

ITALY'S EFFORT TO PHASE OUT AND RATIONALISE ITS FOSSIL-FUEL SUBSIDIES

A REPORT ON THE G20 PEER-REVIEW OF INEFFICIENT
FOSSIL-FUEL SUBSIDIES THAT ENCOURAGE WASTEFUL
CONSUMPTION IN ITALY



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(CHAIR OF THE PEER-REVIEW) AND SELECTED EXPERTS

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Acronyms and Abbreviations

APEC	Asia-Pacific Economic Cooperation
ARERA	Autorità di Regolazione per Energia Reti e Ambiente
c€	Euro-Cents
EER	European Energy Retailers
Enel	Ente Nazionale per l'Energia Elettrica s.p.a.
ENI	Ente Nazionale Idrocarburi s.p.a.
EU28	European Union (28 members)
EU-ETS	European Union Emission Trading System
GBE	Green Budget Europe
GME	Gestore dei Mercati Energetici
GDP	Gross Domestic Product
GHG	Greenhouse Gas
G20	Group of Twenty
GW	giga-Watt
ICAO	International Civil Aviation Organisation
ICES	Italian Catalogue of Environmentally Harmful and Friendly Subsidies
IEA	International Energy Agency
IISD	International Institute for Sustainable Development
ISR	Indonesian Self-Report
ITSR	Italian Self-Report
Ktoe	kilotonnes of oil equivalent
LNG	liquefied natural gas
LPG	liquefied petroleum gas
Mtoe	million tonnes of oil equivalent
OECD	Organisation for Economic Co-operation and Development
PSV	Punto di Scambio Virtuale
Tcf	trillion cubic feet
TFC	total final consumption (of energy)
TPES	total primary energy supply
USD	United States dollar
UNEP	United Nations Environment Programme
VA	volt ampere
VAT	value-added tax
VFT	vehicle fuel tax

Executive Summary

Italy and Indonesia announced in February 2017 that they would undertake a reciprocal peer review of their fossil-fuel subsidies under the auspices of the G20. With People's Republic of China and the United States of America setting the precedent for these peer reviews as the first countries to participate in such an undertaking, and Germany and Mexico as the second pair, Indonesia and Italy constitute the third pair of countries to follow suit. The two countries proceeded to invite other countries, international organisations and experts to take part in the review. In the case of Italy, those invited participants (in addition to Indonesia) were Argentina, Canada, Chile, China, France, Germany, the Netherlands, New Zealand, the IEA, the IISD, the European Energy Retailers, Green Budget Europe, experts from Bocconi University and the University of Pavia, the UNEP, and the OECD. The OECD was also asked to chair the review, and to act as a co-ordinator and facilitator among the participants.

This report is the principal outcome of this peer-review process, reflecting the review team's in-person discussions with Italian officials, but also deliberations among the review team itself. After summarising the key aspects of Italy's energy landscape, the report provides a detailed analysis of the measures reported as inefficient fossil fuel subsidies in the Italian Self-Report (ITSR). Finally, the review team provided some guidance principles and suggestions for reforming inefficient fossil fuel subsidies, and these are discussed in the report as well.

The carbon intensity of the Italian economy is among the lowest of International Energy Agency (IEA) member countries, and it has been falling for several decades.¹ Italy benefits from a large and increasing share of renewable energy sources. Renewable energy contributed 18% of total primary energy supply and 40% of electricity generation in 2016.² This development is driven by both the need to compensate for the scarcity of the country's fossil fuel resources and the need to comply with EU Directive 2009/28/EC. Hydroelectric power for a long time was the major source of renewable energy, but recently, electricity produced from wind and solar energy has helped increase that share, supported by state incentives (feed-in tariffs and other support schemes).

The wholesale segments of energy markets in Italy are fully liberalised and competition is encouraged by recent reforms facilitating exchanges between retailers, and the entry of newcomers. However, historical monopolies largely privatised still dominate energy deliveries to final consumers. A large majority of consumers also pay regulated electricity prices.

¹ Carbon intensity, measured as CO₂ emissions divided by real gross domestic product adjusted for purchasing power parity (GDP PPP), amounted to 0.16 tonnes of CO₂ per USD 1 000 PPP in Italy in 2014, compared with the IEA average of 0.30 tCO₂/USD 1 000 PPP and the IEA Europe average of 0.23 tCO₂/USD 1 000 PPP (Purchasing Power Parity) (International Energy Agency, 2016^[1]).

² Source: IEA global energy data.

Italy applies excise taxes and VAT to energy products. Compared with neighbouring European countries, its excise tax rates are relatively high, especially for oil products and residential natural gas, while electricity taxation remains lower than the European Union average. The level of taxation contributes to high end-user prices.

In this context of scarce resources and high energy prices, Italy strives to develop a long-term strategy for its energy market. The National Energy Strategy (NES), a ten-year national plan approved in 2017, includes decarbonisation of the energy system as one structural objective, along with ensuring the competitiveness of the market and guaranteeing the country's energy security. The NES's quantitative targets include the reduction of annual final energy consumption from 118 to 108 Mtoe between 2021 and 2030, and increasing renewable energy's share in total consumption by 10 percentage points, to 28% in 2030.

The review team commends Italy's transparency with describing its subsidies to fossil fuels, in the present G20 process, but also through the publication of a regularly updated catalogue of environmentally related subsidies (the ICES, comprising also those related to biodiversity). The ICES includes the budgetary cost estimate of subsidies to the government, and, in most cases, the initial rationale for implementing the measure. It was used as a basis for the Italian self-report (ITSR) in the current process.

The ITSR inventories 39 measures subsidising fossil fuel production or use. These measures accounted for more than EUR 13 billion in 2016 and included subsidies for 6 different sectors (energy, industry, transport, households, public services and agriculture).³ A large part of these measures involves small amounts, since 16 out of 39 cost the government less than EUR 20 million annually, but they also include four important measures mobilising more than EUR 1 billion a year each. Nearly all of the measures (35 out of 39) take the form of preferential tax treatment (reduced rates or exemptions) targeting a specific sector or consumer group.

The ITSR also includes a macro-economic assessment of the phasing out of nearly all the listed fossil fuel subsidies. The assessment is based on a dynamic computable general equilibrium (CGE) model of the Italian economy, and considers impacts on sectors, GDP and greenhouse gas (GHG) emissions, under different scenarios of recycling the revenue gain from eliminating subsidies. Results indicate that GHG emissions decline after eliminating subsidies, and that any decline of GDP drop due to a reduction in subsidies can be offset or even reversed by a well-designed revenue recycling scheme.⁴

The review team includes several specific suggestions for reform in the final chapter of this report. This approach is due to the particularity of the Italian self-report, which did not present any past or future plans to phase-out fossil fuel subsidies.

³ This estimate is a minimum since a number of measures' costs were not estimated (it is more particularly the case for VAT exemptions). This figure includes the different fiscal treatment between gasoline and diesel (which amount is estimated at EUR 6.1 billion) and other measures for which status as "fossil fuel subsidies" needs to be discussed (e.g., tax exemptions for electricity, export credits or free allocation of ETS allowances).

⁴ In the simulations presented in the ITSR, GDP increased more in the case of a full recycling into labour tax cuts than in a case of a partial recycling in carbon emission reduction policies.

1. Introduction

1.1. Background and context

G20 and APEC Leaders committed in 2009 to rationalise and phase out inefficient fossil fuel subsidies over the medium term while providing targeted support for the poorest. To follow up on this commitment, members of both groups have since engaged in a voluntary process of periodically reporting on their fossil-fuel subsidies.

In an effort to further facilitate the sharing of experience and mutual learning among G20 members, G20 Finance Ministers announced in February 2013 that they would seek to develop a framework for voluntary peer reviews for rationalising and phasing out inefficient fossil-fuel subsidies that encourage wasteful consumption. This led in December 2013 to a joint announcement by the People's Republic of China and the United States of America that the two countries would undertake a reciprocal peer review of their fossil-fuel subsidies under the G20 process. Other countries - Germany, Mexico, Indonesia, Italy, Argentina and Canada - have since joined China and the United States in agreeing to undertake peer reviews of their own subsidies under the G20. A similar exercise took place in the context of APEC, with Peru, New Zealand, the Philippines and Chinese Taipei, each having already undergone a peer review of their subsidies in, respectively, 2014, 2015, 2016 and 2017.

In reviewing the efforts of Indonesia and Italy to reform their inefficient fossil-fuel subsidies, the peer-review team followed a process similar to that followed in the preceding G20 peer reviews, of China and the United States, Germany and Mexico. This involved:

- Reviewing the self-reports of the two countries and sending them a list of questions and requests for clarification.
- The peer-review members meeting in person with officials from the two countries. For the Indonesia's peer-review, the meeting took place in Jakarta during the week of 4 December 2017. For the Italian peer-review, the meeting took place in Rome during the week of 22 October 2018.
- The OECD writing the first drafts of the peer reviewers' reports and circulating those to other members of each review team for comments.
- The OECD, on behalf of the team, submitting the revised drafts of the peer reviewers' reports to the countries for comments and factual corrections.
- The OECD, on behalf of the team, revising the reports, taking into consideration the comments of the reviewed countries, and eventually producing final reports that could be agreed to by all parties.

Readers should bear in mind that, in reviewing the efforts of Indonesia and Italy to reform their inefficient fossil-fuel subsidies, the peer-review teams were bound by the G20's collective views on the initial reform mandate and on the conduct of the peer reviews, which are voluntary.

The composition of the review team for Italy was as follows:

- Mr. Amir Hidayat (Indonesia, Fiscal Policy Agency, Ministry of Finance)
- Ms. Anna Zulvia Dwi Kurnaini (Indonesia, Fiscal Policy Agency, Ministry of Finance)
- Ms. Hesti Handayani (Indonesia, Fiscal Policy Agency, Ministry of Finance)
- Mr. Oscar Natale (Argentina, Ministry of Energy)
- Ms. Marie-Pier Martin (Canada, Department of Finance)
- Ms. Joyce Yuan (Canada, Department of Environment and Climate Change)
- Mr. Javier Garcia (Chile, mission to the OECD)
- Mr. Han Wenke (China, National Development and Reform Commission)
- Mr. Feng Shengbo (China, National Development and Reform Commission)
- Ms. An Qi (China, National Development and Reform Commission)
- Mr. Nicolas Lancesseur (France, Ministry of Economy and Finance)
- Mr. Kai Schlegelmilch (Germany, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)
- Mr. Bert Roukens (Netherlands, Ministry of Economic Affairs and Climate Policy)
- Ms. Joanna Heslop (New Zealand Embassy in Rome)
- Mr. Wataru Matsumura (International Energy Agency)
- Ms. Joy Aeree Kim (UNEP)
- Mr. Ronald Steenblik (OECD, Trade and Agriculture Directorate)
- Ms. Nathalie Girouard (OECD, Environment Directorate)
- Mr. Kurt Van Dender (OECD, Center for Tax Policy and Administration)
- Ms. Hélène Blake (OECD, Trade and Agriculture Directorate)
- Mr. Philip Gass (International Institute for Sustainable Development)
- Mr. Lucky Lontoh (International Institute for Sustainable Development)
- Mr. Michele Governatori (European Energy Retailers)
- Mr. Edoardo Croci (Green Budget Europe and University Bocconi of Milan)
- Mr. Andrea Zatti (University of Pavia)

A point that the G20 has stressed on several occasions is that the reform of inefficient fossil-fuel subsidies is a sovereign issue dependent on the unique situation and priorities of the individual countries.⁵ In this context, the role envisaged for the review team is to

⁵ For example, at the 2010 G20 Summit in Seoul, Korea, Leaders reaffirmed their commitment to rationalise and phase-out over the medium term inefficient fossil-fuel subsidies that encourage wasteful consumption, with timing based on national circumstances, while providing targeted support for the poorest.

acknowledge the transparency efforts of Italy to identify fossil fuels subsidies and document the reviewed countries' self-reports. One further contribution particular to this report is to provide some principles for future reform and suggestions for reform. This approach is specific to the Italian review. It reflects the particularity of the Italian self-report, which did not present any past or future plans to phase-out fossil fuel subsidies.

