INDONESIA'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 INDONESIA

PREPARED BY THE MEMBERS OF THE PEER-REVIEW TEAM:
CHINA, GERMANY, ITALY, MEXICO, NEW ZEALAND, WORLD BANK, IEA, IISD-GSI, GIZ INDONESIA AND THE OECD
(CHAIR OF THE PEER-REVIEW)

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Acronyms and Abbreviations

APEC	Asian-Pacific Economic Cooperation
Bfc	Billion cubic feet
BPT	Branch profits tax
CIT	Corporate income tax
CCoW	Coal contract of work
CHP	Combined heat-power
CNG	Compressed natural gas
CoW	Contract of work
DGE	Directorate General of Electricity
DGNREEC	Directorate General of New and Renewable Energy and Energy Conservation
DMO	Domestic market obligation
FGE	Fuel grade ethanol
GDP	Growth domestic product
GR	Government regulation
G20	Group of Twenty
GW	Giga-Watt
ICPR	Indonesian coal price reference
ICP	Indonesian crude price
IDR	Indonesian rupiah
IEA	International Energy Agency
IIGF	Indonesia Infrastructure Guarantee Fund
IISD	International Institute for Sustainable Development
IPP	independent power producer
IDSR	Indonesian self-report
Jamali	Java-Madura-Bali
KL	Kilo litre
LBT	Land and building tax
LNG	Liquefied natural gas
LPG	Liquefied petroleum gas
Mbtu	Million British thermal unit
MEMR	Ministry of energy and mineral resources
MoF	Ministry of finance
Mtoe	Million Tonnes of Oil Equivalent
NEP	National energy policy
OECD	Organisation for Economic Co-operation and Development
PLN	Perusahaan Listrik Negara
PPU	Private power utility
PSC	Production sharing contract
PSO	Public service obligation
RRR	Reserve replacement ratio
Tcf	Trillion cubic feet
TFC	Total final consumption (of energy)

TPES	Total primary energy supply
UPD	Unified poverty database
USD	United States dollar
VA	Volt ampere
VAT	Value-added tax
VFT	Vehicle fuel tax
WAP	Weighted average price

Executive Summary

Indonesia and Italy announced in February 2017 that they would undertake a reciprocal peer review of their fossil-fuel subsidies under the auspices of the G20. With China and the United States 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. Indonesia produced its terms of reference in the months that followed their decision, and proceeded to invite other countries and international organisations to take part in the review. Those invited participants (in addition to Italy) to be part of the peer review team for Indonesia were China, Germany, Mexico, New Zealand, the IEA, the IISD, the World Bank, 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 Indonesian officials, but also deliberations among the review team itself. After summarising the key aspects of Indonesia's energy landscape, the report addresses each stage of the supply chain for fossil fuels, discussing in detail the subsidies (and other measures) that Indonesia and the review team have identified in the course of the review process, as per the terms of reference negotiated between Indonesia and Italy.

The review team unanimously praises the remarkable accomplishment of the Indonesian government in carrying through with its reform of its petroleum fuel and electricity pricing over the 2014-17 period. After decades of heavily subsidising end-user prices of gasoline, diesel, kerosene, liquefied petroleum gas (LPG), and electricity, Indonesia started to gradually reduce its fossil-fuel subsidies, until the recent policy change. Electricity subsidy expenditure was reduced by more than half between 2014 and 2017, owing to the elimination of subsidised electricity prices for several consumer groups, including industrial users and wealthy households. For residential consumers, the targeting of electricity subsidies has been improved with the development of the unified poverty database (UPD) – a database gathering socioeconomic information on Indonesia's poorest households.

The new government also significantly increased the retail price of its petroleum fuels, and discontinued budgetary transfers to subsidised premium gasoline (RON 88) in January 2015. Since the 2015 reform, gasoline and diesel prices follow a semi-automatic adjustment mechanism enabling fuel prices to reflect more closely movements in international oil prices. A fixed subsidy has been introduced for diesel, which was cut by half between 2015 and 2016.

The Indonesian government started designing a new, better-targeted LPG subsidy scheme at the end of 2016, and has already conducted several pilot tests. The targeting of the LPG subsidy has been improved by using the UPD, similar to the decision taken for electricity subsidy reform. A new distribution mechanism using a smart-card system is also to be introduced, but the roll-out timeline has yet to be specified. Such reform to the LPG subsidy would reduce the number of beneficiaries from 57 million to 26 million poor households.

However, due to difficulties in designing the reform, its implementation date was postponed from January 2017 to 2018. The gradual electricity tariff-adjustment for non-poor 450-VA electricity consumers planned for 2017 has also been postponed.

The review team encourages Indonesia to continue reforming its fossil-fuel subsidies by harnessing the socio-economic information in the UPD to provide targeted support to poor households. Indonesia also has to make sure not to go back on its recent achievements. The country's new fuel-pricing mechanism has already been compromised by increased political intervention, with the government deviating from the automatic adjustments in fuel prices governed by the published pricing formula. In addition, in March 2018, the government announced that fuel and electricity prices will be kept at current levels until the end of 2019 in order to protect citizens' purchasing power from increasing international oil prices and a weakening rupiah. Such a policy increases the likelihood of potential losses incurred by the state-owned fuel and electricity companies, which might need to be compensated by an increase in government expenditure. The review team expressed concerns regarding the coherence of Indonesia's overall energy and climate change policy, given its ambitious plans to transition to a lower-carbon intensive energy-mix, setting a target of 23% of renewables in its energy mix for 2025.

Additionally, no reform plan exists for tax incentives granted to the oil and gas industry, which are intended to encourage the national production of crude oil, natural gas, and refined petroleum products. The government even plans to broaden tax incentives to industrial users of fossil fuels by increasing their duration, extending the number of eligible sectors, and simplifying application procedures. Like consumption subsidies, tax incentives represent an important cost for the government, yet they have not been systematically measured by the Indonesian administration. A clear inventory of the country's fossil-fuel subsidies, including government tax expenditures that may confer a benefit to fossil fuels, would foster greater transparency and accountability and eventually facilitate their reform.

1. Introduction

1.1. Background and context

G20 and APEC Leaders committed in 2009 to "rationalize and phase out inefficient fossil-fuel subsides that encourage wasteful consumption 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 that the two countries would undertake a reciprocal peer review of their fossil-fuel subsidies under the G20 process. Other countries — Argentina, Canada, Germany, Mexico, Indonesia, and Italy — 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. The review of Viet Nam is pending publication.

As indicated in the terms of reference prepared by Indonesia and Italy, the purpose of G20 peer reviews is to:

1. find out the basic situations, differences and experience of fossil-fuel subsidies in various countries
2. push forward the global momentum to identify and reduce inefficient fossil-fuel subsidies
3. improve the quality of available information about inefficient fossil-fuel subsidies and
4. share lessons and experience of relevant reform.

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

- Mr. Aldo Ravazzi (Italy, Ministry of Environment, Land & Sea)
- Mr. Gionata Castaldi (Italy, Ministry of Environment, Land & Sea)
- 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 of China)

- Mr. Xu Wen (China, Ministry of Finance)
- Ms. Olga Milanin (Germany, Ministry for Economic Affairs and Energy)
- Mr. Carlos Muñoz Pina (Mexico, Ministry of Finance and Public Credit)
- Mr. David Buckrell (New Zealand, Ministry of Business, Innovation and Employment)
- Ms. Assia Elgouacem (OECD, Trade and Agriculture Directorate)
- Mr. Ronald Steenblik (OECD, Trade and Agriculture Directorate): Chair
- Ms. Britta Labuhn (OECD, Environment Directorate)
- Ms. Pui Shen Yoong (World Bank)
- Mr. Tendai Gregan (World Bank)
- Mr. Kieren Clarke (International Energy Agency)
- Mr. Toshiyuki Shirai (International Energy Agency)
- Mr. Peter Wooders (International Institute for Sustainable Development – GSI)
- Mr. Lucky Lontoh (International Institute for Sustainable Development – GSI)
- Ms. Nathalia Marthaleta (GIZ Indonesia)
- Ms. Sonny Syahril (GIZ Indonesia)

1.2. The scope of fossil-fuel subsidies

Although the G20 has not adopted a formal definition of what constitutes a fossil-fuel subsidy, the terms of reference prepared by Indonesia and Italy take note of the studies carried out by international organisations such as the International Monetary Fund, the OECD, and the World Bank, as well as the Global Subsidies Initiative. These relevant reports provide references for Indonesia and Italy. Based on these expert reports, the most common forms of subsidies include:

- direct budgetary support
- tax code provisions
- government provisions of auxiliary goods or services either at no charge or for below-market rates to facilitate fossil fuel use or production; and
- requirements that non-government entities provide particular services to fossil-fuel producers at below-market rates, or that require non-government entities to purchase above market quantities of fossil fuels or related services.

The terms of reference indicated that the focus of the exercise should be on national-level subsidies but may also consider state- and municipal-level subsidies.

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

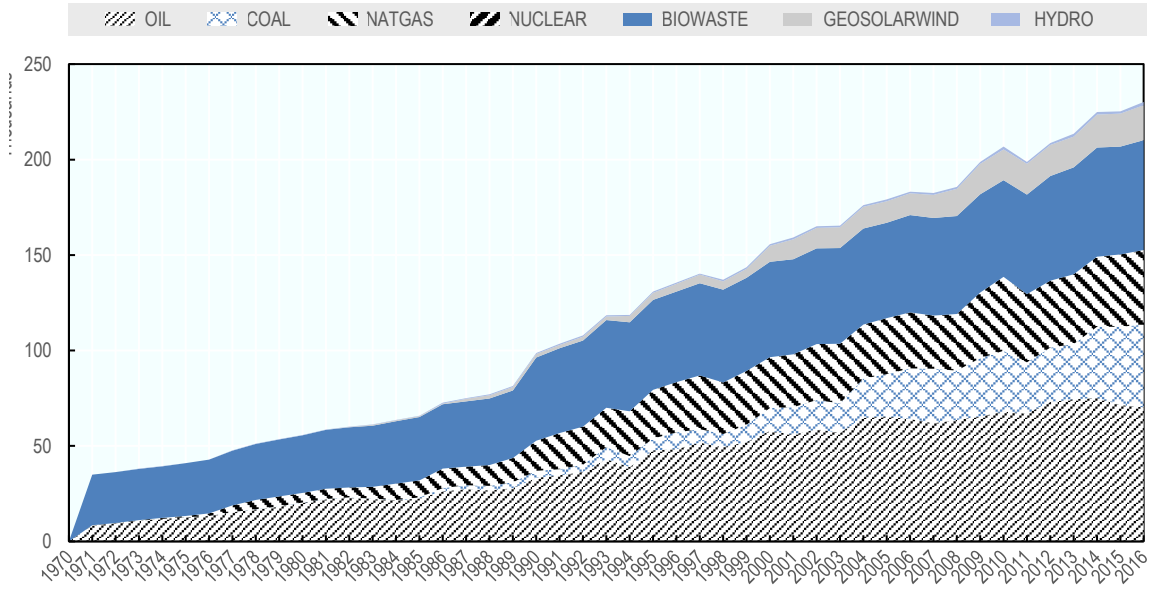
2.1. Energy resources and utilisation

2.1.1. Indonesia's total primary supply of energy

Fossil fuels dominate Indonesia's energy mix where oil accounts for a third, coal for 18%, and natural gas for 17% of the country's total primary energy supply (TPES) (Figure 2.1). The remaining part is provided by biofuels and waste (25%), and other types of renewable energy (8%). In recent years, the share of coal in Indonesia's TPES has risen, leading to an increase in the share of fossil fuels in TPES (IEA, 2018[1]). This is mainly due to a massive increase in domestic coal production since the end of the 1980s.

The share of renewable energy in Indonesia's TPES has declined slightly since 1990, mainly due to slow growth in domestic biomass use as households shift towards modern fuels or electricity for cooking and lighting. The share of geothermal, solar, and wind power production in TPES increased by 6% between 1990 and 2016, while the share of hydro-power has remained steady at just below 1% (IEA, 2018[1]).

Figure 2.1. Indonesia's primary energy supply in Mmtoe, 1970-2016



Source: (IEA, 2018[1])

2.1.2. Indonesia's total final consumption of energy

Based on statistics for 2016, Indonesia's total final consumption (TFC) of energy is dominated by oil products (41%), and biofuel and waste (34%). Electricity takes up 11% of the country's TFC, natural gas accounts for 8% and coal only 6% of Indonesia's TFC. Oil products are mainly used in the transport sector (67%), and biofuels and waste mainly

for residential use (85%). Coal and natural gas are mostly used in industrial sectors (100% and 73% respectively).

Overall, households are the largest consumer group of energy in Indonesia (45% of TFC), followed by transport (25%), and industry (22%), in 2016. Total energy consumption has increased by 37% since 2000, mainly due to persistent growth in energy consumption by the transport sector over the last 15 years, which experiences a two-fold increase (IEA, 2018[1]).

2.1.3. Indonesia's energy resources

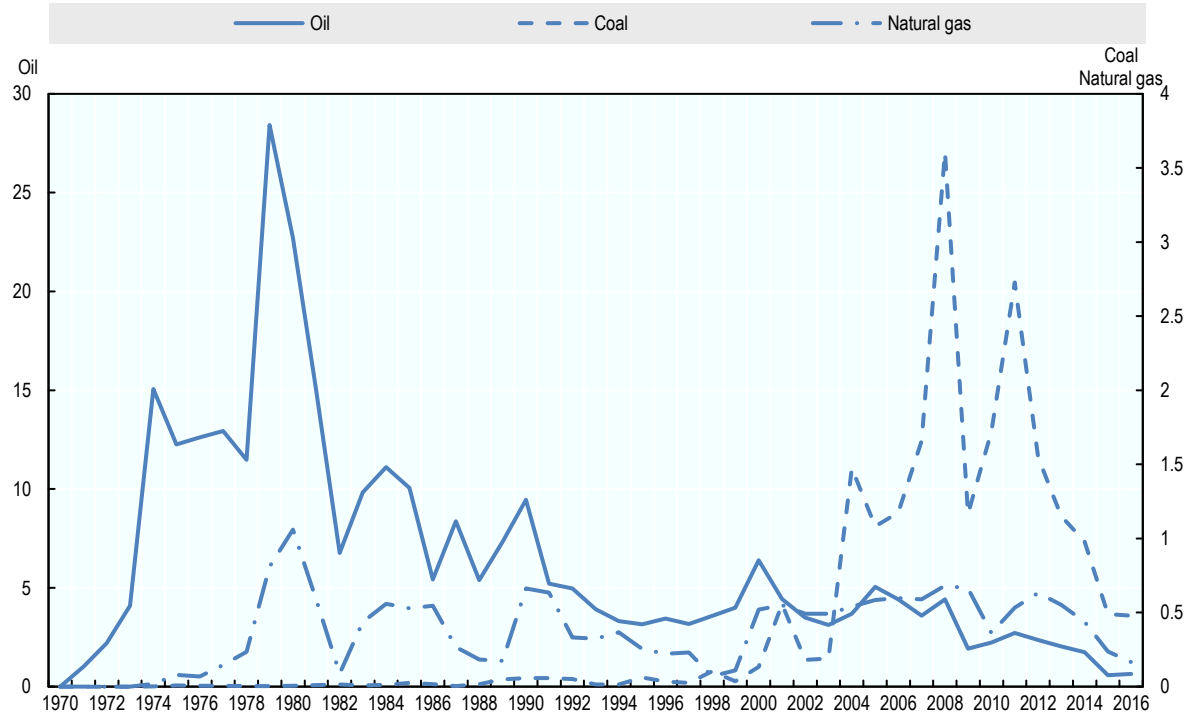
Indonesia is a resource-rich country with significant oil, coal and natural gas resources as well as an important potential for renewable energy production. The country is a major energy producer, and a net exporter of energy, with coal representing 83% of its energy exports; natural gas and crude oil make up most of the rest. Overall, Indonesia exports 60% of the energy it produces, and imports a third of the energy it consumes. Crude oil, motor gasoline, diesel, and liquefied petroleum gas (LPG) are the main imported commodities (IEA, 2018[1]).

Earnings from fossil-fuel resources have comprised a significant share of the country's GDP. Fossil-fuel rents – mostly derived from oil – peaked at around 30% of GDP in 1979, and then dropped to 7% in 1982.[1] Since then, fossil-fuels rents have fluctuated around 5% of GDP, and accounted for 1.3% of GDP in 2016, in line with the world average but almost three times higher than the East Asia and Pacific region average.[2] While oil rents have been significantly reduced since the beginning of the 1980s, coal rents started to rise at the beginning of the 2000s, and reached 3.6% of GDP in 2008; natural gas rents have been fluctuated around 0.3% of GDP (Figure 2.2).

1. Fossil fuel rents are calculated as the difference between the value of fossil fuel production and the total cost.

2. In 2016, fossil-fuel rents (the sum of oil, coal and natural gas rents) in the East Asia and Pacific region accounted for 0.48% of GDP on average.

Figure 2.2. Fossil-fuel rents as a share of GDP (%), 1970-2016

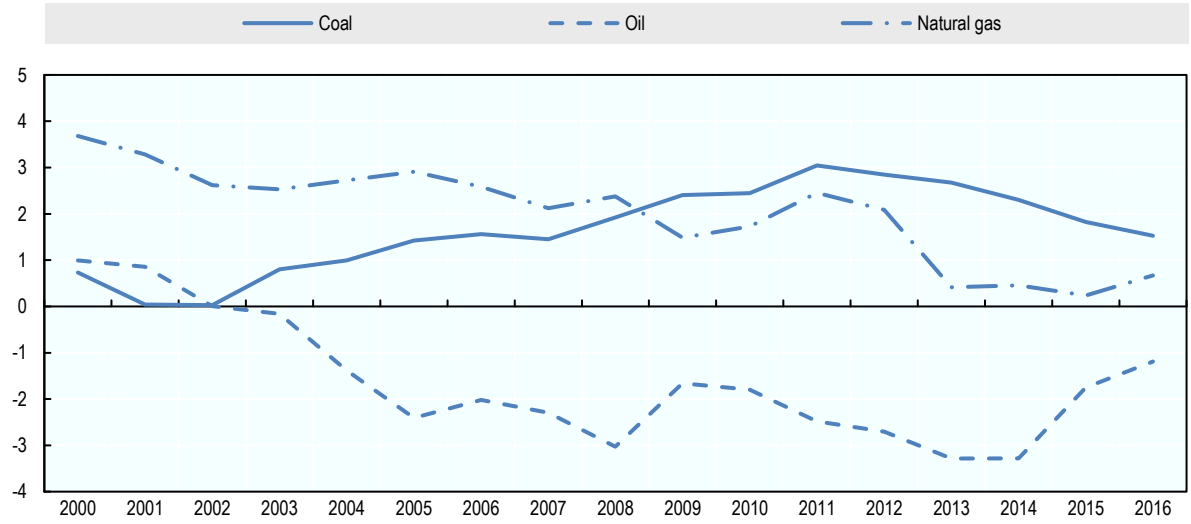


Note: Fossil-fuel rents are calculated as the value of production less the average production cost as calculated by the World Bank. The left axis is used to represent the share of oil rents in Indonesia's GDP. The right axis is used to represent the share of coal and natural gas rents in the country's GDP.
Source: (World Bank, 2018[2]).

Indonesia receives sizeable revenues from fossil-fuel exports. These amounted to 5.4% of GDP in 2000, down to 1% of GDP and 7% of total government revenues in 2016.[3] Until 2009, natural gas was the main contributor to fossil-fuels export revenues, with export revenues averaging at 3% of GDP for the period 2000-09. From 2009 onwards, coal exports have taken a bigger share of GDP at around 2%. Indonesia has been a net importer of oil products since 2004 resulting in a significant oil trade deficit, peaking at 3.3% of GDP in 2014 (Figure 2.3).

3. Total general government revenue comes from IMF Government Finance Statistics data.

Figure 2.3. Trade balance as a share of GDP (%), 2000-16



Notes: A country's trade balance is defined as it net export position: exports less imports.
Source: (United Nations, 2018[3])

Oil

Proven oil reserves, two-thirds of which are located in Sumatra, amounted to 3.2 billion barrels at the end of 2017.[4] Proven oil reserves have been declining since their peak in 1988 at 9 billion barrels (BP, 2018[4]).

Indonesia was once a major oil producer but crude oil production has been on the decline since it peaked in 1991 at just over 1.6 million barrels per day. This production decline occurred due to the depletion of mature oil production wells, the limited development of new production wells and declining investment (PwC, 2017[5]). Between 2013 and 2016, production was more stable, hovering around 860 thousand barrels per day. In 2017, oil production grew by 7.5% to reach 950 thousand barrels per day (BP, 2017[6]). BP estimates that if oil production continues at this rate, remaining reserves will be depleted in about 9 years (BP, 2018[4]).

