGRICULTURE**  
**Field Burning of Agricultural Residues**  
**(Sheet 1 of 1)**

France  
1990  
Submission






GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		EMISSIONS	
	Crop production (t)	Residue/ Crop ratio	Dry matter fraction	Fraction burned in fields	Biomass burned (Gg dm)	Nitrogen fraction in biomass of residues	CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub>	N <sub>2</sub> O
							(kg/t dm)	(kg/t dm)	(Gg)	(Gg)
<b>1. Cereals</b>									<b>0.00</b>	<b>0.00</b>
Wheat							0.00	0.00		
Barley							0.00	0.00		
Maize							0.00	0.00		
Oats							0.00	0.00		
Rye							0.00	0.00		
Rice							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>2. Pulse <sup>(1)</sup></b>									<b>0.00</b>	<b>0.00</b>
Dry bean							0.00	0.00		
Peas							0.00	0.00		
Soybeans							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>3 Tuber and Root</b>									<b>0.00</b>	<b>0.00</b>
Potatoes							0.00	0.00		
Other (please specify) 									0.00	0.00
							0.00	0.00		
<b>4 Sugar Cane</b>							<b>0.00</b>	<b>0.00</b>		
<b>5 Other (please specify) </b>									<b>0.00</b>	<b>0.00</b>
							0.00	0.00		

<sup>(1)</sup> To be used in Table 4.D of this common reporting format.

<b>Documentation Box:</b>

**TABLE 5 SECTORAL REPORT FOR LAND-USE CHANGE AND FORESTRY**  
(Sheet 1 of 1)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	Net CO <sub>2</sub> emissions/ removals	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO
	(Gg)						
<b>Total Land-Use Change and Forestry</b>	<b>86 206.00</b>	<b>-145 823.00</b>	<b>-59 617.00</b>	<b>99.11</b>	<b>17.79</b>	<b>2.61</b>	<b>91.96</b>
<b>A. Changes in Forest and Other Woody Biomass Stocks</b>	<b>66 167.00</b>	<b>-141 497.00</b>	<b>-75 330.00</b>				
1. Tropical Forests		-5 446.00	-5 446.00				
2. Temperate Forests	66 167.00	-136 051.00	-69 884.00				
3. Boreal Forests			0.00				
4. Grasslands/Tundra			0.00				
5. Other (please specify) 	0.00	0.00	0.00				
Harvested Wood <sup>(1)</sup>			0.00				
			0.00				
<b>B. Forest and Grassland Conversion <sup>(2)</sup></b>	<b>11 710.00</b>			<b>10.51</b>	<b>0.07</b>	<b>2.61</b>	<b>91.96</b>
1. Tropical Forests	609.00			0.82	0.01	0.20	7.18
2. Temperate Forests	11 101.00			9.69	0.07	2.41	84.77
3. Boreal Forests							
4. Grasslands/Tundra							
5. Other (please specify) 	0.00			0.00	0.00	0.00	0.00
<b>C. Abandonment of Managed Lands</b>	<b>0.00</b>	<b>-48.00</b>	<b>-48.00</b>				
1. Tropical Forests		-48.00	-48.00				
2. Temperate Forests			0.00				
3. Boreal Forests			0.00				
4. Grasslands/Tundra			0.00				
5. Other (please specify) 	0.00	0.00	0.00				
			0.00				
<b>D. CO<sub>2</sub> Emissions and Removals from Soil</b>	<b>8 329.00</b>	<b>-4 278.00</b>	<b>4 051.00</b>				
Cultivation of Mineral Soils			0.00				
Cultivation of Organic Soils			0.00				
Liming of Agricultural Soils			0.00				
Forest Soils			0.00				
Other (please specify) <sup>(3)</sup> 	8 329.00	-4 278.00	4 051.00				
	8 329.00	-4 278.00	4 051.00				
<b>E. Other (please specify) </b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>88.61</b>	<b>17.72</b>	<b>0.00</b>	<b>0.00</b>
Managed forests for CH <sub>4</sub> , N <sub>2</sub> O, NMVOC			0.00	88.61	17.72		

<sup>(1)</sup> Following the IPCC Guidelines, the harvested wood should be reported under Changes in Forest and Other Woody Biomass Stocks (Volume 3. Reference Manual, p.5.17).

<sup>(2)</sup> Include only the emissions of CO<sub>2</sub> from Forest and Grassland Conversion. Associated removals should be reported under section D.

<sup>(3)</sup> Include emissions from soils not reported under sections A, B and C.

**Note:** See footnote 4 to Summary 1.A of this common reporting format.

**TABLE 5.A SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE  
AND FORESTRY**  
**Changes in Forest and Other Woody Biomass Stocks**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES			ACTIVITY DATA		IMPLIED EMISSION FACTORS	ESTIMATES
			Area of forest/biomass stocks (kha)	Average annual growth rate (t dm/ha)	Implied carbon uptake factor (t C/ha)	Carbon uptake increment (Gg C)
Tropical	Plantations	<i>Acacia spp.</i>			0.00	
		<i>Eucalyptus spp.</i>			0.00	
		<i>Tectona grandis</i>			0.00	
		<i>Pinus spp</i>			0.00	
		<i>Pinus caribaea</i>			0.00	
		Mixed Hardwoods			0.00	
		Mixed Fast-Growing Hardwoods			0.00	
		Mixed Softwoods			0.00	
	Other Forests	Moist			0.00	
		Seasonal			0.00	
		Dry			0.00	
	Other (specify) <input type="checkbox"/>				0.00	
Temperate	Plantations	Forest	366.10	8.34	4.17	1 525.55
					0.00	
					0.00	
	Commercial	Evergreen	19 197.00	10 700 000.00	0.28	5 350.00
		Deciduous	16 039.00	9 470 000.00	0.30	4 735.00
	Other (specify) <input type="checkbox"/>				0.00	
Boreal					0.00	
			Number of trees (1000s of trees)	Annual growth rate (kt dm/1000 trees)	Carbon uptake factor (t C/tree)	Carbon uptake increment (Gg C)
Non-Forest Trees (specify type) <input type="checkbox"/>					0.00	0.00
					0.00	
Total annual growth increment (Gg C)						47 037.55
Gg CO <sub>2</sub>						172 471.02
			Amount of biomass removed (kt dm)	Carbon emission factor (t C/t dm)	Carbon release (Gg C)	
Total biomass removed in Commercial Harvest			20 170.00	0.50	10 085.00	
Traditional Fuelwood Consumed			15 921.00	0.50	7 960.50	
Total Other Wood Use				0.00		
Total Biomass Consumption from Stocks <sup>(1)</sup> (Gg C)						18 045.50
Other Changes in Carbon Stocks <sup>(2)</sup> (Gg C)						
Gg CO <sub>2</sub>						66 166.83
Net annual carbon uptake (+) or release (-) (Gg C)						28 992.05
Net CO <sub>2</sub> emissions (-) or removals (+) (Gg CO <sub>2</sub> )						106 304.18

<sup>(1)</sup> Make sure that the quantity of biomass burned off-site is subtracted from this total.

<sup>(2)</sup> The net annual carbon uptake/release is determined by comparing the annual biomass growth versus annual harvest, including the decay of forest products and slash left during harvest. The IPCC Guidelines recommend default assumption that all carbon removed in wood and other biomass from forests is oxidized in the year of removal. The emissions from decay could be included under Other Changes in Carbon Stocks.

**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology.

Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

**Documentation box:**

- As regards the biomass stock item for the commercial harvest, data are compiled under the 1000 m3 unit;
- Consequently to 1), the corresponding average annual growth item is expressed in t dm per annum;

**TABLE 5.B SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**Forest and Grassland Conversion**  
(Sheet 1 of 1)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION							IMPLIED EMISSION FACTORS					EMISSIONS				
		On and off site burning				Decay of above-ground biomass <sup>(1)</sup>			Burning				Decay	Burning				Decay
		Area converted annually	Annual net loss of biomass	Quantity of biomass burned		Average area converted	Average annual net loss of biomass	Average quantity of biomass left to decay	On site			Off site		On site			Off site	
				On site	Off site				CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O			CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O		
				(kha)	(kt dm)				(kt dm)	(kt dm)	(kha)	(t dm/ha)	(kt dm)	(t/ha)				
Tropical	Wet/Very Moist	0.80	228.00	114.00	114.00			229.20	235.00	1.03	0.01	261.11	0.00	188.00	0.82	0.01	208.89	420.00
	Moist, short dry season								0.00	0.00	0.00	0.00	0.00					
	Moist, long dry season								0.00	0.00	0.00	0.00	0.00					
	Dry								0.00	0.00	0.00	0.00	0.00					
	Montane Moist								0.00	0.00	0.00	0.00	0.00					
	Montane Dry								0.00	0.00	0.00	0.00	0.00					
Tropical Savanna/Grasslands									0.00	0.00	0.00	0.00	0.00					
Temperate	Coniferous								0.00	0.00	0.00	0.00	0.00					
	Broadleaf								0.00	0.00	0.00	0.00	0.00					
	Mixed Broadleaf/Coniferous	80.10	6 055.00	1 211.00	4 844.00	80.10	76.00	6 055.00	27.74	0.12	0.00	110.87	138.59	2 222.00	9.70	0.07	8 881.00	11 101.00
Grasslands									0.00	0.00	0.00	0.00	0.00					
Boreal	Mixed Broadleaf/Coniferous								0.00	0.00	0.00	0.00	0.00					
	Coniferous								0.00	0.00	0.00	0.00	0.00					
	Forest-tundra								0.00	0.00	0.00	0.00	0.00					
Grasslands/Tundra									0.00	0.00	0.00	0.00	0.00					
Other <i>(please specify)</i>									0.00	0.00	0.00	0.00	0.00					
									0.00	0.00	0.00	0.00	0.00					
Total														2 410.00	10.52	0.08	9 089.89	11 521.00

<sup>(1)</sup> Activity data are for default 10-year average. Specify the average decay time which is appropriate for the local conditions, if other than 10 years.

Emissions/Removals	On site	Off site
Immediate carbon release from burning	4.56	17.22
Total On site and Off site (Gg C)	21.78	
Delayed emissions from decay (Gg C)	21.82	
Total annual carbon release (Gg C)	43.60	
Total annual CO <sub>2</sub> emissions (Gg CO <sub>2</sub> )	23 020.89	

#### Additional information

Fractions	On site	Off site
Fraction of biomass burned (average)	0.20	0.80
Fraction which oxidizes during burning (average)		
Carbon fraction of aboveground biomass (average)		
Fraction left to decay (average)		
Nitrogen-carbon ratio	0.01	

**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

#### Documentation box:

Because of a certain lack of data, the average area converted item was calculated taking into account the 1992-1996 period only. This value was also used to fill in the area converted annually item, as a default value. It is emphasised that the CO<sub>2</sub> emissions due to the grassland conversion are included within item D.5, table 5, since such a conversion is considered as generating CO<sub>2</sub> emissions from soils only, according to the IPCC guidelines. As the French methodology used differs from the IPCC's, a specific document describing it is available at the CITEPA ("Evaluation des puits de CO<sub>2</sub> suivant la nouvelle méthode préconisée par le GIEC", CITEPA, June 1999). The average quantity of biomass left to decay regarding tropical wet vegetation is based on the annual production of harvest.

**TABLE 5.C SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**Abandonment of Managed Lands**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		ESTIMATES	
		Total area abandoned and regrowing <sup>(1)</sup>		Annual rate of aboveground biomass growth		Carbon fraction of aboveground biomass		Rate of aboveground biomass carbon uptake		Annual carbon uptake in aboveground biomass	
		first 20 years (kha)	>20 years (kha)	first 20 years (t dm/ha)	>20 years (t dm/ha)	first 20 years	>20 years	first 20 years (t C/ha/yr)	>20 years (t C/ha/yr)	first 20 years (Gg C/yr)	>20 years (Gg C/yr)
<b>Original natural ecosystems</b>											
Tropical	Wet/Very Moist							0.00	0.00		
	Moist, short dry season							0.00	0.00		
	Moist, long dry season							0.00	0.00		
	Dry							0.00	0.00		
	Montane Moist							0.00	0.00		
	Montane Dry							0.00	0.00		
Tropical Savanna/Grasslands								0.00	0.00		
Temperate	Mixed Broadleaf/Coniferous							0.00	0.00		
	Coniferous							0.00	0.00		
	Broadleaf							0.00	0.00		
Grasslands								0.00	0.00		
Boreal	Mixed Broadleaf/Coniferous							0.00	0.00		
	Coniferous							0.00	0.00		
	Forest-tundra							0.00	0.00		
Grasslands/Tundra								0.00	0.00		
Other (please specify)								0.00	0.00		
								0.00	0.00		
Total annual carbon uptake (Gg C)									0.00		
Total annual CO <sub>2</sub> removal (Gg CO <sub>2</sub> )									0.00		

<sup>(1)</sup> If lands are regenerating to grassland, then the default assumption is that no significant changes in above-ground biomass occur.

**Note:** Sectoral background data tables on Land-use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

<b>Documentation box:</b>
This table cannot be filled up properly as the French methodology includes both the annual rate of aboveground biomass growth and the carbon fraction of aboveground biomass within 5.A table.



**TABLE 5.D SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY**  
**CO<sub>2</sub> Emissions and Removals from Soil**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	ESTIMATES
	Land area (Mha)	Average annual rate of soil carbon uptake/removal (Mg C/ha/yr)	Net change in soil carbon in mineral soils (Tg C over 20 yr)
<b>Cultivation of Mineral Soils <sup>(1)</sup></b>			<b>0.00</b>
High Activity Soils		0.00	
Low Activity Soils		0.00	
Sandy		0.00	
Volcanic		0.00	
Wetland (Aquic)		0.00	
Other <i>(please specify)</i>			0.00
		0.00	
	Land area (ha)	Annual loss rate (Mg C/ha/yr)	Carbon emissions from organic soils (Mg C/yr)
<b>Cultivation of Organic Soils</b>			<b>0.00</b>
<b>Cool Temperate</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
<b>Warm Temperate</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
<b>Tropical</b>			<b>0.00</b>
Upland Crops		0.00	
Pasture/Forest		0.00	
	Total annual amount of lime (Mg)	Carbon conversion factor	Carbon emissions from liming (Mg C)
<b>Liming of Agricultural Soils</b>			<b>0.00</b>
Limestone Ca(CO <sub>3</sub> )		0.00	
Dolomite CaMg(CO <sub>3</sub> ) <sub>2</sub>		0.00	
Total annual net carbon emissions from agriculturally impacted soils (Gg C)			0.00
Total annual net CO <sub>2</sub> emissions from agriculturally impacted soils (Gg CO <sub>2</sub> )			0.00

<sup>(1)</sup> The information to be reported under Cultivation of Mineral Soils aggregates data per soil type over all land-use/management systems. This refers to land area data and to the emission estimates and implied emissions factors accordingly.

**Note:** Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

<b>Documentation Box:</b>
Since the French methodology does not treat the carbon soil release or uptake in relation to the nature of the different soils, a specific document available at the CITEPA ("Evaluation des puits de CO <sub>2</sub> suivant la nouvelle méthode préconisée par le GIEC", CITEPA, June 1999) develops the background processing that leads to the results presented in table 5, section D.5.




**Additional information**

Year	Climate <sup>(a)</sup>	land-use/ management system <sup>(a)</sup>	Soil type					
			High activity soils	Low activity soils	Sandy	Volcanic	Wetland (Aquic)	Organic soil
20 years prior	(e.g. tropical, dry)	(e.g. savanna)						
		(e.g. irrigated cropping)						
Inventory year								

<sup>(a)</sup> These should represent the major types of land management systems per climate regions presented in the country as well as ecosystem types which were either converted to agriculture (e.g., forest, savanna, grassland) or have been derived from previous agricultural land-use (e.g., abandoned lands, reforested lands). Systems should also reflect differences in soil carbon stocks that can be related to differences in management (IPCC Guidelines (Volume 2. Workbook, Table 5-9, p. 5.26, and Appendix (pp. 5-31 - 5.38)).

**TABLE 6 SECTORAL REPORT FOR WASTE**  
(Sheet 1 of 1)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
	(Gg)						
<b>Total Waste</b>	<b>2 132.59</b>	<b>892.46</b>	<b>3.12</b>	<b>18.30</b>	<b>258.18</b>	<b>28.70</b>	<b>11.19</b>
<b>A. Solid Waste Disposal on Land</b>	<b>0.00</b>	<b>853.19</b>		<b>0.00</b>	<b>0.00</b>	<b>8.16</b>	
1. Managed Waste Disposal on Land	0.00	493.53				4.72	
2. Unmanaged Waste Disposal Sites	0.00	359.67				3.44	
3. Other <i>(please specify)</i> 	0.00	0.00		0.00	0.00	0.00	
<b>B. Wastewater Handling</b>		<b>12.34</b>	<b>1.97</b>	<b>0.00</b>	<b>0.00</b>	<b>3.04</b>	
1. Industrial Wastewater		0.00	0.99			3.04	
2. Domestic and Commercial Wastewater		12.34	0.99				
3. Other <i>(please specify)</i> 		0.00	0.00	0.00	0.00	0.00	
<b>C. Waste Incineration</b>	<b>2 132.59</b>	<b>15.22</b>	<b>1.15</b>	<b>18.30</b>	<b>258.18</b>	<b>9.88</b>	<b>11.19</b>
<b>D. Other <i>(please specify)</i></b> 	<b>0.00</b>	<b>11.72</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7.61</b>	<b>0.00</b>
Sludge spreading and biogas production (CH <sub>4</sub> and NMVOC)	0.00	11.72				7.61	

<sup>(1)</sup> Note that CO<sub>2</sub> from Waste Disposal and Incineration source categories should only be included if it stems from non-biological or inorganic waste sources.

**TABLE 6.A SECTORAL BACKGROUND DATA FOR WASTE**  
**Solid Waste Disposal**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION				IMPLIED EMISSION FACTOR		EMISSIONS <sup>(1)</sup>	
	Annual MSW at the SWDS (Gg)	MCF	DOC degraded (Gg)	CH <sub>4</sub> recovery <sup>(2)</sup> (Gg)	CH <sub>4</sub> (t /t MSW)	CO <sub>2</sub> (t /t MSW)	CH <sub>4</sub> (Gg)	CO <sub>2</sub> <sup>(3)</sup> (Gg)
1 Managed Waste Disposal on Land	13 789.50	1.00	2 757.90	22.85	0.04	0.00	493.53	0.00
2 Unmanaged Waste Disposal Sites	7 926.25	0.50	1 585.25	0.00	0.05	0.00	359.67	0.00
- deep (>5 m)					0.00	0.00		
- shallow (<5 m)	7 926.25	0.50	1 585.25	0.00	0.05	0.00	359.67	0.00
3 Other (please specify)							0.00	0.00
					0.00	0.00		0.00

**TABLE 6.C SECTORAL BACKGROUND DATA FOR WASTE**  
**Waste Incineration**  
**(Sheet 1 of 1)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA Amount of incinerated wastes (Gg)	IMPLIED EMISSION FACTOR			EMISSIONS		
		CO <sub>2</sub> (kg/t waste)	CH <sub>4</sub> (kg/t waste)	N <sub>2</sub> O (kg/t waste)	CO <sub>2</sub> <sup>(3)</sup> (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)
Waste Incineration (please specify)	15 109.26				2 132.59	15.22	1.15
(biogenic) <sup>(3)</sup>		0.00	0.00	0.00	12 276.74		
(plastics and other non-biogenic waste) <sup>(3)</sup>		0.00	0.00	0.00	2 132.59		
Biogenic and non-biogenic	15 109.26	0.00	1.01	0.08		15.22	1.15

MSW - Municipal Solid Waste, SWDS - Solid Waste Disposal Site, MCF - Methane Correction Factor, DOC - Degradable Organic Carbon (IPCC Guidelines (Volume 3. Reference Manual, section 6.2.4)). MSW includes household waste, yard/garden waste, commercial/market waste and organic industrial solid waste. MSW should not include inorganic industrial waste such as construction or demolition materials.

<sup>(1)</sup> Actual emissions (after recovery).

<sup>(2)</sup> CH<sub>4</sub> recovered and flared or utilized.

<sup>(3)</sup> Under Waste Disposal, CO<sub>2</sub> emissions should be reported only when the disposed wastes are combusted at the disposal site which might constitute a management practice. CO<sub>2</sub> emissions from non-biogenic wastes are included in the totals, while the CO<sub>2</sub> emissions from biogenic wastes are not included in the totals.

<b>Documentation box:</b>
All relevant information used in calculation should be provided in the additional information box and in the documentation box.
Parties that use country specific models should note this with a brief rationale in the documentation box and fill the relevant cells only.
Table 6A: CH <sub>4</sub> emissions are calculated using a first order decay method based on tier 2.
Table 6C: 15% of the waste incineration CO <sub>2</sub> is considered as from biogenic waste.