1.2. The scope of fossil fuel subsidies

The 2009 G20 Leaders' Communiqué announced the commitment of the G20 to “rationalise and phase out over the medium term inefficient fossil-fuel subsidies that encourage wasteful consumption”, while recognising “the importance of providing those in need with essential energy services, including through the use of targeted cash transfers and other appropriate mechanisms”.

One challenge confronting review-team members is that none of the key terms in this instruction - neither medium term, inefficient, nor fossil-fuel subsidies - have been defined by the G20. As a consequence, major terms are left to the interpretation of the reviewed countries as there is no consensus on what should be included in definitions.

The Italian self-report consists of a comprehensive inventory of measures likely to subsidise fossil fuel production or consumption.⁶ This inventory reaffirms the comprehensive approach of the Italian peer-review concerning the definition of what should be considered as an inefficient fossil fuel subsidy. Several issues are raised by the choice of definition made in the ITSR:

1. The question of which types of subsidies are inefficient and encourage wasteful consumption has been left to interpretation by the G20 members themselves. Italy proposes to consider the option that every subsidy to fossil fuel production and consumption is inefficient and presented a comprehensive inventory of 39 measures in its self-review.
2. The question of whether the term “fossil-fuel subsidies” includes subsidies to electric power production (to the extent that it is based on the combustion of fossil fuels) or to the consumption of electricity was left to countries' interpretation. Italy chose to include these measures in its self-review as subsidies to fossil fuels.
3. Finally, the ITSR provides a comprehensive definition of what constitutes a subsidy by including tax expenditures. This definition is subject to debate since the assessment of tax expenditures requires that a certain level of taxation is set as a benchmark such that deviations from this benchmark system give rise to subsidies; there is no international consensus on how to set this benchmark. As a consequence, the introduction of tax expenditures as inefficient fossil fuel subsidies, as well as their quantitative estimation, are left to the reviewed country's judgement. Italy's ICES, following the Parliament mandate, considers that tax exemptions or reductions constitute a subsidy, relative to the usual rate of taxation.

⁶ The self-report is a collective effort by the Italian Ministries of Environment, Land & Sea, of Economic Development and of Economy & Finance.

2. An overview of Italy's energy sector: resources, market structure, prices and taxes

This chapter describes the Italian energy sector. The section (2.1) provides information on Italy's energy resources, their energy supply and consumption mix. The section (2.2) describes the structure and organisation of the energy market and the section (2.3) explains the structure of final energy prices and taxation.

2.1. Energy resources and utilisation

2.1.1. Italy's total primary energy supply

The energy mix of Italy is strongly dominated by fossil fuels, with oil accounting for 35%, natural gas 39% and coal 7 % of total primary energy supply (TPES) respectively in 2016.⁷ The share of fossil fuels in TPES has been in decline over the past two decades (93% in 2000, 92% in 2005 and 82% in 2015) while the share provided by renewable energy and waste has increased (from 7% of TPES in 2000 to 18% in 2016).

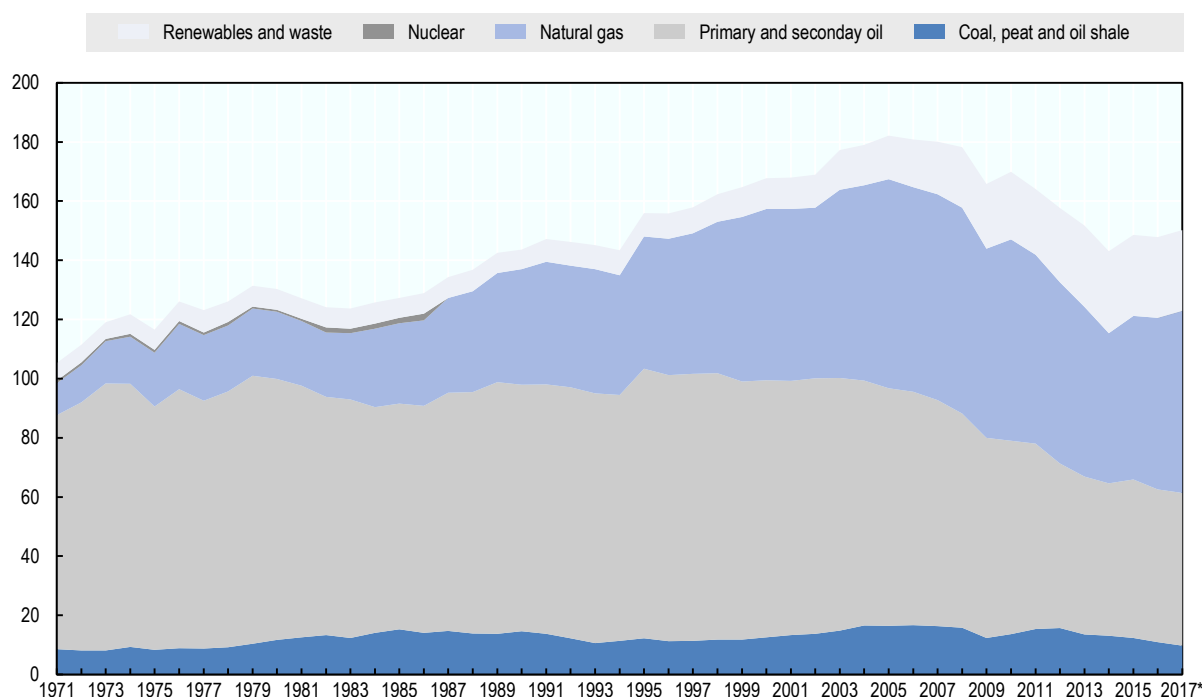
TPES⁸ grew regularly for 30 years until 2005, led by natural gas, the supply of which grew five-fold between 1971 and 2005. The total supply from natural gas and oil has been decreasing since then, although TPES from natural gas made a small rebound in 2015 and 2016.

In 2016, the Italian TPES stabilised at 150 Mtoe, after 10 years of sharp declining.

⁷ Source: IEA.

⁸ Total primary energy supply (TPES) is made up of production + imports - exports - international marine bunkers - international aviation bunkers ± stock changes (IEA definition).

Figure 1. Total Primary Energy Supply in Mtoe, 1971-2017



*Provisional.

Note: TPES here excludes electricity and heat.

Source: IEA data.

The Italian economy is energy efficient relative to neighbouring European countries. In 2016, the energy intensity of the country (defined as the energy supply needed for one unit of GDP⁹) amounted to 70 toe/M 2010 USD, as the average rate was 130 worldwide, 110 in the OECD and 90 in European OECD countries. Considering the population, the TPES amounts to 2.5 toe per capita in 2016 in Italy, compared with 4.1 toe per capita in OECD countries and 3.0 toe per capita in European OECD countries.

2.1.2. Italy's total final consumption of energy

Italy's total final consumption (TFC)¹⁰ of energy amounted to 118 Mtoe in 2016. This consumption peaked in 2005 (141 Mtoe) after a regular increase of twenty years. Between 2008 and 2015, TFC dropped by 14% owing to the global economic crisis. It has been stable since.

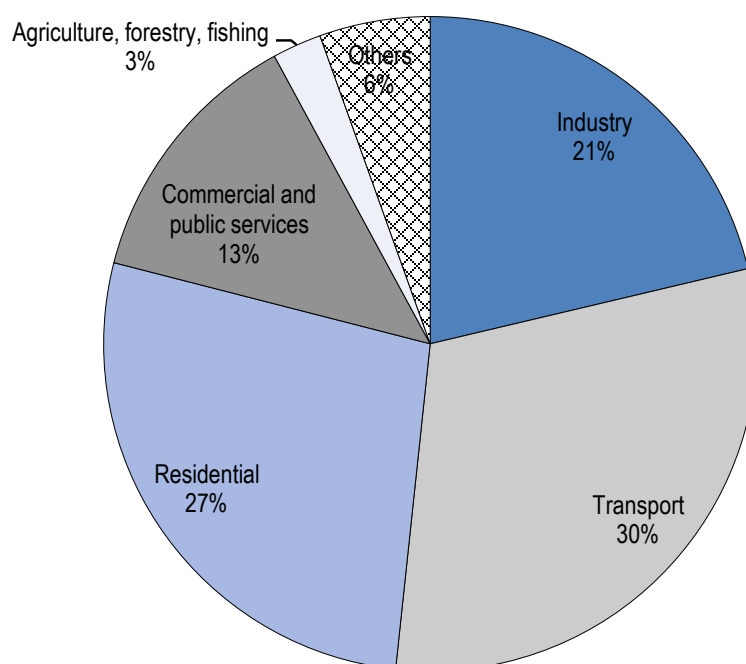
Fossil fuels dominate Italy's TFC of energy, oil products accounting for 69% of the TFC in 2016, while electricity amounted to 21%. The rest of the consumption is shared between renewables (7%), heat (3%) and coal (1%).

⁹ i.e. TPES/GDP at PPP (Power Purchasing Parities).

¹⁰ The Total Final Consumption indicator's purpose is mainly to reflect the final deliveries to consumers. It differs from TPES by excluding energy used for transformation and own-use (in industry production), backflows from the petrochemical industry, international aviation bunkers and international marine bunkers.

More than half of Italy's domestic energy consumption is used for transport (30%) and residential uses (27%). Industry amounts to the same share (21%) as all other sectors combined (commercial and public services, agriculture, and others) (Figure 2.2). TFC has declined by 16% between 2006 and 2016, mainly driven by the decrease of consumption by industry and transport sectors (International Energy Agency, 2016^[1]).

Figure 2.2. Total final consumption of energy per sector (2016)



Source: IEA data.

2.1.3. Italy's energy resources and international trade

Italy's energy dependency amounted to 80% in 2016.¹¹ This ratio is particularly high for hydrocarbons (93%), due to scarce resources and declining domestic production. From 2006 to 2016, natural gas production contracted by 47%, crude oil production by 35% and coal production by 63%. In 2018, the last coal mine in Italy, located in the Sulcis Iglesiente Basin in Sardinia, closed permanently.

Consequently, Italy imports most of its energy supply. Imports of natural gas cover 92% of its requirements, most coming from the Russian Federation (43% in 2014), Algeria (12%), Libya (imports started in 2003) (12%) and the Netherlands.¹² Imports also cover 96% of the country's crude oil supply, coming from Russian Federation (21%), Azerbaijan (16%), Iraq, and Saudi Arabia. They now entirely cover the supply for coal, mostly from the United States (27%), the Russian Federation (21%), and Indonesia (17%).