The combination of increasing domestic fuel consumption and falling oil production has led to declining oil exports and thus revenue from the sale of oil products. Conversely, imports of crude oil and refined oil products have kept rising. The country became a net oil importer in 2004, and by 2015 it was importing 175 million barrels of fuel, of which 65% was gasoline, and 136.7 million barrels of crude oil, mainly from Nigeria and Saudi Arabia (Ministry of Energy and Mineral Resources, 2016[7]). Overall, in 2015, some 45% of Indonesia's domestic supply of crude oil was met by imports (IEA, 2017[8]).

Additionally, increasing domestic demand for LPG – notably as a result of the kerosene-to-LPG conversion programme – has mostly been satisfied by imports due to the country's limited domestic refining capacity. LPG imports almost doubled between 2011 and 2015, reaching 4 million tonnes. Refining capacity, on the other end, was only 1.6 million tonnes in 2015 (Ministry of Energy and Mineral Resources, 2016[7]).

4. According to PwC, potential reserves were on the order of 4.3 billion barrels in 2017, bringing total proven plus potential oil reserves to 7.5 billion barrels (PWC, 2018[27]).

Natural gas

Natural gas reserves are spread across the country, with the biggest concentration located in Natuna (National Energy Council, 2016[9]). Indonesia's proven gas reserves have declined gradually since their peak at 113 trillion cubic feet (Tcf) in 2008 (BP, 2018[4]) to 103 Tcf at the end of 2017.[5]

Gas production in the last ten years has been relatively stable, averaging 2.7 trillion cubic feet (Tcf) per year. Between 2016 and 2017, total gas production decreased by 3.6% to 2.4 Tfc (BP, 2018[4]). Half of the gas production is used to meet domestic demand for industry, power generation, household use, lift and reinjection gas, and energy industry own use of gas (National Energy Council, 2016[9]). Natural gas is also exported. In 2017, Indonesia exported 766 billion cubic feet (Bcf) of liquefied natural gas (LNG), and 282.5 Bcf of piped gas (BP, 2018[4]). As of September 2017, LNG and pipeline exports accounted for 29% and 13%, respectively, of total gas utilisation (International Comparative Legal Guides, 2018[10]).

These exports make Indonesia Southeast Asia's biggest gas supplier, with exports accounting for 44% of its total production in 2016 (IEA, 2017[8]). Indonesia's main export destinations for liquefied natural gas (LNG) are Japan (40% of the total), Korea, the People's Republic of China and Chinese Taipei (Ministry of Energy and Mineral Resources, 2016[7]). Globally, Indonesia is the tenth-largest gas producer and the fifth-largest exporter of LNG. However, Indonesia's gas industry is being increasingly strained by more competitive suppliers of LNG (Qatar and Australia in particular), new pipeline exports, and rising domestic demand (PwC, 2017[5]).

Coal

At the end of 2017, proven coal reserves – mostly composed of anthracite and bituminous coal – amounted to 22.6 billion tonnes (BP, 2018[4]).[6] Two-thirds of the country's proven reserves are located in Kalimantan, with most of the rest located in Sumatra (Ministry of Energy and Mineral Resources, 2015[11]).

Indonesia started producing coal in large quantities at the end of the 1980s, and since then national coal production has increased dramatically. In recent years, it rose from 240 million tonnes in 2008 to 461 million tonnes in 2017. In energy-equivalent terms, Indonesia ranks fifth in the world as a producer of coal (BP, 2018[4]).

National coal production is mainly destined for exports which represented 83% of total coal production in 2016 (IEA, 2017[8]). Indonesia is the second largest coal exporter in the world after Australia (IEA, 2017[12]), providing 28% of world coal exports, mainly to India and China. Domestically, the main coal consumers are local power plants – which are expected to have accounted for 78% of total domestic coal consumption in 2018 – followed by the cement industry, the pulp and paper industry, and other industries for which coal is a cheaper fuel than other energy sources (Indonesia Investments, 2018[13]).

5. According to PwC, potential gas reserves were on the order of 42.3 Tcf in 2017, bringing total gas reserves to 145.3 Tcf (PWC, 2018[27]).

6. Indonesia's potential reserves were on the order of 100 billion tonnes in 2017 (The Jakarta Post, 2017[15]). Potential reserves are dominated by low-to-medium rank coal.

Coal production and exports slowed down slightly during for the period 2014-16, mainly as a result of low coal prices and of the domestic market obligation policy, which requires coal mining companies to supply part of their production to national power plants. Coal exports also suffered from the government's decision to oblige coal mining companies to hold an export licence starting in October 2014.[7] However, rising coal prices since the end of 2016 have been favourable to coal production and exportation (GSI, 2017[14]).

As part of its commitment to preserve coal reserves for national energy security and to mitigate climate change, the government initially aimed to gradually reduce annual coal production from 419 million tonnes in 2016 to around 400 million tonnes a year starting in 2019.[8] However, at the end of 2017, the Energy and Mineral Resources Ministry (MEMR) conceded that carrying out the reduction plan would be difficult, especially if it meant preventing holders of coal-mining permits that had already conducted feasibility studies, or had started developing their mining sites, from commencing production. Another factor behind the abandonment of the plan was the Government's need to increase the country's coal production in order to boost its non-tax state revenues (The Jakarta Post, 2017[15]). The government allowed a 5% year-on-year increase in coal production in 2018, bringing annual production to 485 million tonnes (Indonesia Investments, 2018[16]).

Renewable energy

Indonesia's declining fossil-fuel resources, especially for oil and gas, has compelled the government to start developing renewable energy. The country has a high potential for renewable-energy production, especially compared with its current installed capacity (Table 2.3). Energy utilisation from renewable energy is mostly for electricity generation (National Energy Council, 2016[9]). Combined-heat-and-power (CHP) generation also offers an opportunity for Indonesia to meet growing electricity demand in a cleaner and more energy-efficient way.[9]

As of 2016, Indonesia had an developed 5.3 GW of hydroelectric capacity out of a potential of as much as 75 GW, making it the most used source of renewable energy at present. The Indonesian archipelago is mountainous and generally receives large amounts of rain, giving it numerous sites at which hydro-electric power sites could be developed. The greatest potential for large-scale projects is found in the northern and eastern parts of Indonesia, such as Kalimantan and Papua (PwC, 2017[17]).

7. Since October 2014, coal mining companies are required to apply for export documents (ET) to the MEMR. Companies that do not hold these documents will not be allowed to export. The goal is to track coal exporters more easily. To obtain an ET approval from the MEMR, companies must provide documents of tax payment as well as proof of royalty payment or non-tax state revenue (merdeka.com, 2014[83]).

8. The National Medium-Term Development Plan (2015-19) promotes energy security and sovereignty, and proposes GHG emissions reduction targets for five priority sectors, including energy and transportation.

9. Combined heat and power (CHP) technology enables electricity to be generated while also capturing usable heat. It contrasts with conventional ways of generating electricity, in which more heat is dissipated to the environment and thereby wasted. Indonesia's current CHP capacity is about 1203 MWe (IEA, 2017[8]). A number of important projects are under way such as the expansion and upgrading of the Muara Tawar combined-cycle power plant in West Java, which will add 650 MW to the national grid (ABB, 2018[85]).

The second biggest renewable power capacity is biomass, with 1.8 GW of installed capacity as of 2016, out of an estimated total potential of 50 GW. Most of the plants (94%) are not connected to the grid (PwC, 2017[17]). Biomass utilisation outside the electricity sector is in the form of biodiesel, of which about 3.7 billion litres were produced in 2016. Indonesia ranks as the 4th leading biodiesel producer in the world (Statista, 2018[18]), of which some 90% is produced from palm sludge oil (USDA, 2017[19]). Biofuel production and domestic consumption are encouraged through the "biofuel mandatory programme" (Box 2.1).

Box 2.1. Indonesia's biofuel blending mandate

Production of biodiesel in Indonesia is policy-driven, and around 95% of it is consumed domestically. Within the country, biodiesel is primarily used for the on-road transportation sector, with only a small fraction used for electricity generation. Indonesian ethanol production is molasses-based. Total fuel grade ethanol production capacity is estimated at 0.1 billion litres per year, though there is no fuel ethanol production in Indonesia at the moment (USDA, 2017[19]).

Indonesia started promoting biofuels in 2006 with the enactment of the Presidential Instruction on Biofuel Supply and Utilization. The main step taken to support biofuels, however, has been the introduction of the "biofuel mandatory programme" (B20) in 2008 (MEMR Regulation No.32). This programme sets progressive biofuel blending targets for the period 2008-25, and forms part of the government's policy to decrease reliance on petroleum-based fuels and reduce GHG emissions.

MEMR regulation No. 32 defines the minimum percentage of biofuel to be mixed into fossil diesel in transportation, in industrial and commercial use, and for electricity generation (Table 2.1 and Table 2.2). Since 2008, the blending mandate regulation has been revised several times, most recently through MEMR No.12 in 2015, raising biodiesel blending targets from 10% to 15% for transportation and industrial uses, and to 25% for electricity generation.

Responsible parties for meeting this target are: companies holding a wholesale license to sell fuel to end-users as well as companies that are end-users of fuel, such as the state-owned electricity company *Perusahaan Listrik Negara* (PLN) (Anastasia Kharina, Chris Malins, 2016[20]). Almost all the biodiesel sold in the country is distributed by Pertamina, the Indonesian state-owned oil company.

Table 2.1. Indonesian biodiesel mandatory target as stated in Regulation 12/2015

Sectors	2015	2016	2020	2025
Micro Business, Fishery, Agriculture, Transportation and Public Services (PSO)	15%	20%	30%	30%
Transportation - Non PSO	15%	20%	30%	30%
Industrial and Commercial Business	15%	20%	30%	30%
Electricity generation	25%	30%	30%	30%

Source: (Ministry of Energy and Mineral Resources, 2017[21])

Table 2.2. Indonesian bioethanol mandatory target as stated in Regulation 12/2015

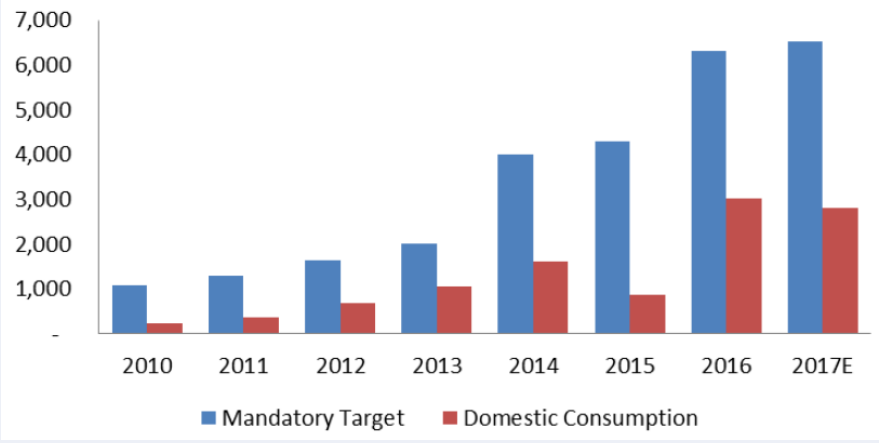
Sectors	2015	2016	2020	2025
Micro Business, Fishery, Agriculture, Transportation and Public Services (PSO)	1%	2%	5%	20%
Transportation - Non PSO	2%	5%	10%	20%
Industrial and Commercial Business	2%	5%	10%	20%

Source: (Ministry of Energy and Mineral Resources, 2017[21])

Blending targets have been largely supported by subsidies as biodiesel prices have generally been higher than petroleum fuels prices. In 2015, Indonesia introduced a new funding mechanism to support the biodiesel subsidy by imposing a levy on exports of palm oil and palm derivatives. Revenues from the palm oil levy are used to offset the difference between fossil diesel and biodiesel prices for Indonesian consumers. The funding programme is managed by the Oil Palm Estate Fund agency (BPDPKS) and its main objective is to support domestic palm biodiesel consumption. Subsidies are only granted for biodiesel used in the transportation sector (USDA, 2017[19]).

Despite the rapid growth in Indonesia's biofuel consumption, blending mandates have not been reached yet (Figure 2.4). Only Pertamina is distributing 20% blended biodiesel for on-road vehicles. Other fuel suppliers are still lagging behind the target. PLN, on the other hand, generates less than 1% of its electricity using biodiesel (USDA, 2017[19]). Actual blending levels seem to depend on the amount of revenues collected through Indonesia's levy on palm oil exports. In addition, parties not receiving the subsidy are struggling to meet blending mandates. Lax enforcement of the target might also be due to the absence of penalties for non-compliance (Anastasia Kharina, Chris Malins, 2016[20]).

Figure 2.4. Indonesia biodiesel mandatory target and domestic consumption (in million litres)



Source: (USDA, 2017[19])

Indonesia's geothermal potential could be as much as 29 GW, based on surveys of more than 300 locations – the second largest geothermal resource in the world, at 28% of total global resources. The country's current geothermal power capacity is just 1.7 GW, however, or around 6% of the country's theoretical potential. The development of Indonesia's geothermal sector has been slow: only ten active working areas (mainly located in East Java) out of 70 potential working areas that have been thoroughly explored by the government (PwC, 2017[17]). Other renewable energy power capacity such as solar, wind and marine energy is still small and sparsely spread across the archipelago.

Low renewable-energy utilisation for power generation is mainly due to high relative production costs. It is thus difficult to compete with fossil-fuel power generation, especially coal. There are also issues such as land-use permits, limited transmission and distribution infrastructure, lack of financial instruments and investment channels in domestic renewable energy power capacity and generation (National Energy Council, 2016[9]). High fossil-fuel subsidies in the past also slowed down the development of renewable forms of energy.

Table 2.3. Renewable energy resources installed and potential power in Indonesia

Type of renewable energy	Installed power	Potential power	Installed power as a share of potential power
Hydropower	5.3 GW	75 GW	7%
Bioenergy	1.8 GW	33 GW	5%
Geothermal	1.7 GW	29 GW	6%
Solar	108 MW	207 GW (4.8kWh/m2/day)	0.05%
Wind	2.4 MW	60 GW (3-6m/s)	0.04%
Marine energy	0.3 MW	17.9 GW	0.002%
Total	**8.9 GW**	**422 GW**	**2%**

Source: (PwC, 2017[17]), (Indonesian Administration, 2017[22]).

Several policies to bolster the deployment of renewable energy have been enacted in recent years. In 2013, the state electricity company *Perusahaan Listrik Negara* (PLN) began offering feed-in-tariffs to independent power producers (IPPs) generating electricity from renewable-energy sources.[10] Different tariffs have been implemented for small generators (under 10 MW) based on the voltage connection level and the region (Table A.1). A recent ministerial regulation (MEMR regulation No. 50/2017), however, provides a new mechanism to determine the tariffs of renewable energy for electricity generation. The price of electricity will now be determined by benchmarking against the regional electricity generation cost or based on negotiations between IPPs and the PLN. This implies that the new tariffs would generally be significantly lower than before and are likely to negatively affect the economic viability of renewable energy projects in many provinces (PwC, 2017[17]).

The government is also providing tax incentives to boost renewable energy production (geothermal in particular) in the form of: i) tax allowances for capital investment; ii) reductions in land and building taxes of up to 100%; iii) exemptions from the income tax on imports; iv) VAT exemptions on imports or domestic purchases of equipment; and

10. According to the IISD, subsidies through feed-in-tariffs amounted to USD 126.4 million in 2015. Technologies receiving the most subsidies were biomass (47%), geothermal energy (42%) and mini-hydro plants (9%) (Attwood et al., 2017[62]).

v) exemptions from import duties on imported goods, materials and machinery (Table 2.4). Indonesia aims to achieve 23% of renewable energy in its energy mix by 2025, as of 2017; however the share stood at only 7%.[11]

Table 2.4. Main regulations governing tax incentives for renewable energy production

Legal basis	Form of support	Apply to	Requirements
MoF Regulation No.177/2007	Exemption from import duty on imported goods used for geothermal business activity	Geothermal	Only applies to goods that are not yet produced domestically, produced domestically but not yet meet specifications, produced domestically but not yet sufficient.
MoF Regulation No. 21/2010	Tax incentives for RE activities in the form of: income tax facilities*; import duty exemption on machinery and capital for development of industries and power plants; VAT exemption on importation of strategic taxable goods; and government borne tax facilities	Multiple RE sources (including geothermal, wind, bio-energy, sun, water flow and fall)	None
MoF Regulation No.179/2013	Income tax facility for the exploitation of geothermal resources for electricity generation purpose	Geothermal	None
MoF Regulation No.142/2015	VAT and sales tax on luxury goods are not collected on goods that are used for geothermal exploration and exploitation	Geothermal	None
MoF Regulation No.188/2015 (amend MoF Regulation No.176/2009)	Exemption from import duty on the import of machinery for 4 years	Industries producing "goods" including mining	None
MoF Regulation No.16/2016	Exemption Article 22 from import duty	Geothermal	None
MoF Regulation No.268/2015	VAT exemption on import or handover of certain taxable goods which are strategic	Geothermal	None
MoF Regulation No.34/2017/	Reduction in land and building tax up of up to 100% for taxpayers in geothermal business activities that are at the exploration stage (for a maximum of 5 years, can be extendable for up to of 2 years)	Geothermal	Having a Geothermal License after the enforcement of Law No. 21/2014 on Geothermal; submitting the Tax Object Notification Letter (SPOP); attaching a letter of recommendation that states the object of the Geothermal PBB is still in exploration stage.
Government Regulation No.9/2016 (amend GR No.18/2015)	Income tax facility for capital investment in certain business fields or certain regions (tax allowance)*	Exploration, drilling, and geothermal power plant + new and renewable energy to be electricity + bioenergy industry	None
MoF Regulation No.90/2017	Provides clarification on tax treatment in the geothermal energy activity	Geothermal	None

Note: * The income tax facilities are in the form of: investment credit equal to 30% of qualifying spending deductible at 5% per annum over 6 years; accelerated tax depreciation and amortisation; reduced withholding tax rates on payable dividend to non-resident; and extended tax loss carried forward.
Source: (Indonesian Administration, 2017[22]).

11 . Indonesian Administration.

Electricity

Indonesia's expanding population (in particular its middle-class population), and rising per capita income, have spurred fast growth in electricity consumption, and on a per capita basis consumption increased by 32% between the years 2011 and 2017. Industrial users represent the biggest category of electricity consumers (42% of final electricity consumption), followed by residential households (37%), and commercial and public services (21%) (Ministry of Energy and Mineral Resources, 2017[23]).

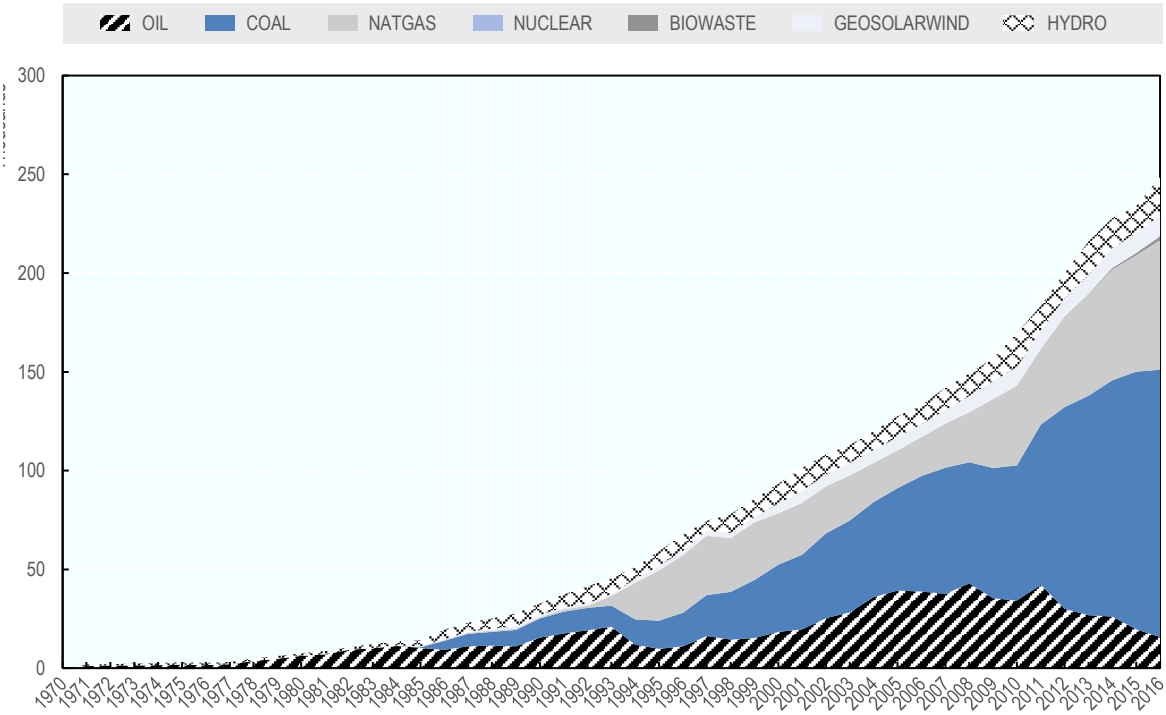
The share of population with access to electricity increased significantly in recent years, climbing from 73% in 2011 to 93% in 2017 (Ministry of Energy and Mineral Resources, 2017[23]). However, electricity penetration varies widely by province: in West Papua, for example, only 48% of households had access to electricity in 2016 (PwC, 2017[17]). This relatively low electrification rate is mainly due to the challenges of electrification across a large archipelago nation, and heavily subsidised electricity prices that have discouraged private investment in infrastructure (Asian Development Bank, 2015[24])]. The 2016 Electricity Supply Business Plan issued by the MEMR aims to achieve an electrification rate of 99.7% by 2025 (PwC, 2017[17]).