**Additional information**

Description	Value
Total population (1000s) <sup>(a)</sup>	
Urban population (1000s) <sup>(a)</sup>	
Waste generation rate (kg/capita/day)	
Fraction of MSW disposed to SWDS	
Fraction of DOC in MSW	
Fraction of wastes incinerated	
Fraction of wastes recycled	
CH <sub>4</sub> oxidation factor (b)	
CH <sub>4</sub> fraction in landfill gas	
Number of SWDS recovering CH <sub>4</sub>	
CH <sub>4</sub> generation rate constant (k) <sup>(c)</sup>	
Time lag considered (yr) <sup>(c)</sup>	
Composition of landfilled waste (%)	
Paper and paperboard	
Food and garden waste	
Plastics	
Glass	
Textiles	
Other (specify)	
other - inert	
other - organic	

<sup>(a)</sup> Specify whether total or urban population is used and the rationale for doing so.

<sup>(b)</sup> See IPCC Guidelines (Volume 3. Reference Manual, p. 6.9).

<sup>(c)</sup> For Parties using Tier 2 methods.

**TABLE 6.B SECTORAL BACKGROUND DATA FOR WASTE**  
**Wastewater Handling**  
**(Sheet 1 of 1)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND RELATED INFORMATION <sup>(1)</sup>				IMPLIED EMISSION FACTOR			EMISSIONS <sup>(2)</sup>			
	Total organic product		CH <sub>4</sub> recovered and/or flared		CH <sub>4</sub>		N <sub>2</sub> O <sup>(3)</sup>	CH <sub>4</sub>		N <sub>2</sub> O <sup>(3)</sup>	
	Wastewater	Sludge	Wastewater	Sludge	Wastewater (kg/kg DC)	Sludge (kg/kg DC)		(kg/kg DC)	Wastewater (Gg)		Sludge (Gg)
	(Gg DC <sup>(1)</sup> /yr)		(Gg)							(Gg)	
Industrial Wastewater					0.00	0.00				0.99	
Domestic and Commercial Wastewater					0.00	0.00		12.34		0.99	
Other (please specify) <input type="checkbox"/>								0.00	0.00	0.00	
					0.00	0.00					

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR	EMISSIONS
	Population <sup>(4)</sup> (1000s)	Protein consumption (protein in kg/person/yr)	N fraction (kg N/kg protein)	N <sub>2</sub> O (kg N <sub>2</sub> O-N/kg sewage N produced)	N <sub>2</sub> O (Gg)
N <sub>2</sub> O from human sewage <sup>(3)</sup>				0.00	

<sup>(1)</sup> DC - degradable organic component. DC indicators are COD (Chemical Oxygen Demand) for industrial wastewater and BOD (Biochemical Oxygen Demand) for Domestic/Commercial wastewater/sludge (IPCC Guidelines (Volume 3. Reference Manual, pp. 6.14, 6.18)).

<sup>(2)</sup> Actual emissions (after recovery).

<sup>(3)</sup> Parties using other methods for estimation of N<sub>2</sub>O emissions from human sewage or wastewater treatment should provide corresponding information on methods, activity data and emission factors used in the documentation box. Use the table to provide aggregate data.

<sup>(4)</sup> Specify whether total or urban population is used in the calculations and the rationale for doing so. Provide explanation in the documentation box.

<b>Documentation box:</b>
A specific method based on national expert data is used to calculate emissions from wastewater handling (emission factors are expressed per unit of inhabitant).

**Additional information**

	Domestic	Industrial
Total wastewater (m <sup>3</sup> ):		
Treated wastewater (%):		

Wastewater streams:	Wastewater output (m <sup>3</sup> )	DC (kgCOD/m <sup>3</sup> )
<b>Industrial wastewater</b>		
Iron and steel		
Non-ferrous		
Fertilizers		
Food and beverage		
Paper and pulp		
Organic chemicals		
Other (specify)		
<b>DC (kg BOD/1000 person/yr)</b>		
<b>Domestic and Commercial</b>		
<b>Other</b>		

Handling systems:	Industrial wastewater treated (%)	Ind. sludge treated (%)	Domestic wastewater treated (%)	Domestic sludge treated (%)
Aerobic				
Anaerobic				
Other (specify)				

**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
(Sheet 1 of 3)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
		emissions	removals			P	A	P	A	P	A				
		(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>Total National Emissions and Removals</b>		<b>385 489.52</b>	<b>-59 617.00</b>	<b>3 108.98</b>	<b>305.94</b>	<b>0.00</b>	<b>2 252.62</b>	<b>0.00</b>	<b>3 195.36</b>	<b>0.00</b>	<b>0.09</b>	<b>1 928.61</b>	<b>10 996.05</b>	<b>2 962.90</b>	<b>1 320.82</b>
<b>1. Energy</b>		<b>360 251.17</b>		<b>483.60</b>	<b>12.38</b>							<b>1 885.35</b>	<b>9 516.78</b>	<b>1 669.06</b>	<b>1 275.34</b>
A. Fuel Combustion	Reference Approach <sup>(2)</sup>	366 324.65													
	Sectoral Approach <sup>(2)</sup>	355 945.32		172.61	12.38							1 879.67	9 511.77	1 496.05	1 180.16
1. Energy Industries		65 495.21		2.21	1.81							156.59	16.43	3.58	516.84
2. Manufacturing Industries and Construction		76 919.30		3.92	2.36							241.94	840.91	20.98	351.35
3. Transport		119 156.27		21.56	3.90							1 108.13	6 491.34	1 151.12	154.55
4. Other Sectors		94 374.54		144.93	4.32							373.01	2 163.09	320.37	157.41
5. Other		0.00		0.00	0.00							0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels		4 305.85		310.99	0.00							5.68	5.01	173.02	95.18
1. Solid Fuels		0.00		206.26	0.00							0.00	4.26	1.06	0.00
2. Oil and Natural Gas		4 305.85		104.73	0.00							5.68	0.75	171.96	95.18
<b>2. Industrial Processes</b>		<b>21 253.84</b>		<b>2.54</b>	<b>89.60</b>	<b>0.00</b>	<b>2 252.62</b>	<b>0.00</b>	<b>3 195.36</b>	<b>0.00</b>	<b>0.09</b>	<b>22.36</b>	<b>1 129.14</b>	<b>103.39</b>	<b>34.30</b>
A. Mineral Products		13 015.95		0.00	0.00							0.00	0.00	12.96	0.00
B. Chemical Industry		3 007.37		2.54	89.60	0.00	0.00	0.00	0.00	0.00	0.00	20.18	0.00	44.77	31.08
C. Metal Production		4 549.52		0.00	0.00				2 293.70		0.05	2.18	1 129.14	3.23	3.22
D. Other Production <sup>(3)</sup>		681.00										0.00	0.00	42.42	0.00
E. Production of Halocarbons and SF <sub>6</sub>							2 230.06		559.60		0.00				
F. Consumption of Halocarbons and SF <sub>6</sub>						0.00	22.57	0.00	342.06	0.00	0.04				
G. Other		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

<sup>(2)</sup> For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach. Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

<sup>(3)</sup> Other Production includes Pulp and Paper and Food and Drink Production.

**Note:** The numbering of footnotes to all tables containing more than one sheet continue to the next sheet. Common footnotes are given only once at the first point of reference.

**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
(Sheet 2 of 3)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NM VOC	SO <sub>2</sub>
	emissions	removals			P	A	P	A	P	A				
	(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
<b>3. Solvent and Other Product Use</b>	<b>1 851.92</b>			<b>1.92</b>									<b>704.35</b>	
<b>4. Agriculture</b>	<b>0.00</b>	<b>0.00</b>	<b>1 631.25</b>	<b>181.12</b>							0.00	0.00	20.92	0.00
A. Enteric Fermentation			1 431.32											
B. Manure Management			168.45	10.48									0.00	
C. Rice Cultivation			8.55										0.00	
D. Agricultural Soils	<sup>(4)</sup>	<sup>(4)</sup>	22.93	170.64									20.92	
E. Prescribed Burning of Savannas			0.00	0.00							0.00	0.00	0.00	
F. Field Burning of Agricultural Residues			0.00	0.00							0.00	0.00	0.00	
G. Other			0.00	0.00							0.00	0.00	0.00	
<b>5. Land-Use Change and Forestry</b>	<sup>(5)</sup> <b>0.00</b>	<sup>(5)</sup> <b>-59 617.00</b>	<b>99.11</b>	<b>17.79</b>							<b>2.61</b>	<b>91.96</b>	<b>436.48</b>	<b>0.00</b>
A. Changes in Forest and Other Woody Biomass Stocks	<sup>(5)</sup> 0.00	<sup>(5)</sup> -75 330.00												
B. Forest and Grassland Conversion	11 710.00		10.51	0.07							2.61	91.96		
C. Abandonment of Managed Lands	<sup>(5)</sup> 0.00	<sup>(5)</sup> -48.00												
D. CO <sub>2</sub> Emissions and Removals from Soil	<sup>(5)</sup> 4 051.00	<sup>(5)</sup> 0.00												
E. Other	<sup>(5)</sup> 0.00	<sup>(5)</sup> 0.00	88.61	17.72							0.00	0.00	436.48	
<b>6. Waste</b>	<b>2 132.59</b>		<b>892.46</b>	<b>3.12</b>							<b>18.30</b>	<b>258.18</b>	<b>28.70</b>	<b>11.19</b>
A. Solid Waste Disposal on Land	<sup>(6)</sup> 0.00		853.19									0.00	8.16	
B. Wastewater Handling			12.34	1.97							0.00	0.00	3.04	
C. Waste Incineration	<sup>(6)</sup> 2 132.59		15.22	1.15							18.30	258.18	9.88	11.19
D. Other	0.00		11.72	0.00							0.00	0.00	7.61	0.00
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	0.00													

<sup>(4)</sup> According to the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.2, 4.87), CO<sub>2</sub> emissions from agricultural soils are to be included under Land-Use Change and Forestry (LUCF). At the same time, the Summary Report 7A (Volume 1. Reporting Instructions, Tables.27) allows for reporting CO<sub>2</sub> emissions or removals from agricultural soils, either in the Agriculture sector, under D. Agricultural Soils or in the Land-Use Change and Forestry sector under D. Emissions and Removals from Soil. Parties may choose either way to report emissions or removals from this source in the common reporting format, but the way they have chosen to report should be clearly indicated, by inserting explanatory comments to the corresponding cells of Summary 1.A and Summary 1.B. Double-counting of these emissions or removals should be avoided. Parties should include these emissions or removals consistently in Table8(a) (Recalculation - Recalculated data) and Table10 (Emission trends).

<sup>(5)</sup> Please do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. "Net" emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(6)</sup> Note that CO<sub>2</sub> from Waste Disposal and Incineration source categories should only be included if it stems from non-biogenic or inorganic waste streams.

**SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)**  
**(Sheet 3 of 3)**

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	CH <sub>4</sub>	N <sub>2</sub> O	HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
					P	A	P	A	P	A				
	(Gg)					CO <sub>2</sub> equivalent (Gg)				(Gg)				
Memo Items: <sup>(7)</sup>														
International Bunkers	16 754.60		0.00	0.26							175.90	9.96	73.71	153.51
Aviation	8 617.73		0.00	0.00							21.14	7.86	2.89	2.74
Marine	8 136.87		0.00	0.26							154.76	2.10	70.82	150.78
Multilateral Operations	0.00		0.00	0.00							0.00	0.00	0.00	0.00
CO <sub>2</sub> Emissions from Biomass	37 858.66													

<sup>(7)</sup> Memo Items are not included in the national totals.

**SUMMARY 1.B SHORT SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7B)**

(Sheet 1 of 1)

 France  
 1990  
 Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(1)</sup>		PFCs <sup>(1)</sup>		SF <sub>6</sub>		NO <sub>x</sub>	CO	NMVOC	SO <sub>2</sub>
		emissions	removals			P	A	P	A	P	A				
		(Gg)				CO <sub>2</sub> equivalent (Gg)				(Gg)					
Total National Emissions and Removals		385 489.52	-59 617.00	3 108.98	305.94	0.00	2 252.62	0.00	3 195.36	0.00	0.09	1 928.61	10 996.05	2 962.90	1 320.82
1. Energy		360 251.17		483.60	12.38							1 885.35	9 516.78	1 669.06	1 275.34
A. Fuel Combustion	Reference Approach <sup>(2)</sup>	366 324.65													
	Sectoral Approach <sup>(2)</sup>	355 945.32		172.61	12.38							1 879.67	9 511.77	1 496.05	1 180.16
B. Fugitive Emissions from Fuels		4 305.85		310.99	0.00							5.68	5.01	173.02	95.18
2. Industrial Processes		21 253.84		2.54	89.60	0.00	2 252.62	0.00	3 195.36	0.00	0.09	22.36	1 129.14	103.39	34.30
3. Solvent and Other Product Use		1 851.92			1.92							0.00	0.00	704.35	0.00
4. Agriculture <sup>(3)</sup>		0.00	0.00	1 631.25	181.12							0.00	0.00	20.92	0.00
5. Land-Use Change and Forestry	<sup>(4)</sup>	0.00 <sup>(4)</sup>	-59 617.00	99.11	17.79							2.61	91.96	436.48	0.00
6. Waste		2 132.59		892.46	3.12							18.30	258.18	28.70	11.19
7. Other		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Memo Items:															
International Bunkers		16 754.60		0.00	0.26							175.90	9.96	73.71	153.51
Aviation		8 617.73		0.00	0.00							21.14	7.86	2.89	2.74
Marine		8 136.87		0.00	0.26							154.76	2.10	70.82	150.78
Multilateral Operations		0.00		0.00	0.00							0.00	0.00	0.00	0.00
CO <sub>2</sub> Emissions from Biomass		37 858.66													

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

<sup>(1)</sup> The emissions of HFCs and PFCs are to be expressed as CO<sub>2</sub> equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

<sup>(2)</sup> For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in document box of Table 1.A(c). Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

<sup>(3)</sup> See footnote 4 to Summary 1.A.

<sup>(4)</sup> Please do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. "Net" emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).



**SUMMARY 2 SUMMARY REPORT FOR CO<sub>2</sub> EQUIVALENT EMISSIONS**  
(Sheet 1 of 1)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>	Total
	CO <sub>2</sub> equivalent (Gg )						
<b>Total (Net Emissions)<sup>(1)</sup></b>	<b>325 872.52</b>	<b>65 288.50</b>	<b>94 841.15</b>	<b>2 252.62</b>	<b>3 195.36</b>	<b>2 194.86</b>	<b>493 645.01</b>
<b>1. Energy</b>	<b>360 251.17</b>	<b>10 155.66</b>	<b>3 838.65</b>				<b>374 245.48</b>
A. Fuel Combustion (Sectoral Approach)	355 945.32	3 624.90	3 838.65				363 408.86
1. Energy Industries	65 495.21	46.33	561.18				66 102.72
2. Manufacturing Industries and Construction	76 919.30	82.40	731.38				77 733.08
3. Transport	119 156.27	452.71	1 208.05				120 817.03
4. Other Sectors	94 374.54	3 043.45	1 338.04				98 756.03
5. Other	0.00	0.00	0.00				0.00
B. Fugitive Emissions from Fuels	4 305.85	6 530.76	0.00				10 836.61
1. Solid Fuels	0.00	4 331.42	0.00				4 331.42
2. Oil and Natural Gas	4 305.85	2 199.34	0.00				6 505.19
<b>2. Industrial Processes</b>	<b>21 253.84</b>	<b>53.42</b>	<b>27 774.76</b>	<b>2 252.62</b>	<b>3 195.36</b>	<b>2 194.86</b>	<b>56 724.87</b>
A. Mineral Products	13 015.95	0.00	0.00				13 015.95
B. Chemical Industry	3 007.37	53.42	27 774.76	0.00	0.00	0.00	30 835.55
C. Metal Production	4 549.52	0.00	0.00		2 293.70	1 135.25	7 978.47
D. Other Production	681.00						681.00
E. Production of Halocarbons and SF <sub>6</sub>				2 230.06	559.60	0.00	2 789.66
F. Consumption of Halocarbons and SF <sub>6</sub>				22.57	342.06	1 059.61	1 424.24
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>3. Solvent and Other Product Use</b>	<b>1 851.92</b>		<b>596.23</b>				<b>2 448.15</b>
<b>4. Agriculture</b>	<b>0.00</b>	<b>34 256.27</b>	<b>56 147.00</b>				<b>90 403.27</b>
A. Enteric Fermentation		30 057.62					30 057.62
B. Manure Management		3 537.42	3 249.22				6 786.64
C. Rice Cultivation		179.61					179.61
D. Agricultural Soils <sup>(2)</sup>		481.62	52 897.78				53 379.40
E. Prescribed Burning of Savannas		0.00	0.00				0.00
F. Field Burning of Agricultural Residues		0.00	0.00				0.00
G. Other		0.00	0.00				0.00
<b>5. Land-Use Change and Forestry<sup>(1)</sup></b>	<b>-59 617.00</b>	<b>2 081.39</b>	<b>5 515.83</b>				<b>-52 019.78</b>
<b>6. Waste</b>	<b>2 132.59</b>	<b>18 741.75</b>	<b>968.68</b>				<b>21 843.03</b>
A. Solid Waste Disposal on Land	0.00	17 917.02					17 917.02
B. Wastewater Handling		259.14	612.06				871.20
C. Waste Incineration	2 132.59	319.57	356.62				2 808.79
D. Other	0.00	246.03	0.00				246.03
<b>7. Other (please specify)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
							0.00
<b>Memo Items:</b>							
<b>International Bunkers</b>	<b>16 754.60</b>	<b>0.00</b>	<b>81.32</b>				<b>16 835.92</b>
Aviation	8 617.73	0.00	0.00				8 617.73
Marine	8 136.87	0.00	81.32				8 218.19
<b>Multilateral Operations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>				<b>0.00</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>37 858.66</b>						<b>37 858.66</b>

<sup>(1)</sup> For CO<sub>2</sub> emissions from Land-Use Change and Forestry the net emissions are to be reported. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions	CO <sub>2</sub> removals	Net CO <sub>2</sub> emissions / removals	CH <sub>4</sub>	N <sub>2</sub> O	Total emissions
	CO <sub>2</sub> equivalent (Gg )					
<b>Land-Use Change and Forestry</b>						
A. Changes in Forest and Other Woody Biomass Stocks	66 167.00	-141 497.00	-75 330.00			-75 330.00
B. Forest and Grassland Conversion	11 710.00		11 710.00	220.69	22.32	11 953.01
C. Abandonment of Managed Lands	0.00	-48.00	-48.00			-48.00
D. CO <sub>2</sub> Emissions and Removals from Soil	8 329.00	-4 278.00	4 051.00			4 051.00
E. Other	0.00	0.00	0.00	1 860.71	5 493.51	7 354.22
Total CO <sub>2</sub> Equivalent Emissions from Land-Use Change and Forestry	86 206.00	-145 823.00	-59 617.00	2 081.39	5 515.83	-52 019.78

Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(a)</sup>	545 664.78
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(a)</sup>	493 645.01

<sup>(a)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

**SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED**  
(Sheet 1 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>	
	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>
<b>1. Energy</b>												
A. Fuel Combustion	C	CS	C	CS	C	CS						
1. Energy Industries	C	CS	C	CS	C	CS						
2. Manufacturing Industries and Construction	C	CS	C	CS	C	CS						
3. Transport	C /CS	C /M /CS	C /CS	C /M /CS	C /CS	C /M /CS						
4. Other Sectors	C	CS	C	CS	C	CS						
5. Other	C	CS	C	CS	C	CS						
B. Fugitive Emissions from Fuels	C	CS	C	CS	C	CS						
1. Solid Fuels	C	CS	C	CS	C	CS						
2. Oil and Natural Gas	C	CS	C	CS	C	CS						
<b>2. Industrial Processes</b>												
A. Mineral Products	C	CS	C	CS	C	CS						
B. Chemical Industry	C	CS	C	CS	C	CS/ PS						
C. Metal Production	C	CS	C	CS	C	CS						
D. Other Production	C	CS										
E. Production of Halocarbons and SF <sub>6</sub>							CS	CS	CS	CS		
F. Consumption of Halocarbons and SF <sub>6</sub>							CS/ T2	CS	CS/ T2	CS	CS/ T2	CS
G. Other												

<sup>(1)</sup> Use the following notation keys to specify the method applied: D (IPCC default), RA (Reference Approach), T1 (IPCC Tier 1), T1a, T1b, T1c (IPCC Tier 1a, Tier 1b and Tier 1c, respectively), T2 (IPCC Tier 2), T3 (IPCC Tier 3), C (CORINAIR), CS (Country Specific), M (Model). If using more than one method, enumerate the relevant methods. Explanations of any modifications to the default IPCC methods, as well as information on the proper use of methods per source category where more than one method is indicated, and explanations on the country specific methods, should be provided in the documentation box of the relevant Sectoral background data table.