Italy produces most of its electricity but it is still a net importer, with 15% of its final electricity consumption coming from abroad (of which 54% from Switzerland, 34% from

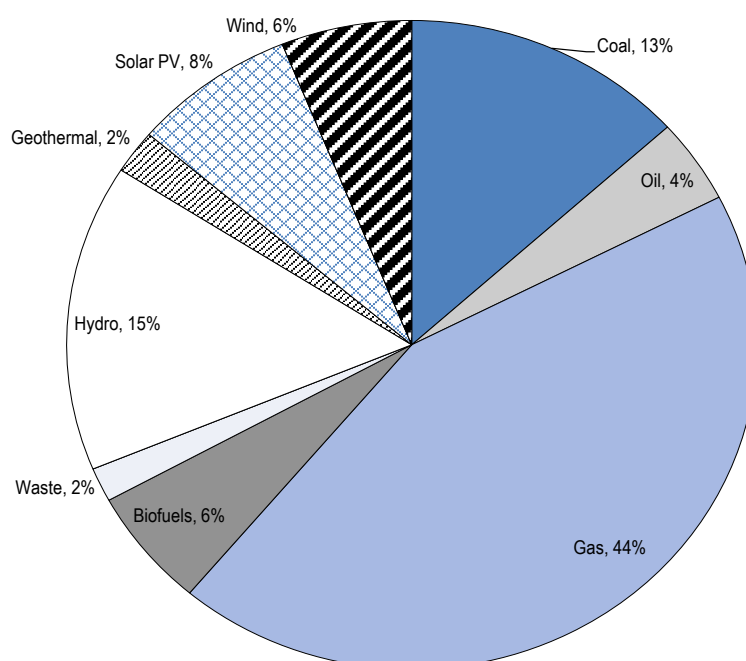
¹¹ The import dependency is the ratio between the net imports (import-export) and TPES.

¹² Source: (International Energy Agency, 2016^[1]).

France, 12% from Slovenia and 3% from Austria). It is a net exporter with Greece, with which trade started via a subsea, high-voltage direct current cable in 2003.

Natural gas constitutes the largest share of energy inputs to electricity generation (43%), but its share has been decreasing for several years in favour of renewable energy. In 2016, renewable-energy sources constituted 33% of electricity generation, against 18% in 2006. Reciprocally, the share of fossil fuels (coal, oil and natural gas) in electricity generation dropped from 73% to 39%. Hydropower constitutes a large share of renewables in electricity (39%, equivalent to 15% of total energy generation), mainly from dams constructed decades ago, but its global production has not evolved much since 1960 (44 257 GWh in 2016 against 43 257 GWh in 2006). The relatively recent increase of the share of renewables in electricity generation is mainly driven by the rise of solar photovoltaic power, which was nearly inexistent in Italy in 2006 but had grown to 8% of national electricity generation by 2016; the electricity generated by wind turbines was multiplied by six over this same period.

Figure 2.3. Electricity generation by source (2016)



Source: IEA. *Electricity Information*, 2018.

Box 2.1. Coal production in Italy

Italy has never been a major producer of coal, but intermittently, starting in the 1950s, it has extracted high-sulphur, high ash sub-bituminous coal from the underground Nuraxi Figus mine (also known as the “Miniera Monte Sinni” Coal Mining Concession) in the prefecture of Sulcis, in the extreme southwest of the island of Sardinia, an area of high unemployment.

In the late 1980s work to expand the mine commenced in anticipation of producing about 1.5 million tonnes of coal a year, to supply power plants on the island (IEA, 1988, p. 164). The Italian government granted ENI, the operator of the mine complex at the time, approximately 500 trillion lira (about USD 380 million at mid-1987 exchange rates, or USD 735 million in 2018) to help cover its costs, to be paid out between 1985 and 1989. Because of delays in the construction of the corresponding power plant, however, actual mining was delayed for eight years. In 1996 a new company was created to operate the mine, Carbosulcis S.A., in which the Sardinian Autonomous Government became the sole shareholder.

In 1994, an Italian presidential decree authorised the construction of an integrated gasification combined-cycle (IGCC) power plant at the Portovesme power station, in nearby Portoscuso, to be fuelled by locally mined coal. Because of technical and economic difficulties, however, the Italian government withdrew its support for the project in 2003 (Source Watch, no date). Instead, the mine ended up selling all of its output to ENEL’s existing conventional coal-fired power plants. Because of its high sulphur content, ENEL usually blended the Nuraxi Figus mine’s coal with coal imported from Colombia or the United States (Mills, 2015: p. 37).

In 2005, Sardinia’s regional government put forward a plan to redevelop the Sulcis mine, and revived proposals to construct a new IGCC power plant that would use enhanced coal-bed methane, drawn from deep seams in the mine, for fuel (Pisanu and Melis, 2008). In 2009, the regional government modified its proposal to one that envisaged building a conventional, 350-MW coal-fired power plant, equipped with carbon capture and storage (CCS) technology (Mills, 2015: p. 37; Source Watch, no date). That plant, too, was ultimately never built.

Finally, on 9 April 2014, following the procedure set out in Council Decision 2010/787/EU, Italy submitted a “Plan for closing the Nuraxi Figus mine” (European Commission, 2014). The final plan was adopted later that year, after which Carbosulcis began to rapidly reduce the pit’s workforce, facilitated by government assistance to underwrite early retirements. Full cessation of mining occurred at the end of 2018 (Martini et al., 2018). The mine site is now being repurposed for other uses, including a plant to dispose of coal combustion by-products (CCBs) in the gob areas of the mine’s abandoned underground long-wall production panels (Lallaia et al., 2015).

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2.2. Market structure and organisation

The electricity and natural gas markets have been gradually opening to competition for 15 years and many reforms have been made to facilitate trade between companies. As of the end of 2018, the process had been completed for gas and nearly completed for electricity. However, historical monopolies are still leaders in both markets and part of the retail market is still regulated.

Founded in 1995, the ARERA (Autorità di Regolazione per Energia Reti e Ambiente) ensures the promotion of competition and the efficiency of the public sector services in the electricity and gas sectors.

2.2.1. The electricity market

Electricity generation in Italy is widely dispersed, with a market of 13 358 producers in 2017, 12 263 of them producing only from renewable-energy sources.¹³ The five biggest producers in 2017 commanded nearly half (49.5%) of the Italian electricity generation market, in terms of volume. Enel (Ente Nazionale per l'Energia Elettrica), the historical producer privatised in 1999, controls 31% of capacity installed and produces about one-fifth of the electricity generated domestically.¹⁴ It is followed by ENI (Ente Nazionale per Idrocarburi), which generated 9.6% of domestic electricity production in 2017, and Edison (7.6%).

Smaller electricity producers (that is those individually accounting for less than 1% of electricity generation in 2017) have strongly contributed to the rise of electricity generated from renewables. They account for 99% of the electricity from solar power, 70% from wind power and 20% from hydro-power. Enel accounts for 80% of the country's electricity produced from coal and 38% of its hydro-power.

The increase of renewables in Italian electricity production and the share of small producers in this segment are probably largely due to the policy incentives to encourage renewables developed during the first decade of this century. In particular, solar photovoltaic (PV) installations were supported by both feed-in tariffs and a premium scheme until 2014. Tax credits for PV systems and the availability of net metering service for plants between

¹³ Source: ARERA.

¹⁴ In February 2019, the Italian State still held 23.59% of ENEL S.p.a..

20 kW and 500 kW also facilitated the development of small producers.¹⁵ In 2015, the cost of the different RES support schemes amounted to EUR 12.4 billion (of which 6.7 billion dedicated to PV). These supports were trimmed in 2011 to contain costs. The cost of RES support in the electricity system is recovered *via* a surcharge on consumers' bills, which is capped at EUR 12.5 billion annually.

The trade of electricity on the wholesale market is managed by the *Gestore dei Mercati Energetici* (GME). The spot market (day-ahead and intraday) provided for 42% of the electricity supply in 2013, with 223 registered participants. The Energy Account platform manages bilateral contracts.

The retail market is divided in three different markets:

- The enhanced protection market, in which regulated prices, set by the ARERA, apply. The single buyer (Acquirente Unico - AU), owned by public group GSE (*Gestore Servizi Energetici*), has the mandate to purchase electricity on the wholesale market at the best conditions and to sell it to retailers. This market provides electricity to 22 million households and 4 million small and medium-sized firms. One hundred and thirty-six companies serve this market, dominated by Enel (85% of consumers).
- The opening of the market for electricity was completed in 2007 and by 2013 counted 336 retailers. Enel is the largest service provider (35% of consumers).
- The safeguard market acts like a last-resort service, and is open to consumers who are not entitled to access the enhanced-protection market and who may find themselves without provider on the open market. Around 93 000 consumers resorted to this service in 2013, provided by two companies (selected by public auction).

The transmission of electricity in Italy is managed by one operator in Italy, Terna, which was unbundled from Enel in 2005. The Italian high-voltage transmission network – the largest in Europe – is very heterogeneous as it has to link southern Italy to the North, which connectivity is facilitated by neighbouring European networks. Italy's two largest islands, Sardinia and Sicily, are poorly connected to the central network. Accordingly, despite some major improvements to the network between north and south and with Sardinia during the last decade that brought some alignment of electricity prices in the country, prices remain higher in Sicily.

2.2.2. The natural gas market

Eni, the historical monopoly, enjoys a dominant position in the production and importation of natural gas in Italy: in 2017, it produced 77% of domestic gas and imported 51% of foreign gas. Italy also has three LNG regasification terminals.

The wholesale natural gas market is structured by its main platform, the *Punto di Scambio Virtuale* (PSV), which is managed by Snam Rete Gas (in charge of the transport of gas). While it included 185 companies, the three biggest companies (Eni, Enel Trade, and Eni Trading & Shipping) accounted for 31% of the market in 2017.

¹⁵ GES (*Gestore dei Servizi Energetici*) applies refunds on the electricity bill according to the injections and withdrawal of electricity in a given time and their market value.

The retail market is more fragmented, with 420 traders. Excluding auto-consumption, which amounts to 15 billion cubic metres (Gm³), some nearly 60 Gm³ were sold in 2017. However, the concentration of the three biggest companies (Eni, Edison and Enel) is similar to the wholesale market, as they accounted for 32% of retail sales in 2017. Households bought 30% of the gas sold in 2017, industry 33% and electricity power plants 22%.

The retail market for natural gas was liberalised in 2003 and since then consumers have been able to choose their own gas suppliers. Those who did not change suppliers remain part of the protected market, the prices and quality of service of which are set by the regulator, ARERA. The protected market is still slightly predominant (52% of clients on the retail market in 2017), although its share is declining.

2.2.3. The oil market

The oil market is completely open but the historic national company Eni, which operates 4 780 filling stations throughout the country, still commands a large part of it, accounting for 31% of total sales to the retail market in 2016.

2.3. Prices and taxes

Energy prices in Italy, both wholesale and retail, are particularly high compared with those in other European countries. This is partly a consequence of Italy's geography. First, Italy is highly dependent of foreign sources of primary fossil energy. Second, the provision of energy is made more difficult (and more expensive) than other countries by the peninsula shape of the country and the presence of several islands.

Italy's levels of taxes (VAT and excise taxes) on fuels also contributes to the high level of end-user energy prices in Italy. However, their impacts differ strongly according to the type of energy and the type of consumers.

2.3.1. Electricity

Italian wholesale electricity prices register well above the average of EU countries. During the second quarter of 2018, Italy had the fourth-highest wholesale prices of electricity in the European Union, at 53.4 €/MWh (against 43.8 €/MWh on average for the EU as a whole), behind only the United Kingdom, Ireland and Greece.¹⁶ Regional wholesale prices remain homogeneous throughout the Italian territory, except for some occasions when prices peak locally. Such local peaks occur particularly in the islands because of some defaults of the interconnections to the mainland.

