



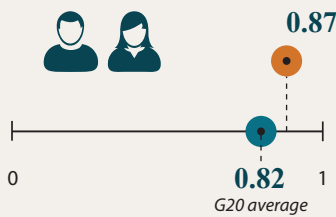
## BROWN TO GREEN: G20 TRANSITION TO A LOW CARBON ECONOMY

# Italy

This country profile assesses Italy's past, present and indications of future performance towards a low-carbon economy by evaluating emissions, decarbonisation, climate policy performance and climate finance. The profile summarises the respective findings from, amongst others, the Climate Change Performance Index (CCPI, operated by Germanwatch and Climate Action Network Europe), the Climate Action Tracker (CAT, operated by Climate Analytics, NewClimate Institute, Ecofys and the Potsdam Institute for Climate Impact Research), and analyses from the Overseas Development Institute (ODI).



### Human Development Index



Source: UNDP, data for 2015

### Share of global GHG emissions



Source: World Bank Indicators, data for 2012

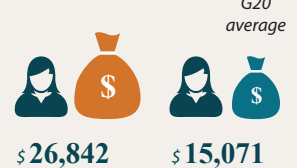
### GHG emissions per capita (tCO<sub>2</sub>e/cap)



### Share of global GDP

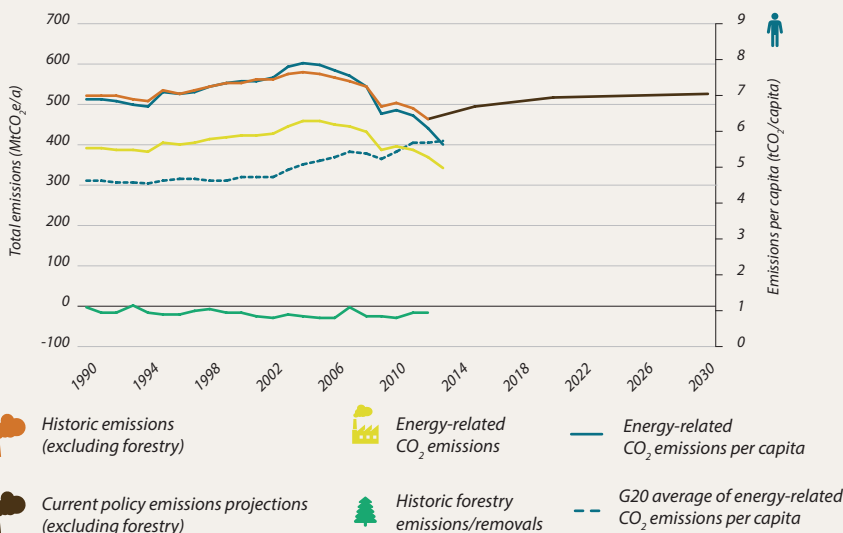


### GDP per capita



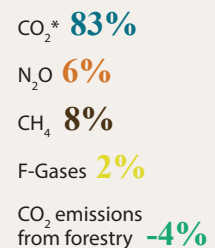
Source: IEA, data for 2013

## GREENHOUSE GAS (GHG) EMISSIONS



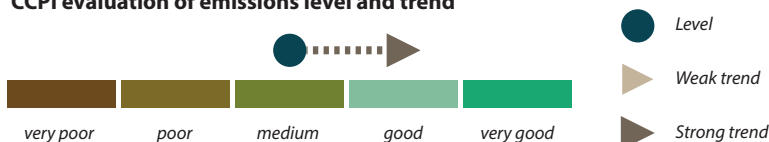
Italy's greenhouse gas (GHG) emissions peaked in 2005 and decreased since then. Future projections show an increase up to a level of 524 MtCO<sub>2</sub>e. Emissions from land use, land-use change and forestry (LULUCF) are in the negative range. Energy-related carbon dioxide (CO<sub>2</sub>) emissions account for 75% of Italy's GHG emissions. CO<sub>2</sub> per capita emissions have developed in line with overall GHG emissions. The CCPI evaluates Italy's emissions level as medium compared to other countries, recognising a positive trend.