<sup>(2)</sup> Use the following notation keys to specify the emission factor used: D (IPCC default), C (CORINAIR), CS (Country Specific), PS (Plant Specific), M (Model). Where a mix of emission factors has been used, use different notations in one and the same cells with further explanation in the documentation box of the relevant Sectoral background data table.

**SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED**  
(Sheet 2 of 2)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>	
	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>	Method applied <sup>(1)</sup>	Emission factor <sup>(2)</sup>
<b>3. Solvent and Other Product Use</b>	C	CS										
<b>4. Agriculture</b>												
A. Enteric Fermentation			C	CS								
B. Manure Management			CS/ T2	CS	T2	T2						
C. Rice Cultivation			C	CS								
D. Agricultural Soils			CS/ T2	CS	T2	T2						
E. Prescribed Burning of Savannas												
F. Field Burning of Agricultural Residues												
G. Other												
<b>5. Land-Use Change and Forestry</b>												
A. Changes in Forest and Other Woody Biomass Stocks	CS	CS										
B. Forest and Grassland Conversion	CS	CS	CS	CS	CS	CS						
C. Abandonment of Managed Lands	CS	CS										
D. CO <sub>2</sub> Emissions and Removals from Soil	CS	CS										
E. Other												
<b>6. Waste</b>												
A. Solid Waste Disposal on Land			CS/ T2	CS/ T2								
B. Wastewater Handling			C	CS	C	CS						
C. Waste Incineration	C	CS/ PS	C	CS	C	CS						
D. Other												
<b>7. Other (please specify)</b>												

**TABLE 7 OVERVIEW TABLE<sup>(1)</sup> FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 1 of 3)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>Total National Emissions and Removals</b>	ALL	H	ALL	M	ALL	L	ALL	M	ALL	M	ALL	M	ALL	M	ALL	M	ALL	M	ALL	H
<b>1 Energy</b>		H		M		L								M		M		M		H
A. Fuel Combustion Activities																				
Reference Approach	ALL	H																		
Sectoral Approach	ALL	H	ALL	L	ALL	L							ALL	M	ALL	M	ALL	M	ALL	H
1. Energy Industries	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
2. Manufacturing Industries and Construction	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
3. Transport	ALL	H	ALL	L	ALL	L							ALL	M	ALL	M	ALL	M	ALL	H
4. Other Sectors	ALL	H	ALL	L	ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
5. Other	NO		NO		NO								NO		NO		NO		NO	
B. Fugitive Emissions from Fuels																				
1. Solid Fuels	IE	H	ALL	M	NO															
2. Oil and Natural Gas	ALL	H	ALL	M	ALL	L							ALL	L	ALL	L	ALL	M	ALL	H
<b>2 Industrial Processes</b>																				
A. Mineral Products	ALL	H	NO		NO								NO		NO		ALL	L	NE	L
B. Chemical Industry	ALL	H	ALL	M	ALL	M	NO		NO				ALL	M	NO		ALL	M	ALL	H
C. Metal Production	ALL	H	ALL	M	NO				ALL	H	ALL	L	ALL	L	ALL	M	ALL	L	ALL	M
D. Other Production	ALL	H											NO		NO		ALL	M	NO	
E. Production of Halocarbons and SF <sub>6</sub>							ALL	M	ALL	M	NO									

<sup>(1)</sup> This table is intended to be used by Parties to summarize their own assessment of completeness (e.g. partial, full estimate, not estimated) and quality (high, medium, low) of major source/sink inventory estimates. The latter could be understood as a quality assessment of the uncertainty of the estimates. This table might change once the IPCC completes its work on managing uncertainties of GHG inventories. The title of the table was kept for consistency with the current table in the IPCC Guidelines.

**Note:** To fill in the table use the notation key as given in the IPCC Guidelines (Volume 1. Reporting Instructions, Tables. 37).

**TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 2 of 3)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>2 Industrial Processes (continued)</b>																				
F. Consumption of Halocarbons and SF <sub>6</sub>																				
Potential <sup>(2)</sup>							NO		NO		NO									
Actual <sup>(3)</sup>							ALL	M	ALL	M	ALL	M								
G. Other	NO		NO		NO		NO		NO		NO		NO		NO		NO		NO	
<b>3 Solvent and Other Product Use</b>	ALL	H			ALL	L														
<b>4 Agriculture</b>													NO		NO		NO		NO	
A. Enteric Fermentation			ALL	M																
B. Manure Management			ALL	M													NO			
C. Rice Cultivation			ALL	L													NO			
D. Agricultural Soils	NO		ALL	L	ALL	L											NO			
E. Prescribed Burning of Savannas			NO		NO								NO		NO		NO		NO	
F. Field Burning of Agricultural Residues			NO		NO								NO		NO		NO		NO	
G. Other			NO		NO								NO		NO		NO		NO	
<b>5 Land-Use Change and Forestry</b>																				
A. Changes in Forest and Other Woody Biomass Stocks	ALL	L																		
B. Forest and Grassland Conversion	ALL	L	ALL	L	ALL	L							ALL	L	ALL	L	NO			

<sup>(2)</sup> Potential emissions based on Tier 1 approach of the IPCC Guidelines.

<sup>(3)</sup> Actual emissions based on Tier 2 approach of the IPCC Guidelines.

**TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)**  
(Sheet 3 of 3)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		HFCs		PFCs		SF <sub>6</sub>		NO <sub>x</sub>		CO		NMVOC		SO <sub>2</sub>	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
<b>5 Land-Use Change and Forestry (continued)</b>																				
C. Abandonment of Managed Lands	ALL	L																		
D. CO <sub>2</sub> Emissions and Removals from Soil	ALL	L																		
E. Other	NO		ALL	L	ALL	L							NO		NO		ALL	L	NO	
<b>6 Waste</b>																				
A. Solid Waste Disposal on Land	ALL	M	ALL	L											NO		ALL	L		
B. Wastewater Handling			ALL	L	ALL	L							NO		NO		ALL	L		
C. Waste Incineration	ALL	M	ALL	L	ALL	L							ALL	L	ALL	L	ALL	L	ALL	L
D. Other	ALL	L	ALL	L	NO								NO		NO		NO		NO	
<b>7 Other (please specify)</b>	NO		NO		NO		NO		NO		NO		NO		NO		NO		NO	
<b>Memo Items:</b>																				
<b>International Bunkers</b>																				
Aviation	ALL	H	NO		ALL	L							ALL	M	ALL	L	ALL	L	ALL	H
Marine	ALL	H	NO		ALL	L							ALL	M	ALL	L	ALL	L	ALL	M
<b>Multilateral Operations</b>																				
CO <sub>2</sub> Emissions from Biomass	ALL	M																		

**TABLE 8(a) RECALCULATION - RECALCULATED DATA**

Recalculated

year:

(Sheet 1 of 2)

France

1990

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
<b>Total National Emissions and Removals</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
<b>1. Energy</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
1.A.	Fuel Combustion Activities			0.00			0.00			0.00
1.A.1.	Energy Industries			0.00			0.00			0.00
1.A.2.	Manufacturing Industries and Construction			0.00			0.00			0.00
1.A.3.	Transport			0.00			0.00			0.00
1.A.4.	Other Sectors			0.00			0.00			0.00
1.A.5.	Other			0.00			0.00			0.00
1.B.	Fugitive Emissions from Fuels			0.00			0.00			0.00
1.B.1.	Solid fuel			0.00			0.00			0.00
1.B.2.	Oil and Natural Gas			0.00			0.00			0.00
<b>2. Industrial Processes</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
2.A.	Mineral Products			0.00			0.00			0.00
2.B.	Chemical Industry			0.00			0.00			0.00
2.C.	Metal Production			0.00			0.00			0.00
2.D.	Other Production			0.00			0.00			0.00
2.G.	Other			0.00			0.00			0.00
<b>3. Solvent and Other Product Use</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
<b>4. Agriculture</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
4.A.	Enteric Fermentation						0.00			
4.B.	Manure Management						0.00			0.00
4.C.	Rice Cultivation						0.00			
4.D.	Agricultural Soils <sup>(2)</sup>			0.00			0.00			0.00
4.E.	Prescribed Burning of Savannas						0.00			0.00
4.F.	Field Burning of Agricultural Residues						0.00			0.00
4.G.	Other						0.00			0.00
<b>5. Land-Use Change and Forestry (net)</b>				<b>0.00</b>			<b>0.00</b>			<b>0.00</b>
5.A.	Changes in Forest and Other Woody Biomass Stocks			0.00						
5.B.	Forest and Grassland Conversion			0.00			0.00			0.00
5.C.	Abandonment of Managed Lands			0.00						
5.D.	CO <sub>2</sub> Emissions and Removals from Soil			0.00						
5.E.	Other			0.00			0.00			0.00

<sup>(1)</sup> Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission. All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated

year:

0

(Sheet 2 of 2)

France

1990

Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO <sub>2</sub>			CH <sub>4</sub>			N <sub>2</sub> O		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
6. Waste				0.00			0.00			0.00
6.A.	Solid Waste Disposal on Land			0.00			0.00			0.00
6.B.	Wastewater Handling						0.00			0.00
6.C.	Waste Incineration			0.00			0.00			0.00
6.D.	Other			0.00			0.00			0.00
7. Other (please specify)				0.00			0.00			0.00
				0.00			0.00			0.00
Memo Items:										
International Bunkers				0.00			0.00			0.00
Multilateral Operations				0.00			0.00			0.00
CO <sub>2</sub> Emissions from Biomass				0.00						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF <sub>6</sub>		
		Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>	Previous submission	Latest submission	Difference <sup>(1)</sup>
		CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)	CO <sub>2</sub> equivalent (Gg)		(%)
Total Actual Emissions				0.00			0.00			0.00
2.C.3.	Aluminium Production						0.00			0.00
2.E.	Production of Halocarbons and SF <sub>6</sub>			0.00			0.00			0.00
2.F.	Consumption of Halocarbons and SF <sub>6</sub>			0.00			0.00			0.00
	Other			0.00			0.00			0.00
Potential Emissions from Consumption of HFCs/PFCs and SF <sub>6</sub>										
				Previous submission			Latest submission			Difference <sup>(1)</sup>
							CO <sub>2</sub> equivalent (Gg)			(%)
Total CO <sub>2</sub> Equivalent Emissions with Land-Use Change and Forestry <sup>(3)</sup>										0.00
Total CO <sub>2</sub> Equivalent Emissions without Land-Use Change and Forestry <sup>(3)</sup>										0.00

<sup>(3)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.



**TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION**  
**(Sheet 1 of 1)**

France  
1990  
Submission

Specify the sector and source/sink category <sup>(1)</sup> where changes in estimates have occurred:	GHG	RECALCULATION DUE TO			
		CHANGES IN:			Addition/removal/ replacement of source/sink categories
		Methods <sup>(2)</sup>	Emission factors <sup>(2)</sup>	Activity data <sup>(2)</sup>	

<sup>(1)</sup> Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

<sup>(2)</sup> Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

<b>Documentation box:</b> Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

**TABLE 9 COMPLETENESS**  
(Sheet 1 of 2)

France  
1990  
Submission

Sources and sinks not reported (NE) <sup>(1)</sup>				
GHG	Sector <sup>(2)</sup>	Source/sink category <sup>(2)</sup>	Explanation	
CO <sub>2</sub>				
CH <sub>4</sub>	1A3. Transport	Civil Aviation	neglected	
	1A3 Transport	Marine national / international	neglected	
N <sub>2</sub> O	4D. Agricultural Soils	Atmospheric Deposition	not included because of possible double counting	
	1A3. Transport	Civil Aviation	neglected	
HFCs				
PFCs				
SF <sub>6</sub>	2. Industrial process	Consumption of SF6 from various minor applications (window insulation, tennis balls etc.) - neglected		
Sources and sinks reported elsewhere (IE) <sup>(3)</sup>				
GHG	Source/sink category	Allocation as per IPCC Guidelines	Allocation used by the Party	Explanation
CO <sub>2</sub>	1A2a-e		1A2f	Not available in the national inventory database at this time
CH <sub>4</sub>	1A2a-e		1A2f	Not available in the national inventory database at this time
N <sub>2</sub> O	1A2a-e		1A2f	Not available in the national inventory database at this time
HFCs				
PFCs				
SF <sub>6</sub>				

<sup>(1)</sup> Please, clearly indicate sources and sinks which are considered in the IPCC Guidelines but are not considered in the submitted inventory. Explain the reason for excluding these sources and sinks, in order to avoid arbitrary interpretations. An entry should be made for each source/sink category for which the indicator "NE" is entered in the sectoral tables.

<sup>(2)</sup> Indicate omitted source/sink following the IPCC source/sink category structure (e.g. sector: Waste, source category: Wastewater Handling).

<sup>(3)</sup> Please clearly indicate sources and sinks in the submitted inventory that are allocated to a sector other than that indicated by the IPCC Guidelines. Show the sector indicated in the IPCC Guidelines and the sector to which the source or sink is allocated in the submitted inventory. Explain the reason for reporting these sources and sinks in a different sector. An entry should be made for each source/sink for which the indicator "IE" is used in the sectoral tables.

TABLE 9 COMPLETENESS  
(Sheet 2 of 2)

France  
1990  
Submission

Additional GHG emissions reported <sup>(4)</sup>						
GHG	Source category	Emissions (Gg)	Estimated GWP value (100-year horizon)	Emissions CO <sub>2</sub> equivalent (Gg)	Reference to the data source of GWP value	Explanation

<sup>(4)</sup> Parties are encouraged to provide information on emissions of greenhouse gases whose GWP values have not yet been agreed upon by the COP. Please include such gases in this table if they are considered in the submitted inventory. Provide additional information on the estimation methods used.

**TABLE 10 EMISSIONS TRENDS (CO<sub>2</sub>)**  
(Sheet 1 of 5)

France  
1990  
Submission

	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</b>	<b>(Gg)</b>										
<b>1. Energy</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Fuel Combustion (Sectoral Approach)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Energy Industries											
2. Manufacturing Industries and Construction											
3. Transport											
4. Other Sectors											
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels											
2. Oil and Natural Gas											
<b>2. Industrial Processes</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other											
<b>3. Solvent and Other Product Use</b>											
<b>4. Agriculture</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Enteric Fermentation											
B. Manure Management											
C. Rice Cultivation											
D. Agricultural Soils <sup>(2)</sup>											
E. Prescribed Burning of Savannas											
F. Field Burning of Agricultural Residues											
G. Other											
<b>5. Land-Use Change and Forestry <sup>(3)</sup></b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Changes in Forest and Other Woody Biomass Stocks											
B. Forest and Grassland Conversion											
C. Abandonment of Managed Lands											
D. CO <sub>2</sub> Emissions and Removals from Soil											
E. Other											
<b>6. Waste</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Solid Waste Disposal on Land											
B. Waste-water Handling											
C. Waste Incineration											
D. Other											
<b>7. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions/Removals with LUCF <sup>(4)</sup></b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions without LUCF <sup>(4)</sup></b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aviation											
Marine											
<b>Multilateral Operations</b>											
<b>CO<sub>2</sub> Emissions from Biomass</b>											

<sup>(1)</sup> Fill in the base year adopted by the Party under the Convention, if different from 1990.

<sup>(2)</sup> See footnote 4 to Summary 1.A of this common reporting format.

<sup>(3)</sup> Take the net emissions as reported in Summary 1.A of this common reporting format. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

<sup>(4)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO<sub>2</sub> emissions and removals from Land-Use Change and Forestry.

**TABLE 10 EMISSIONS TRENDS (CH<sub>4</sub>)**  
(Sheet 2 of 5)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Total Emissions</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1. Energy</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Fuel Combustion (Sectoral Approach)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Energy Industries											
2. Manufacturing Industries and Construction											
3. Transport											
4. Other Sectors											
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels											
2. Oil and Natural Gas											
<b>2. Industrial Processes</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other											
<b>3. Solvent and Other Product Use</b>											
<b>4. Agriculture</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Enteric Fermentation											
B. Manure Management											
C. Rice Cultivation											
D. Agricultural Soils											
E. Prescribed Burning of Savannas											
F. Field Burning of Agricultural Residues											
G. Other											
<b>5. Land-Use Change and Forestry</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Changes in Forest and Other Woody Biomass Stocks											
B. Forest and Grassland Conversion											
C. Abandonment of Managed Lands											
D. CO <sub>2</sub> Emissions and Removals from Soil											
E. Other											
<b>6. Waste</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Solid Waste Disposal on Land											
B. Waste-water Handling											
C. Waste Incineration											
D. Other											
<b>7. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aviation											
Marine											
<b>Multilateral Operations</b>											
<b>CO<sub>2</sub> Emissions from Biomass</b>											

**TABLE 10 EMISSIONS TRENDS (N<sub>2</sub>O)**  
(Sheet 3 of 5)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Total Emissions</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1. Energy</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Fuel Combustion (Sectoral Approach)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Energy Industries											
2. Manufacturing Industries and Construction											
3. Transport											
4. Other Sectors											
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels											
2. Oil and Natural Gas											
<b>2. Industrial Processes</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF <sub>6</sub>											
F. Consumption of Halocarbons and SF <sub>6</sub>											
G. Other											
<b>3. Solvent and Other Product Use</b>											
<b>4. Agriculture</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Enteric Fermentation											
B. Manure Management											
C. Rice Cultivation											
D. Agricultural Soils											
E. Prescribed Burning of Savannas											
F. Field Burning of Agricultural Residues											
G. Other											
<b>5. Land-Use Change and Forestry</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Changes in Forest and Other Woody Biomass Stocks											
B. Forest and Grassland Conversion											
C. Abandonment of Managed Lands											
D. CO <sub>2</sub> Emissions and Removals from Soil											
E. Other											
<b>6. Waste</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A. Solid Waste Disposal on Land											
B. Waste-water Handling											
C. Waste Incineration											
D. Other											
<b>7. Other (please specify)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Memo Items:</b>											
<b>International Bunkers</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aviation											
Marine											
<b>Multilateral Operations</b>											
<b>CO<sub>2</sub> Emissions from Biomass</b>											

**TABLE 10 EMISSION TRENDS ( HFCs, PFCs and SF<sub>6</sub>)**  
(Sheet 4 of 5)

France  
1990  
Submission

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
<b>Emissions of HFCs<sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
HFC-23											
HFC-32											
HFC-41											
HFC-43-10mee											
HFC-125											
HFC-134											
HFC-134a											
HFC-152a											
HFC-143											
HFC-143a											
HFC-227ea											
HFC-236fa											
HFC-245ca											
<b>Emissions of PFCs<sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
CF <sub>4</sub>											
C <sub>2</sub> F <sub>6</sub>											
C <sub>3</sub> F <sub>8</sub>											
C <sub>4</sub> F <sub>10</sub>											
c-C <sub>4</sub> F <sub>8</sub>											
C <sub>5</sub> F <sub>12</sub>											
C <sub>6</sub> F <sub>14</sub>											
<b>Emissions of SF<sub>6</sub><sup>(5)</sup> - CO<sub>2</sub> equivalent (Gg)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
SF <sub>6</sub>											

<sup>(5)</sup> Enter information on the actual emissions. Where estimates are only available for the potential emissions, specify this in a comment to the corresponding cell. Only in this row the emissions are expressed as CO<sub>2</sub> equivalent emissions in order to facilitate data flow among spreadsheets.

**TABLE 10 EMISSION TRENDS (SUMMARY)**  
(Sheet 5 of 5)

France  
1990  
Submission

GREENHOUSE GAS EMISSIONS	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO <sub>2</sub> equivalent (Gg)										
Net CO <sub>2</sub> emissions/removals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO <sub>2</sub> emissions (without LUCF) <sup>(6)</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CH <sub>4</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N <sub>2</sub> O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SF <sub>6</sub>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total (with net CO<sub>2</sub> emissions/removals)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total (without CO<sub>2</sub> from LUCF) <sup>(6)</sup></b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(1)</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO <sub>2</sub> equivalent (Gg)										
1. Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Industrial Processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Solvent and Other Product Use	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Land-Use Change and Forestry <sup>(7)</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>(6)</sup> The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO<sub>2</sub> emissions and removals from Land-Use Change and Forestry.

<sup>(7)</sup> Net emissions.



