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## Country profile – Italy

The section 'Key climate- and energy-related data' was prepared by the EEA. It includes the latest data available as of 31 July 2014

The section 'Climate and energy policy framework' was prepared by eclareon and Ecologic Institute, Germany. It includes the latest information on national policies and measures available as of 31 May 2014.

For methodological details and other country profiles, see [www.eea.europa.eu/themes/climate/country-profiles](http://www.eea.europa.eu/themes/climate/country-profiles).

## Key climate- and energy-related data — Italy

Key data on GHG emissions	2005	2011	2012	2013	EU 2012
Total GHG emissions (UNFCCC, Kyoto Protocol) (Mt CO <sub>2</sub> -eq.)	574.3	486.6	460.1	438.0	4 544.2
GHG per capita (t CO <sub>2</sub> -eq./cap.)	9.9	8.2	7.7	7.3	9.0
GHG per GDP (g CO <sub>2</sub> -eq./PPS in EUR)	415	315	295	284	350
Share of GHG emissions in total EU-28 emissions (%)	11.1 %	10.6 %	10.1 %	9.8 %	100 %
EU ETS verified emissions (Mt CO <sub>2</sub> -eq.)	226.0	190.0	179.1	164.4	1 848.6
Share of EU ETS emissions in total emissions (%)	39 %	39 %	39 %	38 %	41 %
ETS emissions vs allowances (free, auctioned, sold) (%)	+ 4.6 %	- 2.7 %	- 7.1 %	- 11.6 %	- 14.1 %
Share of CERs & ERUs in surrendered allowances (%)	0.0 %	10.3 %	26.1 %	n.a.	26.4 %
Non-ETS (ESD) emissions, adjusted to 2013–2020 scope (Mt CO <sub>2</sub> -eq.)	330.5	284.7	269.2	271.4	2 566.6
Key data on renewable energy	2005	2010	2011	2012	EU 2012
Share of renewable energy in gross FEC (%)			12.3 %	13.5 %	14.1 %
( ) = including all biofuels consumed in transport	(5.9 %)	(10.6 %)			
Share of renewable energy for electricity (%)	16.4 %	20.2 %	23.7 %	27.6 %	23.5 %
Share of renewable energy for heating and cooling (%)	4.7 %	10.7 %	12.5 %	12.8 %	15.6 %
Share of renewable energy for transport (%)			4.7 %	5.8 %	5.1 %
( ) = including all biofuels consumed (%)	(0.8 %)	(4.6 %)			
Key data on energy consumption	2005	2010	2011	2012	EU 2012
Primary energy consumption (Mtoe)	178.9	165.2	162.8	155.3	1 584.8
Primary energy consumption per capita (Mtoe/cap.)	3.1	2.8	2.7	2.6	3.1
Final energy consumption (Mtoe)	134.5	124.8	122.1	119.0	1 104.5
Final energy consumption per capita (Mtoe/cap.)	2.3	2.1	2.1	2.0	2.2
Efficiency of conventional thermal electricity and heat production (%)	45.5 %	46.7 %	46.7 %	46.6 %	50.0 %
Energy consumption per dwelling by end use	2005	2009	2010	2011	EU 2011
Total energy consumption per dwelling (toe/dwelling)	1.14	1.11	1.19	1.21	1.42
Space heating and cooling (toe/dwelling)	0.80	0.78	0.86	0.87	0.96
Water heating (toe/dwelling)	0.11	0.10	0.10	0.10	0.18
Cooking (toe/dwelling)	0.07	0.07	0.07	0.07	0.08
Electricity (lighting, appliances) (toe/dwelling)	0.17	0.16	0.16	0.16	0.20

**Progress towards GHG targets (under the Effort Sharing Decision, i.e. non-ETS emissions)**

2013 ESD target (% vs base year)	- 8.9 %	2020 ESD target (% vs base year)	- 13.0 %
2013 ESD emissions (% vs base year)	- 17.8 %	2020 ESD projections WEM (% vs base year)	- 9.5 %
		2020 ESD projections WAM (% vs base year)	- 18.5 %

Based on approximated emission estimates for 2013, emissions covered by the Effort Sharing Decision (ESD) (i.e. in the sectors which are not covered by the EU ETS) are expected to be below the annual ESD target in 2013. Projections indicate that 2020 ESD emissions are expected to be below the 2020 ESD target, only if measures planned until 2013 are fully implemented.