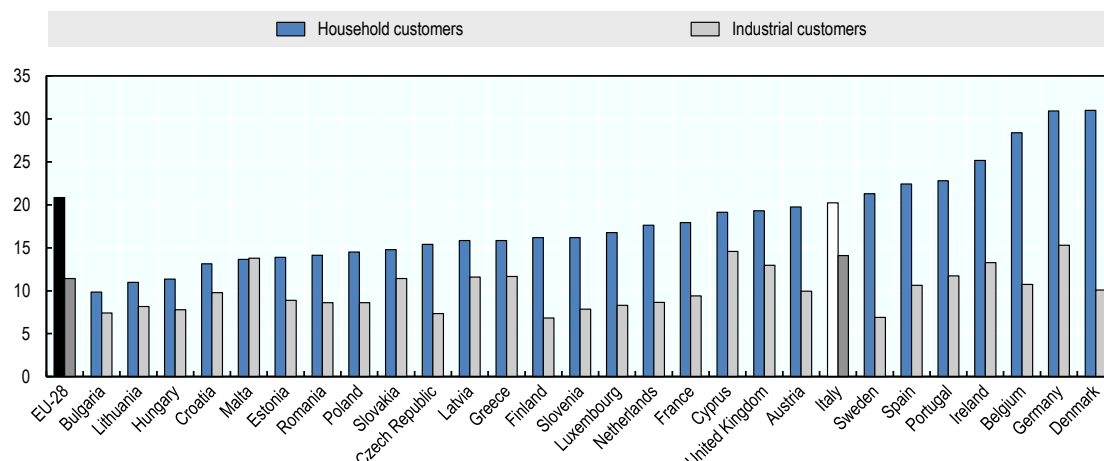
Retail prices of electricity on the enhanced protected market (85% of residential consumers) have four components: the energy cost from the wholesale market, the distribution network costs, taxes and "general burdens", which includes the costs for nuclear decommissioning (A2), the cost of incentives for renewables (A3), support for the reduced tariffs by *Ferrovie dello Stato* (A4), support for research for the improvement of the electricity system (A5), the costs of benefits for consumers who undergo economic or

¹⁶ Source: EU DG Energy, from European wholesale power exchange.

physical hardships (AS), and the cost of the reduced rates for high-consuming industries.¹⁷

Italian prices of electricity for industrial consumers are among the most expensive in the EU (lower than only Germany and Cyprus), reaching 14.10 c€/kWh (eurocent per kWh) in the second quarter of 2018, whereas the average EU prices amounted to 11.42 c€/kWh (excluding VAT and other recoverable taxes).¹⁸

Figure 2.4. Average electricity retail prices, second quarter of 2018 (in c€/kWh)¹⁹



Note: Retail electricity prices for households: Eurostat consumption band DC (annual consumption between 2 500 kWh and 5 000 kWh). All taxes and levies are included. **Retail electricity prices for industry:** Eurostat consumption band ID (annual consumption between 2,000 MWh and 20,000 MWh). VAT and other recoverable taxes and levies are excluded.

Source: Eurostat.

Household retail prices are close to the EU average and amounted to 20.24 c€/kWh in the second quarter of 2018, against 20.86 c€/kWh in EU 28. However, Italy had the 8th highest residential electricity prices in the EU28 in 2018. The comparison between other prices in EU capitals show that is mainly due to a higher price of energy sources. The levels of taxation of electricity for residential users are still near the EU average or below: according to the energy price index, excises amounted to 9% of the average electricity price in Rome

¹⁷ Italy produced nuclear energy from 1963 to 1990. The four nuclear plants were closed following a referendum organised in 1987 in the aftermath of the Chernobyl disaster. They are currently still being decommissioned.

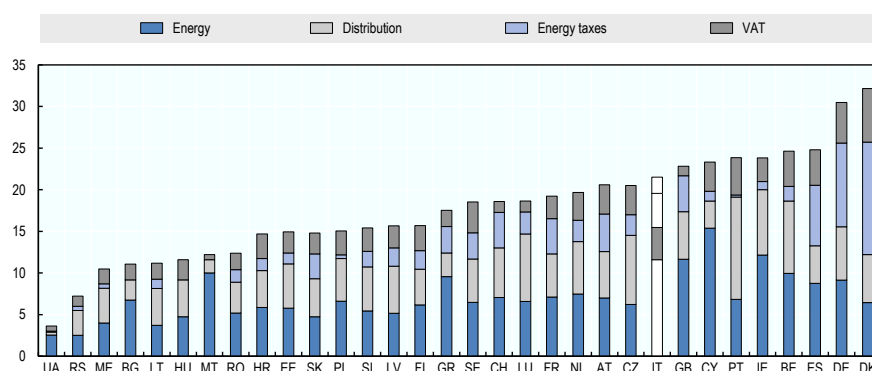
¹⁸ Footnote from the Government of Turkey: The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Footnote from the European Commission: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

¹⁹ *Ibid.*

in November 2018 and VAT 9%. At the EU level, excises amounted to 15% of the average prices and VAT 15%.

Figure 2.5. The Household Energy Price Index (HEPI) in the European capital cities – Electricity prices in November 2018 (in c€/kWh) ²⁰



Source: VaaseTT. HEPI press release, 29 November 2018.

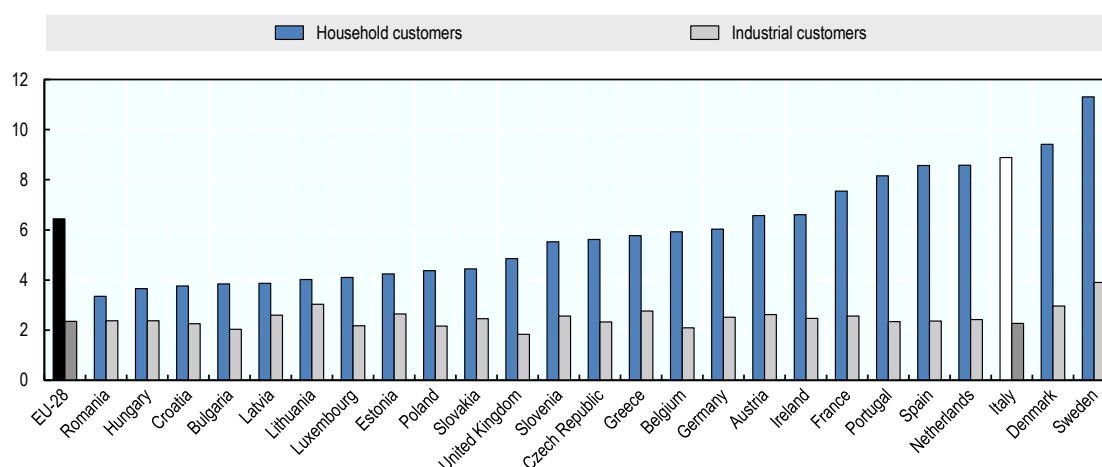
2.3.2. Natural gas

Italian wholesale gas prices have been on an upward trend since the end of 2016, as in other European countries. In the second quarter of 2018, prices at the PSV remained on average 2.1 €/MWh higher than hubs in Northwest Europe.²¹

Comparing prices to the EU28 average, there is a stark difference on the retail market between industrial and residential consumers. Although the price paid by industrial consumers is below the average European price in 2018 (2.27 c€/kWh against 2.35 c€/kWh), prices for residential users placed third in the EU during the second quarter of 2018 (8.89 c€/kWh against 6.44 c€/kWh on average in the EU). This ranking difference is mainly due to the level of energy taxation for natural gas in Italy, amounting to 19% of the final prices in 2018 (against 15% on average in the EU), whereas in several European countries retail prices of natural gas are not burdened by an excise tax at all.

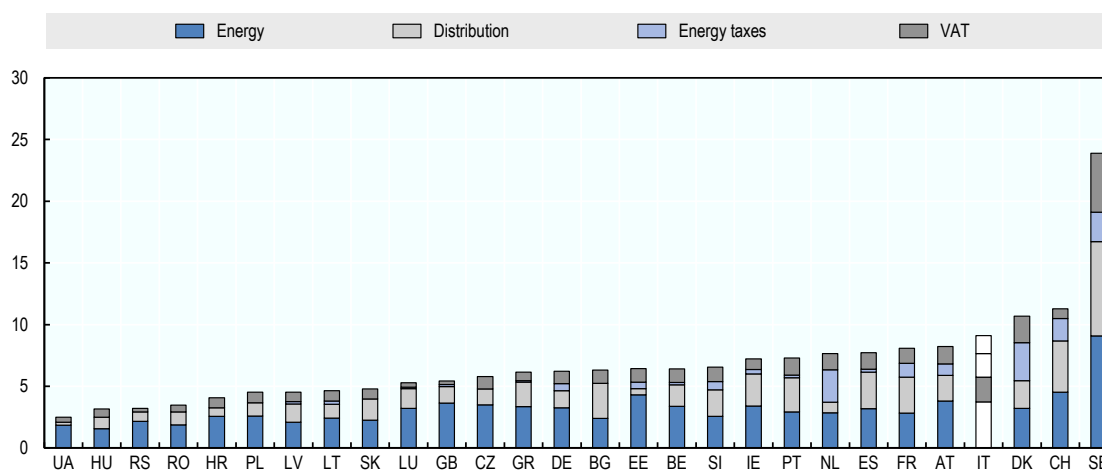
²⁰ *Ibid.*

²¹ Source: Quarterly Report on European Gas Markets (Volume 11-issue 2, second quarter of 2018), European Commission, DG Energy.

Figure 2.6. Average gas retail prices - Second quarter of 2018 (in c€/kWh) ²²

Note: Retail gas prices for households: all taxes and levies are included. Retail gas prices for industry: VAT and other recoverable taxes and levies are excluded.

Source: Eurostat.

Figure 2.7. Composition of Household Energy Price Index (HEPI) in the European capital cities – natural-gas prices in November 2018 (in c€/kWh) ²³

Source: VaaseTT. HEPI press release, 29 November 2018.

2.3.3. Petroleum products

Prices for petroleum products are fully liberalised in Italy, and consequently follow European prices. However, lead-free, 95-octane gasoline (SP95) and gasoil (diesel) prices have been constantly higher than the average EU average prices for at least a decade (+11%

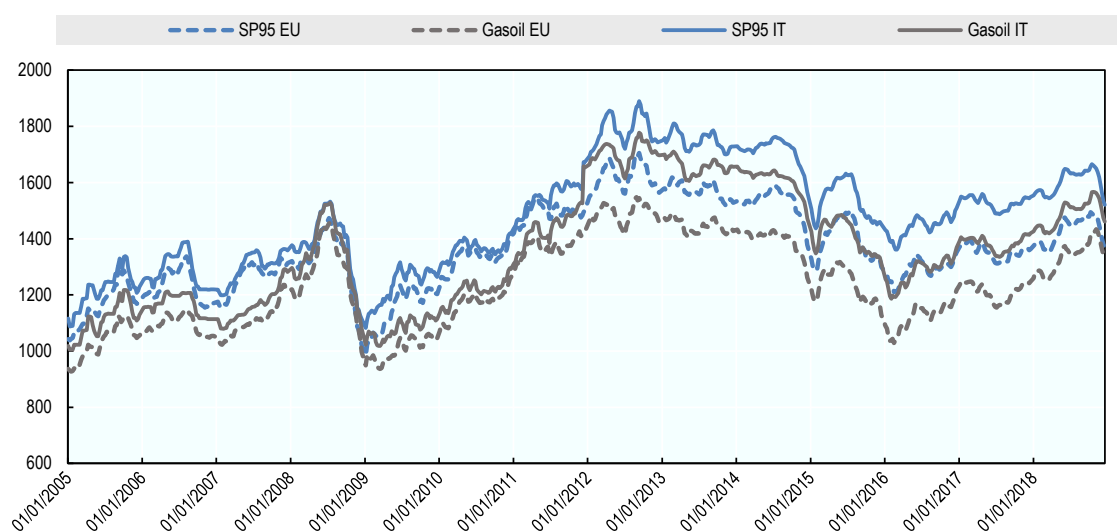
²² See footnote 17.