### Composition of GHG emissions



\*CO<sub>2</sub> emissions incl. LULUCF  
Source: Annex I countries: UNFCCC (2015);  
Non-Annex I countries: IEA (2014)  
and CAT (2015)

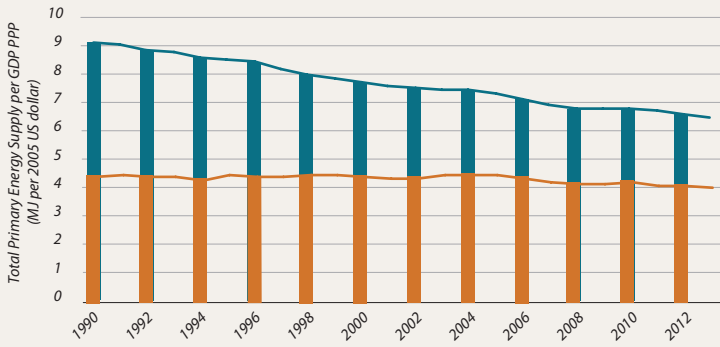
### CCPI evaluation of emissions level and trend



Sources: Past energy related emissions from the Climate Change Performance Index (CCPI); past non-energy and future emissions projections from the Climate Action Tracker (CAT). CCPI calculations are primary based on the most recent IEA data; CAT calculations are based on national policies and country communications.

# DECARBONISATION

## Energy intensity of the economy

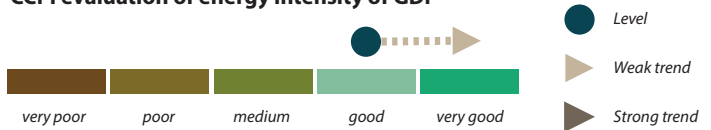


Energy intensity  
Average energy intensity in G20

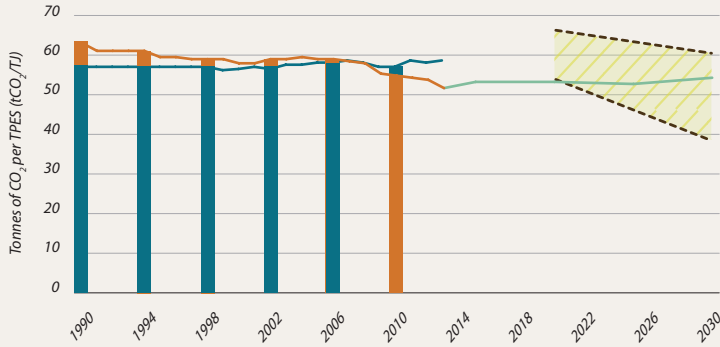
Source: CCPI, 2016

The energy intensity of Italy's economy (TPES/GDP) has barely changed in recent years, and is about one third below the G20 average. The CCPI evaluates Italy's level of energy intensity as relatively good, with a decreasing trend.

### CCPI evaluation of energy intensity of GDP



## Carbon intensity of the energy sector



Carbon intensity (past trend) Average carbon intensity in G20  
Carbon intensity (current policy projection) Global benchmark for a 2°C pathway

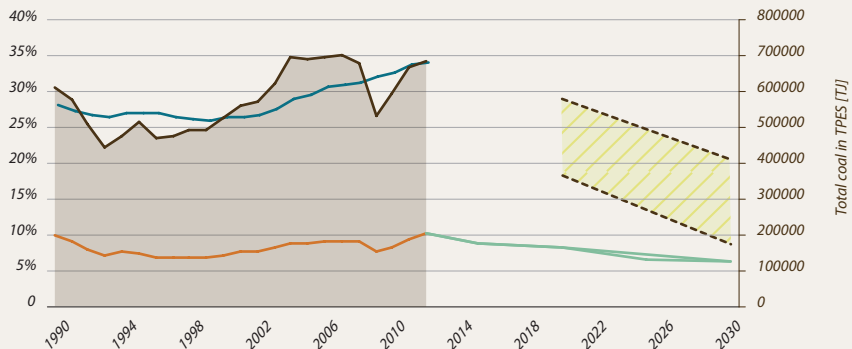
Sources: Past: CCPI; future projections: CAT

Carbon intensity in the energy sector (CO<sub>2</sub>/TPES) slightly declined since 1990, sitting below the G20 average since 2009. Future projections show carbon intensity remaining relatively constant in the future, although the 2°C compatible pathway clearly indicates a decrease is needed over time. The CCPI evaluates Italy's carbon intensity of primary energy supply as medium, but due to the recent decrease recognises a positive trend.