**Progress towards renewable energy targets**

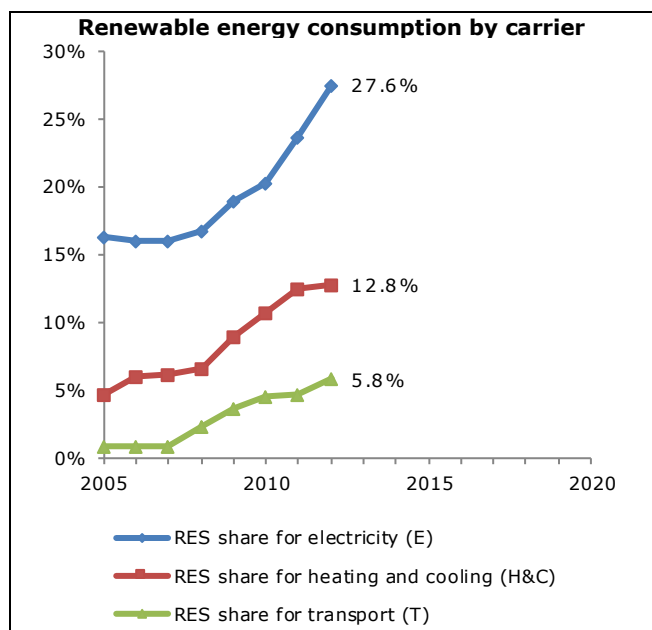
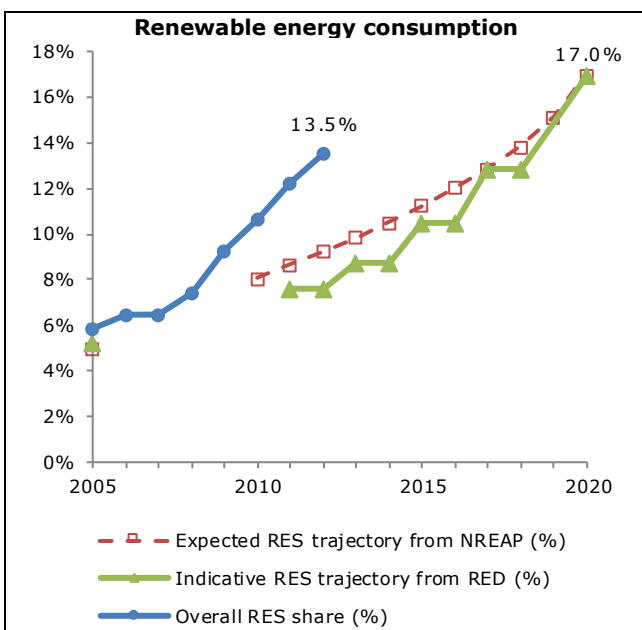
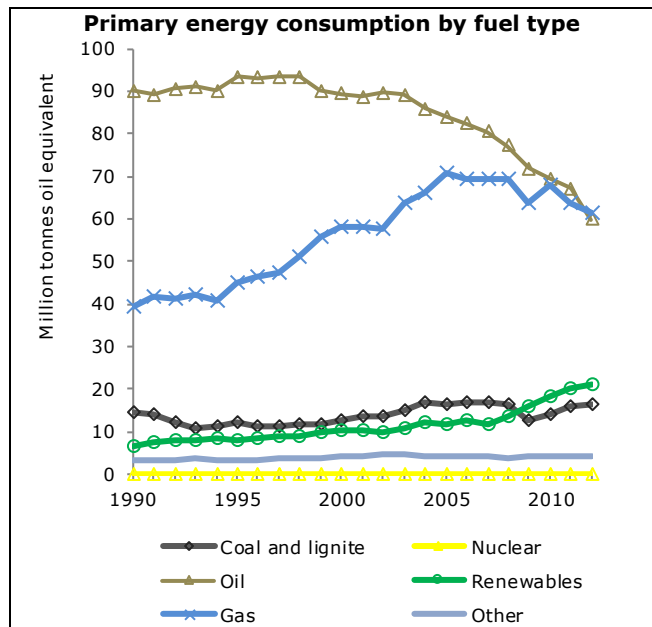
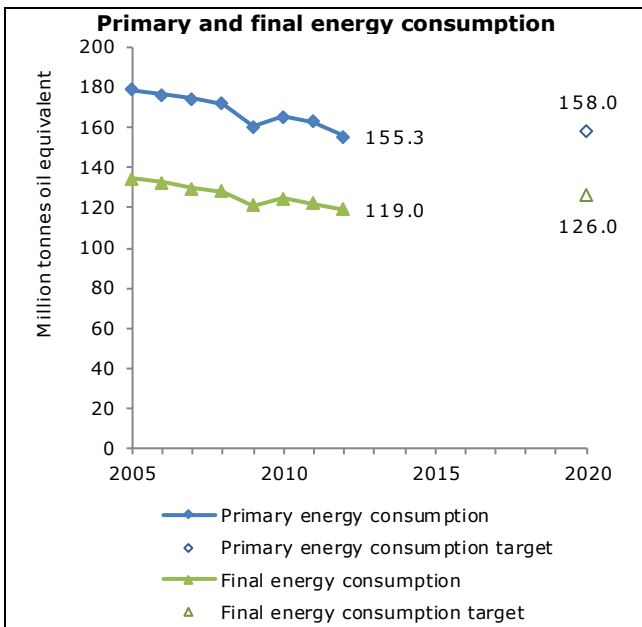
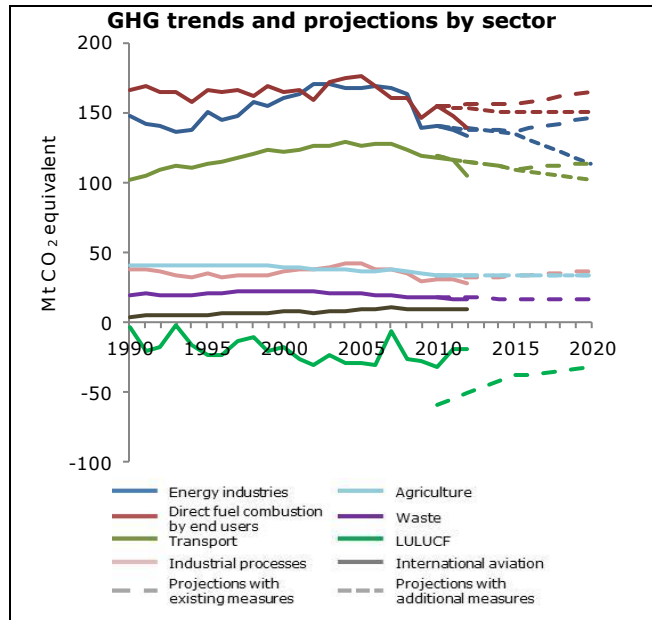