In 2017, the country generated 290 TWh of electricity, of which 75% was generated by the state-owned power company, PLN, and 25% purchased by PLN from independent power producers. Between 2015 and 2016, PLN's own electricity production increased by 4%, compared with 13% growth in purchased electricity (Ministry of Energy and Mineral Resources, 2017[25]). The capacity of the power system in Indonesia was 60 GW at the end of 2017, representing an increase of 8% compared with its 2015 level (Ministry of Energy and Mineral Resources, 2017[23]). The government set an ambitious target of adding 35 GW of generating capacity by 2019, 60% of which would come from coal-fired power plants. However, only 27 GW of additional power capacity is expected to be developed by the end of 2019 (PwC, 2017[17]).

About 88% of Indonesia's electricity generation is based on fossil fuels – more than half from coal, the use of which increased by 15% between 2005 and 2016. The rest is generated from natural gas (25%) and oil (6%), whereas new and renewable energy sources (including hydro) make up 14% (Figure 2.5). More recent data from the MEMR indicate a decrease in the share of coal in electricity generation by 6 percentage points between 2015 and 2017 and a slight increase in the share of natural gas, oil and renewable energy; by 3, 2 and 1 percentage points respectively (Ministry of Energy and Mineral Resources, 2017[23]).

Figure 2.5. Electricity generation by source, 1971-2016

in KTOE



Source: (IEA, 2018[1])

2.2. Energy market structure and organisation

The power sector is regulated by the MEMR and its sub-agencies, including the Directorate General of Electricity (DGE) and the Directorate General of New and Renewable Energy and Energy Conservation (DGNREEC) (PwC, 2017[17]). The state-owned electricity company PLN controls more than two-thirds of the country's installed generating capacity (Ministry of Energy and Mineral Resources, 2017[23]). It is also the only business entity involved in the transmission and distribution of electrical power.

Private participation in the supply of power for both transmission and distribution is permitted by the 2009 Electricity Law, but private-sector participation is still limited to the power-generation sector as PLN is the sole owner of transmission and distribution assets. Independent power producers (IPPs) selling power to PLN, and a number of private power utilities (PPUs) generating electricity for their own use, currently account for 30% of Indonesia's installed power capacity (23% and 4% respectively), and generate about 25% of the country's electricity (PwC, 2017[17]). MEMR Regulation No. 1/2015 on "power wheeling" aims to allow IPPs and PPUs to use PLN's existing transmission and distribution networks. However, regulation on its implementation have not been released yet.

The oil and gas industry is regulated by the 2001 Oil and Gas Law which separates upstream (exploration and exploitation) from downstream business activities (processing, transport, storage and commerce), and prohibits legal entities from operating at both levels. The upstream oil and natural-gas segments have been regulated by SKK Migas since 2012. SKK Migas is a temporary special task force operating under the purview of MEMR until

the government amends the Oil and Gas Law. The downstream oil and natural-gas segments are regulated by BPH Migas (OECD, 2016[26]).

The majority of oil and natural gas exploration and exploitation activities are performed by foreign companies under production-sharing contract (PSC) arrangements.[12] As of January 2018, Chevron was the largest oil producer, accounting for almost a third of domestic crude-oil production, followed by Mobil Cepu Ltd. (25%), and Pertamina (10%) – the state-owned oil and natural-gas company. Half of the country's natural gas was produced by three companies: Total, BP Tangguh, and Conocco Phillips (PWC, 2018[27]). This contrasts with the downstream market, which is largely dominated by Pertamina and its subsidiaries, accounting for over 90% of the country's fuel sales in 2016 (USDA, 2017[19]). Pertaminia also owns and operates almost all of the country's oil refineries. The transmission and distribution of natural gas is mostly carried out by the state-owned company *PT Perusahaan Gas Negara*.

Activities associated with the mining of coal are regulated by the Law on Mineral and Coal Mining No. 4 of 2009. The Mining law introduced a new and simplified area-based licensing system in the form of mining business licences applicable to all investors. It replaced the previous mining regime, which was based on a combination of a licensing system for Indonesian investors and a contract system – the contract of work (CoW) and coal contract of work (CCoW) – for foreign investors. All existing CoWs and CCoWs will continue until their expiration date. The Mining law assigns authority to the Central government, through the MEMR, and to regional governments to determine the areas that can be mined, and to grant mining business licences within these pre-determined areas (Soemadipradja, Reid and Sabrina, 2017[28]).

Coal production is concentrated in the hands of a small group of domestically owned or majority state-owned companies. In 2014, the top six producers in Indonesia accounted for about 75% of total coal production. The majority of coal is still produced by companies under CoWs or CCoWs issued under the pre-2009 mining regime. In 2014, these companies were producing 64% of Indonesia's coal, while holders of mining business licenses issued under the new regime accounted for 33% of national coal production. The remaining 3% was produced by *Bukit Asam*, a state-controlled company (Ministry of Energy and Mineral Resources, 2015[11]).

The primary body governing energy policy is the Ministry of Energy and Mineral Resources (MEMR), which is responsible for formulating national policy and implementing technical policies and government affairs in the field of energy (including energy efficiency and renewable energy), and mineral resources. A number of other ministries and one agency – the National Energy Council – are also involved in overseeing aspects of oil and gas, renewable energy and electricity policy in Indonesia.[13]

12. PSCs were first developed in Indonesia in 1966 and are now used in a number of countries (Asian economies in particular) to govern the relationship between petroleum companies and the government. Under PSC arrangements, the ownership of the resource remains with the state and the oil and gas company is contracted to extract and develop the resource in return of a share of the production.

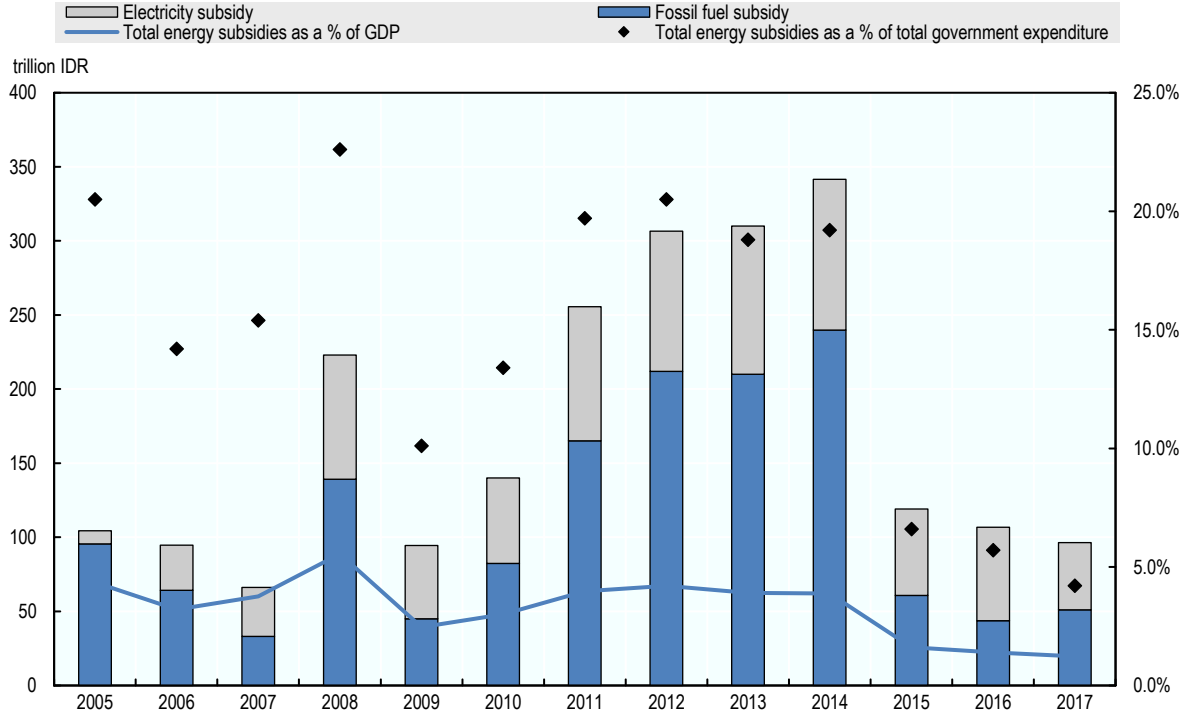
13. Two co-ordinating ministries (the Ministry of Economic Affairs and the Ministry for Maritime Affairs), plus five ministries (the Ministry of Finance, the National Development Planning Agency, the Ministry of State-Owned Enterprises, the Ministry of Environment and Forestry and the Ministry of Public Works and Housing).

Indonesia's energy sector is mainly governed by two regulations: the Energy Law No. 30 of 2007, and the 2014 National Energy Plan (NEP 14). The country's first priority is to strengthen energy security by reducing its dependence on imported oil products, reducing coal and natural gas exports, and increasing the production of alternative energy sources (renewable energy in particular). NEP 14 sets out the following energy-mix targets for 2025: 30% coal, 22% oil, 23% renewable resources and 25% natural gas. Under the UNFCCC framework, Indonesia has committed to cutting its greenhouse gases (GHG) emissions. Its commitment has been translated into action through presidential regulation No. 61 of 2011 of the National Action Plan for GHG Emission Reduction, which aims at cutting GHG emission by 26% below business-as-usual levels by 2020.

2.3. Energy pricing

The prices of gasoline, diesel, kerosene, and LPG as well as the price of electricity have been administered by the government for decades. This has resulted in growing government expenditure on energy subsidies and has made Indonesia's state budget vulnerable to changes in world energy prices. Reforms carried out over the 2014-17 period to fuel and electricity subsidies have enabled domestic energy prices to follow more closely movements in international oil prices, thus significantly reducing the cost of energy subsidies (Figure 2.6). However, early in 2018, President Widodo instructed ministers to keep fuel prices and electricity prices fixed in the face of rising oil prices in order to maintain economic growth and consumers' purchasing power.

Figure 2.6. Fossil-fuel government support in Indonesia, 2005-2017 (in IDR trillion)



Note: The left-axis represents the share of energy subsidies either as a share of GDP or as a share of total government expenditure. Fossil-fuel subsidies include those for gasoline, diesel, kerosene and LPG.
Source: (Indonesian Administration, 2017[22])

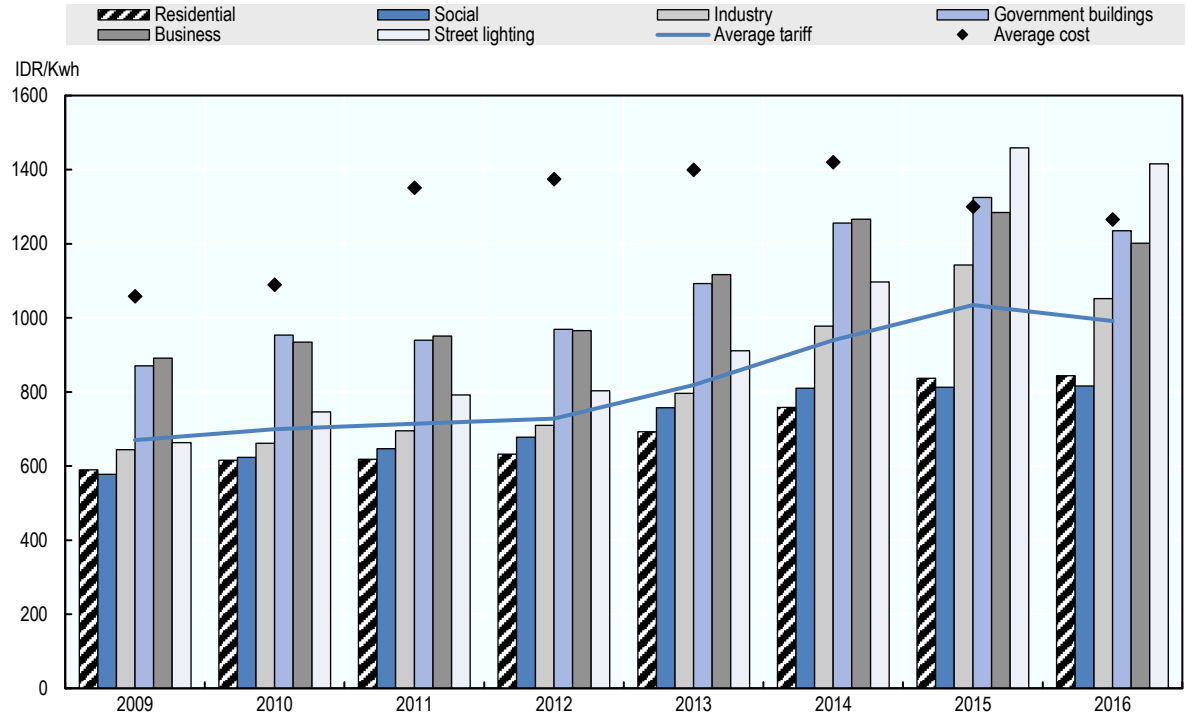
2.3.1. Electricity

Average electricity tariffs do not reflect the average cost of supply, with the government carrying the burden of this shortfall (Figure 2.7). Electricity tariffs are set by the Central Government and ultimately approved by the Parliament. The MEMR compensates PLN for the difference between the lower tariff for households and the average cost of the electricity generated. Since about 90% of electricity generation in Indonesia is based on fossil fuels, electricity subsidies have the effect of stimulating fossil-fuel consumption.

For the purposes of tariff setting, electricity consumers are split into five main groups: social, residential, business, industry and government. Electricity prices vary by consumer group and within each consumer group based on customers' installed capacity, as measured in volt-amperes (VA). Consumers face both fixed charges per VA of installed capacity and utilisation tariffs. The two are usually higher for consumers with larger power connections. Most utilisation tariffs follow an increasing block structure such that a higher marginal price per KWh is applied for higher levels of consumption. Electricity Law No. 30/2009 allows regional differentiation in tariffs; two regions, Batam and Tarakan, apply their own tariff schedules (Burke and Kurniawati, 2018[29]).

Different tariffs have been subject to different subsidy arrangements; households and social services have tended to pay the lowest prices for electricity. In 2013, the government started reforming electricity subsidies, with the objective of limiting beneficiaries to poor households (Box 2.2 and Section 3.5). Between 2013 and 2017, subsidies to 30 million electricity consumers were gradually phased-out. The electricity tariffs for these customers were increased by around 30%, three times a year, until they reached their market value and are now following a monthly tariff adjustment based on movements in oil prices, the exchange rate and inflation (Box 2.2 and Table A.2). In 2017, 22% of electricity was sold at subsidised prices, against 100% in 2012 (Indonesian Administration, 2017[22]). However, electricity subsidies remain for a number of consumers, in particular ones with low power connections in the residential, business and industry classes. Households with 450 VA power connection for instance, were facing an electricity tariff of IDR 417 per kWh (USD 3.1 cents per kWh) in 2016, one-third that of the average electricity supply cost of IDR 1 265 per kWh (USD 9.5 cents per kWh) (PwC, 2017[17]).

Figure 2.7. Electricity tariff by consumer classes, average tariff and average cost in IDR/Kwh, 2009-16



Source: PLN statistics.

Box 2.2. Electricity subsidy reform in Indonesia

2003-04: Only 450 VA consumers are subsidised (5 classes). The 32 other classes are not subsidised.

2005-12: All consumers are subsidised (37 classes). In 2010, the government increased tariffs by 18%, on average, for most consumer classes except 450 VA and 900 VA households.

2013: The base tariff is increased by 15% over over the course of the year (450-900 VA households are not included). Four consumer classes are excluded from the subsidy (large residential, businesses, and government customers), leaving 33 classes still subsidised.

2014-15: Another 8 classes of consumers are excluded from the subsidy, and tariff adjustment is applied to the 4 classes excluded in 2013.

2016: Tariff adjustment is applied to 12 consumer classes (the 4 consumer classes excluded from the subsidy in 2013 and the 8 consumer classes excluded from the subsidy in 2014-15). Twenty-five consumer classes remain subsidised.

2017: "Non-poor" 900 VA residential are excluded from the subsidy based on the unified poverty database (UPD) for social assistance programs. Tariff adjustment for "non-poor" 450 VA is suspended.

2018: In March, the government announces its decision to keep electricity prices at current levels until the end of 2019.

Table 2.5. Subsidy elimination and tariff adjustment implementation

	Classes of customers	2013	2014	2015	2016	2017
	Social					
1	Social (7 classes)	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff
	Residential					
2	Small Household	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff
3	Small Household – 900 VA	Subsidised tariff				Gradual tariff increase and tariff adjustment
4	Small Household – 1300 VA	Subsidised tariff	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment
5	Small Household – 2 200 VA	Subsidised tariff	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment
6	Medium Household 3 500	Subsidised tariff	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment
7	Large Residential (1 class)	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment	Tariff adjustment
	Business					
8	Small Business (3 classes)	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff
9	Medium Business (1 class)	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment	Tariff adjustment
10	Large Business (1 class)	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment	Tariff adjustment
	Industry					
11	Small Industry (6 classes)	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff
12	Medium Industry (1 class)	Subsidised tariff	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment
13	Large Industry (1 class)	Subsidised tariff	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment
	Government					
14	Small government office (4 classes)	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff
15	Medium government office (1 class)	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment	Tariff adjustment
16	Large government office (1 class)	Subsidised tariff	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment
17	Street and Road Lighting	Subsidised tariff	Gradual tariff increase	Tariff adjustment	Tariff adjustment	Tariff adjustment
	Other					
18	Traction	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff	Subsidised tariff
19	Bulk	Subsidised tariff	Subsidised tariff	Tariff adjustment	Tariff adjustment	Tariff adjustment
20	Premium services	Non subsidised tariff	Non subsidised tariff	Tariff adjustment	Tariff adjustment	Tariff adjustment

Source: (Ministry of Energy and Mineral Resources, 2017[23]).

Tariff adjustment formula
As set in MEMR regulation No.18/2017

$$TN = TO\ (1 + \%\,TA)$$
$$\%TA = \%(K_{exc}\ \Delta Exc) + \%(K_{inf}(\Delta Inf)) + \%(K_{ICP}\ (\Delta ICP))$$

Where:

TN : New tariff
TO : Old tariff
TA : Adjustment tariff
K_{exc} : Coefficient of exchange rate
K_{inf}: Coefficient of inflation
K_{ICP} : Coefficient of Indonesian crude price (ICP)
ΔExc : Difference in exchange rate
ΔInf : Difference in inflation (%)
ΔICP : Difference in ICP (USD)

Source: (Ministry of Energy and Mineral Resources, 2017[23])

2.3.2. Petroleum products

Indonesia has a long history of keeping the domestic prices of its fossil fuels artificially low. The first acknowledgment of fossil-fuel subsidies in the state budget traces back to 1977, although some form of fuel subsidy has existed since at least the 1960s. The government has been compensating Pertamina, the state-owned oil company and main fuel retailer in the country, for the difference between the lower domestic price for end-users and the market price. As of April, 2018, three fuels, gasoline, diesel and kerosene, continued to be sold at below-market prices.

Since the Asian financial crisis of 1997, the Indonesian government has repeatedly tried to limit fossil-fuel subsidies. Its main attempts to reform gasoline, diesel and kerosene subsidies include: six *ad hoc* price increases, three *ad hoc* price decreases, and two periods of frequent price adjustments following a pricing formula (Box 2.3).

However, the most significant changes to Indonesia's fuel subsidy policy have been made under the administration of President Widodo. In November 2014, less than one month after the new President took office, gasoline prices were hiked by 30% and diesel prices by 36% to catch up to international prices, and by January 2015, as world oil prices fell, the remaining subsidy on gasoline was effectively eliminated.[14]

A month and a half after the fuel-price increases, the government introduced a set of structural reforms. First, it announced the complete removal of the gasoline subsidy in the Java-Madura-Bali (Jamali) area, in central Indonesia. Gasoline sold outside the Jamali region still received a 2% subsidy, in compensation for higher distribution costs. A fixed subsidy was implemented for diesel set at IDR 1 000 (USD 8 cents) per litre below market prices. It was then reduced to IDR 500 per litre in July 2016. Finally, the retail price of kerosene was fixed at IDR 2500 (USD 20 cents) per litre across the country. Table 2.6 summarises the main characteristics of this fuel subsidy scheme.