**TABLE 11 CHECK LIST OF REPORTED INVENTORY INFORMATION<sup>(1)</sup>**

<b>Party:</b> France		<b>Year:</b> 1990					
<b>Contact info:</b>	Focal point for national GHG inventories: CITEPA						
	Address: 10 rue du Faubourg Poissonnière - 75010 PARIS						
	Telephone: 33 (0)1 44836883		Fax: 33 (0)1 40220483		E-mail: <a href="mailto:jean-pierre.fontelle@citepa.org">jean-pierre.fontelle@citepa.org</a>		
	Main institution preparing the inventory: CITEPA						
<b>General info:</b>	Date of submission: 2000						
	Base years: 1990		PFCs, HFCs, SF <sub>6</sub> :		1990		
	Year covered in the submission: 1990						
	Gases covered: CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, PFCs, HFCs, SF <sub>6</sub> and NO <sub>x</sub> , CO, NMVOC, SO <sub>2</sub> .						
	Omissions in geographic coverage: No						
<b>Tables:</b>		Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
	Sectoral report tables:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Sectoral background data tables:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Summary 1 (IPCC Summary tables):	IPCC Table 7A:		<input checked="" type="checkbox"/>	IPCC Table 7B:		<input checked="" type="checkbox"/>
	Summary 2 (CO <sub>2</sub> equivalent emissions)			<input checked="" type="checkbox"/>			
	Summary 3 (Methods/Emission factors):			<input checked="" type="checkbox"/>			
	Uncertainty:	IPCC Table 8A:		<input checked="" type="checkbox"/>	National information:		<input checked="" type="checkbox"/>
	Recalculation tables:			<input type="checkbox"/>			
	Completeness table:			<input checked="" type="checkbox"/>			
	Trend table:			<input type="checkbox"/>			
<b>CO<sub>2</sub></b>	Comparison of CO <sub>2</sub> from fuel combustion	Worksheet 1-1		Percentage of difference		Explanation of differences	
		<input checked="" type="checkbox"/>		2.92		<input checked="" type="checkbox"/>	
<b>Recalculation:</b>		Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
	CO <sub>2</sub>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	CH <sub>4</sub>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	N <sub>2</sub> O	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	HFCs, PFCs, SF <sub>6</sub>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explanations:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recalculation tables for all recalculated years:			<input type="checkbox"/>			
Full CRF for the recalculated base year:			<input type="checkbox"/>				
<b>HFCs, PFCs, SF<sub>6</sub>:</b>		HFCs		PFCs		SF <sub>6</sub>	
	Disaggregation by species:	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
	Production of Halocarbons/SF <sub>6</sub> :	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	Consumption of Halocarbons/SF <sub>6</sub> :	Actual	Potential	Actual	Potential	Actual	Potential
	Potential/Actual emission ratio:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reference to National Inventory Report and/or national inventory web site:		Inventaire des émissions de gaz à effet de serre en France au cours de la période 1990 - 1999 / Format UNFCCC, CITEPA decembre 2000 - Web site : <a href="http://www.citepa.org">www.citepa.org</a>					

CRF - Common Reporting Format.  
LUCF - Land-Use Change and Forestry.

<sup>(1)</sup> For each omission, give an explanation for the reasons by inserting a comment to the corresponding cell.

*annexe 2 – correspondance*  
*CORINAIR / UNFCCC*

**CORRESPONDENCE BETWEEN 1996 IPCC SOURCE CATEGORIES AND SNAP 97**

This document provides the corresponding allocation of 1996 IPCC source categories into SNAP 97 items.

All codes used in this document refer to :

- CORINAIR / SNAP 97 version 1.0 dated 20/03/1998
- IPCC / Greenhouse Gas Inventory / Reporting Instructions / Revised 1996 Guidelines for National Greenhouse Gas Inventories (Volume 1)

IPCC classification	CORINAIR / SNAP classification
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**1 ENERGY****1 A FUEL COMBUSTION ACTIVITIES**

<b>1 A 1 Energy Industries</b>	
1 A 1 a Public Electricity and Heat Production	01 01 Public power (01.01.01 to 01.01.05) 01 02 District heating plants (01.02.01 to 01.02.05)
1 A 1 b Petroleum refining	01 03 Petroleum refining plants (01.03.01 to 01.03.06)
1 A 1 c Manufacture of Solid fuels and Other Energy Industries	01 04 Solid fuel transformation plants (01.04.01 to 01.04.07) 01 05 Coal mining, oil / gas extraction, pipeline compressors (01.05.01 to 01.05.05)
<b>1 A 2 Manufacturing Industries and Construction</b>	
1 A 2 a Iron and Steel	03 01 (b) Manuf. indus. combust. in boilers, gas turbines and stationary engines (03.01.01 to 03.01.06) 03 02 03 Blast furnace cowpers 03 03 01 Sinter and pelletizing plants 03 03 02 Reheating furnaces steel and iron 03 03 03 Gray iron foundries
1 A 2 b Non-ferrous Metals	03 01 (b) Manuf. indus. combust. in boilers, gas turbines and stationary engines (03.01.01 to 03.01.06) 03 03 04 to 03 03 09 Primary and secondary Pb/Zn/Cu production 03 03 10 Secondary Aluminium production 03 03 22 to 03 03 24 Alumina, Magnesium and Nickel production
1 A 2 c Chemicals	03 01 (b) Manuf. indus. combust. in boilers, gas turbines and stationary engines (03.01.01 to 03.01.06)
1 A 2 d Pulp, Paper and Print	03 01 (b) Manuf. indus. combust. in boilers, gas turbines and stationary engines (03.01.01 to 03.01.06) 03 03 21 Paper-mill industry (drying processes)
1 A 2 e Food Processing, Beverages and Tobacco	03 01 (b) Manuf. indus. combust. in boilers, gas turbines and stationary engines (03.01.01 to 03.01.06)
1 A 2 f Other	03 01 (b) Manuf. indus. combust. in boilers, gas turbines and stationary engines (03.01.01 to 03.01.06) 03 02 04 Plaster furnaces 03 02 05 Other furnaces 03 03 11 to 03 03 20 Cement, Lime, Asphalt concrete, Glass, Mineral wool, Bricks and Tiles, Fine Ceramic materials 03 03 25 Enamel production 03 03 26 Other process with contact 08 08 Other mobile and machinery/Industry

(b) When relevant economic sector split data are available in CORINAIR/NAD module, data can be allocated to sub-categories a to f.

IPCC classification	CORINAIR / SNAP classification	
<b>1 A 3 Transport</b>		
1 A 3 a Civil Aviation		
i International (c)	08 05 02	Internat. airport traffic (LTO cycles - <1000 m)
	08 05 04	International cruise traffic (>1000 m)
ii Domestic	08 05 01	Domestic airport traffic (LTO cycles - <1000 m)
	08 05 03	National cruise traffic (>1000 m)
1 A 3 b Road Transportation	07 01	Passenger cars (07.01.01 to 07.01.03)
	07 02	Light duty vehicles < 3.5 t (07.02.01 to 07.02.03)
	07 03	Heavy duty vehicles > 3.5 t and buses (07.03.01 to 07.03.03)
	07 04	Mopeds and Motorcycles < 50 cm <sup>3</sup>
	07 05	Motorcycles > 50 cm <sup>3</sup> (07.05.01 to 07.05.03)
	07 06	Gasoline evaporation
1 A 3 c Railways	08 02	Railways (08.02.01 to 08.02.03)
1 A 3 d Navigation		
i International Marine (c)	08 04 04	International sea traffic (internat. bunkers)
ii National navigation	08 04 02	National sea traffic within EMEP area
	08 03 01 to 08 03 04	Inland waterways
1 A 3 e Other	08 10	Other mobile sources and machinery
	01 05 06	Pipeline compressors
<b>1 A 4 Other Sectors</b>		
1 A 4 a Commercial / Institutional	02 01	Commercial and institutional plants (02.01.01 to 02.01.06)
1 A 4 b Residential	02 02	Residential plants (02.02.01 to 02.02.05)
	08 09	Household and gardening
1 A 4 c Agriculture / Forestry / Fishing	02 03	Plants in agriculture, forestry and aquaculture (02.03.01 to 02.03.05)
	08 04 03	National fishing
	08 06	Agriculture
	08 07	Forestry
<b>1 A 5 Other</b>		
1 A 5 a Stationary	02 01	Commercial and institutional plants (02.01.01 to 02.01.06) (military only)
1 A 5 b Mobile	08 01	Military

**1 B FUGITIVE EMISSIONS FROM FUELS**

<b>1 B 1 Solid fuels</b>		
1 B 1 a Coal Mining	05 01	Extraction and 1st treatment of solid fossil fuels (05.01.01 to 05.01.03)
1 B 1 b Solid fuel transformation	04.02.01	Coke oven (door leakage and extinction)
	04 02 04	Solid smokeless fuel
1 B 1 c Other		
<b>1 B 2 Oil and natural gas</b>		
1 B 2 a Oil	04 01	Processes in petrol. indust. (04.01.01 to 04.01.05)
	05 02	Extraction, 1st treatment and loading of liquid fossil fuels (05.02.01 to 05.02.02)
	05 04	Liquid fuel distribution (except gasoline distribution) (05.04.01 to 05.04.02)
	05 05	Gasoline distribution (05.05.01 to 05.05.03)
1 B 2 b Natural gas	05 03	Extraction, 1st treat. and loading of gaseous fossil fuels (05.03.01 to 05.03.03)
	05 06	Gas distribution networks (05.06.01 to 05.06.02)
1 B 2 c Venting and flaring	09.02.03	Flaring in oil refinery
	09.02.06	Flaring in oil and gas extraction

(c) not to be included in national total, but to be reported separately

IPCC classification	CORINAIR / SNAP classification
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**2 INDUSTRIAL PROCESSES****2 A MINERAL PRODUCTS**

2 A 1	Cement Production	04 06 12	Cement (decarbonizing)
2 A 2	Lime Production	04 06 14	Lime (decarbonizing)
2 A 3	Limestone and Dolomite Use	04 06 18	Limestone and Dolomite Use
2 A 4	Soda Ash Production and use	04 06 19	Soda Ash Production and Use
2 A 5	Asphalt Roofing	04 06 10	Roof covering with asphalt materials
2 A 6	Road Paving with Asphalt	04 06 11	Road paving with asphalt
2 A 7	Other	04 06 13	Glass (decarbonizing)
		04 06 15	Batteries manufacturing
		04 06 16	Extraction of mineral ores
		04 06 17	Other (includ. asbestos products manufacturing)

**2 B CHEMICAL INDUSTRY**

2 B 1	Ammonia Production	04 04 03	Ammonia
2 B 2	Nitric Acid Production	04 04 02	Nitric acid
2 B 3	Adipic Acid Production	04 05 21	Adipic acid
2 B 4	Carbide Production	04 04 12	Calcium carbide production
2 B 5	Other	04 04 01	Sulfuric acid
		04 04 04 to 04 04 06	Ammonium sulphate / nitrate / phosphate
		04 04 07 and 04 04 08	NPK fertilisers, Urea
		04 04 09 to 04 04 11	Carbon black, Titanium dioxide, Graphite
		04 04 14	Phosphate fertilisers
		04 04 15	Storage and handling of inorganic products
		04 04 16	Other process in inorganic chemical industry
		04 05	Processes in organic chemical industry except adipic acid (04.05.01 to 04.05.20, 04.05.22 to 04.05.26 and 04.05.34)

**2 C METAL PRODUCTION**

2 C 1	Iron and Steel Production	04 02 02	Blast furnace charging
		04 02 03	Pig iron tapping
		04 02 05 to 04 02 10	Furnace steel plant, Rolling mills, Sinter and pelletizing plants (except combustion), Other
2 C 2	Ferroalloys Production	04 03 02	Ferro alloys
2 C 3	Aluminium production	04 03 01	Aluminium production (electrolysis)-except SF6
2 C 4	SF6 Used in Aluminium and Magnesium Foundries	03 03 10	Secondary aluminium production
		04 03 01	Aluminium production (electrolysis)-SF6 only
		04 03 04	Magnesium production - SF6 only
2 C 5	Other	04 03 03 to 04 03 05	Silicium, Magnesium, Nickel production
		04 03 06	Allied metal manufacturing
		04 03 07	Galvanizing
		04 03 08	Electroplating
		04 03 09	Other processes in non-ferrous industries

**2 D OTHER PRODUCTION**

2 D 1	Pulp and Paper	04 06 01	Chipboard
		04 06 02 to 04 06 04	Paper pulp
2 D 2	Food and Drink	04 06 05 to 04 06 08	Bread, Wine, Beer and spirits

IPCC classification	CORINAIR / SNAP classification
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**2 E PRODUCTION OF HALOCARBONS AND SULPHUR HEXAFLUORIDE**

2 E 1 By-Product Emissions	04 08 01 04 08 04	Halogenated hydrocarbons production - By-products Sulphur hexafluoride production - By-products
2 E 2 Fugitive Emissions	04 08 02 04 08 05	Halogenated hydrocarbons production - Fugitive Sulphur hexafluoride production - Fugitive
2 E 3 Other	04 08 03 04 08 06	Halogenated hydrocarbons production - Other Sulphur hexafluoride production - Other

**2 F CONSUMPTION OF HALOCARBONS AND SULPHUR HEXAFLUORIDE**

2 F 1 Refrigeration and Air Conditioning Equipment	06 05 02	Refrigeration and air conditioning equipment using halocarbons
2 F 2 Foam Blowing	06 05 04	Foam Blowing
2 F 3 Fire Extinguishers	06 05 05	Fire Extinguishers
2 F 4 Aerosols	06 05 06	Aerosol cans
2 F 5 Solvents	06 01 to 06 04	Solvents concerning halocarbons
2 F 6 Other	06 01 to 06 04	Sources concerning SF6
	06 05 07	Electrical equipment
	06 05 08	Other

**2 G OTHER**

	06 05 03	Refrigeration and air conditioning equipment using other products
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**3 SOLVENT AND OTHER PRODUCT USE****3 A PAINT APPLICATION**

	06 01	Paint application (06.01.01 to 06.01.09)
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**3 B DEGREASING AND DRY CLEANING**

	06 02	Degreasing, dry cleaning and electronics (06.02.01 to 06.02.04)
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**3 C CHEMICAL PRODUCTS, MANUFACTURE AND PROCESSING**

	06 03	Chemical products manufacturing or processing (06.03.01 to 06.03.14)
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**3 D OTHER**

	06 04	Other use of solvents and related activities (06.04.01 to 06.04.12)
	06 05 01	Anaesthesia
	06 05 08	Other except for halocarbons and SF6

**4 AGRICULTURE****4 A ENTERIC FERMENTATION**

4 A 1 Cattle		
4 A 1 a Dairy	10 04 01	Dairy cows
4 A 1 b Non-Dairy	10 04 02	Other cattle
4 A 2 Buffalo	10 04 14	Buffalos
4 A 3 Sheep	10 04 03	Ovines
4 A 4 Goats	10 04 07	Goats
4 A 5 Camels and Llamas	10 04 13	Camels
4 A 6 Horses	10 04 05	Horses
4 A 7 Mules and Asses	10 04 06	Mules and asses
4 A 8 Swine	10 04 04 and 10 04 12	Fattening pigs, Sows
4 A 9 Poultry	10 04 08 to 10 04 10	Laying hens, Broilers, Other poultry
4 A 10 Other	10 04 11 and 10 04 15	Fur animals, Other animals

IPCC classification	CORINAIR / SNAP classification
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**4 B MANURE MANAGEMENT**

<b>4 B 1 Cattle</b>		
4 B 1 a Dairy	10 05 01	Manure management of organic compounds - Dairy cows
4 B 1 b Non-Dairy	10 05 02	Manure management of organic compounds - Other cattle
<b>4 B 2 Buffalo</b>	10 05 14	Manure management of organic compounds - Buffalos
<b>4 B 3 Sheep</b>	10 05 05	Manure management of organic compounds - Sheep
<b>4 B 4 Goats</b>	10 05 11	Manure management of organic compounds - Goats
<b>4 B 5 Camels and Llamas</b>	10 05 13	Manure management of organic compounds - Camels
<b>4 B 6 Horses</b>	10 05 06	Manure management of organic compounds - Horses
<b>4 B 7 Mules and Asses</b>	10 05 12	Manure management of organic compounds - Mules and asses
<b>4 B 8 Swine</b>	10 05 03 and 10 05 04	Manure management of organic compounds - Fattening pigs, Sows
<b>4 B 9 Poultry</b>	10 05 07 to 10 05 09	Manure management of organic compounds - Laying hens, Broilers, Other
<b>4 B 10 Anaerobic</b>	10 09 01	Manure management of nitrogen compounds - Anaerobic
<b>4 B 11 Liquid Systems</b>	10 09 02	Manure management of nitrogen compounds - Liquid Systems
<b>4 B 12 Solid Storage and Dry Lot</b>	10 09 03	Manure management of nitrogen compounds - Solid Storage and Dry Lot
<b>4 B 13 Other</b>	10 09 04	Manure management of nitrogen compounds - Other Management
	10 05 10 and 10 05 15	Manure management of nitrogen compounds - Fur animals, Other animals

**4 C RICE CULTIVATION**

<b>4 C 1 Irrigated</b>	10 01 03 and 10 02 03	Rice field with/without fertilisers (e)
<b>4 C 2 Rainfed</b>	10 01 03 and 10 02 03	Rice field with/without fertilisers (e)
<b>4 C 3 Deep Water</b>	10 01 03 and 10 02 03	Rice field with/without fertilisers (e)
<b>4 C 4 Other</b>	10 01 03 and 10 02 03	Rice field with/without fertilisers (e)

(e) Low emissions are expected for European countries and deals mainly with continuously flooded process.

**4 D AGRICULTURAL SOILS**

	10 01	Cultures with fertilizers
	except 10 01 03	(10.01.01, 10.01.02 and 10.01.04 to 10.01.06)
	10 02	Cultures without fertilizers
	except 10 02 03	(10.02.01, 10.02.02 and 10.02.04 to 10.02.06)
	11 05	N <sub>2</sub> O from leakage of N into Wetlands
	11 06	N <sub>2</sub> O from leakage of N into Waters

**4 E PRESCRIBED BURNING OF SAVANNAS**

	No item allocated here (not relevant for Europe)
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IPCC classification	CORINAIR / SNAP classification
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**4 F FIELD BURNING OF AGRICULTURAL WASTES**

4 F 1 Cereals	10 03 01	Cereals
4 F 2 Pulse	10 03 02	Pulse
4 F 3 Tuber and Root	10 03 03	Tuber and Root
4 F 4 Sugar Cane	10 03 04	Sugar Cane
4 F 5 Other	10 03 05	Other

**4 G OTHER**

	10 06 01 to 10 06 04	Use of pesticides and limestone (except CO <sub>2</sub> )
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**5 LAND USE CHANGE AND FORESTRY****5 A CHANGES IN FOREST AND OTHER WOODY BIOMASS STOCKS**

5 A 1 Tropical Forests	11 21 01	Tropical Forests
5 A 2 Temperate Forests	11 21 02	Temperate Forests
5 A 3 Boreal Forests	11 21 03	Boreal Forests
5 A 4 Grasslands/Tundra	11 21 04	Grasslands/Tundra
5 A 5 Other	11 21 05	Other

**5 B FOREST AND GRASSLAND CONVERSION**

5 B 1 Tropical Forests	11 22 01	Tropical Forests
5 B 2 Temperate Forests	11 22 02	Temperate Forests
5 B 3 Boreal Forests	11 22 03	Boreal Forests
5 B 4 Grasslands/Tundra	11 22 04	Grasslands/Tundra
5 B 5 Other	11 22 05	Other

**5 C ABANDONMENT OF MANAGED LANDS**

5 C 1 Tropical Forests	11 23 01	Tropical Forests
5 C 2 Temperate Forests	11 23 02	Temperate Forests
5 C 3 Boreal Forests	11 23 03	Boreal Forests
5 C 4 Grasslands/Tundra	11 23 04	Grasslands/Tundra
5 C 5 Other	11 23 05	Other

**5 D CO<sub>2</sub> Emissions and Removals from Soil**

	10 06 01 to 10 06 04	Use of pesticides and limestone (CO <sub>2</sub> only)
	11 24	CO <sub>2</sub> Emissions from / or removals into soils (except 10.06)

**5 E OTHER**

	11 11 04 to 11 11 17	Managed broadleaf forests
	11 12 04 to 11 12 16	Managed coniferous forests
	11 25	Other

**6 WASTE****6 A SOLID WASTE DISPOSAL ON LAND**

6 A 1 Managed Waste disposal	09 04 01	Managed Waste disposal
6 A 2 Unmanaged Waste Disposal	09 04 02	Unmanaged Waste Disposal
6 A 3 Other	09 04 03	Other

**6 B WASTEWATER HANDLING**

6 B 1 Industrial Wastewater	09 10 01	Waste water treatment in industry
6 B 2 Domestic and Commercial Wastewater	09 10 02	Waste water treatment in residential and commercial sectors
	09 10 07	Latrines
6 B 3 Other		



IPCC classification	CORINAIR / SNAP classification
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**6 C WASTE INCINERATION**

	09 02 01 and 09 02 02	Incineration of municipal/industrial wastes
	09 02 04	Flaring in chemical industry
	09 02 05	Incineration of sludges from wastewater
	09 02 07	Incineration of hospital wastes
	09 02 08	Incineration of waste oil
	09 07	Open burning of agricultural wastes (not on field)
	09 09	Cremation (09.09.01 to 09.09.02)

**6 D OTHER WASTE**

	09 10 03	Sludge spreading
	09 10 05	Compost production from waste
	09 10 06	Biogas production
	09 10 08	Other production of fuel (refuse derived fuel,...)