²³ Ibid.

for SP95 and +10% for gasoil in 17 December 2018).²⁴ The gap between European and Italian prices, which used to be small (respectively 0.1% and 2.0% in the beginning of 2011), strongly widened after 2011.

Taxes are largely accountable for this gap between European and Italian prices. Pre-tax prices are very similar to the European average, and have been lower for more than a year in Italy in the case of gasoil. At the end of 2018, taxes (VAT and excise taxes) amounted to 66% of the SP95 consumer price and 60% of the gasoil consumer prices in Italy, while the averages in the EU28 were, respectively, 62% and 54%. Moreover, the gap between Italian and EU after-tax prices has widened since 2011 as a consequence of the increase in VAT rates (from 20% to 21% in 2011, and to 22% in 2013) and excise taxes (+29% between 2010 and 2015 for SP95, +46% for gasoil).

Figure 2.8. Evolution of SP95 and gasoil prices in Italy and in the EU



Note: all taxes are included.

Source: Weekly Oil Bulletin, European Commission.

²⁴ Data from the European Commission.

3. Fossil fuel subsidies in Italy

3.1. General observations

Several definitions of subsidies have been reported by scholars and international organisations. The one adopted in the Italian Self-Report (ITSR) (that is the same as in the ICES) is a definition provided by the OECD in 2006: “a subsidy is a measure that keeps prices for consumers below market levels, or keeps prices for producers above market levels or that reduces costs for both producers and consumers by giving direct and indirect support” (OECD, 2006^[2]). This definition of subsidies is one of the most comprehensive ones, as it includes both budget transfers, tax expenditures and transfers associated with risk-sharing. This definition is based on the impact they might have on costs or prices, something that can be difficult to assess. The non-internalisation of external costs, as challenging as it is to quantify them, can thus also be considered as included in this definition, though not specified here in further details.

The ITSR inventoried 39 measures subsidising fossil fuels, pointing out specifically six of them that need further investigation before being phased-out and three of them for which reforms require international discussion. These measures accounted for more than EUR 13 billion in 2016.²⁵ A large part of these measures involve small amounts, since 16 out of 39 cost the government less than EUR 20 million annually. They also include four important measures mobilising more than EUR 1 billion each.

The measures inventoried are very heterogeneous with respect to the amounts at stake and the public concerned (households, energy producers, public services) but they share some common characteristics. Nearly all measures (35 of them) are targeted tax reductions or exemptions. Many of them were introduced several decades ago and 23 of them have been in place for 25 years or more. Some are highly targeted at specific consumers, like energy-consuming industries.

The ITSR divides the inventoried measures by main benefitting sector. This showed that more than half of the amounts estimated are dedicated to the transport sector (29% when included the measures classified as under discussion in the ITSR) even though it gathers a bit more than a quarter of the measures (Table 3.1).

The measures inventoried in the ITSR are presented in the next sections, following the same sector classification as in the ITSR.

²⁵ This estimate is a minimum since a number of measures' costs were not estimated (it is more particularly the case for VAT exemptions). This figure includes the different fiscal treatment between gasoline and diesel (which amount is estimated at EUR 6.1 billion) and other measures which status as “fossil fuel subsidies” needs to be discussed (tax exemptions for electricity, export credits or free allocation of ETS allowances).

Table 3.1. Fossil fuel subsidies inventoried in the Italian Self-Report

	Number of measures	Estimates for 2016 (excl. measures to be discussed* and VAT reduced rates)		Estimates for 2016 (incl. measures to be discussed* and VAT reduced rates)	
		in EUR millions	in % of the inventoried measures	in EUR millions	in % of the inventoried measures
Energy**	13	477	7%	6 538	48%
Industry	5	445	6%	445	3%
Transport	10	3 939	57%	3 946	29%
Industry and transport***	1	12	0%	12	0%
Households and public services	8	1 257	18%	1 891	14%
Agriculture	2	830	12%	830	6%
Total	39	6 960	100%	13 663	100%

* Measures considered in the ITSR to be discussed are excise tax exemptions for public transports and for small electricity consumers, export credits and different fiscal treatment between gasoline and diesel.

** Subsidies classified in the energy sector in the ITSR encompass measures targeting energy production or distribution, some specific energy products and the different tax treatment between diesel and gasoline.

*** The estimate for the exemption of excise tax on LPG for industrial use and public transport does not unbundle the two types of beneficiaries.

Note: the financial amount of some subsidies is not available for the year 2016. The amounts shown in this table are therefore likely to be underestimates.

3.2. Subsidies to the energy sector

The ITSR inventoried 13 measures in the “energy sector”, defined as subsidies specifically targeting certain fuels. These measures included tax exemptions and direct funding, and the different tax treatment between diesel and gasoline. They are distributed alongside the value chain since they cover fossil fuel production and distribution, energy products, and electricity.

3.2.1. Subsidies to fossil fuel production or distribution

Italy is not a major producer of fossil fuels but a few measures still benefit the industry, directly encouraging the production or the distribution of fossil fuels. Each measure targets a different actor and their individual amounts are relatively small. However, as a whole, the amounts provided in the ITSR can allow us to estimate that they sum up yearly to EUR 200-300 million euros during the years 2014-2016.

These measures, presented in Table 3.2, are very heterogeneous as they benefit different stages of the production process; some are provided through tax cuts, and others through direct transfers. The reduction of the excise tax rate on natural gas is modest (-6%) and the amounts at stake are minor. In contrast, other subsidies for production and distribution (e.g., corporate income tax deduction and royalty cuts) constitute significant amounts for the national and regional budgets (central government and regions sharing royalties).

Moreover, the Italian government grants significant funding to research institutions for the research and development on the extraction, transport, processing, combustion, conversion of oil, natural gas and coal. The financial size presented here and in the ITSR excludes areas of research that could benefit the environment, such as support for energy efficiency, Carbon Capture and Storage (CCS), and flue gas treatment. The precise environmental impact of those measures was not assessed in the ITSR. However, as a whole, by increasing the income of upstream companies, they favour fossil fuel production and consumption.

By strengthening their competitiveness, they also dampen the shift of investments towards greener energies.

Table 3.2. Measures benefitting directly the fossil fuel production and distribution identified in the Italian Self-Report

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Reduced excise tax rate on natural gas used in hydrocarbon extraction	0.3	0.3	0.3
Corporate income tax deduction to favour fuel distribution plants	76.6	110.2	51.0
Royalty-Free quotas for crude petroleum and natural-gas production	n.a.	85.6	52.0
R&D funding in oil, gas and coal sector	81.2	n.a.	n.a.

3.2.2. Subsidies to energy products

The Italian government subsidises specific fossil fuels or specific processes using fossil fuels by tax reduction or other support schemes. These measures are inventoried in Table 3.3.

The rationale, for part of these subsidies, is to promote specific processes that have less negative impact on the environment than others. The use of gasoil emulsions, fuel water, gasified fuel or assimilate energy sources do reduce carbon emissions or air pollution relative to cases in which the energy is provided by coal or oil.²⁶ However, these processes are not carbon neutral and their promotion also dampens the development of alternative, already available, cleaner sources of energy (more specifically, renewable energy).

Tax cuts on fossil fuels for a specific use are also a tool to support specific sectors. In this section, the ITSR includes several policies on the feedstock use of the fossil fuels, which is not a common case for G20 reviews, since it does not directly lead to wasteful consumption of fossil fuels and GHG emissions. The production and processing of rubber and plastic, as well as the extraction of magnesium, from seawater are promoted *via* tax exemptions (from the consumption fee or excise taxes). The reduction for large industrial consumers of natural gas of the rate of excise tax, introduced in 2001, was meant to compensate for the negative effect on the international competitiveness of those consumers of the increase of the general rate of excise tax. This helped keep natural gas prices for industrial consumers in Italy below the EU28 average, though the country's wholesale gas prices are above those in Northwest Europe, as reported in Section 2.3.²⁷

The Italian government also supports electricity producers by reducing the excise tax rates paid on fossil fuels they use, by EUR 366 million in 2016. This measure is justified by the fact that electricity production is covered by the EU Emission Trading System (EU-ETS) and a full excise tax rate would constitute a double regulation on carbon emissions. However, Italy's excise taxes on fossil fuels are not clearly a taxation on carbon emissions

²⁶ The plants which run on "assimilate" energy sources, as in articles 20 and 22 of Law 9/91, are cogeneration, plants using exhaust heat and fumes, and other forms of recoverable energy in processes and systems; plants using residues derived from manufacturing and production processes and/or process waste and those using fossil sources produced only by isolated mineral deposits.

²⁷ Source: Quarterly Report on European Gas Markets (Volume 11-issue 2, second quarter of 2018), European Commission, DG Energy.

as there are not proportional to carbon content. For example, coal, the most polluting and CO₂-emitting fossil fuel, has the smallest rate in per unit of energy.

Subsidising fossil fuels in electricity generation likely impedes the Italian government in fulfilling its European and national objectives on renewable energy²⁸. As noted earlier, a large part of electricity in Italy is generated using renewable sources of energy, in which small-scale producers predominate. The excise tax rate reduction for fossil fuel inputs to electricity generation thus not only reduces incentives to use renewable energy for generating electricity, but it also clearly constitutes a relative advantage for large, fossil-fuel-fired power plants over small producers using renewables. Thus, such subsidy hampers the latter's development. For both reasons, they likely dampen the development of cleaner sources of energy in the Italian energy mix for electricity.

The support scheme provided to “assimilate” energy sources was implemented in 1992 to favour fuels emitting less carbon. It has been phased-out since 2009 and the last agreement will expire by 2021.

Finally, the ITSR includes export credits to coal, oil, gas-fired and nuclear power plants in third countries, as it encourages using polluting sources of energy²⁹. This raises the question of the quantitative assessment of such subsidies. Even though practical methods for measuring the subsidy equivalent of government mediated credit-related support have been developed by academics and international organisations (see the chapter 2 of (OECD, 2018^[3])), they require the collection of precise and sensitive data that are often not readily available. Moreover, including export credits in the ITSR calls for the assessment of other kind of risk sharing, such as loan guarantees or concessional loans for domestic projects.

Table 3.3. Measures benefitting directly energy products identified in the Italian Self-Report

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Reduction of the excise tax rate on gasoil emulsions or fuel in water	2.2	2.2	2.2
Exemption from consumption fee for lubricating oils	1.0	1.0	1.0
Exemption from excise tax on energy products used for electricity produced in gasification plants	0.5	0.5	0.5
Exemption from excise tax on energy products used in the magnesium production from sea water	0.5	0.5	0.5
Reduction of 40% of the ordinary excise duty rate on natural gas for big industrial consumers excluding power generation	61.9	60.1	58.1
Reduced excise duty rates for fuels used for electricity production by registered plants	365.6	365.6	365.6
Support scheme for assimilate energy sources	n.a.	662.9	582.5
Export Credit Guarantees for coal, oil, gas-fired and nuclear power plants in third countries	-	-	-

²⁸ 55% of renewable energies in electricity by 2030. It is to be noted that objectives concerning the total penetration of renewable for 2020 (17%) have already been reached with 17.5% in 2015.