14. Premium gasoline prices (RON 88) increased from IDR 6 500 to IDR 8 500 per litre while diesel prices increased from IDR 5 500 to IDR 7 500 per litre.

Table 2.6. Indonesia's new fuel subsidy scheme, 2015

	Premium gasoline	Diesel	Kerosene
A. Classification			
Specific Subsidised Fuels		✔	✔
Special Designated Fuel	✔		
General Fuel	✔		
B. Subsidy Type			
Fixed Price			✔
Fixed Subsidy		✔	
Distribution compensation	✔		

Note: special designated fuel refers to premium gasoline intended to serve remote or hard-to-reach areas, while general fuel is premium gasoline dedicated to the Java-Madura-Bali area.
Source: (GSI, 2015[30]).

Under the new pricing system, which aims to limit volatility and equalise fuel prices across the country, gasoline and diesel prices are to be adjusted on a regular basis according to a published pricing formula. The price setting formula takes the average international oil price index as reference (Indonesia currently uses the Mean of Platts Singapore), adjusted by the USD/IDR exchange rate, storage and distribution costs, 10% VAT, 5% vehicle fuel tax, as well as a margin for distributors (ranging from 5% to 10%). After initially adjusting fuel prices every month, the government decided at the end of 2015 that domestic fuel prices would be adjusted on a three-monthly basis (IEA, 2016[26]). These adjustments seized starting 2017 as depicted in Figure 2.8.

Figure 2.8. Average monthly gasoline prices in Indonesia (01/2016-11/2018)

Source: TRADINGECONOMICS.COM and EIA.

Box 2.3. Fossil-fuel subsidy reforms in Indonesia, 1997-2018

1997: Indonesia seven types of fuels: aviation kerosene (i.e. jet fuel), aviation gasoline, marine fuel oil, industrial and marine diesel oil, diesel, gasoline (RON 88), and kerosene.

1998: The price of kerosene is increased by 25%, diesel fuel by 60%, and gasoline by 71%. Fuel price increases are met with strong opposition.

1999: Subsidies for aviation kerosene and aviation gasoline are eliminated. The number of subsidised fuels is reduced to five.

2000: Prices of gasoline, diesel and kerosene are increased by 15%, 9% and 25% respectively. This action is followed by violent demonstrations but the price increase is not reversed.

2001: In March, the domestic retail prices of five fuel products (88-octane gasoline, kerosene, automotive diesel, industrial diesel, and fuel oil) is set at 50% of the market price, with the option of increasing prices until they reached market levels. Subsidies for diesel and marine fuel for the industrial and sea transport sector are removed. Three fuels continue to be subsidised (premium gasoline, diesel and kerosene).

2002: The government adjusts the fuel-pricing formula to set gasoline prices at market levels and diesel prices at 75% of market levels, within minimum and maximum price bands, with monthly adjustments.

2003: Fuel prices are more than doubled. The government then backs down and rescinds the price changes after a powerful backlash. The formula-based system for regularly adjusting prices is abandoned after a strong, widespread set of protests against the fuel price hike.

2004: Indonesia becomes a net oil importer.

2005: low-octane Price increase by an average of 29% in March and 114% in October for gasoline and diesel. Industry is no longer eligible to receive subsidised diesel. The government gives an unconditional price transfer (BLT), funded by savings from cuts in subsidies, to middle and lower income members of society in order to compensate for the price increase.

2006: LPG price increases for industrial users.

2007: The kerosene-to-LPG conversion programme is initiated to encourage the replacement of kerosene for cooking with LPG.

2008: Prices are increased in May by 33% for gasoline, 28% for diesel, and 25% for kerosene. Gasoline and diesel prices are lowered in December by 20% and 15%, respectively, as international oil prices drop sharply.

2009: Prices are lowered in January by 11% for gasoline, and 7% for diesel, leaving gasoline prices the same as diesel prices (i.e. close to 2005 levels).

2012: The diesel to compressed natural gas (CNG) conversion programme is launched in some of the country's largest cities. The aim is to provide an alternative to diesel in public transportation.

2013: One-off price increases averaging 40% for gasoline and diesel are enacted in June. The government gives an improved unconditional price transfer (BLSM) to benefit middle and lower income members of society and compensate for the price increase.

2014: An attempt is made in January to raise the price of 12 kg LPG cylinders by 67%, but the price increase is subsequently rolled back. In September, the price of LPG is increased by 23%. Pertamina implements a price- adjustment scheme based on the Aramco contract price and the rupiah exchange rate to take 12 kg LPG cylinders to market prices by 2016. In November, Indonesia's new government raises the gasoline price by around 31%, and the diesel price by 36%.

2015: In January, the government announces the removal of the gasoline subsidy and sets a fixed subsidy of IDR 1 000 (± USD 7.5 cents) per litre below the market price for diesel. Kerosene receives a fixed retail price of IDR 2 500 (USD 20 cents) per litre. The price of 12 kg LPG is raised by 18% and reduced by 4% a few days later. In March, 12 kg LPG price is increased again, by IDR 5 000 per cylinder.

2016: The fixed subsidy for diesel is reduced to IDR 500 (±USD 3.75 cents) per litre below the market price.

2017: The government introduces the "one fuel price" policy (Box 4).

2018: In March, the government announces its decision to keep fuel prices stable until the end of 2019. Diesel subsidy is to be raised from IDR 500 per litre to IDR 2 000.

In a renewed effort to even out fuel-price disparities across the country, the government implemented, at the beginning of 2017, the "single fuel price policy". Retail fuel prices in 150 remote regions are to be aligned with prices in the Jamali region (IDR 6 450 for gasoline and IDR 5 500 for diesel as of June 2017).[15]

Box 2.4. The single fuel price policy

Fuel retail prices have varied significantly in Indonesia due to disparities in distance and distribution infrastructure across the archipelago. In remote areas, fuel prices can be as much as three times higher than prices in the Jamali region, where energy infrastructure is more developed (GSI, 2017[14]).

In January 2017, President Widodo instituted – through MEMR regulation No. 36/2016 – the "one price policy" (Indonesia's *BBM Satu Harga*), which aims at improving the affordability of Indonesia's remote and underdeveloped areas. The regulation stipulates that fuel prices in these regions should be the same as in the more developed regions of the country. This policy is intended to achieve greater equity and social justice. It is also expected to boost the local economy, and improve citizens' welfare (Sekretariat Kabinet Republik Indonesia, 2016[31]).

Director General of Oil and Gas Decree No. 09/2017, which served as a roadmap for the project, identifies 150 regions in Indonesia where access to subsidised fuels should be

15 . As of the end of November 2018, the price for premium gasoline (RON 88) remained at IDR 6 450 in the Jamali region and 6 550 in other regions (See: https://en.katadata.co.id/in-depth/2018/11/28/recalculating-fuel-prices-amid-falling-world-oil-prices).

established within a period of two years (2017-19). As of June 2017, 23 locations had been reached. Without the policy, the price of gasoline in those areas could range between IDR 8 000-15 000 per litre, while the price of diesel was between IDR 7 000 and IDR 18 000 per litre (The Jakarta Post, 2017[32]).

In order to provide fuel to remote and underdeveloped regions, the state-owned oil company had to invest in new storage depots, fuel pumps, distribution agents and airplanes to carry fuel to Papua's most remote areas. In total, investments in infrastructure could cost about IDR 380 billion to Pertamina (Indonesia Investments, 2016[33]). In addition, fuel distributors participating in the programme are entitled to higher profit margin from Pertamina, the country's only fuel supplier. Higher profit margins give an incentive for distributors to operate outside the Jamali region, where distribution costs are much higher. This change has resulted in an increase in Pertamina's operational costs by around IDR 900 billion a year.

Additional costs incurred by the state-owned oil company under the one price policy are supposed to be covered without additional subsidies from the government (Reuters, 2016[34]). Pertamina plans to resort to a cross-subsidy by using compensation from its other business activities, notably the sale of non-subsidised fuels. However, one can question the ability of Pertamina to keep offering the subsidised fuel price while dealing with higher profit margins for distributors, and considerable investment costs. In June 2017, Pertamina reported that it had already lost IDR 5 trillion by implementing the programme (GSI, 2018[35]). In the longer run, there is a risk that Pertamina's burden will be transferred to the State budget.

In addition to fuel subsidies discussed above, the Indonesian government also subsidises the end-user price of LPG. Since the implementation of the kerosene to LPG conversion programme – which aims at encouraging low-income households to use LPG for cooking – the price of a 3 kg LPG cylinder of IDR 12 750 has not been adjusted (Box 6). LPG bottles of 12 kg, while not receiving a formal government subsidy, have also been sold below the market price, with Pertamina carrying the subsidy burden.[16] Between 2008 and 2013, the state-owned company incurred losses of IDR 21.8 trillion (USD 2 billion) on the sale of 12 kg LPG bottles (Beaton, Lontoh and Clarke, 2015[36]). Since 2014, Pertamina has tried several times to increase the price of 12 kg LPG cylinders with various degrees of success (Box 2. 3).

2.4. Taxes

The most important taxes applying to PSC contractors extracting oil and gas from Indonesia are corporate income tax (CIT), branch profits tax (BPT), and withholding taxes on dividends, interest payments, royalties, and fees for services (Table 2.7). CIT tax rate varies depending on the year the PSC was established. The current tax rate for new projects is 25%. The tax rate for withholding taxes depends on the type of recipient: those paid by a resident are subject to lower tax rates. Downstream businesses (processing, transport, storage and commerce) pay taxes in accordance with the prevailing laws (PwC, 2017[5]).

16. 3 kg and 12 kg LPG bottles contain the same fuel. However, due to their high one-off cost of purchase, 12 kg LPG bottles have not been targeted for government support as they are usually too expensive for low-income households.

Coal-mining companies holding a mining business license (IUP or IUPK) are liable for CIT, and withholding taxes as well as royalties on production, the rate of which varies depending on the mining scale, production level, and mining commodity price (Table 2.7).[17] For companies under CoW or CCoW, the same type of taxes normally apply, although specific tax rules set out in the contract generally take precedence over the prevailing tax laws (PwC, 2017[37]).

Land and building tax (LBT), a regional tax on property, is also applicable to the oil, gas, and coal industries. LBT applies to land and buildings located in areas that are used for oil, gas or coal mining activities, including the working areas or other similar areas. LBT is imposed on both onshore and offshore activities. A reduction in the LBT tax rate of up to 100% is available for upstream oil and gas PSC contractors during the exploration and exploitation stages (Chapter 3).

Table 2.7. Oil, gas and coal taxation in Indonesia

	Oil and gas	Coal
Corporate income tax	Depends on the signing date of the PSC. Current rate is 25%.	25% of net taxable income
Branch profits tax	20%	None
Royalties on production	None	2-7%** + additional royalty of 10% of net profit for IUPK
Withholding taxes:		
- Dividend	10-20%	10-20%
- Interest	15-20%	10-20%
- Royalties	15-20%	10-20%
- Services	2-20%	2-20%
VAT	10%	10%
Land and building tax	0.5% of a deemed tax base*	0.5% of the taxable sale value of the LBT object

Note: * The deemed tax base ranges from 20% up to 100% of the "object value" (being a statutory value called "NJOP").
** 3-7% for open pit and 2-6% for underground.
Lower tax rates are the ones payed to residents.
Sources: (Deloitte, 2013[38]), (PwC, 2017[5]), (PwC, 2017[37]).

As crude oil, natural gas and non-processed coal are not subject to VAT, upstream oil and gas contractors and coal mining companies are not taxable entrepreneurs for VAT purposes (PwC, 2017[37]). However, they still have to pay the VAT on local purchase of taxable goods or supplies; VAT refunds and exemptions apply in some cases (Chapter 3).

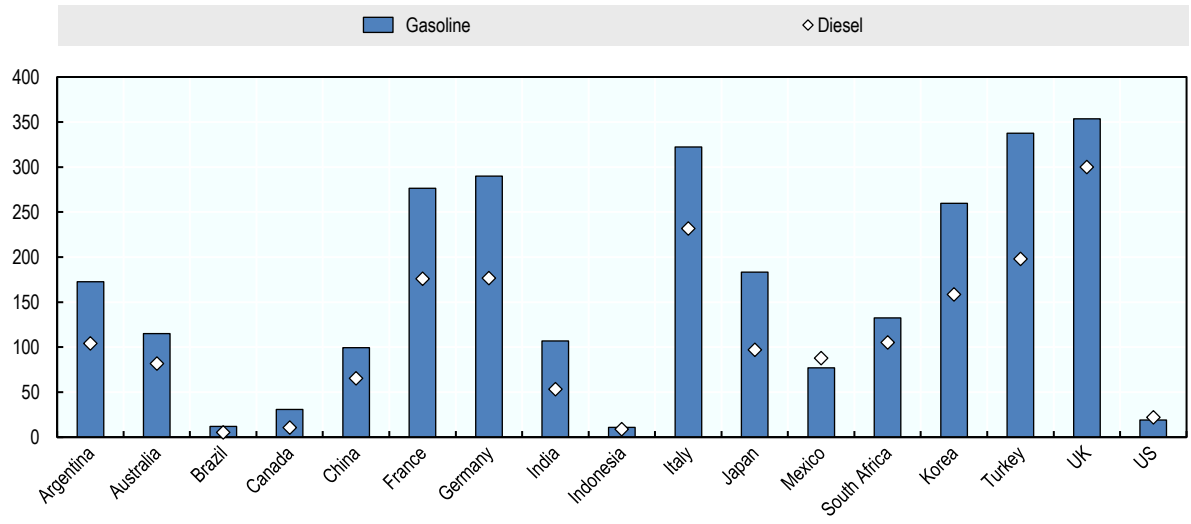
Most downstream energy products and electricity customers with power connections greater than or equal to 6 600 VA are subject to a 10% VAT. Indonesia does not impose any excise taxes on energy products at the national level, but a regional tax is levied on gasoline and diesel used in road transport, throughout the country. The vehicle fuel tax (VFT) applies at an *ad valorem* rate of 5% to 10% of the final sales price.[18] There is no

17. A tax treaty may provide outright relief on services payments and reduce the withholding tax on payments of dividends, interest and royalties (generally to 10% or 15%) (PwC, 2017[37]).

18. The VFT is set at 5% of the selling price for gasoline intended to serve remote or hard-to-reach areas ("designated gasoline"). For non-subsidised fuels, the tax rate is set by regional governments but should not exceed 10% (GSI, 2015[30]).

carbon tax in Indonesia and gasoline and diesel effective tax rates are among the lowest in G20 countries; set at EUR 10.7/tCO_2 and EUR 8.6/tCO_2, respectively (Figure 2.9). Following Ministry of Finance (MoF) regulation No. 34/2017, the sale of oil fuel by Pertamina and its subsidiaries to refuelling stations is also subject to a 0.25% tax on the selling price. A 0.3% tax rate applies to the sale of petroleum fuel to refuelling stations by parties other than Pertamina (PwC, 2017[5]).

Figure 2.9. Gasoline and diesel taxation in G20 countries, 2015



Source: (OECD, 2018[39]).

2.4.1. Natural gas

Domestic pipeline gas prices are negotiated on a field-by-field basis between SKK Migas, the producer and the buyer, based on the economics of gas field development. The Indonesian gas pricing regime is not linked to fluctuations in the oil price. Prices follow a fixed formula expressed as cost plus annual escalation in cost. The Government has expressed its intention to move to a hybrid pricing regime (fixed price plus an adjustment factor linked to the oil price). At the beginning of 2018, new rules for regulating natural gas prices were issued by the Indonesia's Energy Minister, particularly that the regulated price formula would take into account wellhead prices in addition to operational costs.[19]

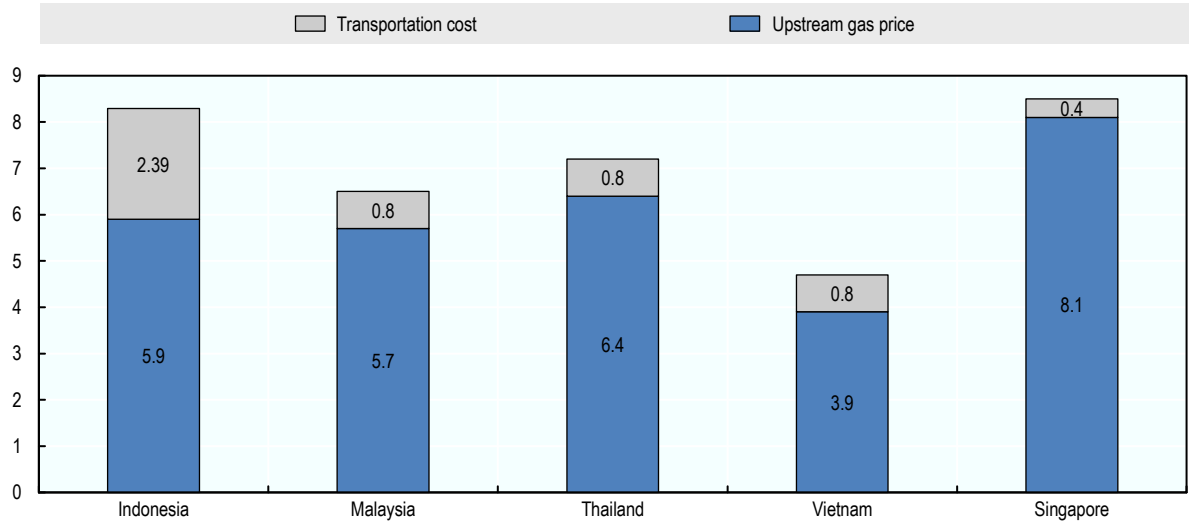
The Indonesian upstream gas price is competitive relative to neighbouring countries. However, high transportation costs, owing to slow infrastructure development, limited access to distribution and transmission pipelines, and multiple layers of traders have affected its affordability for end-users (Figure 2.10). End-users of natural gas are mainly industries (representing 98% of total final consumption in 2015) including gas use for non-energy purposes by the chemical and petrochemical industry. A tiny fraction is used in transport, residential and commercial and public services (IEA, 2018[1]).

19. See: https://energy.economictimes.indiatimes.com/news/oil-and-gas/indonesia-issues-new-rules-on-natural-gas-pricing-transmission/62521096 .

The government has tried several times to bring down domestic gas prices for end-users in order to boost economic growth and improve the competitiveness of domestic industries. In May 2016, President Widodo issued Presidential Regulation No. 40/2016 on the Provisions for Natural Gas Prices, capping gas prices at a maximum of USD 6 per MMBtu for a number of industries (e.g. fertilisers, petrochemicals, oleo chemicals, steel, ceramics, glass, and rubber gloves); prices they used to pay ranged between USD 5.7 and USD 7.5 per MMBtu (Reuters, 2016[40]).

In a renewed effort to lower domestic gas prices, the MEMR recently modified natural gas price setting for industry and power stations (MEMR regulation No.58/2018). Downstream natural gas prices for power plants and industries will now be determined by the energy minister based on a formula that takes into account wellhead prices, infrastructure management costs and commercial fees. The MEMR also capped the natural gas trader profit margin at 7% (Reuters, 2018[41]). This policy is set in the country's power capacity extension programme as low gas prices is a key incentive for PLN to develop additional gas-fired power plants (Inframation, 2018[42]).

Figure 2.10. Comparison of domestic pipeline gas prices in the Southeast Asia region, 2016 (in USD/MMbtu)



Source: (PwC, 2017[17]).

2.5. The fiscal impact of subsidies

Expenditure on energy subsidies has taken a significant share of Indonesia's central government budget, especially since 2004 when the country became a net importer of petroleum products. Between 2005 and 2014, fossil fuels and electricity subsidies represented 17.5% of total government expenditure, and 3.8% of GDP on average (Figure 2.6).

Spending on fossil fuel and electricity subsidies put pressure on the country's fiscal capacity and, until recently, it was a major contributor to its fiscal deficit (IEA, 2016[43]). Additionally, the burden of energy subsidies has made it difficult for the government to allocate its budget to long-term investments in essential public services – such as

infrastructure, education, health, and social protection – that are beneficial for economic growth and development (Indonesian Administration, 2017[22]).

Mainly as a result of high spending on energy subsidies, the Indonesian government's expenditure on priority areas has been low, especially compared with other countries. Between 2000 and 2013, Indonesia spent an average of 3.6% of GDP per annum on public investments and public private partnerships in infrastructure, compared with 17.7% in China, 11.3% in Malaysia and 6.3% in Thailand. The shares of health and social assistance expenditure in GDP have also been significantly lower than both the average for Southeast Asian countries and the low and medium income countries averages.[20] Low revenue collection is also a major cause of underspending on priority sectors (The World Bank, 2018[44]).

From 2014 onwards, falling energy prices and substantial reforms adopted by the new government have allowed significant reduction in the energy subsidy bill. In one year, between 2014 and 2015, the government saved IDR 120 trillion (USD 9 billion) as fossil-fuel subsidy outlays dropped from IDR 240 trillion (USD 20 billion) to IDR 60 trillion (USD 4.5 billion). The share of fossil fuels and electricity subsidies in total government expenditure fell by 12.5 percentage points, while their share in GDP decreased from 4% to 1.5% (Figure 2.6).