**7 OTHER**

	05 07	Geothermal energy extraction
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**SNAP ITEMS NOT ALLOCATED IN IPCC**

07 07	Automobile tyre and brake wear
04 04 13	Chlorine
11 01	Non-managed broadleaf forests (11.01.04 to 11.01.11 and 11.01.15 to 11.01.17)
11 02	Non-managed coniferous forests (11.02.04 to 11.02.12 and 11.02.15 to 11.02.16)
11 03	Forest fires (11.03.01 and 11.03.02)
11 04	Natural grassland (11.04.01 to 11.04.05)
11 05	Wetlands (marshes - swamps) (11.05.01 to 11.05.06) except for N <sub>2</sub> O from leakage of N into wetlands
11 06	Waters (11.06.01 to 11.06.07) except for N <sub>2</sub> O from leakage of N into waters
11 07	Animals (11.07.01 to 11.07.03)
11 08	Volcanoes
11 09	Gas seeps
11 10	Lightning

*annexe 3 - aperçu méthodologique  
du calcul des émissions*

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## 1 - INTRODUCTION

La connaissance des quantités de certaines substances rejetées dans l'atmosphère est une étape nécessaire et fondamentale à toute politique de protection de l'Environnement qui s'intéresse aux problèmes actuels comme l'acidification, la dégradation de la qualité de l'air, le réchauffement global et les modifications du climat, l'appauvrissement de la couche d'ozone stratosphérique, etc.

Cette quantification que l'on dénomme usuellement "inventaire d'émission" s'effectue à partir de règles spécifiques qui varient éventuellement d'un inventaire à l'autre.

Cet état de fait présente l'énorme désavantage de ne pouvoir disposer de données comparables. A l'échelon international des travaux d'harmonisation sont engagés depuis plusieurs années entre DIVERS ORGANISMES INTERNATIONAUX (Commission Européenne, Commission Economique pour l'Europe des Nations Unies, Groupe Intergouvernemental sur l'Evolution du Climat [GIEC, IPCC en anglais], EUROSTAT, Agence Internationale de l'Energie, etc.). Ces travaux se poursuivent conjointement à l'amélioration des méthodologies permettant d'estimer les rejets de divers types d'émetteurs.

Pour tenir compte des changements de spécifications et de l'amélioration dans la connaissance des phénomènes sources de pollution atmosphérique, les résultats des inventaires d'émissions doivent donc être régulièrement révisés y compris rétrospectivement afin de maintenir des séries cohérentes.

Le CITEPA qui remplit la fonction de Centre National de Référence a développé un système d'inventaires dans le cadre du programme CORALIE (COordination de la RéALisation des Inventaires d'Emissions) avec le concours financier du Ministère chargé de l'Aménagement du Territoire et de l'Environnement (MATE).

Ce système d'inventaire est à la base fortement inspiré des principes de CORINAIR (voir encart suivant). Il vise à optimiser les efforts importants de collecte, de traitement et de restitution des informations, d'autant que de multiples demandes d'inventaires ayant chacune des spécifications différentes doivent être satisfaites (voir figure 1).

Les principes de la méthodologie employée sont décrits de manière synthétique dans les sections qui suivent.

### *Inventaire d'émission*

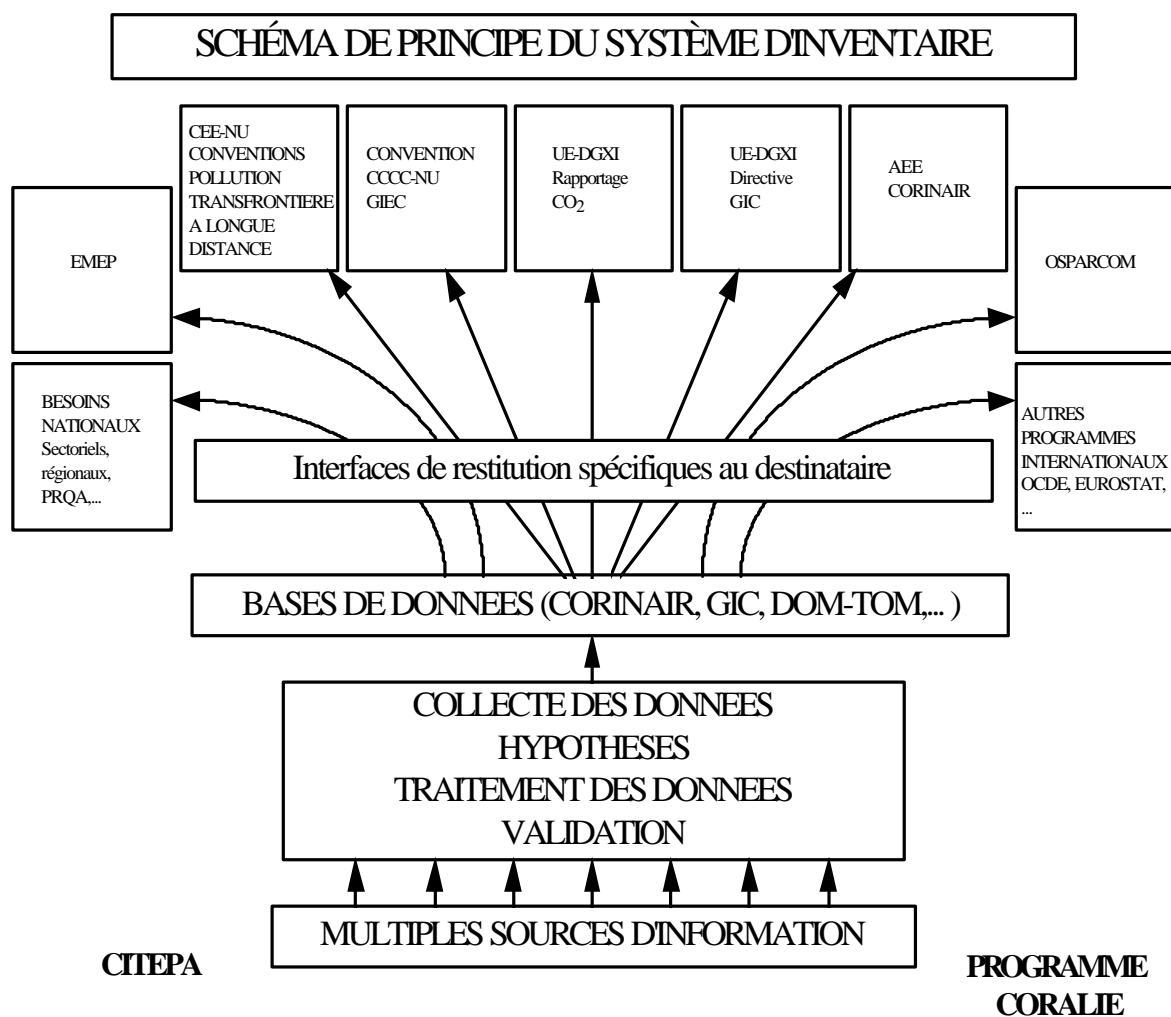
C'est la description qualitative et quantitative des rejets de certaines substances dans l'atmosphère issus de sources anthropiques et/ou naturelles.

Un inventaire d'émission doit présenter les qualités suivantes :

- complet : toutes les sources doivent être prises en compte et les émissions renseignées,
- cohérence : la série obtenue sur la période étudiée doit être homogène, impliquant des méthodes identiques et des données homogènes
- comparabilité : l'inventaire doit être réalisé au moyen d'une méthodologie reconnue et documentée, afin d'assurer la comparabilité des résultats,
- traçabilité : les informations fournies doivent être suffisamment détaillées pour permettre à un tiers de reconstruire les émissions.

Ces qualités facilitent les opérations de validation et de vérification qui consistent à respectivement vérifier que l'inventaire a été réalisé conformément à la méthodologie annoncée et s'assurer que les émissions obtenues reflètent, à peu près bien la réalité.

FIGURE 1



### ***CORINAIR***

La méthodologie CORINAIR a été initialement développée dans le cadre du programme CORINE lancé par la Commission des Communautés Européennes en 1985. Son nom provient de la contraction du nom de ce programme et du domaine d'intérêt relatif à la réalisation d'inventaires d'émissions de polluants dans l'air (CORINE-AIR).

Ces travaux se sont ensuite poursuivis à l'initiative du Comité chargé de préparer la mise en place de l'Agence Européenne de l'Environnement, puis de cette dernière à part entière dès qu'elle fut opérationnelle en 1994.

Pour assurer cette tâche, l'Agence Européenne de l'Environnement s'est entourée d'un Centre Thématique Européen des Emissions dans l'Air qui comporte plusieurs institutions : UBA (Allemagne - chef de projet), AEA Technology (Royaume-Uni), RISØ (Danemark), ENEA (Italie), CITEPA (France), UBA (Autriche), TNO (Pays-Bas), POSEIDON (Grèce). Le Centre Thématique des Emissions dans l'Air est en charge du développement du système CORINAIR dont de nombreux éléments constituent des "standards" européens.

Trois inventaires CORINAIR ont été réalisés :

- CORINAIR 85 : SO<sub>2</sub>, NO<sub>x</sub>, COV au sein des 12 Etats membres de la Communauté Européenne.
- CORINAIR 90 : SO<sub>2</sub>, NO<sub>x</sub>, COVNM, CH<sub>4</sub>, CO, CO<sub>2</sub>, N<sub>2</sub>O, NH<sub>3</sub> pour 29 pays d'Europe.
- CORINAIR 94 : 27 substances (9 métaux lourds et 10 composés organiques persistants ajoutés à la liste précédente) pour une vingtaine de pays.

Les trois inventaires CORINAIR ci-dessus ont une résolution géographique fine et sont basés sur des catégories de sources assez détaillées.

La méthodologie CORINAIR permet de réaliser des inventaires compatibles avec les spécifications requises par la CEE-NU, l'EMEP, la CCCC-NU, OSPARCOM, le Mécanisme Communautaire de surveillance du CO<sub>2</sub>, etc.

Actuellement l'inventaire CORINAIR (rebaptisé CORE INventory AIR) s'identifie avec les inventaires annuels réalisés pour les protocoles de la convention des Nations-unies sur la pollution transfrontalière à longue distance au niveau national et des travaux sont également en cours dans le cadre des inventaires d'émission intégrés.

## **2 – PRINCIPES ET DEFINITIONS**

Cette section présente la méthodologie suivie et passe en revue les principales hypothèses et données utilisées après avoir rappelé les spécifications des inventaires.

### **2.1 / méthodologie**

La méthodologie CORINAIR qui s'est développée depuis le milieu des années 80, vise à obtenir des inventaires offrant les qualités fondamentales indispensables : cohérents, complets, comparables, transparents (voir encart dans la section précédente). Elle se base sur les éléments décrits brièvement ci-après.

#### **2.1.1 / substances étudiées**

Les substances étudiées varient selon les inventaires. Au total, 26 substances sont actuellement étudiées, à savoir les 8 substances SO<sub>2</sub>, (SO<sub>2</sub> + SO<sub>3</sub>), NO<sub>x</sub> (NO + NO<sub>2</sub>), COVNM (Composés Organiques Volatils totaux non méthaniques), CH<sub>4</sub>, CO, CO<sub>2</sub>, N<sub>2</sub>O, NH<sub>3</sub>, auxquelles s'ajoutent les trois gaz à effet de serre introduits à Kyoto (HFC, PFC et SF<sub>6</sub>), 9 métaux lourds, et 6 produits organiques persistants (POP). Les poussières totales et les particules fines sont en cours d'intégration.

Toutes les émissions sont estimées en masse de substance sous la forme chimique citée (exemple  $\text{NH}_3$  en tonnes de  $\text{NH}_3$  et non de N). Cependant, il y a lieu de préciser les points suivants :

- Le terme  $\text{NO}_x$  couvre exclusivement le monoxyde et le dioxyde d'azote. Les émissions sont exprimées en équivalent  $\text{NO}_2$ . Le  $\text{N}_2\text{O}$ , autre composé oxygéné de l'azote, est considéré séparément.
- Sous l'acronyme COVNM, les composés organiques volatils sont considérés globalement, le méthane étant exclus; ce dernier étant comptabilisé séparément. Aucun composé particulier n'est différencié à l'exception des produits organiques persistants cités ci-dessus. Les émissions correspondent à la somme des émissions de corps chimiquement différents. Le système d'inventaire comporte une spéciation des COVNM en environ 250 espèces ou familles de composés qui permet d'estimer des émissions de ces composés.
- Par convention, les émissions de  $\text{CO}_2$  sont exprimées en  $\text{CO}_2$  ultime, c'est-à-dire que le carbone émis sous d'autres formes chimiques ( $\text{CO}$ ,  $\text{CH}_4$ , COVNM, etc.) est assimilé à du  $\text{CO}_2$  à quelques exceptions près.

Par ailleurs, on notera que, toujours par convention, le  $\text{CO}_2$  total est présenté sous la forme d'émissions nettes, c'est-à-dire que les puits de  $\text{CO}_2$  (par exemple, la photosynthèse) viennent en déduction des émissions. A cet effet, les inventaires distinguent les sources et les puits. Cependant, certains phénomènes naturels supposés être en équilibre quant au bilan de  $\text{CO}_2$ , comme les respirations humaine et animale, ne sont pas inclus dans l'inventaire bien qu'ils représentent des flux de  $\text{CO}_2$  très significatifs au regard des émissions totales nettes (environ 1/3).

Le niveau de détail considéré dans le système permet de produire des indicateurs relatifs à des synergies entre substances tels que l'indicateur acide équivalent (Aeq) pour  $\text{SO}_2$ ,  $\text{NO}_x$  et  $\text{NH}_3$  et le pouvoir de réchauffement global (PRG) pour  $\text{CO}_2$ ,  $\text{CH}_4$ ,  $\text{N}_2\text{O}$ , HFC, PFC,  $\text{SF}_6$ .

### 2.1.2 / nomenclatures des sources émettrices

Les activités anthropiques ou naturelles à l'origine des rejets de diverses substances dans l'atmosphère sont identifiées dans une nomenclature de référence appelée SNAP (Selected Nomenclature for Air Pollution). Cette nomenclature qui constitue un standard européen, voire international, évolue dans le temps en fonction des substances retenues par le programme CORINAIR de l'Agence Européenne de l'Environnement et des améliorations apportées.

Actuellement et dans le cas de l'inventaire faisant l'objet du présent rapport, la nomenclature utilisée est la SNAP 97 qui couvre les 30 substances couvertes par CORINAIR (voir plus loin).

Bien que ne prétendant pas à l'exclusivité, la SNAP 97 présente une liste détaillée d'activités (près de 400 items pour la résolution la plus fine). Quelques items, "autres" permettent d'inclure le cas échéant des activités supplémentaires (activités omises ou plus généralement négligées du fait de leurs très faibles contributions).

La SNAP 97 est structurée en trois niveaux dont certains constituent le format de rapport des données d'inventaires.

Dans le cas des activités mettant en œuvre une combustion, la définition de l'activité émettrice est généralement affinée en distinguant les différents combustibles utilisés. La nomenclature correspondante baptisée NAPFUE (Nomenclature for Air Pollution of FUEls) prévoit dans sa version 1994, 59 types de combustibles différents.

Le système utilisé prévoit une décomposition de chaque activité le cas échéant. Cette opportunité est utilisée, par exemple, pour différencier certains procédés, apprécier des tailles d'équipements, etc.. Pour ce faire, des rubriques peuvent être ajoutées à l'activité lors de la construction de l'inventaire.

La combinaison de ces trois composantes (activité, combustible, rubrique) qui est détaillée à la section 1.6, constitue l'ensemble des activités émettrices élémentaires qui peut donc comporter plusieurs milliers d'éléments selon le degré de résolution retenu pour l'inventaire. Actuellement, pour les inventaires relatifs à la France on dénombre de l'ordre de 500 activités élémentaires.

### 2.1.3 / types de sources

Plusieurs catégories de sources de rejets atmosphériques sont considérées par la méthodologie d'inventaire. Toutefois, selon les cas ces catégories peuvent exister ou non.

- **Sources Ponctuelles**  
Une source ponctuelle correspond typiquement à une installation fixe telle qu'une usine.
- **Sources linéaires**  
Elles sont essentiellement constituées par les principaux axes de communication (routier, fluvial, maritime, etc.). Elles sont donc le plus souvent relatives aux sources mobiles et occasionnellement aux sources fixes (gazoduc, oléoduc, etc.).
- **Grandes Sources Ponctuelles (GSP)**  
Il s'agit des sources fixes canalisées ou diffuses dont les rejets potentiels ou effectifs dans l'atmosphère excèdent certains seuils.  
Ces seuils constituent une spécification propre à chaque inventaire et résultent de multiples paramètres (objectifs de l'inventaire, zone étudiée, substances considérées, ressources et délai consacrés à l'inventaire).
- **Grandes Sources Linéaires (GSL)**  
De manière analogue aux GSP, elles regroupent des tronçons de route à fort trafic dont les niveaux d'émissions sont comparables à ceux atteints par des émetteurs ponctuels (autoroute, route nationale, etc.).
- **Sources surfaciques (SUR)**  
Cette catégorie couvre, le solde des sources constitué par, d'une part, les sources fixes non incluses dans la catégorie des Grandes Sources Ponctuelles et, d'autre part, les sources fixes et mobiles non incluses dans les Grandes Sources Linéaires. On y trouve typiquement la circulation urbaine diffuse, l'habitat, les espaces cultivés, etc.).

Cette classification vise à renforcer la fiabilité des estimations et procure des informations plus appropriées à certains besoins (par exemple la modélisation de la qualité de l'air). En effet, pour certaines substances comme le SO<sub>2</sub> on observe qu'une part importante des émissions provient d'un nombre limité de sources. C'est pourquoi, la méthodologie suivie pour la réalisation de certains inventaires est basée sur une approche individualisée des Grandes Sources Ponctuelles et/ou Linéaires.

### 2.1.4 / couverture et résolution spatiale

Cette spécification varie d'un inventaire à l'autre. Dans le cas de la France on dénombre au moins trois cas différents obtenus par combinaison des entités « métropole », « départements d'outre-mer (DOM) » et « Territoires d'outre-mer (TOM) » selon la couverture géographique propre à chaque inventaire.

La résolution spatiale porte généralement :

- d'une part, globalement sur la France métropolitaine et dans certains cas l'outre-mer pour satisfaire les demandes annuelles générales.
- d'autre part, sur une résolution correspondant à des entités administratives plus petites (régions, départements, arrondissements, unités urbaines, zones de 50 x 50 km<sup>2</sup> voire moins, etc.). Les inventaires de résolution spatiale plus élevée ne sont généralement réalisés que périodiquement (par exemple tous les cinq ans en ce qui concerne l'inventaire pour l'EMEP<sup>1</sup>).

### 2.1.5 / étendue et résolution temporelle

Sauf cas particulier, les inventaires sont établis sur la base d'une année civile sans distinction de périodes particulières (saison, semaine, etc.). Des profils temporels sont parfois disponibles pour évaluer la répartition des émissions dans le temps.

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<sup>1</sup> European Monitoring and Evaluation Programme



## 2.2 / principes méthodologiques

Les émissions sont estimées pour chacune des activités émettrices élémentaires retenues pour l'inventaire (cf. section 2.1.2) en considérant séparément s'il y a lieu les différentes catégories de sources (surfaciques, grandes sources ponctuelles et grandes sources linéaires).

Les émissions d'une activité donnée sont exprimées par la formule générale et schématique suivante :

$$E_{s,a,t} = A_{a,t} \times F_{s,a} \quad (1)$$

avec      E : émission relative à la substance "s" et à l'activité "a" pendant le temps "t"  
             A : quantité d'activité relative à l'activité "a" pendant le temps "t"  
             F : facteur d'émission relatif à la substance "s" et à l'activité "a".

Pour l'ensemble des activités, les émissions totales sont exprimées par la formule suivante :

$$E_{s,t} = \sum_{a=1}^{a=n} E_{s,a,t}$$

avec      n : nombre d'activités émettrices prises en compte.

Il est évident que si la valeur de n diffère d'un inventaire à un autre (ce qui est souvent le cas), les émissions totales peuvent ne plus être comparables (inventaires à champs non constants) et les contributions relatives des sources varier.

Les termes  $A_{a,t}$  et  $F_{s,a}$  dans la formule (1) sont en fait déterminés pour des combinaisons plus fines de l'activité associant de manière générale une opération, une technologie et un produit.