²⁹ This measure, as reported in the ITSR, also includes nuclear power because the fuel resources for running nuclear power plants are equally finite and it is thus also a fossil fuel. This inclusion is due to the fact that the ITSR inventory on this measure is based on category A and B projects (i.e., high environmental risk projects) under the OECD framework on supported export credits and environmental and social due diligence.

3.2.3. Different excise tax treatment of diesel and gasoline

The ITSR includes as a subsidy to fossil fuels the different excise tax treatment of diesel relative to gasoline. According to the ICES and the ITSR, if the energy content of diesel was taxed at the same rate as gasoline (EUR 22.4 per gigajoule), the excise tax rate of diesel would increase by 22.6% (from EUR 617.4 per litre to EUR 757 per litre). Consequently, the Italian government revenue would increase by more than EUR 6 billion (without taking into account behavioural effects).³⁰

Table 3.4. Differential fiscal treatment between diesel and gasoline

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Different fiscal treatment between gasoline and diesel	n.a.	n.a.	6 061.3

3.3. Subsidies to industry (manufacturing)

The Italian government supports specific end-user manufacturing industries through the reduction of the cost of their fossil-fuel inputs. These six measures are reported in Table 3.5. Most of these measures consist of tax reduction or exemption on fossil fuels to support particular sectors.

Those measures also include a programme consisting of a bill reduction for large energy consumers agreeing for energy interruption in case of emergency. Industries agreeing for an interruptible power superior to 40 MW are exempted from payment of several electricity tariff components. As the payment may not be related directly to electricity generated from fossil fuel, and could be serving as a demand side management for the grid, the definition of fossil fuel subsidies in the ITSR may not apply, although it clearly benefits large electricity consumers.

Finally, an indirect support is provided to large energy consumers in the context of the European Union's Emissions Trading System: sectors facing carbon leakage risks are granted allowances when most of them are auctioned. The new phase of the ETS anticipates a phasing-out of free allowances for sectors less exposed to carbon leakage by 2030. The sectors benefiting from the free allocation of emission allowances include manufacturing industry, power generators, and aviation.

³⁰ This estimation has been calculated on the annual volume of diesel fuel sold for transport use in Italy (23.2 million tons in 2015).

Table 3.5. Measures subsidising industry inventoried in the Italian Self-Report

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Reduction of excise duty on LPG (-10%) for industrial use and public transport services*	n.a.	6.3	11.7
Exemption from excise on energy products injected in the blast furnaces	1.0	1.0	1.0
Reduced VAT rate of 10% for electricity and gas used in industrial processes**	n.a.	n.a.	n.a.
Reduced VAT rate of 10% for energy products for different uses**	n.a.	n.a.	n.a.
Exemption from payment of bill components benefitting large energy consumers for interruptibility	n.a.	n.a.	n.a.
Free allocation of ETS allowances***	0.0	654.0	444.0

* This measure benefits both transport and industry and the estimations include both.

** As the Italian Ministry of Economy & Finance considers that normal VAT rates are not the benchmarks to estimate tax expenditures, there is no estimation of the cost of reduced rates.

*** The estimation covers all the free allocation of ETS allowances, including those benefitting other sectors (like aviation).

3.4. Subsidies to transport

The ITSR identified 11 measures (reported in Table 3.6) that subsidise fossil fuels in the transport sector, most of which were implemented to support a specific sector (railway transport, taxi drivers, public transport, road freight, transport by ship) and entail small expenses for the Italian government (i.e., less than EUR 15 million for a large part of them). They put in place as tools to ensure the competitiveness of the sector, but also to provide public transport services.

One of the most important measures reported in this section concerns the excise duty reduction on diesel used by freight and passenger transport companies (EUR 1.3 billion in 2016). Initially implemented to compensate for the increased burden of excise duties, this measure has been only been applied to the less polluting vehicles since 2015. However, this phasing out process is not reflected in the budgetary estimate of the measure, which has not declined substantially so far.

The owners of company cars enjoy specific fiscal advantages that are listed in the ITSR as subsidies to fossil fuels. This fringe benefit is considered in the payroll tax and in the taxable income of the employee as a fixed amount based on an assumed distance travelled using the vehicles. Academics, by considering higher mileage they deemed more realistic, have estimated that this fiscal advantage amounted to EUR 1 230 - 2 370 million in 2012³¹.

Exemptions for excise duty for energy products used in aviation and navigation are the consequences of international agreements and could thus be reformed in this framework. According to the Chicago Convention, signed in 1944, the fuel carried on international flights is exempted from taxation in the landing country, if it is a member of the ICAO (International Civil Aviation Organisation). Bilateral treaties between member states reinforced in some cases this tax exemption. Moreover, flights inside the European Union

³¹ However, this estimation was not mentioned in governmental documents which would be reasonable and is thus recommended for future reports.

and Iceland are subject to the EU-ETS and levying an excise tax may be criticised as applying two environmental pricing policies.

The impact of some of those measures on fossil fuel consumption and the environment may be hard to assess. It may even be hard to consider them as encouraging fossil-fuel consumption. In the case of measures subsidising public transport, the overall impact on fossil fuel consumption is unclear. On the one hand, it favours the use of fossil fuels over cleaner alternatives; on the other hand, it also favours, instead of individual transportation, mobility in collective transports, which are more energy efficient in terms of passenger-km transported. Financing public transport directly without underpricing fossil fuels might be a more efficient and sustainable measure.

The impact of measures supporting certain vehicles (company cars and ship anchorage) also have an unclear impact on fossil fuel consumption since fuels are not directly targeted. Those measures are technologically neutral as regard to the type of fuel and may consequently support some vehicles or ships using electricity or biofuels for propulsion, even though they are a minority. The discussion in Harding (2014) of the potential effect of preferential treatment of company cars suggests that this can result in adverse incentives regarding environmental characteristics.

Table 3.6. Measures subsidising transport inventoried in the Italian Self-Report

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Reduction of the excise duty for fuels for passenger and goods in railway transport (30% of the ordinary rate)	2.1	7.7	11.2
Reduction of excise duties on fuels for experimental trials and testing aviation and navigation engines	0.5	0.5	0.5
Excise duty discount for fuels used by taxis	23.5	22.9	12.7
Reduction of excise duty on LPG (10% of ordinary rate) for industrial use and public transport services	n.a.	6.3	11.7
Reduction of excise duty on diesel fuel used in freight and passenger transport services companies	1 268.7	1 292.3	1 264.4
Facilitated ship anchorage fee in trans-shipment ports	n.a.	n.a.	1.8
Income tax reduction due to the simplification of the estimation of costs related to company car use by employees	n.a.	n.a.	n.a.
Exemption from excise duty on electricity used in railways	66.0	65.5	64.5
Exemption from excise duty for the electricity used in urban and intercity lines of transport	7.0	4.8	7.7
Exemption for excise duty for energy products used in aviation	1 603.5	1 539.3	1 551.1
Exemption from excise duty for energy products used for navigation	641.0	598.1	456.9

* This measure benefits both transport and industry and the estimations include both.

3.5. Subsidies to households and public services

3.5.1. Subsidies to public services

The ITSR inventoried four measures subsidising public services (excluding public transport subsidies, treated in Section 3.4) through a reduction of fossil fuel prices. While two of them were implemented for particular circumstances (floods or land restoration), the others target specific actors (ambulances or armed forces).

The amounts at stake are low relative to these sectors: as an example, the reduction of the excise duty for armed forces amounted to EUR 25 million in 2016 while the defence budget of Italy was EUR 26 billion in 2016.³² Nation-wide support provided by the tax cut for ambulances amounted to EUR 3 million in 2016; yet the region of Tuscany alone planned EUR 93 million in support to ambulances.³³ This alternative might appear as a more transparent and more efficient way to support an activity considered to deserve social support and might be used as a decarbonisation incentive scheme.

Table 3.7. Measures subsidising public services inventoried in the Italian Self-Report

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Exemption from excise duty on fuels for draining and settling flooded soils in flood-affected areas	0.5	0.5	0.5
Exemption from excise duty on fuels for water lifting to facilitate the cultivation of rustic fields on reclaimed lands	0.5	0.5	0.5
Reduction of excise duty on fuels used in ambulances	4.9	5.0	2.9
Reduction from excise duty on fuels used by National Armed Forces	26.1	26.7	24.9

3.5.2. Subsidies to households

The ITSR reported four measures subsidising fossil fuels directly targeting households (Table 3.8). Two of them consist of a VAT reduction for energy and the two others are targeted supports. Subsidies to households constitute a large part of the inventoried fossil fuel subsidies (up to EUR 1 billion for the measures that were estimated).

While the price reduction of LPG and diesel in geographically disadvantaged areas aims to compensate for the difficult accessibility to energy³⁴, the rationale of other measures is mainly to support households' power purchase through a reduction of energy prices. However, the criteria to receive the supports are not income-based and, for this reason, they probably have a small impact on redistribution and inequalities.

Italy also has a recent specific support measure to fight energy poverty that is not reported in the ITSR. A direct reduction of households' gas and electricity bill is provided to economically (and physically) disadvantaged households. In the case of a family of four people or less that is financially deprived, this discount on the gas bill can range from EUR 37 to EUR 217 per year depending on the climatic zone and the type of use of gas. For the first time in 2017, 500 000 households benefited from it, for a total cost of EUR 56 million. The discount of the electricity bill can range from EUR 132 to EUR 194 and depends only on the composition of the household. In 2017, some 765 000 households benefited from it, for a total cost of EUR 95 million.³⁵

³² Source: SIPRI.

³³ www.piananotizie.it/servizi-di-trasporti-in-emergenza-93-milioni-di-euro-per-il-2018-soddisfatte-le-associazioni-di-volontariato/.

³⁴ These include mountain areas in the North and municipalities not connected to the gas-grid.

³⁵ Source: www.arera.it/allegati/docs/18/342-18.pdf

The ITSR includes several measures subsidising electricity consumption although there is no unanimity among the organisations inventorying fossil-fuel subsidies to define them as such. On the one hand, Italian electricity is mainly produced by fossil fuels (61% of electricity generation in 2016 – see Section 2.1.1 above) and supporting electricity consumption is also an incentive to use more fossil fuels. On the other hand, these types of supports are technologically neutral: fossil fuels are supported at the same level as renewable forms of energy, which accounted for 33% of electricity generation in 2016. Encouraging the use of electricity may also reduce the use of fossil fuels in heating or transport. But definitely, the supports discourage higher efficiency and they can thus be considered as environmentally harmful.

Table 3.8. Measures directly subsidising households inventoried in the Italian Self-Report

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Price reduction for LPG and diesel for heating in geographically disadvantaged areas	231.0	231.0	219.4
Reduced VAT rate of 10% (normal: 22%) for domestic electricity consumption	872.9	920.1	1 008.8
Reduced VAT rate of 10% (normal: 22%) on natural gas and LPG for cooking and water-heating purposes	n.a.	n.a.	n.a.
Exemption from excise duty on electricity used in households with a power capacity up to 3 kW and monthly consumption up to 150 kWh	570.0	597.1	634.1

3.6. Subsidies to agriculture and similar sectors

Two measures subsidising fossil fuel use in agriculture are inventoried in the ITSR (Table 3.9). They both aim at reducing the costs for using farm machinery and more generally supporting a politically sensitive sector, in charge of food security. The amounts provided by these measures (a total superior to EUR 1 billion) are substantial for both the sector and government expenditures. As a consequence, the impact of these measures on the economy and on commodity prices should be assessed.