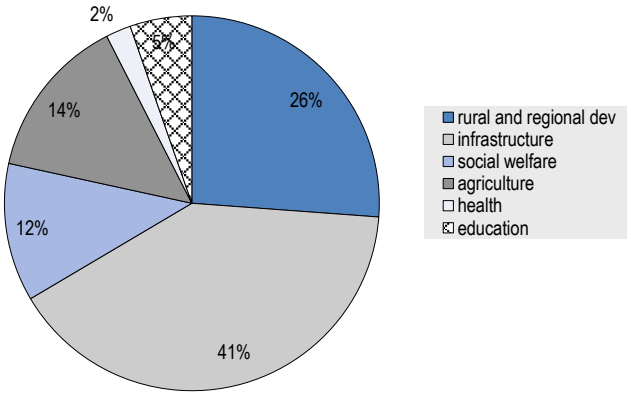
This important cut in energy subsidies enabled the government to reallocate spending towards productive sectors. In 2015, more than 60% of fossil-fuel subsidy savings were invested in infrastructure and rural and regional development projects. The rest was split among social welfare programmes (12%), health and education (2% and 5% respectively), and agricultural subsidies (14%) (Figure 2.11). Savings have mainly been allocated through transfers to ministries, state-owned enterprises, and regions and villages.[21] Overall, between 2014 and 2015, the share of health, education and infrastructure spending in total government expenditure increased by 0.7, 1.5, and 5.5 percentage points respectively (Figure A.2).

20. In 2009, Indonesia spent 1.2% of GDP on social protection against 5% on average for Southeast Asian countries (Inchauste and Victor, 2017[74]). In 2016, Indonesia spent 1.4% of GDP on health compared with an average of 3% of GDP for low and middle income countries. Social assistance spending represented 0.6% of GDP in 2015, below the low and medium income countries average of 1.5%. Low and medium income countries include: Indonesia, Philippines, China, Cambodia, Vietnam, Brazil, Peru, India, Mexico, Argentina, Columbia, and South-Africa.

21. In 2015, the government injected USD 5.5 billion of capital into forty SOEs, mainly in the transport and construction sectors to upgrade the country infrastructure. Budgets for Ministries were increased by 23%, from USD 47 billion to USD 59 billion, with the highest increases given to the Ministries of Agriculture (106%), Transportation (45%), Public Works and Housing (40%) and Finance (37%) (Indonesian Administration, 2017[22]).

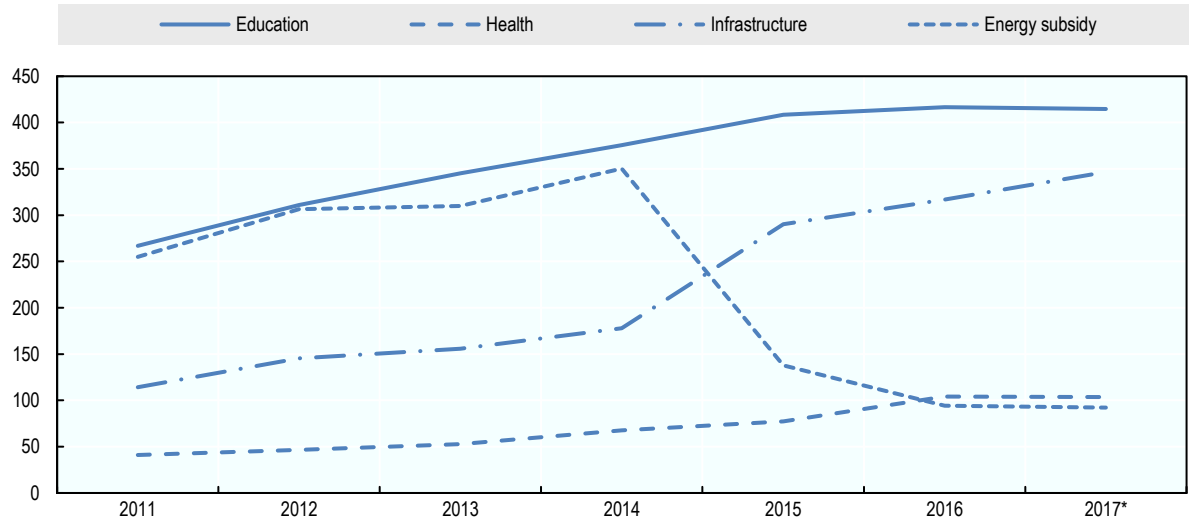
Figure 2.11. Fuel subsidy reallocation

Shifting fuel subsidy savings to infrastructure and social security programs (2015)



Note: The category rural and regional development include the village fund (Dana Desa) and the Special Allocation Fund (Dana Alokasi Khusus). Infrastructure: (Pembangunan Kapal dan pelabuhan), fleet border information systems and marine logistics (armada perbatasan sistem informasi dan lositik kelautan), infrastructure projects of reservoirs, drinking water, jlana and toll roads (proyek infrastruktur waduk, air minum, jlana dan jalan tol).
Source: (Ministry of Energy and Mineral Resources, 2017[45]).

Figure 2.12. Energy subsidies and other priority spending comparison 2011-17 (in IDR trillion)



Source: (Indonesian Administration, 2017[22]).

2.6. The social impact of subsidies

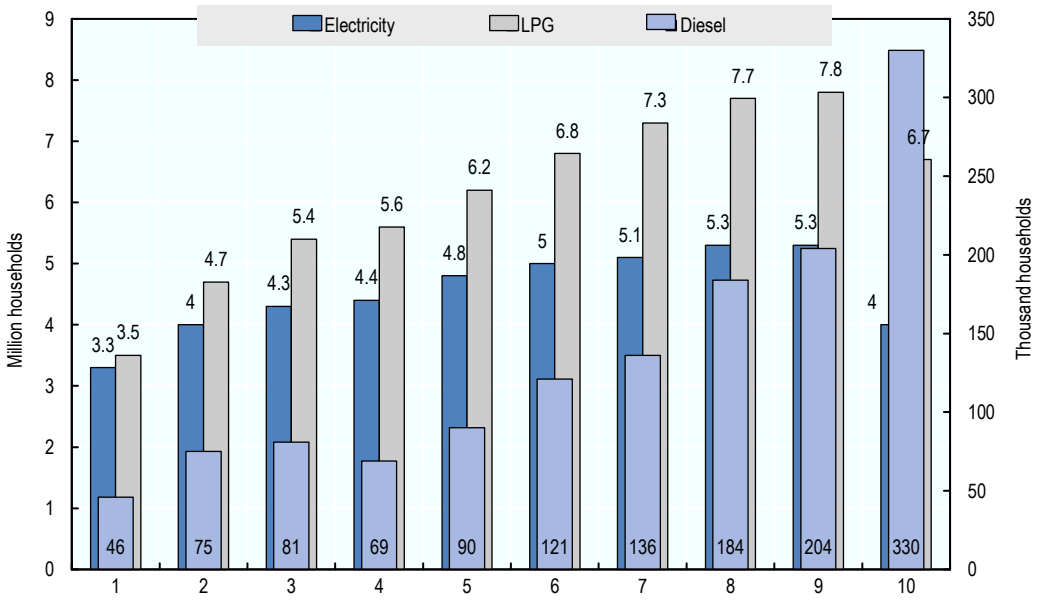
2.6.1. Distribution of subsidies

In Indonesia, fossil fuel and electricity subsidies have been regarded as a form of social welfare policy. These policies have supported the poor by lowering the costs of transport

and direct energy use, but these benefits have not been achieved efficiently. Large spending on energy subsidies – a fifth of total government expenditure in 2012 or about four times the amount spent on social assistance –have had a low effectiveness in reducing income inequality and poverty; especially compared with social assistance programmes (Figure A.3). This can be largely explained by to the poor targeting of these policies: low domestic prices for fuels and electricity had been available to all.

Overall, the growing middle and high-income segment of the population have captured a larger share of energy subsidies. Figure 2.13 shows that there are more beneficiaries of diesel, electricity and LPG subsidies in the highest income deciles of the population. Fuel subsidies in particular have been mostly enjoyed by rich individuals who own a private vehicle. Most poor households directly consume no diesel and gasoline at all. Industrial users have also benefited from energy subsidies. In 2013, 24% of the total electricity subsidy went to 10 931 large-scale industrial customers, while 39.5 million small household customers – using 450 VA and 900 VA power connections – received only 40% of the total electricity subsidies (Indonesian Administration, 2017[22]).

Figure 2.13. Electricity, LPG and diesel subsidies beneficiaries by income decile[1]



Note: 1- Decile 1 correspond to the poorest 10% households, and decile 10 to the richest 10%.
Electricity and LPG beneficiaries are reported on the primary axis (in million households) while diesel beneficiaries are reported on the secondary axis (in thousand households).
Source: (Indonesian Administration, 2017[22]).

Due to their higher energy consumption, rich households have also received more energy subsidy benefits in monetary value, even though energy subsidies represent a higher share of poor households' income (Indonesian Administration, 2017[22]). Based on Susenas data from 2015, diesel subsidies transferred six times more per month to the richest 10% of households than to the poorest 10%, while electricity subsidies transferred 2.5 more to the

richest 10% of households than to the poorest 10%.[22] However, an OECD study suggests that the total phase-out of fossil fuels and electricity consumption subsidies by 2020 could generate up to 0.7% real GDP growth and 1.6% welfare gains, according to the redistribution scheme envisaged. The redistribution of energy subsidy savings using cash transfers appears to be the most progressive and pro-poor policy and give rise to the highest welfare improvement (Durand-Lasserve et al., 2015[46]). Since the beginning of the 2000s, the Indonesian government has tried to reform its energy subsidies policy while taking steps to avoid harming the more vulnerable for whom subsidies still have a significant value.

2.6.2. Mitigation measures

Successive attempts to reform fossil-fuel subsidies have been accompanied by mitigation measures directed to the poor and the vulnerable. Fuel price increases in 2005, 2008 and 2013 have been linked to the creation of temporary cash transfers to help poorer households coping with the adverse effect of fuel price increases and to maintain their purchasing power for basic needs. Smaller compensation programmes were also provided, such as health and education support for the poor and infrastructure programmes (Table 2.8). In 2014, gasoline and diesel price hikes have been preceded by the implementation of a smart card system covering financial assistance, education, and healthcare support.[23] While this new social assistance programme was not funded by a reallocation of energy subsidy savings, part of the motivation was to provide compensation for expected price increases.

Energy price increases are unpopular policies that have been highly contested in the past, giving rise to violent protests and panic buying at gas stations. Starting in 2005, public information campaigns using TV ads, mobile phone text messages and social media activities have been deployed to support fuel and electricity pricing reforms. These campaigns have mostly focused on explaining the rationales for reform (such as the growing costs of energy subsidies and their regressive nature) and highlighting its benefits (like the opportunity for funding education, health and infrastructure). The government also provided information on compensation measures and emphasised that reforms are not about eliminating every form of support but about switching subsidies from products to households. In general, public opinion and attitudes towards energy subsidies reforms has improved in recent years.

22. In 2015, on average, the 10% poorest households received USD 3.07/month in diesel-subsidy benefits and USD 5.76/month in electricity subsidy benefits; against USR 20.31/month for diesel and USD 14.80/month for electricity for the richest 10%.

23. The Productive Family Programme introduced three cards: Indonesia Smart Card targeting 152 364 students from elementary to high school from age 7-18 years old; Indonesia Healthy Card expanding the coverage of existing healthcare insurance from 86.4 million to 88.1 million target recipients, with the inclusion of households from the near poor class; and the Prosperous Family Saving Card providing a cash transfer directly into saving accounts. The size of the first cash transfer was IDR 400 000 (USD 32).

Table 2.8. Subsidy reform compensation packages in Indonesia, 2003–14

2003 Megawati era	2005 Yudhoyono era	2008 Yudhoyono era	2013 Yudhoyono era	2014 Widodo era
Rice subsidies (OPKB)	Unconditional cash transfer (BLT)	Unconditional cash transfer (BLT)	Unconditional cash transfer (BLSM)	Indonesia Smart Card (KIP)
Health and social welfare	Education	Rice subsidies (Raskin)	Conditional cash transfer (PKH)	Indonesia Healthy Card (KIS)
Education	Health insurance (Askeskin)	Low-interest loans for small businesses	Rice subsidies (Raskin)	Prosperous Family Saving Card (KSKS)
Transportation	Rural infrastructure program (IP)	Educational support for children of low-ranking civil servants and military men	Grants for poor students (BSM)	
Water infrastructure	Grants for poor students (BKM)		Infrastructure program	
Revolving fund for small businesses	Operational grants for schools (BOS)			
Direct loans to Fishing communities (PEMP)				

Source: (Inchauste, Gabriela; Victor, 2017[47])

2.7. The macroeconomic impact of energy subsidies reform

Energy pricing adjustments have an impact on a number of macroeconomic variables such as a country's inflation rate and fiscal position. Caution is therefore necessary when carrying through energy price reform.

Increases in energy prices usually raise concerns about inflationary effects, both direct and indirect through higher transportation costs and food prices, for instance. Overall, the Indonesian economy has been able to manage inflation responses following the latest fuel and electricity pricing reforms. Electricity tariffs increases in 2014 and 2016 resulted in limited inflationary pressure, while the January 2015 fuel prices decrease was followed by a moderate period of deflation. The November 2014 gasoline and diesel price hikes, however, contributed to almost half the country's annual rate of inflation helping to raise the annual rate of inflation for 2014 to 8.36%, slightly above the acceptable range of 7.7-8.1% (GSI, 2015[30]).

The recent adoption of pricing mechanisms to align fuel and electricity prices to market prices via monthly or quarterly adjustments has eliminated the need for large, one-off price increases, which should contribute to the stabilisation of inflation expectations. One concern, however, has been "price stickiness", such as following the January 2015 fuels price, which were criticised for not being passed through into price reductions elsewhere in the economy.

Indonesia's 2014-15 subsidy reforms have benefited the country's fiscal situation more than most historical reforms, with energy subsidies expenditure dropping from 4% of GDP in 2014 to 1.5% in 2015. The improved fiscal position has been rewarded with increasing investor confidence in the country, with a strengthening exchange rate against major currencies and positive stock exchange reactions in the days after the new fuel prices

announcement.[24] In May 2015, Standard & Poor's (S&P) lifted Indonesia's BB+ credit rating from "stable" to "positive", citing, among other reasons, the improved quality, effectiveness, and predictability of government expenditure (Indonesian Administration, 2017[22]). Two years later, S&P raised Indonesia's credit rating to investment grade, bringing it in line with Fitch and Moody's ratings. The upgrade reflects the country's consistency in managing its budget deficit and the recent emphasis on financial sustainability (GSI, 2018[35])

24. The day after the new price announcement in November 2014, the Jakarta composite index increased by 23.61 points to 5 077.1.

3. Government support for fossil fuels in Indonesia

3.1. General observations

Indonesia's energy policy has been heavily influenced by its macroeconomic conditions and oil price fluctuations. Over the last decade, Indonesia's primary objective has been to reinforce energy security by redirecting energy resources from exports to the domestic market, and rebalancing its energy mix. This has mostly translated into reducing its reliance on oil while increasing coal, natural gas and renewable energy production and consumption. Indonesia has a high potential for renewable energy production in particular for electricity generation, yet renewable energy development to date has been quite limited. In its 2014 National Energy Plan, Indonesia committed to reduce fossil fuel and electricity subsidies while guaranteeing affordable access to energy for all end-users.

The Indonesia self-report (ISR) identifies 12fossil-fuel subsidies that may confer a benefit to fossil fuels along the fossil-fuel value chain, from the upstream extractive activities to the downstream end-users (Table 3.1). The IDSR classifies its fossil-fuel subsidies under two main categories: direct subsidies to end-users of petroleum fuels and electricity (S-1 to S-5); and tax incentives to the upstream and downstream segments of the oil and gas industry (T-1 to T-7). The bulk of Indonesia's subsidies come from below-market pricing of fuels (gasoline, diesel, kerosene and LPG), and below-cost recovery electricity tariffs.

The country undertook major reforms to its energy consumption subsidies in the 2014-17 period. Electricity subsidy expenditure was halved between 2014 and 2017, owing to the elimination of subsidised electricity prices to 30 million electricity consumers, representing about half of PLN's customers. For residential consumers, the targeting of electricity subsidies has been improved using the unified poverty database (UPD) – a database that gathers socioeconomic data on Indonesia's poorest households. Similar reforms have been designed for the LPG subsidy programme, and are planned to be implemented in 2018. In addition, the government has a plan to merge energy subsidy and social assistance programs into a unified family welfare smart-card system.

Fuel subsidy expenditure has also been significantly reduced by the new government. The prices of gasoline and diesel were raised by more than 30% at the end of 2014 and the government introduced a semi-automatic fuel pricing system enabling domestic fuel prices to follow more closely movements in international oil prices. Savings resulting from lower fuel subsidy expenditures have been used to finance infrastructure projects and social assistance programs for the poor. Lower energy subsidy outlay has also been translated into an increase in the share of health and education spending in total government's expenditure.

Indonesia does not have a comprehensive inventory that takes stock of its subsidies and their associated cost for the government. In particular, the Indonesian Administration has not systematically estimated the cost to the government generated from providing tax incentives for the oil and gas industry. In addition, a number of subsidies, such as the domestic market obligation policy and subsidies to the coal industry, have not been acknowledged in Indonesia's self-report of its inefficient fossil-fuel subsidies.

No reform plan exists for tax incentives in the oil and gas industry. These measures are intended to increase the national production of crude oil, natural gas, and refined oil and gas products. The government even plans to broaden tax incentives applying to investors in the downstream segment of the oil and gas industry (T-6 and T-7) by increasing the

duration of tax incentives, extending the number of eligible sectors, and simplifying application procedures. On the upstream sector, the implications of the recent change in the production sharing regime remain unclear.

Table 3.1. The 12 policies that Indonesia identified in the Indonesia self-review

Full name of the measure	Measure identifier	Estimated annual fiscal cost (2013)	Estimated annual fiscal cost (2016)
		USD millions	USD millions
Subsidies for the exploration, development and extraction of fossil fuels			
Import duty exemption for PSC contractors in exploration and exploitation stages	T-1	n.a	n.a
VAT and Sale Tax on Luxury Goods exemption and reduction for PSC contractors in exploration and exploitation stages	T-2	n.a	1 102
Income tax Article 22 exemption on imported goods and services for PSC contractors in exploration and exploitation stages	T-3	n.a	n.a
Reduction in Land and Building tax up to 100% for PSC contractors in exploration and exploitation stages	T-4	n.a	6.02
Lower rates of revaluation of fixed assets	T-5	n.a	1.90
Subsidies for the refining and processing of fossil fuels			
Corporate income tax reduction for pioneer investors in the petroleum refining industry	T-6	n.a	n.a
Tax allowances for companies investing or expending business in the oil, natural gas and coal refining and processing industries	T-7	n.a	0
Subsidies to end-users of fossil fuels			
Consumption subsidies for gasoline	S-1	10 000	0
Consumption subsidies for diesel	S-2	6 997	1 150
Consumption subsidies for kerosene	S-3	597	175
Consumption subsidies for LPG	S-4	2 961	1 871
Consumption subsidies for electricity	S-5	9 559	4 741

Note: n.a.: not available.

3.2. Subsidies for the exploration and exploitation of fossil fuels

In order to attract oil and gas companies to investment in exploration and exploitation activities, the Indonesian government provides tax incentives to the upstream segments of the oil and gas industry (Indonesian Administration, 2017[22]). They are intended to encourage the discovery and proving of new reserves and to boost national production of crude oil and natural gas. The IDSR identifies five subsidy measures (T-1 to T-5) that grant tax benefits to oil and gas PSCs contractors.

The measures mainly consist in exemptions from import taxes (i.e. import duty, VAT on importation, and Article 22 income tax) on capital goods and equipment (T-1 to T-3).[25] Until the enactment of the 2001 Oil and Gas law, import tax facilities were granted based

25. Income tax Article 22 is a withholding tax applicable to the import, sale, and purchase of certain goods.

on a master list specifying concerned items. Since then, they have been regulated by a number of separate regulations as summarised in Table 3.3. Since 2015, PSCs signed after 2010 (i.e. the effective date of GR 79) can also benefit from reduction in the land and building tax up to 100% (T-4).

A recent Government regulation (GR No. 27 year 2017 [PP27]) provides clarification on tax incentives applicable to new PSC contractors (i.e. PSC signed after the enactment of PP27), and to old PSC contractors who decide to adjust to its provisions. PP27 Article 26 specifies the following four tax benefits applying to activities during both the exploration and the exploitation stages (KPMG, 2017[48]):

1. Import duty exemption on imported goods used in the context of petroleum operations (T-1).
2. VAT and/or luxury goods sales taxes payable are not collected on the acquisition of certain taxable goods and services, on the import of certain taxable goods, the utilisation of offshore intangible goods, or the utilisation of certain offshore taxable services (T-2).
3. Income tax Article 22 is not imposed on any imported goods or services used in upstream activities subject to import duty exemption, as stipulated in point 1 (T-3).
4. A reduction of the land and building tax (LBT) amounting to 100% of the payable oil or gas LBT for the exploration stage, and a 100% reduction of the sub-surface LBT for the exploitation stage of the PSC (T-4).