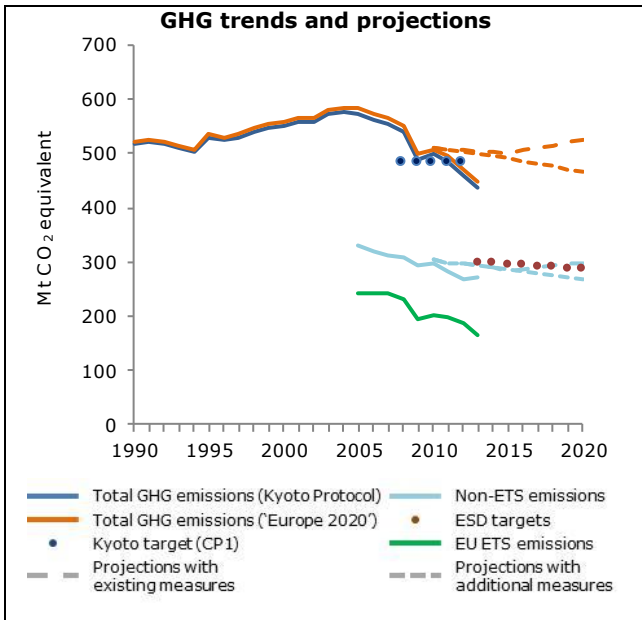
2012 RES share in gross final energy consumption (%)	13.5 %	2011–2012 indicative share from RES Directive (%)	7.6 %
2020 RES target	17.0 %	2012 expected share from NREAP (%)	9.2 %