### CCPI evaluation of carbon intensity of energy sector



## Share of coal in Total Primary Energy Supply (TPES)



% of coal (past trend) Average % of coal in G20  
% of coal (current policy projections) Global benchmark for a 2°C pathway (min & max)  
Total coal consumption (TJ)

Source: CAT

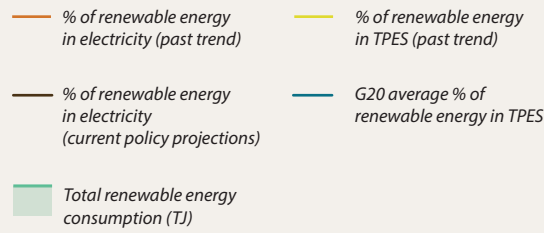
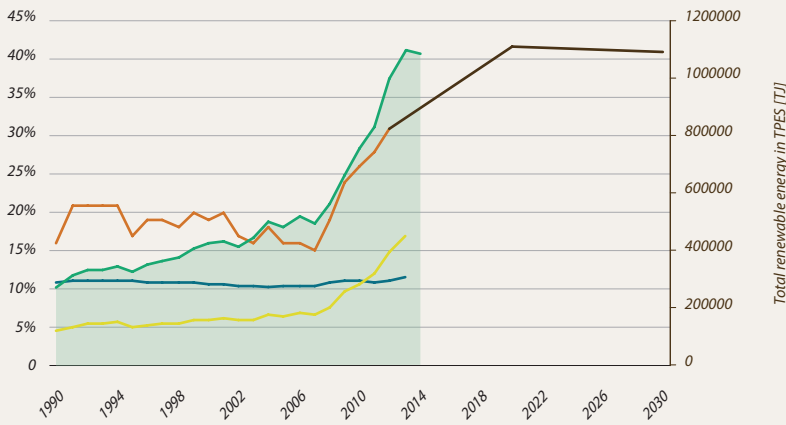
The share of coal is relatively low in Italy, compared to other G20 members. In 2012, coal accounted for 10% of the country's total primary energy supply. According to future projections, the share will decrease slightly over the years to 6% in 2030, which would be in line with a 2°C compatible development.

### Evaluation of coal share in TPES



Source: own evaluation

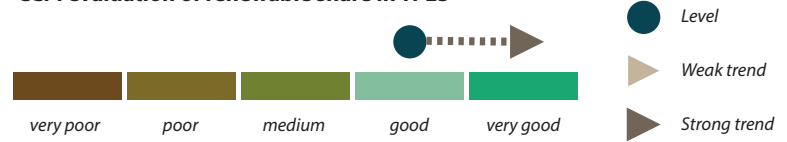
## Renewable energy in TPES and electricity sector



Sources: CCPI and CAT

The share of renewable energy in electricity has risen strongly. It doubled its share in just five years from 2007, reaching 31% in 2012. Projections predict further increases, up to 41% in 2030. The share of renewables in Italy's total primary energy supply has also increased since 2007 and currently is on a level of 17%. Italy's level of renewables is rated as relatively good compared with other countries, and the recent increase has led to a positive trend.

### CCPI evaluation of renewable share in TPES

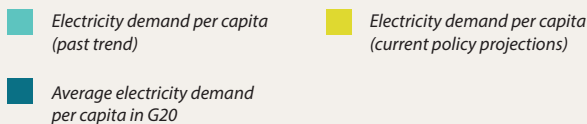
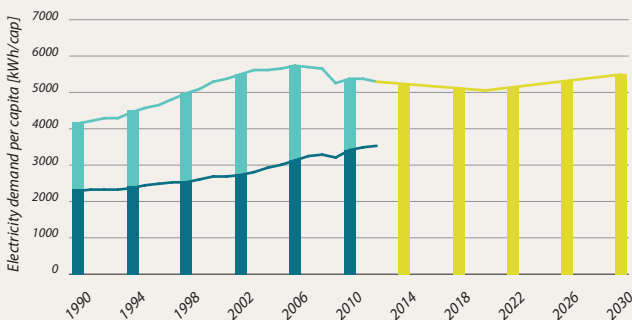