These tax incentives automatically apply during the exploration stage. For PSCs contractors in the exploitation stage, however, tax facilities have to be granted by the MoF based on considerations of the project's economics from the MEMR (Deloitte, 2017[49]).

In addition, reduction in the tax rate of revaluation of fixed assets has been granted to oil and gas contractors who have submitted an application for fixed assets revaluation in 2015 and 2016 (T-5). The official 10% final income tax rate was reduced to 3% in 2015, to 4% in the first half of 2016, and to 6% in the second half of 2016. Since 1 January 2017, the applicable tax rate has returned to 10%. This tax incentive benefits oil and gas companies by increasing the tax depreciable value of their assets, thereby reducing their future tax payments. Besides the reduction of the final tax rate, companies were also able to choose specific fixed asset to be revalued in order to optimise their tax benefits (PwC, 2015[50]).

Table 3.2. Subsidies to exploration and exploitation of fossil fuels not listed in the IDSR

Full name of the measure	Description
Interest recovery on loans	Contractors conducting oil and natural gas operations in Indonesia are usually not allowed to claim interest expenses for capital investments as part of their cost recovery. However, in cases wherein the internal rate of return (IRR) is less than the standard petroleum investment IRR, interest expenses for capital expenditure can be recovered. GR No. 27/2017 removed interest costs from the list of non-cost recoverable items (revoking GR No.79/2010).
Investment tax credits	An investment tax credit is allowed for capital investment on production facilities, including pipeline and terminal facilities. It is provided as an incentive for developing certain capital-intensive facilities. Oil fields entitled to the incentive must: a) be located in a producing working area, and b) have an estimated rate of return of less than 15%. Under GR 79 the Minister has the authority to determine investment incentive credits.
Loss carry forward and unrecovered costs	There is an unlimited carry forward of prior years' unrecovered costs. Loss carry forward refers to the ability of a company to credit losses incurred in one year against its tax liability in future years.

Source: (EY, 2017[51]), (PwC, 2017[5]), (Braithwaite et al., 2010[52])

There are additional tax incentives that benefit the upstream segments of the oil and gas industry, yet have not been included in IDSR (Table 3.2). Interest costs on loans contracted by upstream oil and gas contractors can, under certain conditions, be treated as cost recoverable and tax deductible items. Another support measure that benefits PSC contractors is an investment tax credit for capital investment in production facilities, including pipeline and terminal facilities. Finally, loss carry forward of prior years' unrecovered costs is granted for an unlimited number of years for all PSCs signed before 2017.[26]

26 . Loss carry forward for other industries is limited to five years, but can be extended to ten years for companies benefiting from tax incentives.

Table 3.3. Regulations governing tax facilities in the upstream oil and gas industry

Legal basis	Form of support	Apply to	Requirements
Oil and Gas Mining Law No. 44/1960	Exemption from all import taxes (i.e. Article 22 income tax, VAT on importation, and import duty) on capital goods and equipment. The discharge of import taxes is accommodated via a master list.	All PSCs signed before 2001 ("Old PSC")	None
Oil and Gas Law No. 22/2001	Import tax exemptions are no longer available under the master list.	All PSCs signed from 2001 onwards ("New PSC")	None
MoF Regulation No. 20/2005	Import tax exemptions for old PSCs are available until the end of their contract term.	Old PSCs until their contract expire	None
MoF Regulation No. 177/2007	Import duty exemption for new PSCs applicable to both exploration and exploitation activities.	New PSCs from 2007 onwards	Only apply to goods that have not yet been produced, or are not produced to the required specifications, or not produced in sufficient quantity in Indonesia.
MoF Regulation No. 179/2007	0% Import duty on imports of drilling platforms and floating or submarine production facilities.	New PSCs from 2007 onwards	None
MoF Regulation No. 154/2010	Exemption from Article 22 income tax on the importation of goods used in upstream oil and gas activities that are exempted from Import duty and/or VAT.	New PSCs from 2010 onwards	None
GR No. 79/2010 (PP 79)	Exemption from taxes on imports (import duty, VAT and Income Tax Article 22) in relation to the importation of goods used in oil and gas exploration and production activities. Any indirect taxes, local taxes and retribution paid by contractors are treated as cost recovery, instead of reimbursable items.	New PSCs from 2010 onwards	None
MoF Regulation No. 27/2012 (PMK 27)	Exemption from import VAT on certain goods exempted from import duty. Concerns goods used for upstream oil and gas exploration business activities, as well as temporarily imported goods.	New PSCs from 2012 onwards	None
MoF Regulation No. 70/2013 (PMK 70) (amend PMK 27)	General VAT exemption on imports of goods for upstream oil and gas business. The exemption applies to imports carried-out during both exploration and exploitation stages.	New PSCs from 2013 onwards	Only apply to goods that have not yet been produced, or are not produced to the required specifications, or not produced in sufficient quantity in Indonesia.
MoF Regulation No. 267/2014	Land and building tax reduction for oil and gas PSC contractors in the exploration stage.	Applicable starting from 2015 for all PSCs signed after 2010 (i.e. the effective date of GR 79).	None
MoF Regulation No. 218/2014 (as amended by MoF Regulation No. 158/2016)	Reimbursement of VAT and Sales Tax on Luxury Goods payed by upstream oil and gas contractors on the acquisition of taxable goods and services.	PSCs signed before 2010 (i.e. the effective date of GR 79).	There is no entitlement to reimbursement until the PSC goes into production and reaches the government share. Reimbursement is also subject to high standards of documentation.
GR No. 27/2017 (PP27) (amend PP70)	See main text	All PSCs signed after the entry into force of PP27*	None

Note: *PSCs signed before PP27 can choose to follow the terms of the contract or adjust to the provisions of PP27 no later than six months after its enactment.
Sources: (PwC, 2017[5]), (Indonesian Administration, 2017[22]), (Deloitte, 2017[49]), (KPMG, 2017[48]).

[T-1] Import duty exemption for PSC contractors in exploration and exploitation stages

Objective	The tax facility is intended to attract oil and gas companies to undertake domestic exploration and exploitation activities, and therefore increase the national production of oil and gas.
Legal basis	MoF Regulation No. 177/2007; MoF Regulation No; 179/2007; Government Regulation No. 27/2007.

Annual tax expenditure (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	n.a	n.a	n.a	n.a	n.a

Degression	No provision has been made for degression.
Outlook	There are no plans at present for changes to be made to this arrangement.

Note: n.a.: not available.
Source: (Indonesian Administration, 2017[22])

[T-2] VAT and Sale Tax on Luxury Goods reimbursement upon deliveries of taxable goods for PSC contractors

Objective	These tax facilities are intended to incentivise oil and gas companies to undertake domestic exploration and exploitation activities.
Legal basis	MoF Regulation No. 27/2012 as amended by MoF Regulation No. 70/2013; MoF regulation No. 218/2014 as amended by MoF Regulation No. 158/2016; Gr No. 27/2017

Annual tax expenditure (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	n.a	n.a	331	1 102	n.a

Degression	No provision has been made for degression.
Outlook	There are no plans at present for changes to be made to this arrangement.

Note: n.a.: not available.
Source: (Indonesian Administration, 2017[22]).

[T-3] Income tax Article 22 exemption on imported goods and services for PSC contractors in exploration and exploitation stages

Objective	These tax facilities are intended to incentivise oil and gas companies to undertake domestic exploration and exploitation activities.
Legal basis	MoF Regulation No. 154/2010; GR No. 27/2017

Annual tax expenditure (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	n.a	n.a	n.a	n.a	n.a

Degression	No provision has been made for degression.
Outlook	There are no plans at present for changes to be made to this arrangement.

Note: n.a.: not available.
Source: (Indonesian Administration, 2017[22]).

[T-4] Reduction in Land and Building tax up to 100% for PSC contractors in exploration and exploitation stages

Objective	The tax facilities are intended to attract oil and gas companies to undertake domestic exploration and exploitation activities.
Legal basis	MoF Regulation No. 267/2014; Government Regulation No. 27/2017

Annual tax expenditure (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	n.a	n.a	4.98	6.02	n.a

Degression	No provision has been made for degression.
Outlook	There are no plans at present for changes to be made to this arrangement.

Note: n.a.: not available.
Source: (Indonesian Administration, 2017[22]).

[T-5] Lower rates of revaluation of fixed assets

Objective	These tax facilities are intended to incentivise oil and gas companies to undertake domestic exploration and exploitation activities.
Legal basis	Minister of Finance Regulation No. 191/ 2015 reduced the applicable final income tax rate from 10% to 3% in 2015, to 4% in the first half of 2016, and to 6% in the second half of 2016. MoF regulation No. 29/ 2016 provides leniency to extend the payment deadline up to 31 December 2016.

Annual tax expenditure (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	n.a	n.a	5.94	1.90	n.a

Degression	Reductions in the final income tax rate terminated in 2016. They are back to the 10% rate starting 1 January 2017.
Outlook	There are no plans at present for changes to be made to this arrangement.

Note: n.a.: not available.
Source: (Indonesian Administration, 2017[22]).

One important development is the recent change in the oil and gas production sharing regime. In January 2017, through regulation No. 8/2017, the MEMR replaced the previous cost-recovery PSC by a production-split PSC, which applies to net production income (net of capital and operational costs incurred by the firm) through a progressive and sliding gross production split. This new PSC scheme is expected to encourage oil and gas companies to be more cost-efficient as it does not provide any mechanism for recovering sunk costs before production is shared with the State (Jones Day, 2017[53]). Tax treatment with regard to the new regime is regulated by GR No. 53/2017, which provides details on the determination of taxable income. Tax incentives for gross-production split PSCs are similar to those under the previous production sharing regime, with the exception that loss carry forward is now limited to a period of 10 years (PwC, 2018[54]).[27]

3.3. Subsidies for the refining and processing of fossil fuels

The Indonesian government is also providing tax incentives to investors in the downstream oil and gas industry, in the form of income-tax holidays (T-6), and income tax allowances (T-7). According to the IDSR, these tax incentives are intended to increase direct investment activities in the oil and gas refining and processing industries.

Income tax holiday for pioneer investors: Oil refineries or industries, oil refinery infrastructure – including those using a government-to-business co-operation scheme – and base organic chemicals sourced from oil and gas are qualifying industries for a reduction in corporate income tax (CIT) of between 10% and 100% (T-6). The income tax holiday is granted for a period of 5 to 15 years, and can be extended to 20 years if the project is considered to be of national interest. Besides operating in a pioneer industry (e.g. metals, oil refining, machinery, renewables, and communications devices), there are several other requirements for being eligible to the income tax reduction, in particular: that the project involves a capital investment of at least IDR 1 trillion; that the investor deposits at least 10% of the total capital investment within an Indonesian bank, and that this deposit cannot be withdrawn before the realisation of the investment (PwC, 2017[5]).

Income tax facility for capital investment: The Indonesian government also provides tax allowances to companies investing or expanding business in certain energy-related sectors (T-7). Following GR No. 9/2016, the qualifying business sectors include: oil refinery, natural gas processing plants and some other oil-and-natural-gas based industries, as summarised in Table 3.4. The income tax facilities are in the form of: an investment credit of 30% for qualifying spending, deductible at 5% per annum over six years; accelerated tax depreciation and amortisation; reduced withholding tax rates on payable dividend to non-resident; and an extended tax loss carry forward period of up to ten years (PwC, 2017[5]).

27. The new regime allows split adjustments based on field characteristics and market developments. The firm retains more of the production if the field has less favourable physical features that render production cost higher compromising the commercialisation of the field and if oil and gas market prices dip below USD 70 per barrel. For more detail see: www.bakermckenzie.com/-/media/files/careers/job-opportunities/emea/althenew-grosssplit-pscproblem-solved-april-2018.pdf?la=en

Table 3.4. Energy-related sectors eligible for a tax allowance (following GR 9/2016)

Business Field	Scope of products	Requirements
Natural oil refinery industry	Refining of oil to produce natural gas, LPG, avtur, avigas, naphtha, diesel fuel, kerosene, diesel oil, fuel oil, lubricant, wax, solvent, residue and asphalt	Priority to meet local demands
Natural gas refinery and processing industry	Processing of natural gas into LNG or LPG	None
Lubricant manufacturing industry	All scope of products included within the relevant Lubricants business code (KBLI)	None
Oil, natural gas and coal originated organic base chemical industry	• Olefin upstream group: ethylene, propylene, crylic acid butadien, buthane, butane-1, Ethyl Tert Buthyl Ether, ethylene dichloride, vinyl chloride monomer, raffinate, pyrolisis gasoline, crude c-4 • Aromatic upstream group: purified, terephthalic acid (PTA), paraxylene, benzene, toluene, orthoxylene • C1 upstream group: methanol, ammonia • Others: black carbon	None
Natural and artificial gas supply	Regasification of LNG into natural gas using a FSRU Coalbed Methane (Non PSC), shale gas, tight gas sand and methane hydrate	None

Note: Avtur is aviation turbine fuel designed for use in aircrafts powered by gas-turbine engines.
Source: (PwC, 2017[5]).

The government recently expressed its intention to increase the duration of the income tax holidays for pioneer investors (T-6) from 5 to 30 years, instead of to a maximum of 20 years. There is also a plan to broaden economic sectors eligible to apply for tax allowance (T-7), and to simplify application procedures (OECD, 2018[55]).

In addition to the tax incentives mentioned in IDSR, the review team is of the view that government's domestic market obligation (DMO) policy also supports the oil refining industry (Table 3.5). The DMO policy requires PSC contractors to sell part of their oil production to domestic refineries at below-market prices. Contractors extracting crude oil from new fields can, however, receive the full market price for their DMO during the first five years of production. As the DMO provides Pertamina's refineries with cheaper crude-oil feedstock, it can be characterised as a form of producer support, even though the measure does reduce the revenues of companies operating upstream.

Table 3.5. Support measures for the refining and processing of fossil fuels not listed in the IDSR

Full name of the measure	Description
Below-market pricing of crude oil under DMO	Oil DMO has been in place since 1976 (2nd generation PSCs). Following GR 79/2010 Article 24(8), the DMO quota is currently set at 25% of the produced petroleum and the DMO price is 10% of the market price (weighted average price).

Source: (PwC, 2017[5])

[T-6] Corporate income tax reduction for pioneer investors in the petroleum refining industry

Objective	The income tax reduction is intended to increase direct investment in oil and gas refining and processing industries.
Legal basis	MoF Regulation No. 130/2011 regarding the provision of the exemption or reduction of income tax, as amended by: MoF Regulation No. 192/2014, MoF regulation 159/2015, and MoF regulation No. 103/2016.

Annual tax expenditure (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	n.a	n.a	n.a	n.a	n.a

Degression	No provision has been made for degression.
Outlook	The government plans to increase the duration of tax holidays from 5-20 years to 5-30 years (OECD, 2018[55]).

Note: n.a.: not available.
Source: (Indonesian Administration, 2017[22]).

[T-7] Tax allowances for companies investing or expanding business in the oil, natural gas and coal refining and processing industries

Objective	Tax allowances are intended to increase direct investment in oil and gas refining and processing industries.
Legal basis	Investment Law No. 25/2007 stipulating that the government can provide incentives to qualifying investments. Government Regulation No. 1/2007 (as amended by GR No. 62/2008 and GR No. 52/2011) specifies the nature of the tax incentives. The latest amendment (GR No. 9/2016) expands the list of qualifying industries.

Annual tax expenditure (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	n.a	n.a	n.a	0	n.a

Degression	No provision has been made for degression.
Outlook	The government plans to broaden economic sectors eligible to apply for a tax allowance, and simplify procedures for tax allowance applications (OECD, 2018[55]).

Note: n.a.: not available.
Source: (Indonesian Administration, 2017[22]).

3.4. Subsidies for fossil fuels used in transport

The end-user prices of premium gasoline and diesel have been subsidised for decades in order to protect consumers from volatility in fuel prices and extend energy access to vulnerable and low-income populations (S-1 and S-2). But transport fuel subsidies – Indonesia's oldest subsidy policies – have been increasingly expensive for the government and have mainly benefited the higher income segment of the population (see Section 2.6.1).

Fossil-fuel subsidy expenditure gradually increased from 2009, and peaked in 2014 at IDR 240 trillion (USD 20 billion), 75% of which was for gasoline and diesel alone, the rest was split between kerosene and LPG subsidies. This trend has been reversed since 2015 due to falling and highly uncertain oil prices and significant reforms undertaken by the new government. In November 2014, the end-user prices of gasoline and diesel were raised by more than 30% to align with international prices. A month and half later, the government revoked the gasoline subsidy, introduced a fixed subsidy for diesel and opted for a switch from fixed pricing towards a semi-automatic pricing system based on an index of international oil prices (see Section 2.3.2).

However, despite fluctuations in world oil prices, the government has not systematically adjusted domestic fuel prices according to the new pricing formula. In March 2015, Pertamina already claimed that premium gasoline prices determined by the government were IDR 200-750 below the level calculated by the price formula. The state-owned company has been forced to bear the cost of this price disparity as the government stopped providing budgetary transfers to subsidised premium gasoline in January 2015. Less than a year after the reform, Pertamina losses on the sale of premium gasoline amounted to IDR 6.7 trillion (USD 0.5 billion) (Table A.4). There is evidence that Pertamina resorts to cross-subsidisation through higher prices for non-subsidised fuels to cope with low domestic prices for premium gasoline under rising international oil prices (The World Bank, 2018[44]).[28]

Further, in March 2018, the government announced its decision to keep fuel prices stable over the next two years in order to preserve people's purchasing power from the rise in international oil prices. To that end, the fixed subsidy for diesel fuel is expected to be increased from IDR 500 per litre to IDR 2000 (Reuters, 2018[56]). Such a policy will likely result in the worsening of Pertamina's financial situation and the upsurge of government's fossil-fuel expenditure through arrears payments.

In the first quarter of 2018, fossil-fuels subsidy expenditure grew by more than three times compared with 2017 (The World Bank, 2018[57]).[29] Nonetheless, the 2015 reforms to fossil-fuel subsidies have yielded important benefit for Indonesia's budget. In 2017, the government expenditure for gasoline and diesel subsidies was only 5% of its 2014 value.[30] Fossil-fuel subsidies reforms have also been credited with reduced traffic pressure (Burke, Batsuuri and Yudhistira, 2017[58]).[31]

In addition to measures identified in the IDSR, the review team identified three other measures supporting fossil fuels used in the transport sector (Table 3.6). The distribution of compressed natural gas (CNG) conversion kits in the context of the diesel to CNG conversion programme conferred a subsidy to the transport sector. The switch from diesel-to-CNG in public transportation has also been promoted through capped prices for

28. Premium gasoline (RON 88) prices have not been changed since 1 April 2016 despite the increase in Brent crude oil price from USD 35-40/barrel in April 2016 to USD 66.6/barrel in the first quarter of 2018. Pertamax (RON 92) and Pertamax turbo prices, however, were increased by IDR 300/litre and IDR 500/litre respectively on February 2018.

29. This includes fuel and gas subsidies and does not include FFS arrears payments.

30. In 2017, the government expenditure for gasoline and diesel subsidies amounted to IDR 10.3 trillion against IDR 183.8 trillion in 2014.

31. Burke et al. estimated that Indonesia's 2013–14 fuel subsidy reforms eased traffic flows on the roads by around 10% by the second half of 2015, relative to the counterfactual without reform.

automotive gas fuel. Another support measure identified by the review team is the reduced income tax rate applicable to Pertamina and its subsidiaries on the sale of fuels to gasoline stations.

Table 3.6. Support measures for fossil fuels used in transport not listed in IDSR

Full name of the measure	Description
Reduced income tax on fuel product sales for PT Pertamina retail stations	Following MoF Regulation No.34/2017, the sale of oil fuel by Pertamina and its subsidiaries to gas stations is subject to a 0.25% tax on the selling price. A 0.3% tax rate applies to the sale of oil fuel by other parties than Pertamina to gas stations.
Compressed natural gas conversion kit distribution	During Yudhoyono's administration, the Ministry of Transportation has distributed over 2000 conversion kits for taxi and microbuses.in order to promote the use of CNG in public transportation.

Source: (PwC, 2017[5]), (PwC, 2017[59]), (Asian Development Bank, 2015[24])

[S-1] Consumption subsidies for gasoline

Objective	This subsidy aims at avoiding volatility in fuel prices for final consumers.				
Revenue forgone (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	10 000	9 183	836	0	0
Legal basis	Law No. 20/2001 on petroleum and natural gas; Law No. 22/2011 (Article 7) on the state budget; PR No. 191/2014 on the provision, distribution and retail price of fuel oil; MEMR No. 39/2014, No. 4/2015, No. 39/2015, No. 27/2016 on the calculation of retail price of fuel *(not exhaustive)*.				
Recent development	The gasoline subsidy was eliminated in January 2015. The price is now determined by a base market price plus taxes (VAT and motor fuel tax), and a margin for distributors.				
Outlook	The government recently decided to keep fuel prices stable over the next two years.				