While the reduced VAT rate englobes homogeneously all petroleum products, the reduction of excise duty is higher for diesel than gasoline (-78% against -51%). This fiscal treatment in favour of diesel may be explained by the fact that historical Italian tractor producers (Fiat, Landin, Lamborghini, Same, Ferrari, Pasquali, Carraro and Goldoni) mainly produced diesel tractors.

Table 3.9. Measures directly subsidising agriculture and similar sectors inventoried in the Italian Self-Report *

Measure	Financial effect 2014 (EUR million)	Financial effect 2015 (EUR million)	Financial effect 2016 (EUR million)
Reduction of excise duty for diesel and gasoline in agricultural activities and similar sectors	955.3	885.8	830.4
Reduced VAT rate of 10% (normal: 22%) for petroleum products for agricultural use and inland fishing	233.0	n.a.	n.a.

*Similar sectors are horticulture, breeding, forestry, fish breeding and floriculture

3.7. Phasing-out fossil fuel subsidies in Italy: a macroeconomic assessment

For the first time since the beginning of the G20 peer-review process on fossil fuel subsidies, the ITSR includes a macroeconomic assessment of fossil fuels subsidies removal. This approach may contribute to facilitating the phasing out of fossil fuel subsidies by anticipating its potential impact.

The model used for this assessment is a dynamic computable general equilibrium model called ERMES (Economic Recursive-dynamic Model for Environmental Sustainability) that includes representative firms and households as well as production factors. It covers 67 sectors, for which interactions are defined using input-output relations. The energy sector is particularly developed as 11 types of technologies, including renewable and clean energies, are modelled and can substitute for each other (as determined by elasticities). International trade with 15 countries and regions of the world is considered in each sector.³⁶

This model, calibrated for the year 2015, was used by the Italian administration to simulate three scenarios of phasing-out fossil fuel subsidies. The amount of subsidies considered in the scenario is equal to EUR 11.6 billion and includes 17 of the most expensive measures inventoried in the ITSR. More specifically, the alignment of the fiscal treatment of diesel to the one of gasoline forms part of the scenarios assessed.

Three scenarios were considered in the ITSR. Scenario 1 does not include any revenue recycling and the phasing-out of fossil fuel subsidies results only in a reduction of the deficit; scenario 2 includes the recycling of two thirds of the saved revenues in policies favouring renewable energy and energy efficiency in the industry sector (the rest resulting in a decrease in the public deficit); scenario 3 corresponds to a recycling of all the expenses saved into a reduction of labour costs for high-skilled workers.

The impacts of these scenarios on the GDP, carbon emissions and carbon leakage were assessed. It appears that phasing out fossil fuel subsidies without any form of compensation (scenario 1) would result in a decrease of GDP (-0.6%) and a stronger carbon leakage phenomenon than other scenarios. A compensation, even partial, of this expense reduction may cancel this unwanted effect. Scenarios 2 and 3 both result in an increase of GDP (+0.8% in scenario 2 and +1.6% in scenario 3, in which labour costs are reduced) and a decrease of carbon emissions (-2.7% in scenario 2, in which environmental policies are implemented and -0.9% in scenario 3).

³⁶ China, France, Germany, Poland, Russian Federation, Spain, the United Kingdom, the United States, the rest of the EU, South Asia, Latin America, Middle-East and North Africa, Sub-Saharan Africa and the rest of the World.

4. The Peer-review team's evaluation

This chapter reports on the peer review team's evaluation of Italy's self-review report. As in earlier evaluations, it is recognised that the reform of inefficient fossil-fuel subsidies is a sovereign issue dependent on the unique situation and priorities of the individual countries. It is the prerogative of the reviewed countries themselves to identify their list of subsidies, and which of those they currently wish to reform. At the time of writing this evaluation, the Italian Government has not identified concrete reform options; instead, Italy asked the review team to provide indications for such options. These, therefore, are discussed in this chapter.

The review team has therefore included several specific suggestions for reform in this chapter. This approach is novel in the context of the G20 peer-reviews of countries fossil-fuel subsidy reform processes, and is due to the particularity of the Italian self-report, which did not set out any past or future plans to phase-out fossil fuel subsidies.

In Section 4.1, the review team takes stock of the efforts taken to date by the Italian Governments to phase out fossil fuel subsidies. Section 4.2 reports on how Italy communicates on environmentally-related subsidies. Section 4.3 provides suggestions that could help structure a future reform. It also offers some concrete options for reforms.

4.1. Recent reforms of fossil fuel subsidies and strategies for the energy system

The carbon intensity of the Italian economy is among the lowest of International Energy Agency (IEA) member countries, and it has been falling for several decades³⁷. Italy benefits from a large and increasing share of renewable energy sources. Renewable energy contributed 18% of total primary energy supply in 2015 and 40% of electricity generation³⁸. Hydroelectric power for a long time was the major source of renewable energy, but recently, electricity produced from wind and solar energy has helped increase that share.

In line with Italy's efforts to make its energy system more sustainable, some measures supporting fossil fuels both for production and consumption listed in the self-review report have been eliminated or scaled back.

- Since 2015, older vehicles have been excluded from the excise duty reduction on diesel fuel used by freight and passenger transport service companies³⁹. The 2015 Financial Stability Law excluded vehicles meeting Euro 0 emission standards and the 2016 Financial Stability Law excluded vehicles meeting Euro 2 or less stringent emission standards.
- The subsidies scheme for "assimilate" energy sources was closed to new applicants in 2009. It will be completely phased out by 2021, when the last agreement expires.

³⁷ Carbon intensity, measured as CO₂ emissions by real gross domestic product adjusted for purchasing power parity (GDP PPP) amounted to 0.16 tonnes of CO₂ per USD 1 000 PPP in Italy in 2014, compared with the IEA average of 0.30 tCO₂/USD 1 000 PPP and the IEA Europe average of 0.23 tCO₂/USD 1 000 PPP (International Energy Agency, 2016^[1]).

³⁸ Source: IEA global energy data.

³⁹ This tax reduction is disbursed as a reimbursement after a declaration to the customs.

Introduced in 1992, its objective was to promote fuels that are less carbon-intensive than fossil fuels, but the environmental impacts of these fuels, particularly local air pollution, were underestimated.

- In 2015, the excise tax on gasoline and diesel used in taxis was raised, although it remains below the standard rate. It resulted in an increase in revenues by 45% in 2016.
- The subsidised Sulcis sub-bituminous coal mine on the island of Sardinia – Italy’s last coal mine – was closed in 2018.

The review team acknowledges Italy’s efforts to develop a long-term strategy for its energy market. The National Energy Strategy (NES), a ten-year national plan approved in 2017 led by the Ministry of Economic Development (energy, industry and trade) and supported by the Ministry of Environment, includes decarbonisation of the energy system as one structural objective, along with ensuring the competitiveness of the market and guaranteeing the country’s energy security. The NES quantitative targets include the reduction of final energy consumption from 118 to 108 Mtoe per year between 2021 and 2030, and increasing renewable energy’s share in total consumption by 10 percentage points, to 28% in 2030. Furthermore, the NES includes an acceleration of the decommissioning of coal-fired thermal power plants by 2025, based on the premise that renewable energy would be providing 55% of electricity production by 2025.

4.2. Transparency through the Catalogue and macroeconomic impact assessment

Italy promotes transparency on environmentally related subsidies and their impact through the publication of a regularly updated catalogue of environmentally related subsidies and the use of model-based evaluation of the macroeconomic impact of fossil fuel reform.

4.2.1. *Developing a catalogue of environmentally related subsidies*

Italy reported and listed its environmentally related subsidies for the first time in 2017, in the “Catalogue of Environmentally Harmful and Environmentally Friendly Subsidies”⁴⁰ (ICES). The ICES includes the budgetary cost to the government of its subsidies, and, in most cases, the initial rationale for implementing the measure. The first edition, transmitted to the Parliament in 2017, inventoried 57 environmentally harmful subsidies, estimated worth EUR 16.2 billion in 2016, and 46 environmentally friendly subsidies, for a total of EUR 15.7 billion. The second edition is expected to be published soon and preparations for the third edition are underway.

The ICES provides transparency on environmentally related subsidies and it raises awareness with policy makers and other stakeholders of the budgetary cost to the government of environmentally damaging subsidies. The estimated cost of EUR 16.2 billion in 2016 accrues for 71% to the energy sector (including electricity and heating, excluding transport). The ICES also informed the drafting and evaluation of the G20 self-review report, although the latter contains measures that are not included in the first ICES.

⁴⁰ Catalogo dei Sussidi Ambientalmente Favorevoli e dei Sussidi Ambientalmente Dannosi.

The review team considers the ICES as a key tool for evidence-based reform efforts related to fossil fuel subsidies and suggests that the value of the Catalogue could be enhanced further by:

- Establishing which types of households and firms benefit most from fossil fuel subsidies, and indicating how progressive or regressive they are;
- Reporting available evidence on the greenhouse gas (GHG) emissions, local pollution and human health and other damages resulting from the exploration, extraction and use of fossil fuels and their relationship with levels of subsidies, and endeavouring to improve the evidence. The evaluation of cost implications for the economy, if possible, would also be a valuable input. A first assessment was presented in the Italian self-review report with a macroeconomic model reporting of the economic and climate impacts of a fossil fuel subsidy reform, see Section 4.2.2;
- Analysing any subsidies for fossil fuels not identified in the course of the review, including preferential loan-guarantees (potentially but not necessarily including export credits but also loans to domestic projects), investment incentives, direct public investments and regulations favouring fossil-fuel producers or fossil-fuel-based power generators;
- Collecting information on the additional charges on fossil fuels levied by local authorities (regions and municipalities) and their exemptions. Regional- and city-level surveys in the ICES could prove to be a valuable input.

4.2.2. Including CGE modelling tools in the self-review report

The Italian self-review report is the first among the country self-reviews of inefficient Fossil Fuel Subsidies (IFFS) to include a macroeconomic assessment of the phasing out of all the listed fossil fuel subsidies. The assessment is based on a dynamic computable general equilibrium model of the Italian economy, and considers impacts on sectors, GDP and GHG emissions, under different scenarios of recycling the revenue gain from eliminating subsidies. GHG emissions are found to decline after eliminating subsidies. The GDP drop due to the fall of subsidies could be offset or even reversed by a proper revenue recycling⁴¹.

Estimates of economy-wide and sectoral effects, and the effect on GHG emissions, of fossil fuel subsidies reforms are of great value. They help gauge the size of net benefits as well as describe broad patterns of incidence, which can contribute to building support for reform options across government, including scenarios for the deployment of revenues that ensure that fossil fuel reform results in stronger economic performance.

The publication and a wide diffusion of the results of this model could help to inform the public debate on fossil fuel subsidy reform.

⁴¹ In the simulations presented in the Italian self-report, GDP increased more in the case of a full recycling into labour tax cuts than in a case of a partial recycling via carbon emission reduction policies.