The average share of renewable sources in gross final energy consumption for 2011–2012 was 12.9% (16.2 Mtoe), which is higher than the indicative RED target for 2011–2012 (7.6%). At the same time, the share of renewables in 2012 (13.5 %) is higher than the expected 2012 NREAP target (9.2 %). Over the period 2005–2012 the observed average annual growth rate in renewable energy consumption amounted to 11.3%. In order to reach its 2020 NREAP target, Italy needs an average annual growth rate of 3.2% in the run-up to 2020. In absolute terms, this is equivalent to 0.5 time its cumulative effort so far.

**Progress towards energy efficiency targets**

Primary energy consumption:		Final energy consumption:	
2005–2012 average annual change	-2.0 %	2005–2012 average annual change	-1.7 %
2012–2020 average annual change to target	0.2 %	2012–2020 average annual change to target	0.7 %

Primary and final energy consumption decreased at a faster pace than is necessary to achieve the 2020 targets. The decrease was a combined result of energy efficiency policies (in particular the introduction of a white certificate scheme) and the effects of the economic crisis (resulting in a decrease in activity). Italy can therefore focus on limiting its energy consumption. Reducing distribution losses, which have increased by 7.3 % since 2008, and improving efficiency in electricity generation, where the consumption of solid fuels increased by 25 % since 2009, could contribute to further reducing primary energy consumption. In addition, the residential sector is the only sector where energy consumption actually increased since 2007, in stark contrast with the industry and transport sectors which experienced a significant reduction.



## Climate and energy policy framework

### Challenges and opportunities

Italy is projected to not meet its 2020 emission reduction target with existing measures (EEA, 2013). Recently introduced strategies and support measures, including the National Energy Strategy, aim to tackle this deficit and bring Italy on course to surpass the 2020 goal, while at the same time developing Italy's green economy sectors and creating green jobs. A major challenge regarding non-Emissions Trading System (ETS) emissions is the inclusion of environmental externalities into existing environmental taxation, as was emphasised by the Organisation for Economic Co-operation and Development (OECD) (OECD, 2013). Italy has a quite structured range of environmental taxes related to energy, fuels, transport and polluting activities (e.g. emissions of sulphur dioxide). However, existing environmental taxes do not sufficiently reflect environmental externalities to result in significant emission reductions. For example, none of the vehicle taxes take carbon dioxide (CO<sub>2</sub>) emissions into account. Also, excise duties on fuels vary greatly and do not entirely reflect the corresponding fuel's carbon impact. A restructuring of energy and fuel taxes to provide a consistent carbon price across all fuel types could tackle transport greenhouse gas (GHG) emissions, which currently make up 24 % of total emissions and increase energy-efficient end-use. In addition, it would help shifting taxation towards environmental taxes, as recommended by the European Commission (COM, 2013).

### Climate and energy strategies

Renewable energy and the promotion of energy efficiency are a clear policy priority. The primary development in this area is currently Italy's new National Energy Strategy, which was approved in March 2013. It includes various targets, such as energy cost reduction (prices and volumes) through investment in renewables and energy efficiency, reaching and surpassing all European climate change and energy goals, a higher security of supply (reduction from 84 % to 62 % of energy dependence), as well as industrial development of the energy sector, including job creation. A competitive gas market and extended interconnections with the EU electricity market are further aims of the strategy.

### Renewable energy

In Italy, support schemes for renewable electricity are mainly managed by the state-owned Manager of Electricity Services (Gestore dei Servizi Energetici (GSE)). A range of mechanisms to support renewable electricity are in place. Various feed-in tariffs (FITs), premium tariffs and a tendering scheme coexist as alternatives and complementaries promoting wind power, geothermal energy, biogas and biomass, as well as hydropower and concentrated solar power. Depending on the source and the size of the renewables plant, operators may be obliged to opt for a certain system or may choose between the available ones. Besides this, there are tax regulations in place reducing real estate tax (all technologies) and value-added tax (wind and solar electricity). Under certain conditions, electricity producers can also make use of net-metering. In addition to these national incentives, there are also a number of regional programmes available. However, Italy is currently reviewing the amount of incentives granted. The recent changes of the FIT Ritiro Dedicato in January 2014 abolish the guaranteed minimum price granted to renewable producers, leaving only the option to sell at market price. The cut also affects existing installations, which have to choose between two system exit strategies. Furthermore, after the introduction of a legal framework for self-consumption systems up to 20 MW, there is an ongoing debate regarding the contribution of self-consumers to grid access fees. Photovoltaic (PV) systems are currently only promoted through tax reductions in real estate tax and value-added tax, as well as through tax deduction of expenses as part of energy efficiency measures in buildings.

There are also various support mechanisms for renewable heating and cooling in place. The Thermal Account gives subsidies for the installation of small renewable heating sources, with the amount varying depending on the type, source, capacity and location of the installation. Moreover, subsidised loans with an interest rate of 0.5 % are available supporting biomass, biogas, geothermal and solar thermal plants. The overall budget for 2014 amounts to EUR 200 million, and the available loan amount depends on the nature of the subject, the plant size and technology. In addition, tax deductions of up to 65 % for expenses related to energetic requalification of buildings and installation of renewable technologies are in place. Reductions of the real estate tax also apply to buildings equipped with renewables for heating.