Source: (GSI, 2017[14])

[S-2] Consumption subsidies for diesel

Objective	This subsidy aims at avoiding volatility in fuel prices for final consumers				
Revenue forgone (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	6 997	6 309	1 530	1 150	583
Legal basis	Law No. 20/2001 on petroleum and natural gas *(not exhaustive)*.				
Recent development	In 2015, the government set a fixed subsidy of IDR 1 000 (~ USD 7.5 cents) per litre for diesel. In 2016, the subsidy was reduced to IDR 500 (~ USD 3.75 cents) per litre. The price is now determined by a base market price plus taxes (VAT and motor fuel tax) and includes a fixed subsidy at IDR 500 per litre.				
Outlook	In March 2018, the government announced its intention to raise diesel subsidy from IDR 500 per litre to IDR 2000 per litre.				

Note: The Ministry of Finance estimates of fossil-fuel subsidies have been converted into US dollars using annual market exchange rates for rupiahs.
Source: (Indonesian Administration, 2017[22])

3.5. Subsidies for electricity consumption and generation

The Indonesian government has been subsidising the end-user price of electricity for the majority of electricity consumers (S-5). The main justification behind electricity subsidies has been poverty alleviation and inequality reduction. However, due to poor targeting, the well-off have been the largest beneficiaries of the subsidy.[32]

Electricity subsidy expenditure peaked in 2013-14 at around IDR 100 trillion (USD 9 billion) following the surge in international oil prices. Based on IMF calculation, in 2013, Indonesia had the world's 4th largest electricity subsidies in US dollar terms, after Russia, Iran, and Saudi Arabia (Burke and Kurniawati, 2018[29]). This alarming increase in the cost of electricity subsidies force it to undertake reform to its electricity subsidy scheme, with the objective of eliminating subsidies to non-poor households.

Beginning 2013, the government began to exclude certain electricity consumers from the subsidy, beginning with the ones with the largest power connections in the industrial, business, government and residential classes. In total, subsidies to 12 consumer classes – medium and large businesses, industries and government offices, households with power connection greater or equal to 1 300 VA, and street and road lighting – were phased out between 2013 and 2016. The electricity tariffs for these consumers have first been subject to gradual price increases until they reach their market value. Since then they have followed a monthly automatic tariff adjustment mechanism which enables PLN to pass on inflation, the price of oil, and the USD/IDR exchange rate to non-subsidised consumers. Automatic tariff adjustment includes a public service obligation (PSO) margin set at 7% above the cost of electricity supplied.

At the end of 2016, the government decided to improve the subsidy targeting of the two poorest residential classes, representing about 70% of PLN's consumers. To that end, data from the UPD have been matched with PLN customer identification in order to separate

32. In 2016, 70% of households received subsidised electricity while Indonesia's official poverty rate was only 11% (Burke and Kurniawati, 2018[86]).

450 VA and 900 VA households between "poor" and "non-poor"; households considered as poor are those living in the bottom 40% of the economic stratum. In 2017, tariff adjustments were gradually implemented for non-poor 900 VA customers, and reached its final stage in mid-2017. As a result, the number of subsidised 900 VA consumers dropped from 23 million to 4 million. However, in 2017 tariff adjustments for non-poor 450 VA consumers were suspended.[33]

Electricity subsidy reforms already yielded important benefits for Indonesia's budget: the subsidy bill was cut by more than two between 2014 and 2017, dropping from IDR 100 trillion (USD 8.6 billion) to IDR 45 trillion (USD 3.4 billion). The progressive reduction in electricity subsidies has also fostered improved efficiency in electricity use, with savings in annual electricity use of around 7% in 2015 relative to the no-reform counterfactual (Burke and Kurniawati, 2018[29]). However, electricity subsidy allocation in the 2018 state budget is set to increase.[34] The subsidy increase is a result of the government's decision to keep electricity prices at current levels until 2019 in order to preserve people's purchasing power from rising global oil prices, while easing the financial burden on PLN (OECD, 2018[55]).

Besides subsidising electricity consumption, the Indonesian government is also supporting the generation of electricity in the country, mainly through credit assistance in the form of preferential direct loans and loan guarantees to the state-owned electricity company (Box 3.1). Government credit assistance lowers the borrowing cost for the beneficiary firm compared with the cost it incurs if it were to borrow at market prices. This under-pricing of credit products for PLN amounts to a subsidy cost for the government.

Box 3.1. Support measures for power generation

As 90% of Indonesia's electricity generation is based on fossil fuels, support measures to the electricity sector encourage the use of fossil fuels. The Indonesian government provides support for electricity generation mainly in the form of credit assistance to the state-owned electricity company, and funding to coal-based electricity-specific research and development.

In its 2015 report on fossil-fuels subsidies in Indonesia, the Asian Development Bank identifies three types of credit support provided by the government to the state-owned electricity company: i) soft loans, ii) loan guarantees, and iii) subsidised credit for PLN from subsidiary loan agreements (Asian Development Bank, 2015[24]).

As explained to the OECD *Companion to the Inventory of Support Measures for Fossil Fuels* report (OECD, 2018[60]), in providing loan guarantees or direct concessional loans, the government increases access to credit or lowers the cost of borrowing for the company that would have otherwise been excluded from the credit market or penalised by higher interest rates.

When a government provides a loan guarantee for a project, it pledges to repay some or all of the outstanding amount to the lender should the borrower default. As guarantors, governments pass the risk underlying such investment to taxpayers, who inevitably

33. Among 14.7 million 450VA households, 95% have been identified as poor by the UPD.

34. Electricity subsidy expenditure has been set at IDR 47.66 trillion in the 2018 state budget, against IDR 44.98 trillion in 2017 (GSI, 2018[35]).

become de facto equity-holders in the project. In the event of a default, the government would have to pay back the loan by cutting spending or levying additional taxes to finance this expenditure; debt financing is another way to pay back losses in the short run, but issuing additional debt simply means pushing repayment into the future.

Direct government lending for energy projects is an alternative and widely used form of credit support with costs and benefits comparable to loan guarantees. As for loan guarantees, direct government loans provide support to investors through better contractual terms than those that would have been obtained on private markets, including through favourable interest rates, or repayment conditions.

Government credit support, therefore, can result in a cost to the government that should enter into the evaluation of government support policies to fossil fuels. The OECD *Companion* considers that the subsidy cost of a loan or a loan guarantee to the government can be estimated by the difference between what would have been paid by the debtor under market pricing and what is actually paid (OECD, 2018[61]).

The Asian Development Bank's latest estimates for the cost of credit support to electricity production for the Indonesian government are the following: USD 38 million in soft loans and USD 94 million in subsidised credit in 2012, USD 72 million in loan guarantees in 2013 (Asian Development Bank, 2015[24]). The International Institute for Sustainable Development also provides data on the cost of loan guarantee to PLN, which are directly extracted from the government's financial statement. Between 2012 and 2016, the Indonesian government provided loan guarantees worth nearly USD 270 million in loan guarantees, mainly supporting coal-fired electricity generation (Attwood et al., 2017[62]).

[S-5] Consumption subsidies to electricity

Objective	The subsidy aims at guaranteeing reasonable electricity prices to final consumers.				
Revenue forgone (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	9 559	8 580	4 354	4 741	3 393
Legal basis	Pursuant to GR 14/2012, tariffs for electricity sold to consumers are determined by the MEMR or governor, subject to approval by the provincial or national house of representatives. A number of MEMR regulations regulate the tariff of electricity supplied by PLN. MEMR No. 30/2012 sets quarterly increases in key tariffs in 2013 *(not exhaustive).*				
Recent development	Since 2013, 13 consumer classes have been gradually excluded from the subsidy and subject to monthly tariff adjustments, resulting in a significant reduction in electricity subsidy expenditure.				
Outlook	Electricity subsidy allocation in the state budget is set to increase following the government's decision to keep electricity prices at current levels until 2019, and the suspension of tariff adjustment for wealthy 450VA consumers.				

Note: The Ministry of Finance estimates of fossil-fuel subsidies have been converted into US dollars using annual market exchange rates for rupiahs.
Source: (Indonesian Administration, 2017[22])

3.6. Subsidies for fossil fuels used in residential, industrial, fishing and agricultural sectors

The end-user price of kerosene, Indonesia's main cooking fuel, has been subsidised for decades (S-3). In 2007, as kerosene subsidies started to become fiscally unsustainable, the Indonesian government launched the kerosene-to-LPG conversion programme to encourage a switch toward a higher energy density, cleaner fuel for low-income households (Box 3.2). LPG consumption has mainly been promoted through heavily subsidised prices for 3 kg cylinders (S-4).

Kerosene subsidy expenditure has been significantly reduced since the implementation of the kerosene to LPG conversion programme, which led to a drop in its consumption. In a year, between 2008 and 2009, the kerosene subsidy bill has been divided by four, and since then it has been hovering around IDR 7 trillion (USD 773 million), down to IDR 3 trillion in 2015 as international oil and gas prices fell (Figure A.1). Since the 2015 reform to fuel prices, the retail price of kerosene is fixed at IDR 2500 per litre (see Section 2.3.2). Some subsidised kerosene remains in distribution as several Indonesian provinces have not been targeted for the conversion programme.

However, the poor targeting of the kerosene to LPG conversion programme led to a dramatic increase in the LPG subsidy expenditure, jumping from IDR 4 trillion (USD 438 million) in 2007 to about IDR 50 trillion (USD 4.2 billion) in 2014 (Box 3.2). Declining international oil and gas prices for the 2015-16 period brought the LPG subsidy bill down to around IDR 25 trillion. But in 2017, it rose again to IDR 40 trillion due to import cost pressure and a weakening rupiah. The subsidised LPG price of IDR 12 750 per 3 kg cylinder or IDR 4,250 per kilogram has not been adjusted since 2007 (Indonesian Administration, 2017[22]).

The Indonesian government has acknowledged the need to reform its LPG subsidy policy, which has taken an increasing share of the central government budget. In addition, increasing LPG subsidy outlays have made it more and more difficult for the government to compensate Pertamina for the sale of subsidised LPG, leading to an accumulation of unpaid obligations amounting to IDR 16 trillion (USD 1.2 billion) in 2016 (GSI, 2018[35]).

At the end of 2016, the government started designing a new LPG subsidy scheme with the objective of restricting the subsidy to poor households, small businesses, small fishers and farmers. To this purpose, the Parliament proposed to improve the subsidy targeting by using the Indonesia's unified poverty database (UPD) for social protection programmes, similar to the decision taken for the electricity subsidy reform. The idea is to provide the LPG subsidy only to the 40% poorest households as well as micro-businesses managed by those households. Such a reform would reduce the number of beneficiaries from 57 million people to 26 million poor households, 2.3 million small businesses and an undetermined number of small fishers and farmers (GSI, 2017[14]).

Additionally, the President suggested the introduction of a new mechanism for the LPG subsidy distribution. The plan is to develop a direct subsidy system by giving to eligible citizens a 3 kg LPG subscription card linked to the banking system, and transfer the subsidy on the card at the beginning of each month. The new LPG subsidy will amount to three canisters per month for households, and nine canisters per month for micro- businesses. For non-eligible citizens, the LPG price will be set at its economic cost (Ministry of Energy and Mineral Resources, 2017[45]). In January 2017, the Office of the Cabinet Secretariat required the integration of subsidy and social assistance programmes into a unified family

welfare card system in an attempt to merge the energy subsidy into the social protection system (GSI, 2018[35]).

The LPG subsidy reform was supposed to be implemented at the beginning of 2017. However, due to revisions in the subsidy scheme and difficulties in designing the reform – notably the lack of administrative and physical infrastructure to implement a smart-card system, and the challenge of merging energy subsidy with social protection system – the implementation date has been postponed. The government expects to introduce the new system in 2018. Several pilot tests for the new LPG subsidy scheme have been conducted by the MEMR since 2016 (GSI, 2018[35]).

There are additional measures supporting fossil fuels used in the residential, industrial, fishing and agricultural sectors that have not been included in IDSR (Table 3.7). The distribution of initial packages in the context of the kerosene-to-LPG conversion programme is conferring a subsidy to households and small businesses living in targeted provinces. Another measure benefiting end-users of natural gas is the domestic market obligation (DMO) policy, which required PSC gas contractors to supply a share of their output to the domestic market at heavily discounted prices. This measure mainly benefits local industries (fertiliser, petrochemicals, steel, etc.) since they are the main consumers of natural gas in the country.

Table 3.7. Support measures for fossil fuels used in residential, industrial, fishing and agricultural sectors not listed in the IDSR

Full name of the measure	Description
LPG conversion kit distribution	To encourage the switch from kerosene to LPG, conversion kits –consisting in a 3 kg LPG cylinder, a first gas-fill, one-burner stove, a hose, and a regulator – are distributed for free to households and microbusinesses across the country. As of 2015, some 57 million packages have been distributed since 2007.
Below-market pricing of natural gas under the Domestic Market Obligation	Since 2004, the DMO applies to new PSC's contractors producing natural gas in Indonesia (i.e. PSCs signed after the enactment of the 2001 oil and gas Law). Following GR 79/2010 Article 24(8), the DMO quota is set at 25% of the produced natural gas. The DMO price is 10% of the market price (weighted average price).

Source: (Asian Development Bank, 2015[24]), (Braithwaite et al., 2010[52]).

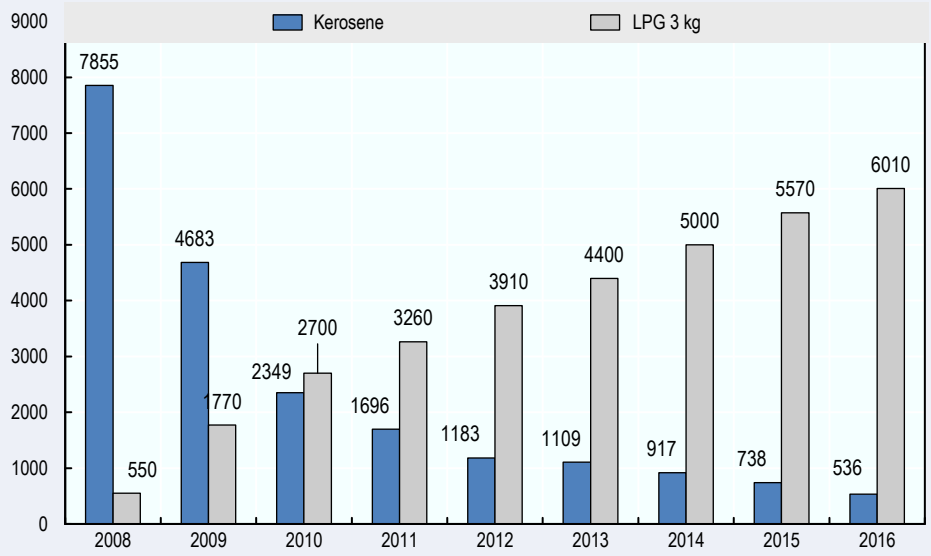
Box 3.2. Kerosene-to-LPG conversion programme

Traditionally, kerosene has been Indonesia's main cooking fuel. In 2004, 48 million of the 52 million Indonesian households were using kerosene for cooking and lighting purposes. A small portion was also used by small businesses, fisherman and farmers. Kerosene has been subsidised by the Indonesian government for decades, however, the rapid growth in population and oil price increases at the beginning of the 2000s have led to an explosion in the kerosene subsidy expenditure which rapidly became unsustainable for the government. In 2006, the subsidy for kerosene amounted to IDR 31.58 trillion (USD 3.4 billion), representing more than half of the state's total fossil-fuel subsidy bill.

In order to reduce kerosene subsidy expenditure without resorting to an increase in kerosene price, the government decided to introduce a programme aimed at encouraging the replacement of kerosene for cooking with LPG. The choice of LPG as an alternative fuel was motivated by its higher energy intensity (one litre of kerosene equates to 0.57 kg

of LPG), and lower emissions compared to kerosene. "Based on the end-use calorific value of energy delivered for cooking, and the subsidy per unit of fuel, the LPG subsidy is significantly lower than the kerosene subsidy" (WLPGA, 2012[63]).

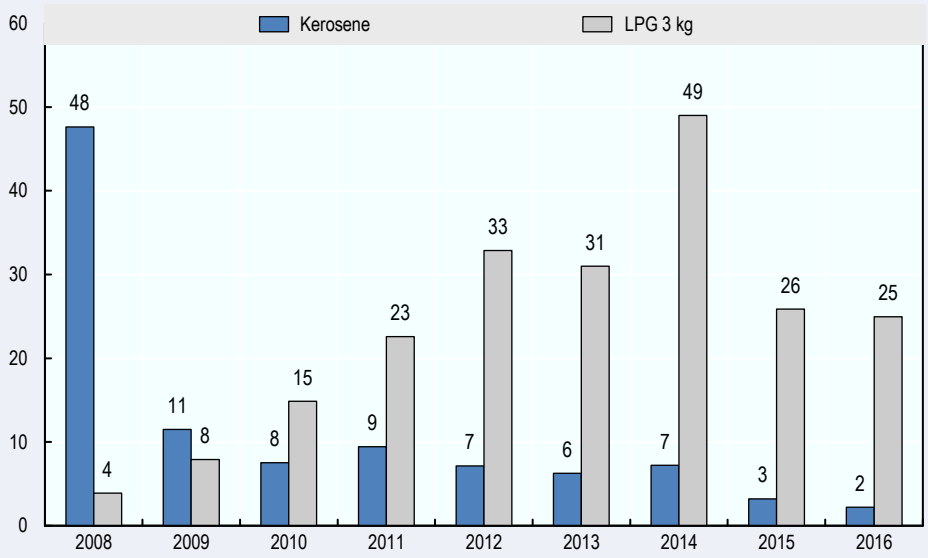
Figure 3.1. Kerosene and 3 kg LPG canister consumption in million kg, 2008-16



Source: (Indonesian Administration, 2017[22])

The switch from kerosene to LPG has been encouraged through the distribution of the so called "initial package" – consisting of a 3 kg LPG cylinder, a first gas-fill, a one-burner stove, a hose, and a regulator. In areas where conversion packages were fully distributed, kerosene was progressively withdrawn by cutting distribution agents' allocation and supply. As of 2015, 57.19 million packages have been distributed to households and micro-businesses across the country (Ministry of Energy and Mineral Resources, 2017[45]). LPG consumption has also been promoted through heavily subsidised prices for 3 kg cylinders, which have been kept constant since the beginning of the programme. Pertamina is the sole distributor of subsidised LPG. It finances all aspects of the program and is then reimbursed by the government.

Figure 3.2. Subsidy spending (in IDR trillion) for kerosene and LPG 3 kg, 2008-16



Source: (Indonesian Administration, 2017[22])

Launched in 2007, the kerosene to LPG conversion programme has been progressively implemented in a number of provinces. Areas given priority for conversion were those with high kerosene consumption and available LPG filling stations and terminals. Other requirements were the possibility to withdraw kerosene easily and a minimum infiltration of kerosene from unconverted areas (WLPGA, 2012[63]). At the time, converted provinces were mainly located in Western Indonesia due to better LPG infrastructure. There is a plan to expand the programme to the Eastern part of the country such as Papua and Malaku. The initial government's target was the conversion of 42 million households and micro businesses nationally. This was later increased to 54-58 million.

The kerosene to LPG conversion programme has been successful in reducing kerosene consumption, which dropped from 7.8 billion kg in 2008 to only about 536 million kg in 2016, saving the government USD 15.16 billion in spending on kerosene subsidies. However, this policy led to a dramatic increase in LPG consumption and subsidy bill. LPG consumption jumped from 0.5 billion kg in 2008 to 6 billion kg in 2016, and the subsidy expenditure rose from IDR 4 trillion to IDR 25 trillion (Figure 3.1 and Figure 3.2). This is mainly due to heavily subsidised prices for 3 kg LPG, and the lack of targeted distribution mechanism for LPG subsidy. In addition, as about 60% of LPG consumed in Indonesia is imported, the LPG subsidy element is highly dependent on movements in international oil and gas prices (Indonesian Administration, 2017[22]).

[S-3] Consumption subsidies for kerosene

Objective	The subsidy aims at avoiding volatility in fuel prices for final consumers				
Revenue forgone (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	597	607	240	175	187
Legal basis	Law No. 20/2001 on petroleum and natural gas *(not exhaustive)*.				
Recent development	In 2015, the government set a fixed retail price for kerosene (fluctuating subsidy) of IDR 2 500 (USD 0.20) per litre, VAT included. The price of kerosene is uniform across the country.				
Outlook					

Note: The Ministry of Finance estimates of fossil-fuel subsidies have been converted into US dollars using annual market exchange rates for rupiahs.
Source: (Indonesian Administration, 2017[22]).