## Electricity demand per capita

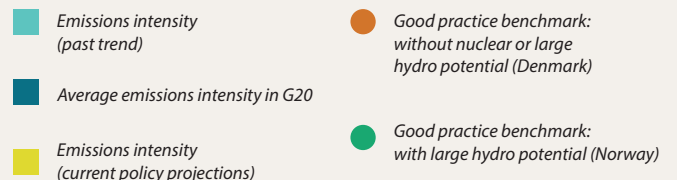
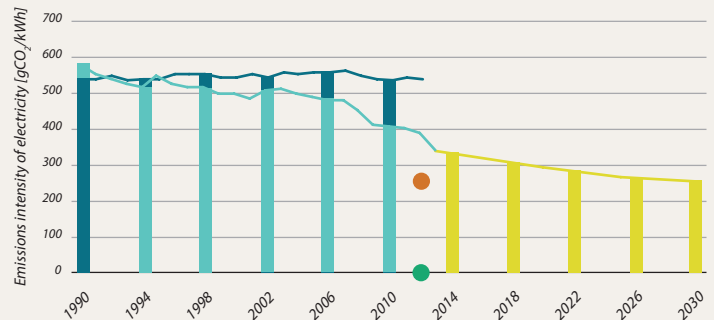
Italy's electricity demand per capita increased steadily in the past decades. After peaking in 2007, a slight decrease set in, but electricity demand remained at a very high level compared to the G20 average. Future projections indicate the per capita electricity demand will remain stable until 2030.

## Emissions intensity of the electricity sector

The emission intensity of Italy's electricity has measurably declined since 1990. The country's emissions intensity is below the G20 average and it can be expected, that decrease will continue until 2030.

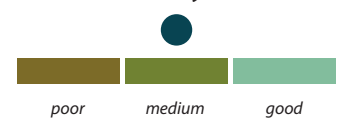


Source: CAT, 2015



Source: CAT, 2015

### Evaluation of the electricity emission intensity



Source: own evaluation

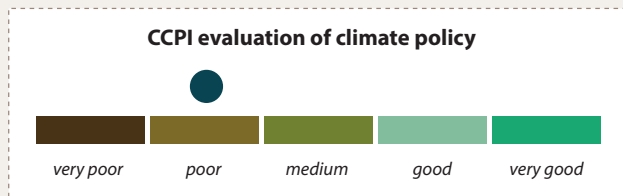
# CLIMATE POLICY PERFORMANCE

## Checklist of the climate policy framework

Low emissions development plan for 2050*	✗
2050 GHG emissions target	✗
Building codes, standards and incentives for low-emissions options	✓
Support scheme for renewables in the power sector	✓
Emissions performance standards for cars	✓
Emissions Trading Scheme (ETS)	✓
Carbon tax	✗

\* Understood as decarbonisation plans and not specifically as the plans called for in the Paris Agreement

