Category		Title
NFR:	**2.A.3**	**Limestone and dolomite use**
SNAP:	**040618**	**Limestone and dolomite use**
ISIC:		
Version	**Guidebook 2009**	

Coordinator

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Contents

1 Overview

Emissions from the use of limestone and dolomite (source category 2.A.3) consist mainly of emissions of carbon dioxide (CO_2) and are therefore not significant in the scope of this Guidebook. Emissions of CO_2 from this source are discussed in the IPCC Guidelines for estimating emissions of greenhouse gases (IPCC, 2006).

Emissions of other pollutants from this source are not significant, therefore all emission factors are considered to be negligible.

2 Description of sources

2.1 Process description

Limestone ($CaCO_3$) and dolomite ($CaMg(CO_3)_2$) are basic raw materials having commercial applications in a number of industries. These carbonates are consumed in the mineral industries (e.g. during the production of cement, lime and glass) and also in metallurgy (e.g. iron and steel), agriculture, construction and environmental pollution control (e.g. flue gas desulphurisation).

2.2 Techniques

No techniques are distinguished for this source.

2.3 Emissions and controls

The main emission from the calcining of limestone and dolomite is CO_2. It is good practice to report the CO_2 emission in compliance with the IPCC Guidelines (IPCC, 2006).

3 Methods

3.1 Choice of method

Figure 3.1 presents the procedure for estimating emissions from the use of dolomite and limestone. The basic approach is as follows:

• If detailed information is available such that higher tiered methods can be employed: use it.

• If the source category is a key category, a Tier 2 or better method must be applied and detailed input data must be collected. The decision tree directs the user in such cases to the Tier 2 method, since it is expected that it is more easy to obtain the necessary input data for this approach than to collect facility-level data needed for a Tier 3 estimate

• The alternative of applying a Tier 3 method, using detailed process modelling is not explicitly included in this decision tree. However, detailed modelling will always be done at facility level and results of such modelling could be seen as 'facility data' in the decision tree.
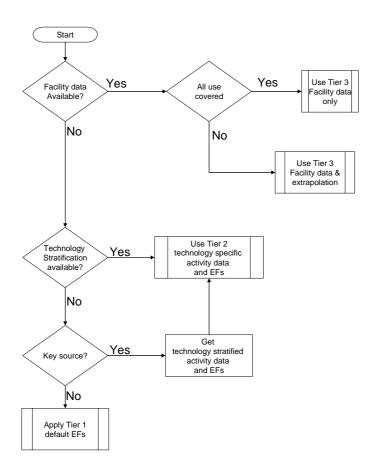
Figure 3.1   Decision tree for source category 2.A.3 Limestone and dolomite use

3.2   Tier 1 default approach

The present subsection provides a Tier 1 emission factor table for this source. No information on specific emission factors for the use of dolomite and limestone is available, therefore the table does not contain any emission factors. In most cases, emissions of air pollutants from this source category can be considered negligible.

If data are available for the sectors where limestone is used, emission estimates can also be made in those specific sectors. However, if this information is not available it is good practice to make an estimate under the present source category.

It is good practice to exclude the emissions from fuel combustion (heating) during the use of limestone and dolomite from reporting under the present chapter and report them under source category 1.A.2.c.

3.2.1   Algorithm

The Tier 1 approach uses the general equation:

$$E_{pollutant} = AR_{production} \times EF_{pollutant} \qquad (1)$$

where:

$E_{pollutant}$ = the emission of the specified pollutant

$AR_{production}$ = the activity rate for the limestone or dolomite use

$EF_{pollutant}$ = the emission factor for this pollutant

The Tier 1 emission factors assume an 'averaged' or typical technology and abatement implementation in the country and integrate all sub-processes.

3.2.2 Default emission factors

The Tier 1 emission factor table is presented in Table 3/1. The table does not contain any emission factors. Emissions of particulates are expected to arise from the use of limestone and dolomite, however no estimate of emission factors is available.

Table 3/1 **Tier 1 emission factors for source category 2.A.3 Limestone and dolomite use**

Tier 1 default emission factors		
	Code	Name
NFR Source Category	2.A.3	Limestone and dolomite use
Fuel	NA	
Not applicable	NOx, CO, NMVOC, SOx, NH3, Pb, Cd, Hg, As, Cr, Cu, Ni, Se, Zn, Aldrin, Chlordane, Chlordecone, Dieldrin, Endrin, Heptachlor, Heptabromo-biphenyl, Mirex, Toxaphene, HCH, DDT, PCB, PCDD/F, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Total 4 PAHs, HCB, PCP, SCCP	
Not estimated	TSP, PM10, PM2.5	

3.2.3 Activity data

Not applicable.

3.3 Tier 2 technology-specific approach

Not available for this source.

3.4 Tier 3 emission modelling and use of facility data

Not available for this source.

4 Data quality

It is good practice to take care not to double count emissions in this source category and the specific source category where the limestone/dolomite is used.

5 Glossary

$AR_{production}$	the activity rate for the limestone or dolomite use
$E_{pollutant}$	the emission of the specified pollutant
$EF_{pollutant}$	the emission factor for this pollutant

6   References

IPCC, 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Eggleston, H.S., Buendia, L., Miwa, K., Ngara, T. and Tanabe, K. (eds)., National Greenhouse Gas Inventories Programme. IGES, Japan.

7   Point of enquiry

Enquiries concerning this chapter should be directed to the relevant leader(s) of the Task Force on Emission Inventories and Projection's expert panel on combustion and industry. Please refer to the TFEIP website (www.tfeip-secretariat.org) for the contact details of the current expert panel leaders.