4.3. From stock-taking to reform options

The G20 peer-review is a voluntary process in which countries themselves define the scope of the exercise as it pertains to them. In this context, Italy made a request to the review team to offer suggestions for how to structure its fossil fuel subsidy reform process. This section responds to that request. It is based on discussions in the review team and draws from literature on international reform experience, including earlier G20 and APEC peer-reviews, the Energy Subsidy Reform Assessment Framework Flochel and Rentschler and Bazilian (2017).

4.3.1. Identifying and quantifying fossil fuel subsidy measures

In order to formulate a comprehensive and coherent reform process, it is indispensable to identify existing subsidy measures, describing their initially intended objective and details on the delivery mechanisms, and to assess their quantitative value and whether the policy objectives are met.

Governments can deliver fossil fuel subsidies through four different channels (OECD, 2018^[3]): direct transfers, tax incentives, transfer of risk to government, and induced transfers. Quantitative assessment ideally involves a complete cost-benefit analysis. While this may be out of reach for all but the largest items, estimates of the budgetary costs and of impacts on households, firms, public health and the environment should be collected in as far as possible or at least described qualitatively.

Tax expenditures, as defined by the ICES, account for most of the subsidies inventoried in Italy's self-review report. The ICES defines a tax expenditure as "an exemption or a reduction of every form of taxation relative to the 'normal' level for a specific category of beneficiaries". This definition leaves room for interpretation. For example, there is no consensus within the Italian administration on whether to consider VAT "reductions or exemptions" as support. The Italian Ministry of Economy & Finance assesses tax expenditures in VAT against a zero rate, in line with the EU directive, and, as a result, does not consider VAT exemptions or reductions to be tax expenditures. The Ministry of Environment, however, considers that a lower rate on fossil fuels relative to substitute goods, and more particularly relative to less polluting goods, constitutes a fossil fuel subsidy.

4.3.2. Prioritising measures for reform

Eliminating all inefficient fossil fuel subsidies in a single big-bang reform would have significant direct economic and social impacts. It would be technically difficult and politically challenging, so there is a need for defining priorities and identifying subsidies to reform first; in some cases, a gradual implementation could be more efficient. In the case of Italy, reform is mostly a matter of cutting back or eliminating certain tax measures. The *Delega Fiscale 2014*, a delegation of powers on fiscal matters from the Parliament to the Government, delimited by a number of principles, constraints and indications, provides a helpful framework⁴². Specifically, Article 4 gives power to adopt "norms aiming at reducing, eliminating or reforming tax expenditures that appear, fully or partly, unjustified or obsolete in the light of social or economic needs or which constitute a duplication". Reducing tax expenditures is also one of the three final recommendations of the first ICES.

⁴² www.gazzettaufficiale.it/eli/id/2014/03/12/14G00030/sg.

As a first step, subsidy measures clearly qualify as unjustified or obsolete if the policy objective they were intended to serve is no longer valid. Removing measures that no longer serve a public policy purpose is a sound principle of policy-updating, and the ICES or similar exercises are key inputs to such a process.

A next step is to consider that, where policy objectives remain valid, it may be the case that the subsidy measure is not an efficient way of reaching them, or that better ways of reaching them are now available. Removing ineffective policies seems an uncontroversial policy principle, and support for their gradual implementation can increase with good communication and accompanying measures to reduce adverse effects. Investigating if revisions of policies or policy packages are in order to make them more cost-effective is a more difficult task, but it is worth undertaking from time to time.

Whatever the rationale for subsidy reform, there will be adverse impacts on some households or firms, even if overall the reform results in net benefits. Equity and poverty impacts should be assessed, as should the potentially reduced competitiveness of some sectors or firms. The reform impacts on the subsidy-beneficiaries should be properly assessed. The consequences of a fossil fuel subsidy reform not only concern people and firms directly targeted by government subsidy programmes (direct effects). There might also be indirect effects resulting from price changes and shifts of consumption and production patterns throughout the value chains. If different measures are phased-out simultaneously, their impacts should be assessed cumulatively. Transitional measures should be considered when necessary, especially when the reform impacts the lower-income households.

Investigating if compensation measures are justified, what form they should take, who they should target and how they should be phased out over time, is part of a reform policy that takes seriously the question to what extent better policy packages exist to reach objectives that to date have been pursued through fossil fuel subsidies. The notion that decoupling subsidies from fossil fuel production or use tends to be superior to delivering subsidies to producers by decreasing their costs or to consumers by reducing their prices is a key input to this exercise⁴³.

Where the discussion concerns policy instruments but not policy objectives, the principal question is whether better policy packages exist than the existing ones to reach policy objectives. This differs from the view that all fossil fuel subsidies are inefficient and should therefore be removed. Some existing fossil fuel subsidies may have been designed to address genuine environmental, social or economic issues, but they may do so in a relatively inefficient way. The review team therefore considers that the search for alternative measures, more effective and more efficient for addressing the identified issues, is a prerequisite for developing an effective programme of reform.

Social acceptance could be crucial for a smooth reform. Adverse effects could be minimised if the phase-out of inefficient fossil fuel subsidies is planned and widely communicated step-by-step with precise timelines. A well-designed public communication strategy, especially targeted with the public and the key stakeholders of the subsidy reform,

⁴³ Decoupling often involves relying on social expenditures to reach equity or poverty-related objectives. The more targeted the transfer system, the more likely it is to be superior to fossil fuel support in this respect, as fossil fuel support typically accrues to relatively affluent households as well. However, the Italian transfer system is poorly targeted, as the lowest income decile receives only 2% of total transfers (2013 data; *OECD Economic Surveys - Italy*, 2017), which is the lowest rate in OECD countries.

helps to build support and acceptance of the reform. Stakeholders could be able to anticipate the impacts of such reform and, where possible, adapt their production and consumption paths.

Finally, implementing the phasing out of subsidies to fossil fuels is more likely to be efficient and socially accepted if it is implemented consistently with other policies, including those aiming at reducing carbon emissions (for instance the development of renewable energy and promotion of energy efficiency).

4.3.3. Options for reform

The Italian self-review report is a detailed stock-taking of the state of fossil fuel subsidies in the country and of recent reforms. Given the G20 impetus for phasing out inefficient subsidies, the question naturally arises whether and how this stock-take can inform the preparation of a specific reform agenda. The review team considered this question, and this section summarises the outcome of discussions. The team identified the following options for reform, keeping in mind that a gradual implementation is often preferable:

- **Eliminate first and foremost direct subsidies and tax expenditures allocated to fossil fuel producers or distributors that are not fulfilling any desired policy objectives efficiently.**

This could be a first step towards the complete phasing-out of fossil fuel subsidies. Italy is not a major producer of fossil fuels. Its last coal mine ceased its operations in 2018 and its natural gas production peaked in 1994. Nevertheless, a few tax expenditures still benefit the industry, amounting to just under EUR 200 million in 2015, according to Italy's self-review report.

- **Phase-out long-standing fossil fuel subsidies targeted at very particular industries and not aligned with current social needs and policy objectives.**

Potential items under this heading include subsidies to taxis and to magnesium production from seawater. Subsidies can be phased out gradually, allowing the targeted sectors time to adapt to the removal of the subsidy measure. Fossil fuel subsidies targeting public services should be phased-out, given their small relative weight and replaced, if needed, by direct funding.

- **Consider reducing or eliminating differences in the rates of excise taxation on diesel and gasoline.**

The differential tax treatment of diesel and gasoline could be reconsidered. While there can be discussion on whether or not the differential tax rates constitute a subsidy, it is widely recognised that the current structure results in excessive health damages from energy use in passenger transport. The excise tax on diesel is lower than that on gasoline, despite the higher health costs resulting from diesel combustion. Italy has one of the highest numbers of premature deaths due to air pollution in Europe (PM_{2.5}, O₃ and NO₂), suggesting that tackling air pollution from transport could result in high social benefits.⁴⁴

⁴⁴ This is particularly due to the fact that geographic specificities of the Po Plain favour the concentration of pollutants and that this region has the highest population density in Italy.

One option would be to increase the diesel excise tax to the level of the gasoline excise tax. The social impacts of such an increase would need to be assessed and accompanying measures might be justified. A second option would be to increase the diesel tax rate and reduce the gasoline rate. This approach has been taken by Belgium since 2015. Which option is the better depends on how closely current taxes align with external costs and on the value of extra tax revenue⁴⁵.

- **Develop detailed plans for phasing out major tax expenditures in road freight transport, maritime transport, aviation and agriculture that are inefficient.**

Italy's self-review report identifies significant levels of subsidies through tax expenditures for freight transport (EUR 1 260 million through preferential excise tax rates), aviation (EUR 1 150 million through the exemption from excise tax) and agriculture (EUR 830 million through a preferential excise tax rate). Resistance to reducing these fossil fuel subsidies is likely to be strong as there would be direct negative impacts on specific stakeholders. Nevertheless, the environmental benefits and economic efficiency gains from reform are potentially large. Fundamental reform questions include whether the objectives of the subsidy remain valid, and if yes, whether the fossil fuel subsidies are the best instrument for attaining them. The answer to the second question may well be negative, but a thorough assessment is needed to draw up reform strategies that include alternative forms of subsidies to the affected sectors where needed during the transition phase. Three sectors are particularly concerned:

- *Agriculture* (EUR 830 million in 2016). The phasing out of this fossil fuel subsidy could have a severe impact on beneficiaries' income in a sector the Italian government considers as strategic. Accordingly, providing some compensation in the form of tax exemptions or subsidies, consistent with EU and WTO rules and decoupled from fossil fuel consumption, may make sense and would be made easier by virtue of the savings from the phasing out itself. Such compensation might also answer concerns that the phasing-out of the subsidy might increase commodity prices or even pose a threat to food security.
- *Freight* (EUR 1 260 million in 2016). Phasing-out of these fossil fuel subsidies should be embedded in a broader reform as part of national strategy on transport, to ensure alignment with other transport and spatial-planning objectives. Such a strategy should promote alternative fuels and cleaner energy vehicles, but also the reduction of fuel consumption. A clean transition of the transport sector led by the public transport should be supported.
- *Aviation* (EUR 1 551 million in 2016). The phasing-out of the exemption of excise tax for international flights, an exemption granted in the context of the 1944 Chicago Convention, would require that Italy strengthens its engagement in international efforts on this matter, for example through the EU or the International Civil Aviation Organisation (ICAO). Another option would be to phase-out the excise tax exemption on energy products used as fuel for aviation for domestic flights⁴⁶, which are not encompassed by the Chicago Convention.

⁴⁵ In this context, the review team advises against the creation of a price stabilisation mechanism for oil products as it would strengthen the dependence of consumers on fossil fuels and encourage wasteful consumption.

⁴⁶ See www.umweltbundesamt.de/publikationen/possibility-of-introducing-a-kerosene-tax-on.

The competitiveness impacts of such measure would need to be assessed as a preliminary.

4.4. Conclusion

The review team commends Italy for its effort in transitioning towards a more sustainable energy system and for the transparency exercise of inventoried environmentally related subsidies in the ICES. The current peer-review exercise strengthens these efforts. The self-review is a strong base for examining fossil fuel subsidies and identifying opportunities to reform inefficient fossil fuel subsidies. The peer review process also fosters transparency and the sharing of information between countries and across ministries within countries. Broad support across government is a prerequisite for successful and ambitious reform. Detailed insight into the budgetary, environmental and social benefits of reform strategies that couple phasing out fossil fuel subsidies with complementary or substitute policies is essential to building broad support, and the Italian self-review is an excellent example of how to build the required evidence-base.

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