Exemples :

fabriquer de la chaleur au moyen d'une chaudière de 50 MW équipée d'un brûleur bas NOx fonctionnant au fioul lourd  
 se déplacer en voiture particulière équipée d'un moteur à essence de 2 l de cylindrée.

Cette description est illustrée par la formule ci-après pour une substance, un intervalle de temps et une entité géographique donnés.

$$E_{s,t,z} = \sum_{a,i,f} \left[ A_{a,i,f,t,z} \times \sum_p \left[ F_{s,a,i,f,p} \times P_{a,i,f,p} \right] \right] \quad (2)$$

avec :

A : quantité d'activité  
 F : facteur d'émission,  
 P : fraction de secteur, d'activité, de combustible et de procédé,  
 a : indice relatif au type de source,  
 f : indice relatif au type de combustible  
 i : indice relatif au secteur économique  
 p : indice relatif au procédé,  
 s : indice relatif à la substance,  
 t : indice relatif à l'intervalle de temps,  
 z : indice relatif à l'entité géographique.

Dans certains cas, les émissions présentent des relations complexes avec de nombreux paramètres caractéristiques et il est alors nécessaire de recourir à des modèles spécifiques pour obtenir une bonne représentation des phénomènes. C'est le cas du trafic routier, des émissions biogènes, etc.

In fine, il sera toujours possible de se ramener à une expression de la forme de l'équation (1) en rapportant les émissions à un seul paramètre relatif à l'activité. Cette représentation d'une simplicité extrême, qui masque la structure réelle et éventuellement complexe des émissions de l'activité, peut conduire à des interprétations erronées.

Les Grandes Sources (Ponctuelles et Linéaires) sont étudiées individuellement ; on bénéficie des émissions de certaines substances qui sont mesurées en permanence ou à intervalles réguliers sur certaines installations. D'autres méthodes telles que des corrélations entre les paramètres caractéristiques d'un procédé et les émissions, ainsi que des bilans permettent de connaître les rejets spécifiques de la source considérée pour certaines substances. Les formules (1) et (2) ne sont alors utilisées qu'en tout ou partie.

Pour certaines substances ( $\text{SO}_2$ ,  $\text{NO}_x$ ,  $\text{CO}$ ,  $\text{CO}_2$ , etc.), une part importante des émissions est liée à l'utilisation de l'énergie.

Pour l'application de la formule (2), on peut expliciter les rejets en exprimant les émissions totales d'une source comme étant égales à la somme de deux émissions distinctes (en pratique, réelles ou virtuelles selon les cas).

$$E = E_1 + E_2$$

avec :

$E_1$  : émission liée à la combustion d'énergie fossile et de biomasse.

$E_2$  : émission liée à d'autres phénomènes se rapportant à l'emploi de matières premières, à des réactions, à des opérations diverses (évaporation, broyage, réaction chimique, etc.).

Selon les valeurs prises respectivement par  $E_1$  et  $E_2$ , six cas sont à considérer (voir figure 2) :

$E_1 = 0 \text{ et } E_2 < 0$	procédé constituant un puits (émission négative, comme la photosynthèse pour le $\text{CO}_2$ ).
$E_1 > 0 \text{ et } E_2 < 0$	procédé avec combustion et rétention.
$E_1 = E_2 = 0$	procédé ne contribuant pas à la pollution atmosphérique ou dont la contribution est négligeable.
$E_1 = 0 \text{ et } E_2 > 0$	procédé sans rapport avec l'utilisation de l'énergie ; les émissions proviennent de réactions chimiques, d'actions mécaniques comme le broyage, d'évaporations de produits, etc.
$E_1 > 0 \text{ et } E_2 = 0$	combustion dans des procédés où il n'y a pas contact entre la flamme ou les produits de combustion et un produit tiers (e.g. combustion sous chaudière, moteurs, etc.).
$E_1 \text{ et } E_2 > 0$	procédé impliquant une combustion associée à d'autres phénomènes, notamment ceux où il y a contact entre une matière première ou un produit et une flamme ou les produits de la combustion (par exemple fours).

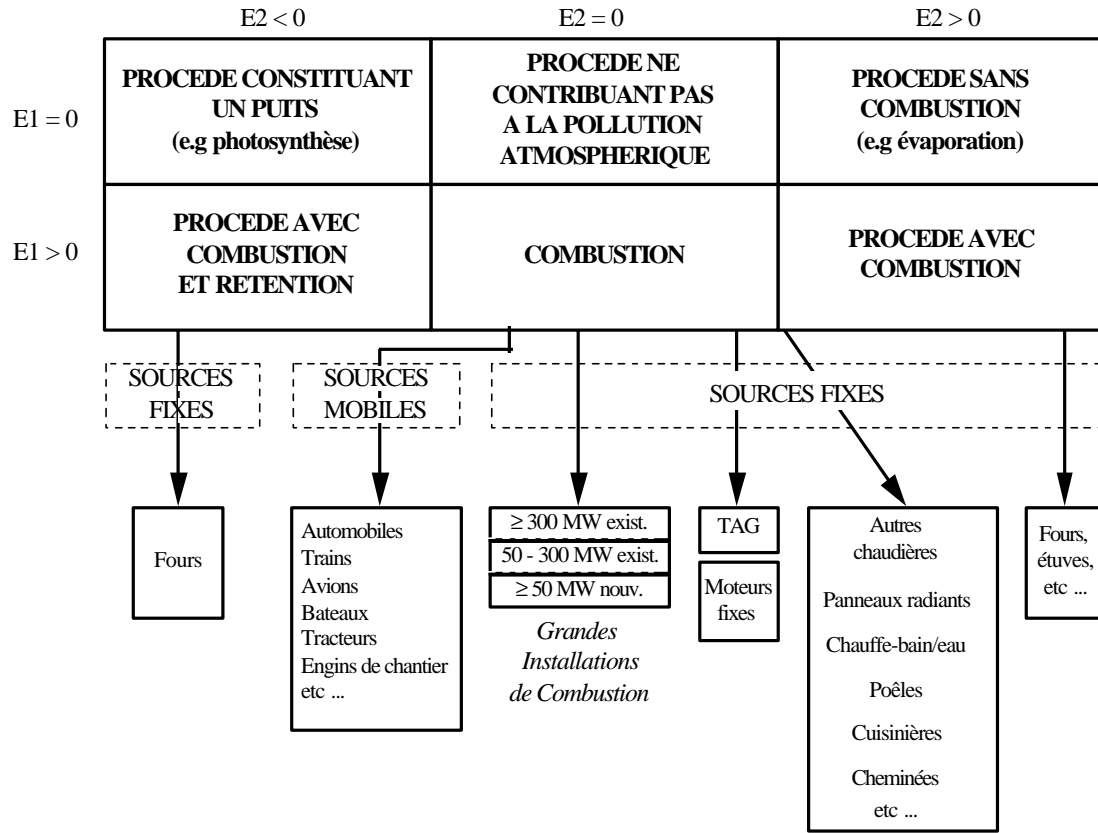
Des différenciations plus fines conduisent à une caractérisation de certaines sources (cf. fig. 2).

La formule (2) s'applique, en principe, à toute entité géographique  $z$ .

L'accessibilité à la quantité d'activité  $A_{a,i,f,t}$  est d'autant plus difficile que la zone géographique se restreint : le plus souvent l'information recherchée n'existe pas à ce niveau ou est confidentielle.

Il y a lieu de remarquer que la quantité d'informations à collecter et à gérer ainsi que l'incertitude relative à l'information élémentaire augmentent considérablement avec la résolution spatio-temporelle.

Figure 2 : Typologie des sources au regard de l'utilisation de l'énergie



Il est suppléé à l'indisponibilité de certaines informations à différents niveaux géographiques (donnée inexistante, confidentialité, etc.), en établissant une relation avec des paramètres socio-économiques disponibles (population, emploi, superficie, etc.). La quantité d'activité d'une entité géographique de niveau  $n + 2$  est estimée à partir de la quantité d'activité connue ou estimée au niveau  $n + 1$  (qui peut elle-même être déduite du niveau  $n$ , etc.). Cette dernière est répartie au moyen des relations suppléantes établies spécifiquement pour cette activité selon les formules suivantes (cf. figure 3).

Pour une entité géographique  $z_n$  de niveau  $N$ , constituée de  $j$  entités géographiques  $z_{n+1}$  de niveau plus fin  $N + 1$  on a :

$$A_{a,i,f,z_n} = \sum_j A_{a,i,f,z_{n+1}}$$

$$A_{a,i,f,z_{n+1}^i} = K_{z_{n+1}^i} \times \left( A_{a,i,f,z_n} - \sum_j A_{a,i,f,z_{n+1}^c} \right)$$

avec :

- $z_i$  entité géographique pour laquelle la quantité d'activité relative à  $a,i,f$  est inconnue.
- $z^c$  entité géographique pour laquelle la quantité d'activité relative à  $a,i,f$  est connue.
- $j$  nombre d'entités géographiques de niveau  $n + 1$  pour lesquelles la quantité d'activité relative à  $a,i,f$  est connue.

et :

$$K_{zi_{n+1}} = \frac{a_a \times P_{1,a,zi_{n+1}} + b_a \times P_{2,a,zi_{n+1}} + g_a \times P_{3,a,zi_{n+1}} + \dots}{\sum_{zi_{n+1}} (a_a \times P_{1,a} + b_a \times P_{2,a} + g_a \times P_{3,a} + \dots)}$$

avec :

$P_{1,a}, P_{2,a}, P_{3,a}, \dots$  paramètres socio-économiques associés à l'activité  $a$

$g_a, b_a, g_a, \dots$  coefficients de pondération associés aux paramètres socio-économiques pour l'activité  $a$  avec  $a + b + g = 1$  et  $0 \leq a, b, g \leq 1$

Certains paramètres socio-économiques pouvant eux-mêmes être indisponibles à certains niveaux géographiques, chaque activité peut-être associée à différentes relations suppléantes classées selon un ordre hiérarchique de pertinence.

Le système utilisé jusqu'à présent limite à trois le nombre de paramètres socio-économiques utilisés dans une même relation suppléante. Ceci n'est pas une limite de principe, mais s'avère généralement largement suffisant en pratique.

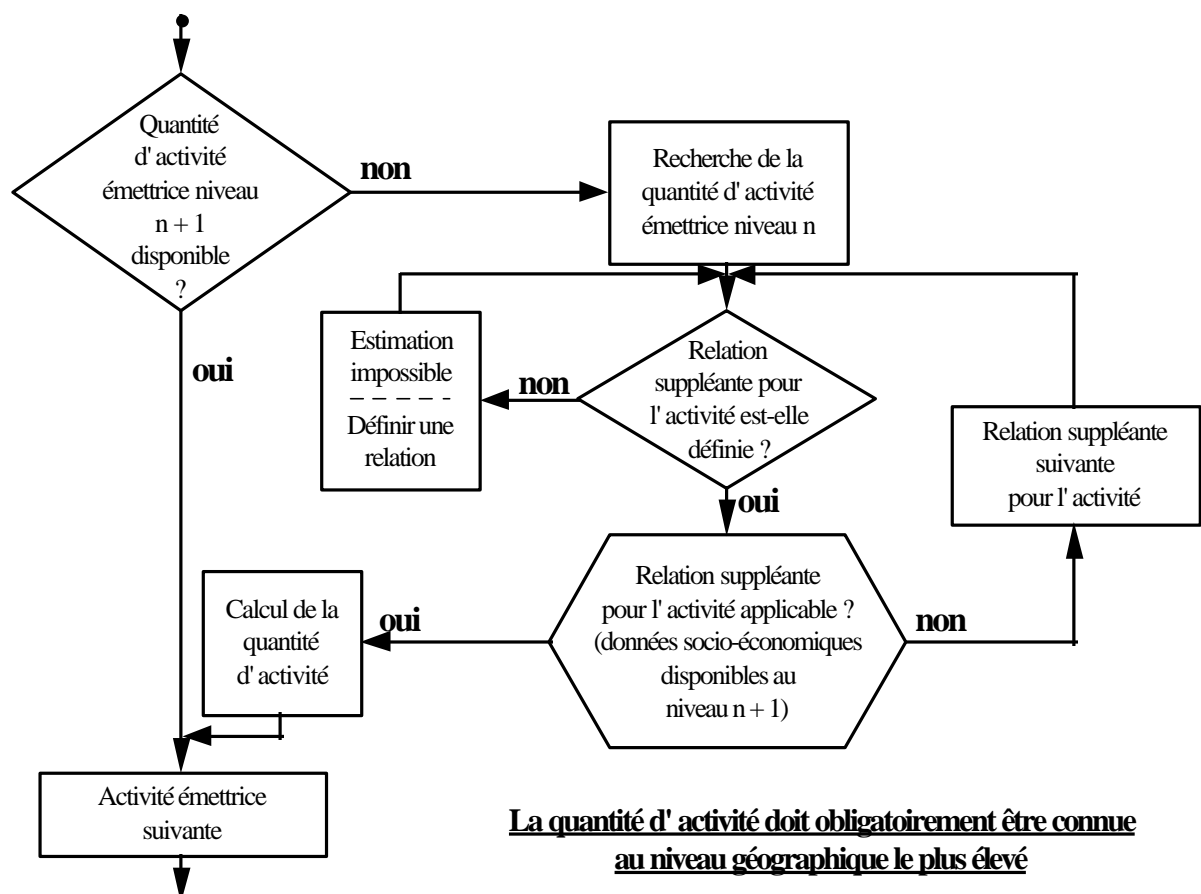
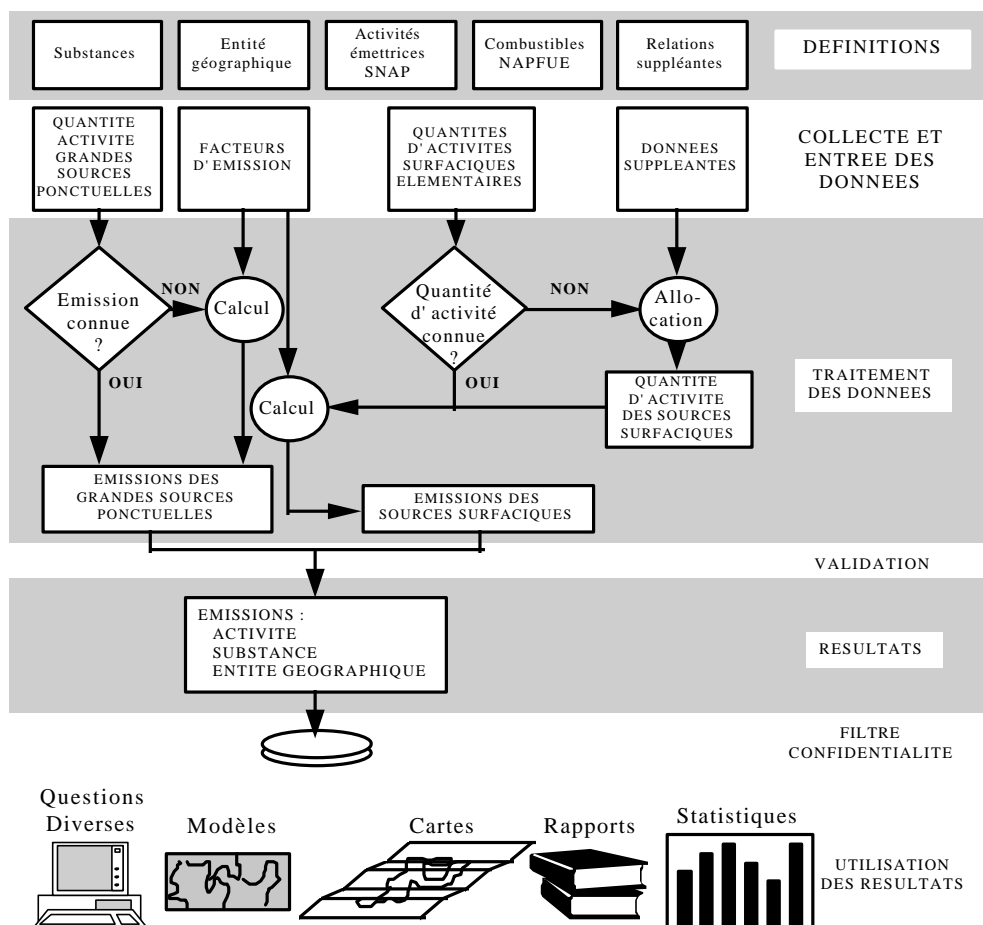


Figure 3 : Estimation des quantités d'activité non disponibles

La figure 4 représente schématiquement l'ensemble du système d'inventaire.

Figure 4 - Principes méthodologiques du système CORINAIR



### 3 – HYPOTHESES, DONNEES DE BASE ET ELEMENTS METHODOLOGIQUES

Cette section présente les principales hypothèses retenues pour construire l'inventaire ainsi que l'origine des sources d'information les plus importantes et fournit des éléments méthodologiques relatifs aux estimations des émissions.

La méthodologie utilisée dans les inventaires d'émissions est dite "**orientée source**". Cela signifie que **les émissions sont localisées géographiquement et par secteurs là où elles sont réellement rejetées**. En conséquence, à titre d'exemple, l'utilisation de l'électricité correspond à une émission nulle, les émissions étant attribuées à l'entité de production.

#### 3.1 / procédés liés à l'utilisation de l'énergie fossile et de la biomasse

Seuls, les combustibles fossiles et la biomasse sont pris en compte au regard des substances étudiées dans le présent inventaire.

L'extraction, la transformation, le transport, la distribution de produits énergétiques et l'utilisation de combustibles fossiles et de la biomasse à des fins énergétiques engendrent des rejets de nombreuses substances dans l'atmosphère et constituent pour nombre d'entre elles une contribution majeure (SO<sub>2</sub>, NOx, CO, CO<sub>2</sub>, métaux lourds, etc.). Avec la méthodologie employée, qui prend en compte à la fois des données individuelles et sectorielles, il est particulièrement important de reconstruire un bilan énergétique en adéquation avec les données nationales officielles établies par l'Observatoire de l'Energie.

Les quantités de combustibles fossiles et de biomasse utilisées dans des installations de combustion sont des données de base indispensables. Une part importante est connue sur une base individuelle par l'intermédiaire de diverses enquêtes (EACEI<sup>2</sup>, taxe sur les émissions atmosphériques, inventaire des Grandes Installations de Combustion, enquête auprès des industriels). Une autre part est disponible pour certains secteurs, certains combustibles, certains équipements, certaines entités géographiques (industrie, chauffage urbain, transports routiers, etc.). Enfin, on dispose du bilan énergétique national de l'Observatoire de l'Energie qui sert de référence. Pour apprécier les pressions sur l'Environnement, il est nécessaire de connaître les consommations d'énergie selon un découpage assez fin des combustibles : en effet, par exemple, le fioul lourd et le gaz de pétrole liquéfié n'émettent pas les mêmes quantités de SO<sub>2</sub>, NOx, COV, CO<sub>2</sub>, etc. rapportées à une même unité d'énergie, que les produits pétroliers dans leur ensemble, lesquelles émissions dépendent aussi du procédé considéré et des éventuels équipements de dépollution voire des conditions opératoires dans certains cas. Toutes ces données sont mises en relation et segmentées, de manière appropriée (cf. figure 5).

L'objectif de l'inventaire étant de fournir une représentation des émissions aussi proche que possible de la réalité, les informations utilisées sont systématiquement des données **non corrigées du climat**, bien que des données corrigées du climat aient par ailleurs un intérêt pour l'étude des évolutions à moyen et long termes.

Les émissions sont déterminées :

- soit au moyen des résultats de mesures en continu ou périodiques effectuées au niveau du rejet des émetteurs, de corrélations ou de bilans spécifiques pour les émetteurs les plus importants et certaines substances (SO<sub>2</sub>, NOx, métaux lourds, etc.),
- soit au moyen de coefficients appelés facteurs d'émissions tenant compte de la nature des procédés mis en œuvre lorsque le cas ci-dessus n'est pas applicable.

##### 3.1.1 / extraction, transport, distribution d'énergie fossile

Pour les Combustibles Minéraux Solides (CMS), les données sont issues du bilan charbonnier. La production nationale de CMS est en régulière diminution. Les bassins encore exploités (Lorraine et Provence notamment ne couvrent qu'une petite partie des besoins, le solde étant assuré par les importations..