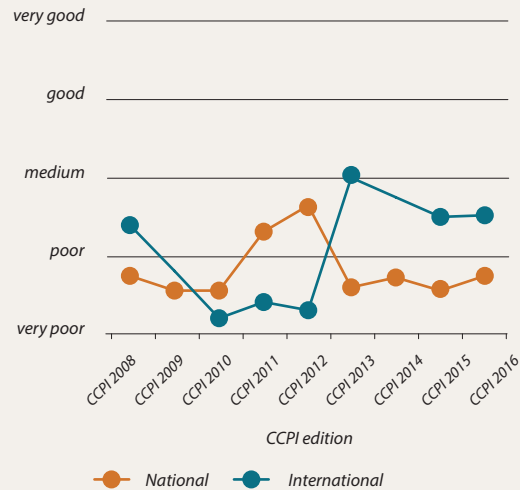
Source: Climate Policy Database, 2016



## Climate policy evaluation by experts

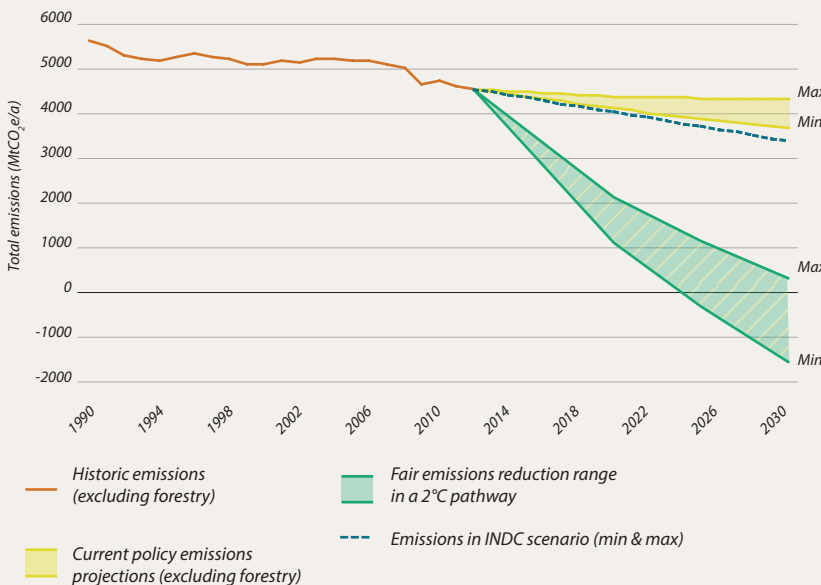
CCPI experts criticise Italy for lacking a coherent climate and energy policy, reflected in its unsteady CCPI scores. On a national level Italy's performance is evaluated as poor. Recent changes in renewable energy policy cut investments and slowed growth rates. Internationally, experts criticise Italy's passive role in the EU, simply following EU climate policy without being proactive. Overall, the experts rated Italy's performance as relatively poor.

The CCPI evaluates a country's performance in national and international climate policy through feedback from national energy and climate experts.

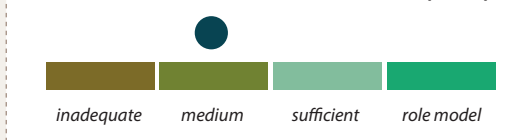


Source: CCPI, 2016

## Compatibility of national climate targets (INDCs) with a 2°C scenario



## CAT evaluation of the EU's Intended National Determined Contributions (INDC)



Source: CAT, 2015

As an EU member state, Italy did not submit its own Intended Nationally Determined Contribution (INDC) or emissions reduction target for COP21.

Under its INDC, on 6 March 2015 the EU proposed a binding, economy-wide target to cut domestic greenhouse gas emissions by at least 40% below 1990 levels in 2030. No individual EU member state has its own INDC.

The Climate Action Tracker (CAT) rates the EU emissions target as "medium", meaning the INDC is inconsistent with limiting warming below 2°C. It would require other countries to make a comparably greater effort, and much deeper emissions reductions.

The overall level of GHG emissions reductions proposed in the EU28 INDC does not fall within the range of approaches for fair and equitable emission reductions. Current policies are projected to reduce domestic emissions by 23–35% below 1990 levels in 2030, and do not put the EU on a trajectory towards meeting either its 2030 or 2050 targets. The EU's Emissions Trading Scheme is an important instrument to achieve its 2020 and 2030 targets. However, an accumulated surplus of emissions allowances could dilute the 40% GHG target by 7% in 2030. It is therefore important that the EU creates a robust market reserve for eliminating that surplus, to keep in line with the 40% GHG target.

## FINANCING THE TRANSITION

### Investment attractiveness



Allianz Energy and Climate Monitor

**MEDIUM**

RECAI\* (E&Y index)  
Category (own assessment)

**LOW**

Trend\*\*



\*Adapted from RECAI and re-classified in 3 categories (low, medium, high) for comparison purposes with Allianz Monitor.