### Energy networks

The EU Commission recommended to Italy to upgrade infrastructure capacity with a focus on energy interconnections (COM, 2013). In July 2013, it was reported that the European Investment Bank (EIB) will support the development of the national grid in southern Italy for the period 2012–2016 with EUR 570 million. The focus of this financial support will be the development of the grid in Campania, Puglia, Sicily and Calabria (EIB, 2013).

### Energy efficiency

The National Energy Strategy lists various measures to achieve the energy efficiency target, most of them aiming at strengthening and enforcing existing instruments such as the white certificate scheme and the prolongation of tax deductions for energy efficiency works in buildings. Energy **taxation** is rather high with the level of excise duties being well above EU average. However, there are excise duty exemptions, for example reduced rates on liquefied petroleum gas used for heating in mountain regions and progressive duty rates on electricity with lowest rates for energy-intensive businesses. Italy has no CO<sub>2</sub> tax in place.

The principal instrument to promote energy efficiency in the energy services sector is a **white certificate system**. The certificates represent reductions of energy consumptions obtained through energy efficiency projects. Energy services companies need to obtain a certain number of white certificates depending on the amount of energy sold. **Cogeneration** of electricity and heat is supported by various incentive schemes rewarding the production of heat or electricity.

In the **building** sector, minimum energy performance standards for new and modernised buildings have been introduced and energy performance certificates are mandatory. In 2013, tax incentives for energy efficiency measures were introduced so that certain energy refurbishment measures can now count on a tax deduction of up to 65 % of expenses related to the refurbishment of existing buildings, renovations aimed at increasing energy efficiency and installation of renewable technologies (50 % in the case of the installation of PV panels). After its successful uptake

the incentive was prolonged until 2016, with the deduction level declining to 50 % in 2015 and 36 % in 2016. Moreover, the Thermal Account provides subsidies to cover a part of the investment costs for building renovation, exchange of heating systems and the production of thermal energy.

### Transport

In Italy, the vehicle registration tax is based on engine capacity and has varying rates between the provinces. An ownership tax applies to passenger cars, which is based on horsepower, and to heavy-goods vehicles, which is based on weight. Both diesel and petrol are taxed above EU average. A quota system is in place to support renewables in transport. Moreover, the Ministry of Economic Development provides lump sum financial support for the purchase of cars powered by natural gas, electricity and hybrid engines, based on CO<sub>2</sub> emission levels. In 2013 and 2014, incentives of 20 % of the purchase price of the vehicle are provided with a maximum amount of EUR 3 000 to 5 000. This subsidy is lowered to 15 % of the price and a maximum of EUR 1 800 to 3 500 in 2015. The total available budget until 2015 is EUR 120 million: EUR 40 million in 2013, EUR 35 million in 2014 and EUR 45 million in 2015. In addition, policy measures focus on the shift from private to public transport, as well as a shift of freight road transport to sea and rail. In 2013, a Memorandum of Understanding on sustainable mobility was signed by the Ministry of Environment, the logistics company Auta Marocchi and the rail transport company Trenitalia. It establishes the target to increase rail freight transport from the current 6 % to 24 % of total transport by shifting road transportation of goods to rail transportation.

### Agriculture

Following the reform of the Common Agricultural Policy (CAP), financial support has been decoupled from production, and criteria for rural development and environmental considerations are now included. Italy concentrates on two main policies in the agricultural sector: firstly, the rationalisation of nitrogen fertiliser usage, and secondly, the recovery of biogas from the animal storage system. In 2011, methane from biogas recovery has contributed to reducing methane emissions from manure management by 36 % (IMELS, 2013).

### Waste

Italy's main policy goals are compliance with the separate collection targets and the reduction of biodegradable waste disposed into landfills, both resulting from the transposition of the European Landfill Directive into national law. Separate collection has been increasing over the last years. In 2011, 31.3 % of municipal solid waste was subject to separate collection, compared to 25.8 % in 2006 and 7.2 % in 1996. This was also supported by policies supporting alternative waste treatments, such as incineration with energy recovery, mechanical biological treatment and composting. A further measure is to only dispose bio-stabilised waste into landfills, which encourages the anaerobic digestion of municipal solid waste also in co-digestion with other types of waste such as sludge from municipal wastewater treatment plants and animal waste and also increases energy recovery from biogas production (IMELS, 2013).

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