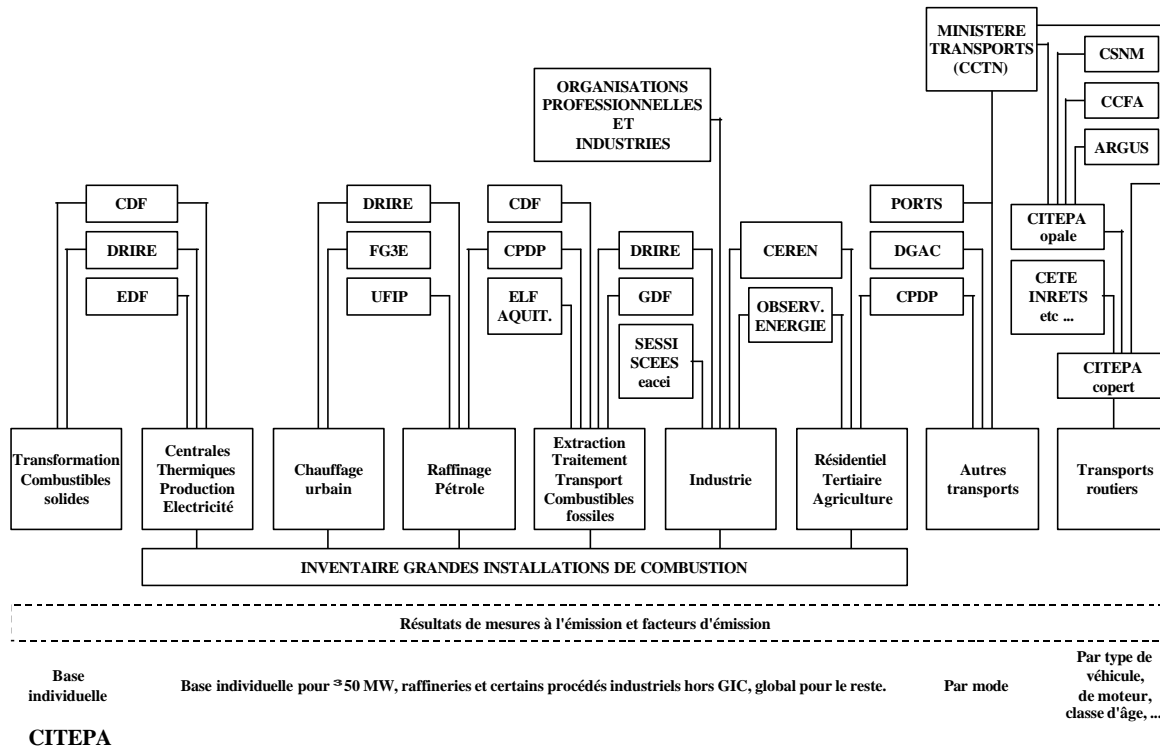
L'extraction et la distribution du charbon des mines grisouteuses est à l'origine d'émissions fugitives de méthane. La part du rejet lors du transport et du stockage chez l'utilisateur final ne fait pas l'objet d'une délocalisation des émissions par défaut de connaissance des circuits et des délais de

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<sup>2</sup> Enquête Annuelle des Consommations d'Energie dans l'Industrie

distribution. En conséquence, la totalité de l'émission de méthane est comptabilisée au lieu d'extraction et le charbon importé est supposé ne plus émettre sur le territoire national, excepté les émissions relatives à la combustion.

Figure 5 : Schéma relationnel des émissions liées à l'utilisation de l'énergie



Pour le pétrole et le gaz, les données proviennent du Comité Professionnel du Pétrole (CPDP) pour ce qui concerne l'extraction. Le transport et la distribution sont basés sur les ventes de certains produits pétroliers et du gaz naturel. Les quantités auto consommées (par exemple dans les stations de compression) sont estimées à partir de données de GdF et GSO.

La quantité de pétrole brut extraite sur le territoire national est marginale comparée à la quantité traitée par les raffineries. Les principaux gisements sont situés dans le Bassin Parisien et en Aquitaine.

La distribution des produits pétroliers et plus particulièrement de l'essence, entraîne des émissions atmosphériques de COV par évaporation (cf. section 2.2). La distribution de carburant couvre toutes les opérations depuis la raffinerie jusqu'au remplissage des véhicules inclus.

Le gaz naturel provient principalement des gisements situés dans le sud-ouest (plus de 90 % de la production nationale) et secondairement du bassin parisien. Cette production ne satisfait que 10% environ de la consommation aussi importe-t-on des quantités importantes de gaz naturel depuis la Russie, les Pays-Bas, l'Algérie. L'extraction, le transport, et la distribution du gaz naturel induisent des rejets de COV significatifs (principalement du méthane). Ces quantités sont cependant faibles au regard de la consommation.

Les émissions sont calculées au moyen de facteurs d'émission ainsi que de données spécifiques à l'extraction du charbon fournies par CdF.

### 3.1.2 / production d'électricité

La totalité de la soixantaine d'installations de production d'électricité située en Métropole et Outre-mer, hors auto producteurs, est recensée individuellement chaque année à l'occasion des inventaires d'émissions. Consommations caractéristiques des combustibles et émissions sont directement utilisées (cf. remarque 1 section 3.1.10).

A l'exception des turbines à gaz et des moteurs fixes qui ne représentent qu'une petite part de la production, toutes les installations constituent des Grandes Installations de Combustion utilisant essentiellement du charbon et du fioul lourd à basse teneur en soufre, voire ponctuellement d'autres combustibles tels que gaz de haut-fourneau, gaz de cokerie, gaz naturel.

Seulement, quelques pour-cent de l'électricité sont produits par la filière thermique classique, la filière nucléaire étant prépondérante en France, et la production hydraulique non négligeable. L'auto production thermique représente environ le quart de la production de la filière thermique classique. Elle est comptabilisée dans le secteur relatif à l'activité principale des établissements producteurs (industrie, chauffage urbain, etc.).

### 3.1.3 / chauffage urbain

Caractéristiques et consommations des installations les plus importantes sont relevées et utilisées annuellement sur une base individuelle (cf. remarque 1 section 3.1.10). Le solde de la consommation d'énergie déduite de l'enquête annuelle réalisée par la profession est attribuée aux plus petites installations.

Plusieurs centaines d'installations de chauffage urbain sont actuellement recensées. Environ 1/6 d'entre elles appartiennent à la catégorie des Grandes Installations de Combustion et représentent à elles seules près de 40% de la capacité thermique installée. Pour ces installations comme pour la production d'électricité, une incidence notable des conditions climatiques sur les émissions est observable.

Les émissions sont estimées pour partie au moyen des résultats de mesure des émissions et pour le reste au moyen de facteurs d'émission.

Lorsque cela s'avère nécessaire, la répartition géographique des plus petites installations est réalisée au moyen d'indicateurs utilisant la population urbaine.

### 3.1.4 / raffinage du pétrole et du gaz

Pour les besoins des inventaires, les 15 installations concernées sont étudiées individuellement, les informations étant collectées auprès des DRIRE ainsi que de la profession. Les données spécifiques recueillies, dont caractéristiques de consommations d'énergie et émissions font partie, sont utilisées directement (cf. remarque 1 section 3.1.10). Pour les émissions non liées à l'utilisation directe de l'énergie se reporter à la section 3.2.1).

### 3.1.5 / transformation des combustibles minéraux solides

Les consommations et les émissions des installations minières et sidérurgiques, en particulier des cokeries, sont estimées à partir des bilans fournis par CdF, la FFA et les DRIRE, ainsi que par l'utilisation de facteurs d'émission.

### 3.1.6 / industrie (y compris sidérurgie, IAA, sciage et installations frigorifiques)

Pour estimer les émissions de ce secteur, la connaissance des divers emplois de l'énergie est nécessaire. Une part importante de l'énergie fossile n'est pas utilisée à des fins énergétiques ou l'est indirectement. Les quantités d'énergie sont estimées sur les bases suivantes :

- a) enquêtes annuelles (EACEI) réalisées par le SESSI et le SCEES (Agreste). Ces enquêtes proposent des statistiques selon une structure d'usages qui a été modifiée plusieurs fois au fil du temps, et qui s'avère peu appropriée à des applications dans le domaine de l'environnement. Cependant, cette série détaillée et disponible sur une période assez longue s'avère très utile.
- b) inventaire GIC dans lequel sont recensées, sur une base individuelle, consommations et caractéristiques spécifiques d'environ 160 installations appartenant à l'industrie (cf. remarque 1



section 3.1.10).

- c) données collectées auprès des DRIRE et des industriels (exploitants, organisations professionnelles), soit pour certaines installations fortes consommatrices d'énergie, soit pour des secteurs particuliers (cf. remarque 1 section 3.1.10).
- d) Eurostat, CEREN et Observatoire de l'Energie pour certaines données (biomasse, utilisation non énergétique des combustibles).

La quantité d'énergie attribuée aux procédés énergétiques industriels est estimée au moyen de ratios relatifs à la consommation d'énergie / quantité de produit fabriqué. Pour cela il est fait appel notamment à des données du SESSI ou de certaines branches par exemple la FFA.

Le solde de la quantité d'énergie consommée dans l'industrie après déduction des quantités attribuées aux Grandes Installations de Combustion, aux procédés consommant de l'énergie ("combustion avec contact") et aux usages particuliers (par exemple les machines et engins) est alloué aux plus petites installations (< 50 MW).

A noter que les consommations identifiées de certains produits utilisés à des fins énergétiques (solvants, gaz de raffinerie, biogaz, hydrogène, lubrifiants, déchets, gaz de cokerie, gaz de haut fourneau, gaz d'aciérie) viennent, dans certains cas, en déduction des quantités obtenues précédemment pour éviter des doubles comptages (par exemple, liqueur noire avec biomasse).

La distribution géographique des émissions est effectuée au moyen de procédures développées à cet effet à partir des statistiques de consommation d'énergie dans l'industrie.

#### *Combustion sans contact et avec contact*

Les procédés utilisant de l'énergie appartiennent à l'un ou l'autre cas :

- les sources relatives à la "combustion sans contact" (chaudières, TAG, moteurs, certains fours, panneaux radiants, etc.) c'est-à-dire aux procédés dans lesquels la flamme où les produits de la combustion ne sont pas en contact avec un produit tiers. Ces émissions sont alors estimées directement à partir des consommations d'énergie.
- les sources relatives à la "combustion avec contact", c'est-à-dire aux procédés dans lesquels la flamme ou les produits de la combustion entrent en contact avec un produit tiers (fours à clinker, à verre, métallurgique, etc.). Dans ce cas, les émissions sont le plus souvent estimées à partir de la quantité de produit fabriqué, car diverses réactions sont susceptibles de modifier qualitativement et quantitativement les rejets.

### **3.1.7 / résidentiel/tertiaire**

Les consommations d'énergie de ce secteur sont appréciées à partir des données de l'Observatoire de l'Energie et du CEREN; la ventilation des produits pétroliers est donnée par le CPDP. La différence constatée entre les données du CPDP et de l'Observatoire de l'Energie correspond d'une part, à la majeure partie du chauffage urbain (le solde affectant l'industrie et marginalement l'agriculture) et d'autre part, aux usages militaires dont la décomposition en divers sous-produits est confidentielle.

Le secteur résidentiel/tertiaire regroupe d'une part, de multiples consommateurs d'énergie de types très différents :

- bureaux, commerces, hôpitaux, universités, centres d'essais, etc.
- foyers domestiques (chauffage, eau chaude, cuisine, agrément).

et d'autre part, une grande diversité d'équipements thermiques :

- chaudière de type industriel,
- chaudière domestique de tous types,
- chauffe bain,
- chauffe eau,
- poêle,
- cheminée à foyer ouvert ou fermé,
- appareil de cuisson,
- etc.

Les émissions sont estimées à partir des statistiques énergétiques et de facteurs d'émission spécifiques à chaque combustible en s'efforçant de tenir compte de la diversité des équipements utilisés. La dizaine d'installations appartenant à la catégorie des Grandes Installations de Combustion

(> 50 MW) est étudiée spécifiquement.

Les machines utilisées dans le secteur résidentiel (groupes électrogènes, machines de jardinage, etc.) font l'objet d'estimations forfaitaires de consommations d'énergie auxquelles sont associées des facteurs d'émission particuliers.

### 3.1.8 / agriculture

Les consommations d'énergie proviennent de l'Observatoire de l'Energie et pour la ventilation des produits pétroliers, du CPDP. La consommation de bois est évaluée à partir d'une étude datant de 1985 publiée par l'Observatoire de l'Energie.

Seuls les usages spécifiques de l'agriculture sont pris en compte (chauffage des serres, conservation du lait, chauffage pour l'élevage, etc.) tandis que la consommation d'énergie domestique est incluse dans le secteur résidentiel. Le FOD et l'essence sont supposés être utilisés en totalité par les machines (tracteurs, moissonneuses, etc.).

Comme pour le secteur précédent, les émissions sont déterminées à partir de statistiques énergétiques et de facteurs d'émission appropriés, tant pour les sources fixes que pour les machines mobiles.

### 3.1.9 / transports

Les consommations de produits pétroliers des différents modes sont données par les statistiques du CPDP et de la CCTN. Ces données sont en accord avec celles de l'Observatoire de l'Energie.

Cependant, des considérations particulières sont introduites :

- dans le cas du trafic maritime, le champ couvert correspond au trafic entre deux ports français à l'intérieur de la zone EMEP.
- dans le cas du trafic aérien, le champ couvert par le total national varie selon les inventaires (trafic aérien < 1000 m seulement y compris trafic international pour UNECE [sauf CO<sub>2</sub> comme UNFCCC], trafic domestique seul y compris la croisière (partie du vol au-dessus de 1000 m) pour UNFCCC). Pour le trafic aérien, les statistiques des ventes totales de carburant sont disponibles (CPDP), sans distinction des vols domestiques et internationaux.
- dans le cas des transports routiers, selon les spécifications de l'UNFCCC, les consommations de carburants correspondent aux quantités livrées pour ce secteur. Ces données sont issues des statistiques du Ministère des Transports (Commission des Comptes des Transports de la Nation). Cette est appliquée de la même manière aux inventaires établis pour UNECE seules les ventes sur le territoire national sont prises en compte. Voir la section 3.3 pour plus de détail concernant les éléments relatifs au calcul des émissions.

### 3.1.10 / remarques relatives au bilan énergétique

#### Remarque 1

La comparaison de l'approche de référence basée sur les bilans énergétiques avec l'approche sectorielle, conduit à un écart inférieur à 2 % sur le CO<sub>2</sub>. somme des consommations d'énergie obtenue avec l'approche sectorielle utilisée dans l'élaboration des inventaires peut être comparée au bilan énergétique national produit par l'Observatoire de l'Energie. Un écart très faible inférieur à 2 % est constaté. Les raisons en sont principalement :

- la prise en compte des caractéristiques réelles des combustibles par rapport à des caractéristiques standard.
- les approximations des différents éléments respectifs de l'inventaire et du bilan énergétique, notamment les ajustements statistiques.

#### Remarque 2

La différenciation des consommations d'énergie selon la nature des équipements est importante du point de vue de l'environnement car :

- les émissions de nombreuses substances (NO<sub>x</sub>, COV, CO, etc.) dépendent des techniques utilisées (un moteur ne produit pas la même quantité de NO<sub>x</sub> qu'une turbine ou une chaudière pour

une même quantité d'énergie consommée). Les cas du CO<sub>2</sub>, voire du SO<sub>2</sub> pour lesquels il est possible en première approximation de s'affranchir de cette contrainte, tendent à faire oublier cet aspect important dans la réalisation des inventaires.

- les directives, conventions, et plus généralement les spécifications relatives à la présentation des résultats, nécessitent de fournir des estimations pour certaines catégories d'installations (par exemple la directive GIC<sup>3</sup> 88/609 exclut moteurs, turbines et la plupart des fours). Il en résulte la nécessité de segmenter certaines sources en fonction de critères particuliers dans les inventaires.

#### Remarque 3

Des progrès restent à faire pour une meilleure prise en compte des quantités d'énergie fossile du point de vue des émissions dans l'atmosphère, en particulier en ce qui concerne les usages, la nature des équipements et le détail des produits valorisés énergétiquement.

Au plan global, l'incertitude sur les consommations d'énergie est faible et reste largement inférieure aux incertitudes relatives à la détermination des émissions (sauf pour CO<sub>2</sub> et SO<sub>2</sub> qui sont probablement du même ordre de grandeur).

## **3.2 / procédés non énergétiques hors agriculture et nature**

Contrairement à ce que peut laisser croire le titre de cette section, quelques uns des procédés appartenant à cette catégorie ont une relation avec l'énergie. Le plus souvent, celle-ci se présente sous forme de vapeur produite dans des installations de combustion classiques distinctes (cf. section 3.1), ou par l'intermédiaire de certains produits comme l'oxygène.

Une partie de la matière première peut aussi participer à des réactions thermiques. Cependant, les processus mis en œuvre diffèrent d'une combustion classique.

### **3.2.1 / procédés du raffinage du pétrole**

Les émissions en provenance des équipements tels que vannes, joints, récupérateurs de soufre, régénération de catalyseur, stockage et manipulation d'hydrocarbures, etc. sont appréciées à partir de données spécifiques à chaque installation de chacune des raffineries.

### **3.2.2 / procédés de la sidérurgie, de la transformation de l'acier et des cokeries**

Les sources considérées dans cette section sont à l'origine en grande partie des émissions fugitives (extinction du coke, chaîne d'agglomération, chargement des hauts-fourneaux, coulée de la fonte, aciéries à l'oxygène et électriques, laminaires). Les données proviennent des statistiques relatives à ces secteurs et de diverses sources pour les facteurs d'émissions.

### **3.2.3 / procédés des industries des métaux non-ferreux**

Les émissions des secteurs d'activité couverts sont déterminées à l'exception de quelques uns à partir de statistiques de production et de facteurs d'émission spécifiques.

### **3.2.4 / procédés de la chimie**

La fabrication de plusieurs dizaines de produits différents est prise en compte. Le plus souvent c'est le fait d'un nombre limité de sites comportant assez fréquemment différents ateliers relatifs à divers procédés. Les productions et/ou les quantités de matière première consommées sont collectées dans une grande majorité de cas sur une base individuelle. Elles sont complétées par des estimations à partir de statistiques nationales ou de capacités installées. Les émissions sont estimées en tenant compte, si nécessaire, des spécificités de chaque installation et éventuellement sur la base de facteurs d'émission lorsque une connaissance plus précise fait défaut (par exemple ceux de la chimie organique et de la chimie inorganique).

### **3.2.5 / matériaux minéraux, pâte à papier, construction automobile**

Comme précédemment, ces secteurs comportent un nombre suffisamment restreint d'établissements pour autoriser une approche individuelle en terme de quantités produites ou mises en œuvre (tout au

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<sup>3</sup> Grandes Installations de Combustion

plus deux ou trois dizaines chacun) et permettre la prise en compte de données spécifiques telles que mesure des émissions, type de procédé, etc. Pour certaines installations ou substances des facteurs d'émission sont utilisés à défaut d'une connaissance plus précise.

Ce dernier raisonnement s'applique particulièrement à la production de pâte à papier, à la décarbonatation (chaux, ciment, verre) et à l'évaporation de solvants dans la peinture automobile.

### 3.2.6 / autres procédés industriels

A l'inverse de la plupart des secteurs évoqués précédemment dans les sous-sections 3.2.x, il existe de nombreuses activités pour lesquelles :

- les installations sont unitairement de petite taille ou de moindre importance relativement aux rejets dans l'atmosphère : fabrication de panneaux de particules, fabrication de produits alimentaires (pain, vin, bière, alcools), carrosserie, construction de bateaux, prélaquage, nettoyage à sec, mise en œuvre de divers produits (polyester, PVC, polyuréthane, mousse de polystyrène, caoutchouc), fabrication de produits adhésifs, finition textile, tannage du cuir, imprimerie, traitement du bois, etc.
- voire très disséminées dans différents secteurs industriels : recouvrement de surfaces par de l'asphalte ou par de la peinture, dégraissage des métaux, application de colle, etc.
- l'estimation des rejets de ces activités passe le plus souvent par l'utilisation de statistiques nationales auxquelles sont associées des facteurs d'émission qui s'efforcent de tenir compte de l'évolution des caractéristiques des produits et des techniques utilisées, lesquelles évoluent au cours du temps.

A l'exception de quelques activités (extraction d'huiles comestibles et non comestibles, prélaquage, etc.) pour lesquelles une approche plus fine est parfois possible, la distribution géographique des émissions est effectuée au moyen d'indicateurs tels que le nombre d'employés ou la consommation d'énergie.

### 3.2.7. / procédés du secteur résidentiel/tertiaire

Les émissions sont généralement estimées à partir de coefficients basés sur la population. Les activités du secteur résidentiel et tertiaire couvrent aussi l'utilisation de peintures et autres produits à base de solvants, la consommation de produits pharmaceutiques, l'emploi du protoxyde d'azote en milieu hospitalier, réfrigération, aérosols, extincteurs, climatisation, etc.

### 3.2.8 / traitement des déchets

Le traitement des déchets concerne différents secteurs et différents procédés :

- l'incinération se décompose en plusieurs sous activités
- ✓ incinération des déchets ménagers (environ 300 installations)
- ✓ incinération de déchets industriels en tant qu'activité spécifique (environ 20 installations)
- ✓ incinération de déchets industriels en tant que procédé connexe à une autre activité principale (torchères, incinérateurs)
- ✓ incinération de déchets particuliers (déchets hospitaliers, boues de stations d'épuration des eaux, carcasses)
- ✓ crémation (environ 70 installations).