\*\*Taken from RECAI issue of May 2016

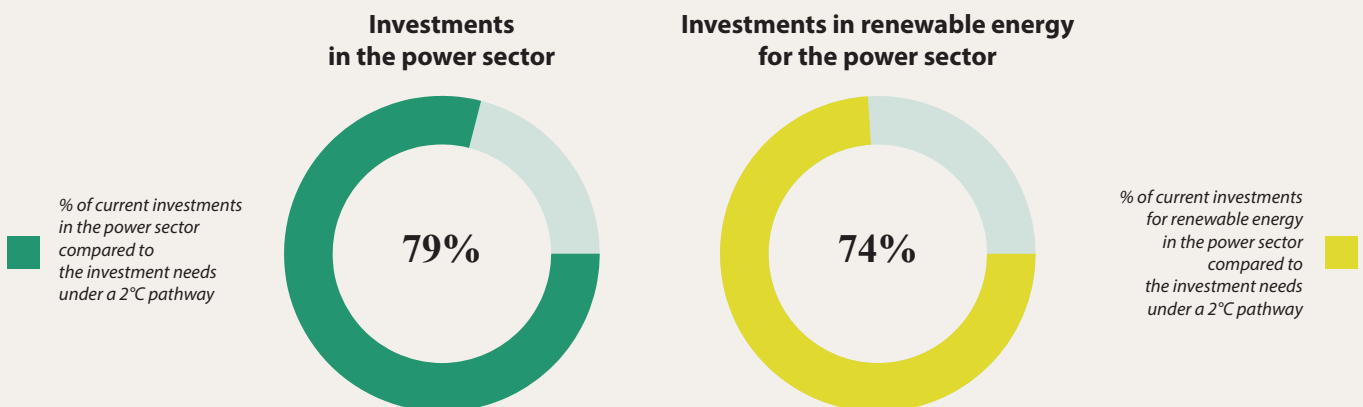
Climate Transparency rates Italy's investment attractiveness as low to medium, due to differences in positions of political parties on energy (and climate) policy, and the limited political influence of green lobbies. However, low policy predictability is balanced by favourable investment potential and conditions, prior experience with green investments, and a well-established value chain for renewables.

Sources: Allianz Energy and Climate Monitor and RECAI reports

The Allianz Energy & Climate Monitor ranks G20 member states on their relative fitness as potential investment destinations for building low-carbon electricity infrastructure. The investment attractiveness of a country is assessed through four categories: Policy adequacy, Policy reliability of sustained support, Market absorption capacity and the National investment conditions. The Renewable Energy Country Attractiveness Index (RECAI) produces score and rankings for countries' attractiveness based on Macro drivers, Energy market drivers and Technology-specific drivers which together compress a set of 5 drivers, 16 parameters and over 50 datasets.

### Historical investments in renewable energy and investment gap

This section shows Italy's current investments in the overall power sector (including distribution and transmission) as well as in renewable energy expressed as the share of the total annual investments needed to be in line with a 2°C compatible trajectory.



Source: Adapted from WEIO, 2014<sup>(1)</sup>

<sup>(1)</sup> WEIO (2014) compares annual average investments from 2000 to 2013 with average annual investments needed from 2015 to 2030 under a 2°C scenario

### Carbon pricing mechanisms

#### Emissions Trading Schemes (ETS)

An ETS caps the total level of GHG emissions and allows industries to trade allowances based on their marginal abatement cost. By creating a supply and demand for allowances, an ETS establishes a market price for GHG emissions.

#### Carbon Tax

A Carbon tax directly sets a price on carbon by defining a tax rate on GHG emissions or – more commonly – on the carbon content of fossil fuels. Unlike an ETS, a carbon tax is a price-based instrument that pre-defines the carbon price, but not the emissions reduction outcome of a carbon tax.

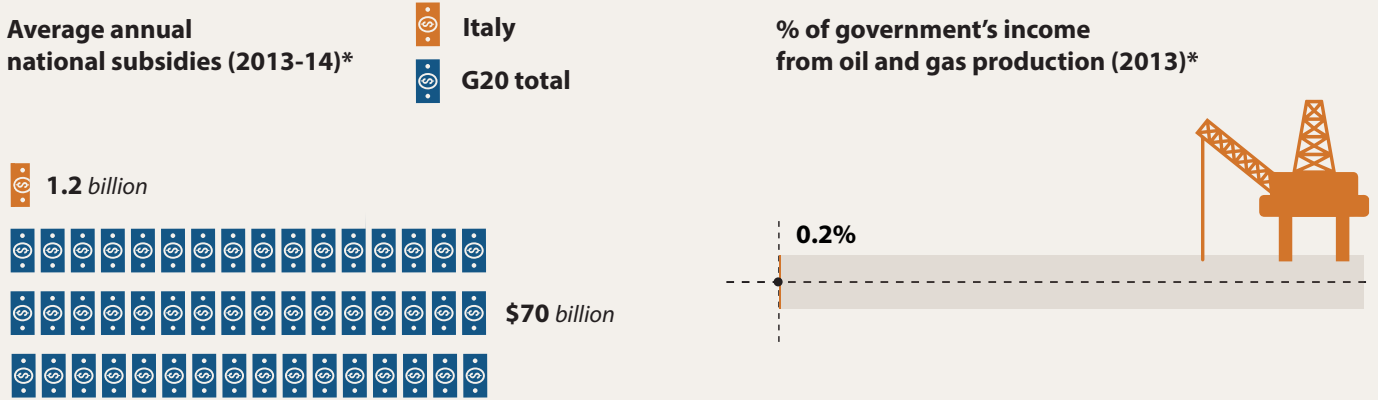
Italy does not yet have a carbon tax either in place, or under consideration. However, Italy is part of the EU-ETS, which covers 2GtCO<sub>2</sub>e of emissions and 45% of the EU's emissions.