Dans la quasi totalité des cas, les installations d'incinération sont répertoriées sur une base individuelle et leurs émissions évaluées à partir des quantités traitées et de facteurs d'émission lorsque les émissions ne sont pas directement connues.

Les feux ouverts sont supposés négligeables faute de données précises.

- la mise en décharge des déchets est inventoriée par l'ADEME<sup>4</sup> ; on dénombre environ 500 installations, nombre en recul progressif par suite des actions engagées dans ce secteur. L'ensemble des données et hypothèses utilisées sont établies en concertation avec l'ADEME. Les émissions sont estimées sur la base de facteurs d'émission relatifs à différents critères :

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<sup>4</sup> Agence de l'Environnement et de la Maîtrise de l'Energie

- ✓ la dégradation progressive des déchets basée sur une cinétique d'ordre 1 (GIEC tier 2).
- ✓ le type de déchet selon leur biodégradabilité
- ✓ le type de décharge (avec ou sans compactage)
- ✓ la récupération et l'utilisation du biogaz (brûlage en torchère ou valorisation thermique).
- les autres traitements tels que le traitement des eaux, l'épandage des boues, le compostage, la fabrication de biogaz ou de produits énergétiques dérivés, etc. sont abordés à partir de statistiques globales et de facteurs d'émission assez imprécis. La répartition géographique est réalisée à partir des recensements existants et/ou au moyen de valeurs suppléantes comme la population.

### 3.3 / transports

Les différents modes de transports appartiennent à l'ensemble des sources mobiles. Ce dernier englobe également des engins mobiles utilisés dans d'autres secteurs : véhicules spéciaux (grues auto-portées, pelleteuses, engins de déneigement, etc.), tracteurs agricoles et forestiers, compresseurs de chantier, groupes électrogènes, etc.

#### 3.3.1 / transport routier

Les émissions des véhicules routiers dépendent de nombreux paramètres en rapport avec :

- les caractéristiques du véhicule (voiture particulière, véhicule utilitaire léger, poids lourd, deux roues)
  - ✓ le type de véhicule,
  - ✓ la motorisation et le carburant (essence, gazole, GPL-c, GNV),
  - ✓ les équipements (pot catalytique, climatisation, type de réservoir, injection),
  - ✓ l'âge.
- les conditions d'utilisation
  - ✓ le parcours annuel,
  - ✓ la longueur moyenne d'un trajet,
  - ✓ les réseaux empruntés (autoroute, route, urbain) qui conditionnent pour partie les vitesses de circulation,
  - ✓ les conditions climatiques,
  - ✓ l'entretien du véhicule,
  - ✓ le comportement de l'utilisateur (conduite sportive, charge du véhicule, etc.).

Les émissions sont déterminées au moyen du modèle européen COPERT<sup>5</sup> à partir d'une estimation du parc de véhicules provenant de la base de données OPALE (Ordonnancement du PARc en Liaison avec les Emissions), d'un ensemble d'hypothèses relatives aux conditions d'utilisation et de fonctions de consommations et d'émissions, ainsi que d'un ensemble de statistiques sur le bilan de la circulation routière en France issu de la Commission des Comptes des Transports de la Nation. La figure 6 en présente le principe, à savoir :

- **dans un premier temps, la détermination des données de base.** Le parc OPALE fait appel à diverses sources statistiques CCFA<sup>6</sup>, ARGUS, FIEV<sup>7</sup>, Ministère des Transports. Les parcours annuels, les longueurs de trajet, la répartition du trafic sur les différents réseaux sont fixés à partir de diverses sources (INRETS<sup>8</sup>, ADEME, CCTN<sup>9</sup>, etc.). Les consommations de carburants proviennent de la CCTN.
- **dans un deuxième temps le calcul des consommations totales.** Les consommations totales sont calculées à partir des données initiales au moyen des fonctions proposées par le modèle. Ces fonctions sont établies sur la base d'un nombre important de mesures réalisées par divers laboratoires européens. Les consommations calculées sont comparées aux consommations de référence et une démarche itérative conduit à ajuster les données initiales.

**Remarque :** Un minimum de degrés de liberté est nécessaire pour permettre les ajustements. Ceux-ci sont effectués différemment selon les types de véhicule de manière à conserver un maximum de cohérence avec les données de la CCTN.

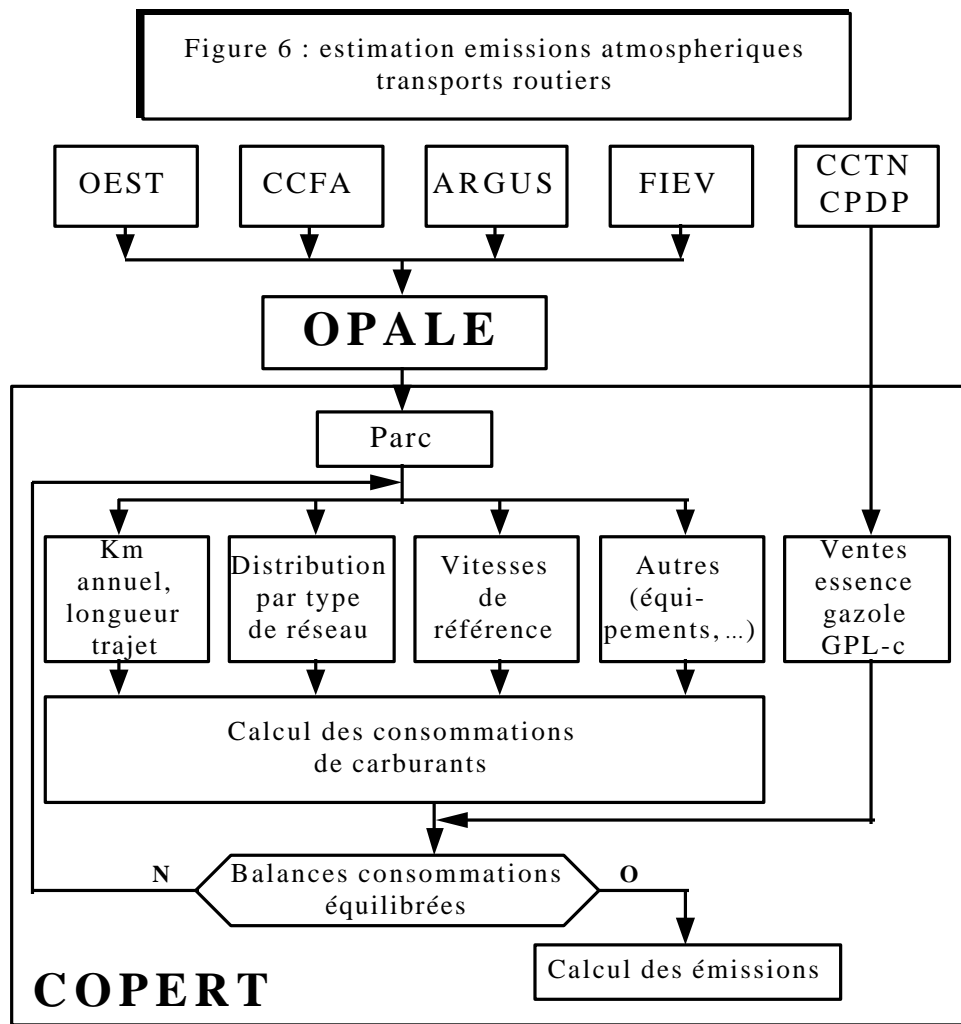
<sup>5</sup> COmputer Programme to calculate Emissions from Road Traffic

<sup>6</sup> Comité des Constructeurs Français d'Automobiles

<sup>7</sup> Fédération des Industries des Equipements pour Véhicules

<sup>8</sup> Institut National de REcherche sur les Transports et leur Sécurité

<sup>9</sup> Commission des Comptes des Transports de la Nation



- **dans un troisième temps le calcul des émissions.** Les émissions sont calculées sauf dans quelques cas au moyen des fonctions d'émissions unitaires proposées par le modèle COPERT. Ces dernières sont basées sur un nombre important de mesures réalisées par divers laboratoires européens dont l'INRETS en France.

Pour mémoire, en cas de résolution spatiale plus fine, les émissions sont calculées en faisant appel à des procédures complexes basées sur divers paramètres : trafic sur différents réseaux, effets de transit aux frontières, données socio-économiques (population urbaine, rurale, infrastructure routière, etc).

### 3.3.2 / transport ferroviaire

Les émissions sont déterminées sur la base des consommations d'énergie de ce secteur et de facteurs d'émission.

### 3.3.3 / transport fluvial

Les émissions sont déterminées sur la base des consommations d'énergie de ce secteur et de facteurs d'émission.

### 3.3.4 / transport maritime

Le trafic international est généralement exclus du champ national mais constitue une partie des inventaires rapportée séparément.

La part du trafic national est définie comme le trafic effectué entre deux ports situés dans un même pays à l'intérieur de la zone EMEP (approximativement l'Europe). Ainsi la liaison Le Havre - Ajaccio est comptabilisé dans les émissions françaises, même si les rejets se produisent en partie loin de France. A l'inverse, les émissions d'un ferry reliant Douvres et Calais ne sont pas incluses dans le total national.

Les émissions dues au trafic national sont déterminées sur la base de la part de consommation d'énergie correspondant au trafic défini ci-dessus. Une étude réalisée par le CITEPA à partir des trafics portuaires et de considérations relatives aux différents types et tailles de bateaux conduit à un ratio de l'ordre de 4% des soutes nationales.

La pêche est intégralement prise en compte par l'intermédiaire de la consommation d'énergie de ce secteur quels que soient les lieux de pêche même très éloignés.

### 3.3.5 / transport aérien

Dans le cas du trafic aérien, sont prises en compte dans les totaux nationaux :

- les émissions produites au-dessous de 1000 m pour UNECE quelles que soient les vols et les compagnies.
- les émissions du trafic domestique pour UNFCCC quelles que soient les compagnies.

La définition du trafic domestique s'entend comme pour les bateaux comme correspondant au trafic entre deux aéroports d'un même pays.

Les émissions hors total national (au-dessus de 1000 m ou internationales selon les cas) sont calculées mais rapportées séparément.

Les émissions sont estimées à partir d'une méthode détaillée basée sur les mouvements du trafic commercial et du trafic non commercial (sources DGAC<sup>10</sup>), sur les données OACI<sup>11</sup> et sur les éléments méthodologiques de MEET<sup>12</sup> et de CORINAIR. Pour chaque liaison, la méthode mise en œuvre prend en compte le type d'avion et le type de moteur ainsi que les diverses caractéristiques du vol dont les consommations au cours des différentes phases (roulage au sol, décollage, montée, croisière, approche, atterrissage). Le bouclage énergétique sur la vente totale de carburant pour aéronefs est assurée en déterminant la consommation de la phase de croisière internationale comme égale à la différence entre le total des ventes et la consommation calculée, d'une part, pour la phase LTO domestique et, d'autre part, pour la phase de croisière domestique.

## 3.4 / agriculture et sylviculture

### 3.4.1 / élevage

De cette activité résulte des quantités importantes de méthane et d'ammoniac notamment. Les estimations sont effectuées au moyen des statistiques relatives au cheptel et de facteurs d'émission résultant de différentes hypothèses concernant les pratiques d'élevage pour chacune des douze catégories d'animaux considérées.

### 3.4.2 / cultures et forêts

Les surfaces occupées par les diverses espèces cultivées et les essences sont recensées par le Ministère de l'Agriculture.

En ce qui concerne le méthane, le protoxyde d'azote et l'ammoniac, les émissions sont calculées au moyen de facteurs d'émission assez rustiques. Pour les composés organiques volatils, le modèle COBRA<sup>13</sup> développé par le CITEPA est utilisé. Le modèle calcule pour chaque espèce et essence les émissions sur une base mensuelle, car celles-ci dépendent de paramètres fonctions du temps comme la température et le développement de la biomasse foliaire. Pour ce faire, la France est découpée en 29 zones climatiques et les données de température tri horaires de 88 stations météorologiques sont

<sup>10</sup> Direction Générale de l'Aviation Civile

<sup>11</sup> Organisation de l'Aviation Civile Internationale

<sup>12</sup> Methodologies for Estimating air Emissions from Transports

<sup>13</sup> Composés Organiques de la Biomasse Rejetés dans l'Atmosphère

intégrées. In fine, le modèle COBRA fournit des émissions par type d'espèce et par département. Ces dernières restent associées à des incertitudes importantes.

### 3.4.3 / changement dans l'utilisation des sols / puits

Cette section n'a d'intérêt que pour la détermination des émissions de CO<sub>2</sub> qui requiert de tenir compte du puits de dioxyde de carbone que représente la photosynthèse.

A cet effet, la méthode préconisée par le GIEC consiste à déterminer d'une part, les **accroissements de biomasse** au cours de l'année étudiée et, d'autre part, l'utilisation de la biomasse à partir de l'évaluation qualitative et quantitative des différents **produits issus des récoltes** (houppiers, bois de sciage, bois de feu, fourrages, etc.). Selon les usages de ces produits, le stock de carbone constitué par l'accroissement de biomasse de l'année considérée est réduit de la quantité de carbone relative aux émissions de CO<sub>2</sub> dues à la combustion de la biomasse et majoré ou réduit de l'accroissement ou de la perte de carbone des sols dans la mesure où leur utilisation a été modifiée.

#### *Emissions anthropiques et naturelles*

A y regarder de près, cette distinction n'est guère aisée. Si pour les volcans, les hydrates de gaz, les termites, etc. on peut à peu près affirmer que les rejets dans l'atmosphère sont sans relation avec la main de l'homme, cela est beaucoup plus discutable en ce qui concerne les forêts, les animaux, l'utilisation des sols (canaux, lacs, fossés, marais, etc.). Les experts s'accordent à dire qu'une part importante des émissions de ces sources est liée à l'activité humaine. Cette part est assez difficilement quantifiable, de même que les émissions de ces sources prises globalement.

De plus, ces émetteurs se caractérisent par le fait que l'homme peut difficilement prétendre agir pour les modifier significativement dans des délais de temps comparables à ceux généralement considérés en matière de planification (quelques dizaines d'année).

C'est pourquoi ces émetteurs tendent à être classés à part et, de ce fait, leurs émissions n'entrent pas dans les émissions de référence retenues dans le cadre des conventions internationales.

Cependant, ces émissions interviennent dans les phénomènes de pollution de l'air : COV biogènes en rapport avec la formation d'ozone troposphérique, puits de CO<sub>2</sub>, CH<sub>4</sub> de l'anaérobiose, pour l'effet de serre, etc.

### 3.5 / autres sources

Les émissions des autres sources, quelles soient considérées naturelles ou anthropiques, ne sont pas rapportées dans l'inventaire UNFCCC, à l'exception des émissions biogènes des forêts. Lorsqu'elles sont rapportées, notamment dans l'inventaire UNECE, elles sont estimées au moyen de facteurs d'émission et couvrent différents types d'émetteurs dont les principaux sont :

- les forêts qui sont couvertes par le modèle COBRA (cf. section 3.4.3). La distinction entre sources anthropiques / naturelles repose sur les superficies gérées par l'homme (95 % en Métropole),
- les prairies naturelles incluses également dans COBRA et définies comme telles par le Ministère de l'Agriculture,
- les feux de forêts même d'origine criminelle ou accidentelle d'importance très variable selon les années (73 000 ha en 1990, 19 000 en 1998 en métropole),
- les zones marécageuses qui regroupent les marais et étangs soit respectivement 95 000 ha et 30 000 ha en métropole.
- les eaux libres pour lesquelles l'inventaire porte sur les lacs, marais salants, rivières et canaux couvrent respectivement en métropole 347 000 ha, 90 000 ha et 330 000 ha.
- les animaux sauvages, les émissions de CH<sub>4</sub> des termites et des mammifères sont négligées faute d'information.
- les volcans (inactifs en France métropolitaine) mais négligés en outre-mer faute d'information fiable et d'un besoin de couvrir ce type de source.
- les hydrates de gaz proches de la surface du sol peu répandus sur le territoire national sont supposés ne pas contribuer aux émissions de méthane.

**NOTE :** Les émissions de CO<sub>2</sub> provenant de la respiration des êtres vivants (homme, mammifères, etc.) ne sont pas prises en compte, un certain état d'équilibre étant supposé. L'ordre de grandeur est estimé approximativement à 100 Mt de CO<sub>2</sub>, soit environ entre un cinquième et un quart des autres émissions anthropiques.



## *annexe 4 – fichiers informatiques relatifs au texte, tableaux et figures du rapport*

Le rapport intégral est disponible sur le site web du CITEPA à l'adresse <http://citepa.org>

Le support informatique éventuellement joint au rapport contient les éléments suivants :

### **Texte du rapport**

Les fichiers "UNFCCC\_France\_dec2000a" et "UNFCCC\_France\_dec2000b" (Word 97) contiennent respectivement le corps du texte et les annexes à l'exclusion des tables du CRF.

### **Tables CRF du format UNFCCC.**

Les fichiers "CRF\_France\_xx" (Excel 2000) contiennent les tableaux de données au format UNFCCC relatifs à chacune des années considérées. Les deux derniers caractères du nom correspondent à l'année de référence (exemple CRF\_France\_90 pour l'année 1990). Chaque fichier comporte 61 feuillets qui correspondent aux tableaux définis dans le CRF et pour la plupart reproduits dans l'annexe 1.

Les tableaux de données relatifs d'une part à la France métropolitaine et d'autre part aux départements et territoires d'outre-mer sont disponibles séparément.

### **Tableaux et figures du rapport.**

Les tableaux de synthèse et les figures présents dans le corps du rapport se trouvent dans le fichier "serre\_dec2000" (Excel 97). Ce fichier comporte 16 feuillets :

- le feuillet "comp-meth" correspond au tableau page 13 du rapport.
- le feuillet "recap" correspond aux tableaux et figures des pages 17, 19, 20 et 19 du rapport.
- le feuillet "résumé" correspond à la page 6 du rapport
- le feuillet "HFC\_PFC\_SF<sub>6</sub>" correspond au tableau de la page 16 du rapport.
- le feuillet "secteurs" correspond à la page 24 du rapport.
- le feuillet "graph\_var" correspond à la page 18 du rapport.
- le feuillet "appro-référ" correspond au tableau page 22 du rapport.
- le feuillet "réfé-annexe" correspond au tableau à la page 23 du rapport.
- les feuillets "CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SO<sub>2</sub>, NO<sub>x</sub>, COVNM, CO" correspondent aux tableaux pages 25 à 31 du rapport.
- le feuillet "dispo table CRF" correspond au tableau de l'annexe 4
- le feuillet « IPCC96-SNAP97 » correspond à l'annexe 2 du rapport.

## DISPONIBILITE DES TABLES CRF

- Les tables CRF dans le rapport UNFCCC sont données en annexe, seules les tables des années 1990, 1998 et 1999 y figurent.
- Les tables concernant le recalcul des émissions pour les différentes années 1990 à 1998 (les tables 8) sont incluses dans le CRF 1999 uniquement.

CRF des autres années.

ces

années intermédiaires, cf. tableau ci-après.

N.B.: normalement en régime établi, seules les tables CRF de la dernière année sont requises.

serre\_dec2000/dispo tables CRF.xls

Tables CRF	1990		1991		1992		1993		1994		1995		1996		1997		1998		1999	
	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM	rap- port	CD- ROM
Table1s1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table1.A(a)s1, s2, s3, s4	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table1.A(b)	☒	☒															☒	☒		
Table1.A(c)	☒	☒															☒	☒		
Table1.A(d)	☒	☒															☒	☒		
Table1.B.1	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table1.B.2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table1.C	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table2(I)s1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table2(I).A-Gs1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table2(II)s1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table2(II).C,E	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table2(II).Fs1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table3	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table3.A-D	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table4s1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table4.A	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table4.B(a)	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table4.B(b)	☒	☒															☒	☒	☒	☒
Table4.C	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table4.D	☒	☒															☒	☒	☒	☒
Table4.E	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table4.F	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table5	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table5.A	☒	☒															☒	☒	☒	☒
Table5.B	☒	☒															☒	☒	☒	☒
Table5.C	☒	☒															☒	☒	☒	☒
Table5.D	☒	☒															☒	☒	☒	☒
Table6	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table6.A,C	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table6.B	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Summary1.As1, s2, s3	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Summary1.B	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Summary2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Summary3s1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table7s1, s2, s3	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table8(a)s1, s2																			☒	☒
Table8(b)																			☒	☒
Table9s1, s2	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒
Table10s1, s2, s3, s4, s5																			☒	☒
Table11	☒	☒		☒		☒		☒		☒		☒		☒		☒	☒	☒	☒	☒

☒ : table disponible