Sources: World Bank and Ecofys, 2016; other national sources

## Fossil fuel subsidies

88% of Italy's energy is generated from fossil fuels, and its subsidies aim to keep energy prices low to enable equitable access to energy. The bulk of Italy's fossil fuel tax subsidies focus on consumption. The government provides two tax exemptions for fossil fuel production, and direct spending for gas and coal. Under its former feed-in tariff system, Italy provided incentives for promoting new electricity capacity from renewable as well as fossil fuel sources (through, e.g. cogeneration, heat recovery, etc.). Italy abolished this system for plants built after 2009 and considered an accelerated phase-out process for existing contracts. So far, agreements have been negotiated for 1GW of installed capacity, to be phased out.

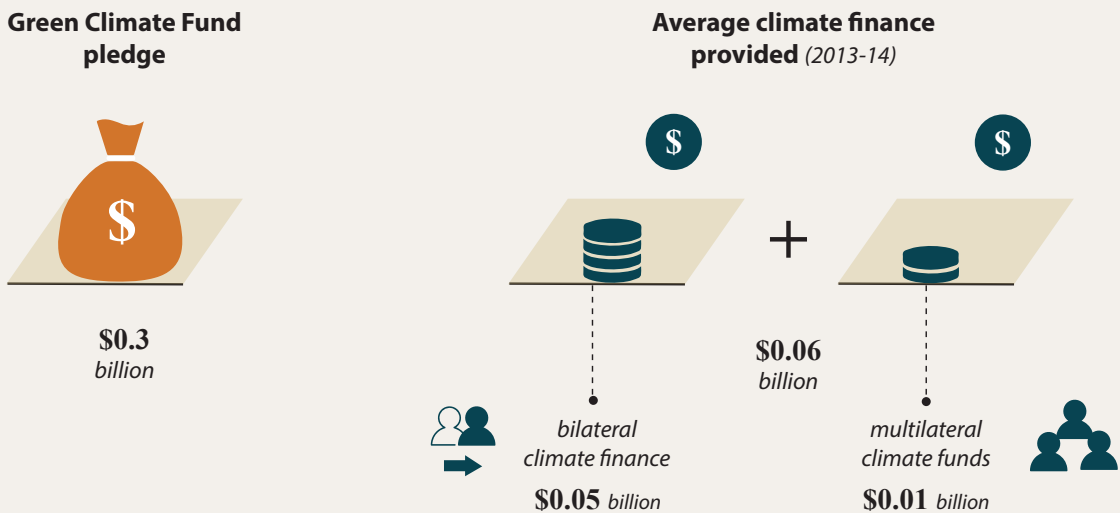


Source: ODI, 2015

\*The indicators above refer only to subsidies for fossil fuel production, and include direct spending (e.g. government budget expenditure on infrastructure that specifically benefits fossil fuels), tax expenditure (e.g. tax deductions for investment in drilling and mining equipment) and other support mechanisms (e.g. capacity mechanisms).

## Public climate finance

Of all the G20 countries, Italy has contributed the least climate finance, both in absolute terms and relative to GDP. It has made the sixth smallest G20 pledge to the GCF. Italy's contribution includes export credits to support Italian companies to invest in developing countries.



Source: ODI, 2016