[S-4] Consumption subsidies for LPG

Objective	The subsidy is intended to support energy access for low-income households, and encourage the replacement of kerosene with LPG.				
Revenue forgone (million dollars)	**2013**	**2014**	**2015**	**2016**	**2017**
	2 961	4 127	1 932	1 871	2 989
Legal basis	Law No. 20/2001 *(not exhaustive)*.				
Recent development	At the end of 2016, the government started designing a new LPG subsidy scheme with the objective of lowering the number of beneficiaries from 57 million to 26 million poor households. Several pilot tests have been conducted by the MEMR since 2016.				
Outlook	The LPG subsidy reform is supposed to be implemented in 2018.				

Note: The Ministry of Finance estimates of fossil-fuel subsidies have been converted into US dollars using annual market exchange rates for rupiahs.
Source: (Indonesian Administration, 2017[22]).

Indonesia's efforts to reduce its fossil-fuel subsidies have mainly consisted in gradually increasing the price of petroleum products and electricity but also limiting access to subsidised energy products. Subsidy access to certain groups of energy consumers has been progressively restricted. Fuels subsidies for aviation, sea transport and industrial users have been revoked between 1999 and 2005. More recently, electricity subsidies to 30 million consumers have been eliminated, and the government has a plan to restrict LPG subsidies to poor-households. In addition, access to certain energy products has been limited by reducing their availability (i.e. by cutting distribution agent's allocation and supply) and encouraging the use of alternative products. This has been the underlying principle of the

kerosene-to-LPG, and diesel-to-compressed-natural-gas (CNG) conversion programmes.[35] Several attempts have also been made to restrict premium gasoline access and to foster a switch towards higher grade, non-subsidised, fuels. Between 2016 and 2017, the share of RON 88 in Pertamina's sales mix fall from 80% to 40% while the share of RON 90 increased from 10% to 40% (The World Bank, 2017[64]). Overall, this strategy has been successful as the consumption of subsidised fuels and electricity has been gradually reduced over the past five years (Figure A.3).

3.7. Support measures for coal

The review team called on Indonesia for not including in its IDSR measures benefiting the production and use of coal. In its 2017 report on "Financial support for coal and renewable in Indonesia", The International Institute for Sustainable Development (IISD) lists 15 policies providing a subsidy to either the coal industry or end-users of coal. The subsidies are categorised according to the four types of subsidies described in Article 1 of the WTO's Agreement on Subsidies and Countervailing Measures. Overall, the report estimates that coal subsidies amounted to USD 946 million (IDR 12.4 trillion) in 2014, and USD 645 million (IDR 8.5 trillion) in 2015 (Table 3.8). Due to a lack of data and the inability to quantify all of the subsidies, these estimates constitute a lower-bound to the real cost of coal subsidies in Indonesia (Attwood et al., 2017[62]). The burning of coal is one of the main causes of air pollution in the country, with associated negative consequences on the population's health (Sanchez and Luan, 2018[65]).

35. Since the end of the 1980s, the Indonesian government has tried to promote the use of CNG in public transportation (for taxis and microbuses in particular) by supplying conversion kits to allow vehicles to switch to using these alternative fuels, and augmenting the capacity of supply by building additional fuelling stations.

Table 3.8. Subsidies to coal producers identified by the Global Subsidies Initiative

Full name of the measure	Estimated annual fiscal cost (2014) USD millions	Estimated annual fiscal cost (2015) USD millions
Direct and indirect transfer of funds and liabilities		
Government credit support through loan guarantees	70.2	60.9
Indonesia Infrastructure Guarantee Fund (IIGF)- coal-related projects	n.q	n.q
Government revenues forgone		
Export tax exemption on coal	201.7	91.1
Waiving import tariff for certain advanced equipment in budget year of 2011	n.q	n.q
Preferential VAT rate for goods and services purchased by coal mining companies	0.0614	0.099
Domestic Market Obligation	n.q	14.7
Failure to collect land and building tax for coal mines	n.q	n.q
Preferential corporate tax rate for businesses in specified fields including coal mining	n.q	n.q
Reduction in corporate tax for coal mining companies registered after 15 August 2011	n.q	n.q
Failure to collect taxes and royalties from unregulated or illegal coal mines	95.2	n.q
Tax allowance 30% for coal liquefaction and coal gasification	n.q	n.q
Preferential royalty rates and corporate tax rates for small coal mining license holders	565	471
Value added tax exemption to coal	n.q	n.q
Provision of goods or services below market value		
Support for research, development, technology and training	14	7
Income or price support		
Subsidy for mine owners prior to the amendment of the existing regulation on mine mouth coal pricing	n.q	n.q
TOTAL	946.2	644.8

Note: n.q : not quantified.
Source: (Attwood et al., 2017[62]).

Among the 15 support policies listed by the IISD, nine are still in force (Table 3.9). The majority of these subsidies are tax incentives to the coal mining and processing industries, or support measures to coal-fired power plants.

Table 3.9. Ongoing subsidies to coal production and coal use

Full name of the measure	Measure identifier
Tax incentives to the coal industry	
Preferential royalty rates and corporate tax rates for small coal mining license holders	P-1
Exemption or reduction of import duty and/or VAT on imports*	P-2
Preferential VAT rate for goods and services purchased by coal mining companies	P-3
Tax allowance 30% for coal liquefaction and coal gasification	P-4
Reduction in corporate tax for coal mining companies registered after 15 August 2011	P-5
Support measures to coal-fired power plants	
Government credit support through loan guarantees	P-6
Indonesia Infrastructure Guarantee Fund (IIGF)- coal-related projects	P-7
Domestic Market Obligation	P-8
Research and development support	
Support for research, development, technology and training	P-9

Note: * This measure was not identified in the GSI report. It refers to MoF Regulation No. 259/2016.
Source: (Attwood et al., 2017[62]), (KPMG, 2017[66]).

Tax incentives to the coal industry

As in the case of the oil and gas industry, the Indonesian government provides tax incentives to the coal mining industry. First, holders of coal-mining licenses issued by provincial governments under the new mining regime (referred to as IUP) are subject to lower CIT and royalty rates than holders of CoW and CCoW licences (P-1).[36] This policy aims at easing the tax burden on smaller coal mining companies. In addition, exemption or reduction of import duty and/or VAT on the import of goods (P-2) is applicable to contractors whose CoW or CCoW stipulates such tax facilities. Finally, six coal companies who signed an agreement with the government in 1985 benefit from a reduced VAT rate on the purchase of goods and services until the end of their contracts (P-3).

The coal processing and refining industries also benefit from tax incentives. Following GR No. 9/2016, coal gasification and the use of coal for energy liquefaction are qualifying industries for tax allowances described in Section 3.3 (P-4). Additionally, coal processing companies operating in special economic zones (i.e. regions considered to have economic and geostrategic value that warrants accelerated economic growth) are eligible for a CIT reduction of between 10% and 100% (P-5).

Support measures to coal-fired power plants

The Indonesian government also provides support to coal-fired power plants, thereby favouring the use of coal for electricity generation. Coal-fired electricity generators can, in partnership with the PLN, apply for a government loan guarantee (P-6). Government loan guarantees reduce the risks for the borrower and usually lead to more favourable rates. This policy is intended to secure power plant investment, and forms part of Indonesia's 35 GW

36. Royalties are a way for governments to recover the opportunity cost of depleting a publically owned exhaustible natural resource, thus lower royalty rates *might* result in a transfer of the resource rents from the government to the extracting company. Further analysis is needed to determine whether the revenue raised from royalty payments is high enough to recover the "market value" of the extracted resources.

power capacity extension programme. The Indonesia Infrastructure Guarantee Fund (IIGF) is also offering loan guarantees to coal-related projects (P-7), including the development of the 2 000 MW Batang coal power plant in Central Java and two coal-fired power plants of a total of 1 200 MW and 600 MW in South Sumatra.

The government's DMO policy – which required coal mining companies to supply a share of their output to the domestic market – is also largely benefiting the electricity generating sector which consumed 80% of the total coal DMO (P-8). The government recently capped the price of coal sold to local coal-fired power plants at USD 70 per metric tonne for a period of two years (2018-19). As of February 2018, this capped price of USD 70 per metric tonne was 30% below the Indonesian coal reference price (HBA) for equivalent coal sold for export (Pardede, 2018[67]). The cement, metallurgy, fertiliser, textile, and paper industries also benefit from below-market pricing of coal under DMO.

Research and development support

The Indonesian government subsidises coal exploration, mining and processing through funding to the "Centre for Research and Development of Mineral and Coal Technology" (P-9). This centre was created in 1956 to support R&D, training and education in the coal and hard-rock minerals industry. In 2015, the budget allocated to coal-specific R&D and training is estimated to have been at USD 7 million, representing about half of the centre's total budget.

Expired support measures

A number of measures supporting coal production and coal use have expired in recent years, or have been replaced (Table 3.10). This is the case for the measure "Preferential corporate tax rate for businesses in specified fields including coal mining", which was replaced in 2015 by "Reduction in corporate tax for coal mining companies registered after August 15, 2011" (P-5), thereby restricting the CIT reduction to coal processing companies operating in special economic zones. Some other measures like the "export tax exemption on coal" have been revoked but still apply to mining companies whose licences were issued under the old mining regime (CoW). Expired support measures fall outside the scope of subsidies defined by the terms of reference as there is no longer any policy to be reformed. However, since some of these subsidies still confer a benefit to qualifying coal companies, the review team deems it appropriate to acknowledge their existence.

Table 3.10. Expired subsidies to coal production and coal use

Full name of the measure	Time period	Measure description
Tax incentives in the coal industry		
Failure to collect land and building tax for coal mines	December 2012–December 2015	During this time period, land and building tax was calculated only on the value of the surface of the land, and did not take into account the value of coal under the ground.
Preferential corporate tax rate for businesses in specified fields including coal mining	2012–15	The measure granted a reduction in corporate income tax of between 10% and 100% for certain business sectors including coal mining.
Failure to collect taxes and royalties from unregulated or illegal coal mines		
Price support to coal producers		
Subsidy for mine owners prior to the amendment of the existing regulation on mine mouth coal pricing	2011–16	During this time period, the price of coal supplied to mine mouth electricity generators was set above the market price. The policy was intended to make it more attractive for Indonesia's coal sector to develop and use low-grade coal at domestic mine mouth power plants.
Support measures to coal-fired power plants		
Waiving import tariff for certain advanced equipment in budget year of 2011	July 2011–June 2012	This regulation waived the import duty for boilers and other materials for electricity generators.

Source: (Attwood et al., 2017[62])

4. The peer-review team's evaluation

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 adopted by 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 a list of questions and requests for clarification to each country.
- The peer-review members meeting in person with officials from the two countries. For Indonesia's peer-review, the meeting took place in Jakarta during the week of 4 December 2017. For Italy, 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 both the G20's collective views on the initial reform mandate and on the conduct of the peer reviews, which are voluntary, and the specific terms of reference agreed between the two countries under review.

The 2009 G20 Leaders' Communiqué admonishes its members 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". The challenge confronting review-team members is that none of the key terms in this instruction — e.g. medium term, inefficient, or fossil-fuel subsidies — have been defined by the G20. 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 also not specified, for instance. China, Germany, and Indonesia included measures relating to electricity in both of their respective self-reports; Mexico and the United States did not.

The question of which types of subsidies encourage wasteful consumption has also been left to interpretation by the G20 members themselves. The first pair of G20 voluntary peer reviews of inefficient fossil-fuel subsidies highlighted the intentions of the reviewed countries, China and the United States, at that time to phase out certain tax measures that benefitted fossil-fuel production, on the argument that reduced prices, thus encouraging wasteful consumption. Likewise, Germany highlighted the reform of its support measures for domestic production of hard-coal. Mexico on the other hand, argues that from the microeconomic theory point of view, tax exemptions are not inefficient unless the value of externalities is higher than the resulting net tax. Instead, Mexico honed in on its fuel pricing reforms.

What G20 countries undergoing reviews have generally agreed on, to date, are the types of policies that fall under the purview of the review. These are listed in the terms of reference (Annex 1) as including:

- direct budgetary support
- tax-code provisions
- government provisions of auxiliary goods or services either at no charge or for below-market rates to facilitate fossil fuel use or production; and
- requirements that non-government entities provide particular services to fossil-fuel producers at below-market rates, or that require non-government entities to purchase above market quantities of fossil fuels or related services.

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.[37] Moreover, the issue should be considered within the context of the common but differentiated responsibilities of developed and developing countries. In short, it is the prerogative of the reviewed countries themselves to identify which subsidies they wish to reform, and which they deem not necessary to reform, most commonly because the country considers those subsidies to not be inefficient, but sometimes for other reasons.

That said, the role envisaged for the review teams is more than simply to acknowledge and document the reviewed countries' self-reports. One contribution they are expected to make is to recognise any successful recent reform of fossil-fuel subsidies and identify lessons learned. In the case of Indonesia, the main successful reforms are those relating to the phasing-out of Indonesia's electricity subsidies to non-poor households, and to consider any proposed action that could accelerate the reform process in each country.

4.1. Successful reforms of fossil-fuel subsidies and lessons learned

Indonesia's energy policy has experienced several changes over the past few years. Fuel pricing reforms, electricity tariff adjustments, and the kerosene-to-LPG conversion programmes have all demonstrated the extent to which energy pricing liberalisation and better targeting of subsidies can result in substantial savings for the government that can be reallocated to more productive uses. In 2015, more than 60% of savings were invested in infrastructure and rural and regional development projects, the rest were split among social welfare programmes, health and education, and agricultural subsidies.

Over the years, Indonesia has successfully phased out electricity subsidies to most user classes with only 450 VA and "poor" 900 VA consumers currently benefitting from below-cost electricity tariffs. While the Administration does not discriminate between poor and non-poor households for the remaining 450 VA beneficiaries, the UPD will be very instrumental in establishing a well-targeted electricity subsidy policy, once its envisioned implementation is completed. Tariff adjustments that were introduced in 2016, as part of the electricity subsidy reform programme, have been successful at bringing electricity prices closer to cost recovery, however, they are set to track international crude oil prices

37. For example, at their 2010 Summit in Seoul, Korea, G20 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.

even though oil contributes very little to the country's energy mix. Plans to modify the tariff setting formula to be based on the Indonesian Coal Benchmark Price (HBA) have been announced by the Energy and Mineral Resource Ministry, but current regulation to maintain tariffs fixed until 2019 have put these plans on hold.

The kerosene to LPG conversion programme has also been cemented in Indonesia reducing to almost nil the number of kerosene users. The large-scale switch to a cleaner cooking fuel, and to a lower subsidy per unit of fuel scheme, constitutes a first step towards reigning in emissions produced by low-income households and lowering the subsidy cost for the government. Peer review team members encourage the Indonesian Administration to carry out fully the merging of the UPD with the subsidy information for LPG and electricity in order to establish a well-targeted and fiscally sustainable energy access policy.

The review team commends the Indonesian Administration for implementing fuel-pricing reforms, in 2015-17, for premium gasoline and diesel, by developing a semi-automatic adjustment mechanism for regulating prices. The pricing reforms resulted in a sizable decrease in government expenditure related to fossil fuels, bringing the subsidy outlays to diesel and gasoline from USD 15.5 billion in 2014 to USD 0.6 billion in 2017. Although, the recent policy change by President Widodo fixes prices for the next two years at the current level with the aim to shield households' purchasing power from rising international oil prices, the reforms of the past few years have generated savings that benefitted infrastructure and social programmes. The review team called for better data to understand the behavioural impacts of the pricing reforms on consumption, health, and congestion.

The review team acknowledged that the G20 mandate not only endeavours to phase out inefficient fossil-fuel subsidies, but also to provide targeted support for the poorest. In this regard, Indonesia has made great strides in building the infrastructure that could allow for well-targeted support schemes for the poor, by developing a far-reaching social database and designing a smart card system for providing LPG and electricity subsidies. The discussion of fossil-fuel subsidy reform in Indonesia has brought to the fore the distributional aspects of energy policy; an important dimension of FFS that warrants careful consideration.

Universal fuel subsidies such as those granted in Indonesia are fraught with distributional issues, benefitting richer households more than proportionally compared with lower income households. While fossil-fuel subsidies have been part of Indonesia's social policy aimed at poverty alleviation (and energy access), the efficiency and effectiveness of such policy instruments in fighting inequality are questionable (Inchauste, Gabriela; Victor, 2017[47]). However, reforming fuel subsidies can adversely affect low-income households and should be accompanied by adequate social support to low-income households (Rentschler and Bazilian, 2017[68]) (Gupta et al., 2000[69]). Thus far, Indonesia's reforms have focused on reducing the number of beneficiaries of subsidised electricity and LPG cylinders, however subsidies are still linked to the consumption of fossil fuel. Decoupling social support from fossil-fuel consumption can be a longer-term goal for Indonesia. Means-tested cash transfers for fossil-fuel consumption, for example, could address, distortions caused by subsidised fossil-fuel prices and electricity tariffs.

The latest policy changes, the increase in the cap for diesel to IDR 2 000/litre, the freeze in prices for RON 88, and the one price policy, however, underline the role of the political economy environment as a major deciding factor for the resilience of reforms. The upcoming presidential election is not inconsequential to recent developments in FFSR. With no clear plan for fuel pricing post the two-year period, the rise in fuel and electricity subsidies could result in renewed pressure on the government's fiscal position and could

reinforce distortions in energy prices (and encourage wasteful consumption). Already, payments to Pertamina for its domestic sales of fuel at below its costs are expected to reach USD 1.3 billion for 2017 (Reuters, 2018[70]). The latter effect could in turn put additional strain on Indonesia's domestic fossil-fuel resources, increasing its reliance on imports, and thus exacerbating its fossil-fuel trade balance vis-à-vis the rest of the world.

Although the scope of the Indonesia's peer review is limited to government policies and the corresponding subsidy estimates up to 2017, recent developments in Indonesia, since the in-person meeting at the end of 2017, have already resulted in higher government subsidies for transport fuels and electricity. The review team notes that the recent updates to the subsidy estimates should be noted in this report. The latest government figures point to an increase in energy subsidies (kerosene, LPG and electricity) from IDR 106.8 to 153.5 trillion between 2016 and 2018.[38]

Indonesia, as a natural-resource rich country, grants several incentives to its fossil-fuel producers. However, the cost to the government of many of these policies is not measured systematically. The review team calls on the Indonesian Administration to report more regularly the government transfers resulting from tax incentives, risk transfer mechanisms, and other benefits granted to upstream oil and gas activities. The review team also recommend that the Administration assess the extent to which these measures might distort exploration, development, extraction decisions, and could result in support for fossil fuels.

The fact that tax expenditures (and other provisions resulting in government revenue forgone) are reviewed less frequently than direct transfers, which are authorised through the budget process, ensures some tax policy stability. While such stability may be desirable because it provides certainty for economic agents, it can also result in the tax expenditures costing more than the gains they were designed to generate, or their policy objective being no longer relevant. Therefore, keeping track of the revenue foregone is a first step towards verifying that these measures are achieving their objectives in the most cost effective way.

In August 2018, Indonesia made great progress towards bringing more transparency on the revenue forgone resulting from tax preferences in its tax code by publishing for the first time a tax expenditure report for fiscal years 2016 and 2017. The scope of the report covers benefits provided through reductions or exemptions in VAT, luxury goods sales tax, income and import duty and excise taxes, across all sectors. Several of these policies relate to the energy sector, including tax incentives provided to the oil and gas upstream activities (Ministry of Fiscal Policy Agency, 2018[71]). Indonesia plans to extend their efforts towards transparency by producing an inventory of fossil-fuel support measures. Additionally, Indonesia is nearing completion of its *OECD Green Growth Review,* which assesses the country's progress towards meeting its domestic and international commitments towards environmental reforms.

Fossil-fuel resources are an important source of government revenue for many countries. For Indonesia, revenues raised from the oil and gas sector made up 20-25% of total general government revenue between 2009 and 2014.[39] Designing a taxation system that can generate enough revenue while not discouraging investment in the extraction of fossil fuels

38 . See: www.esdm.go.id/assets/media/content/content-subsidi-energi-terus-dialihkan-untuk-belanja-produktif.pdf

39 . Revenue from the oil and gas sector are those reported to the Extractive Industries Transparency Initiative. Total general government revenue is from the IMF Government Finance Statistics data.

is a complicated task. The difficulty lies in finding a workable scheme for risk and revenue sharing that is the least distortive vis-à-vis the firms and the most cost effective for the government. The team suggests greater detail on the implications of the recent change in the production-sharing regimes to ascertain whether this new change further distorts investment decisions in the sector.

In addition to the tax facilities and other measures benefitting the upstream sector, Indonesia's state-owned enterprises (SOEs), notably Pertamina and PLN, have been identified to benefit from not only preferable fiscal treatment, but also government credit assistance in the form of direct loans and loan guarantees. These support programmes transfer the risk underlying the SOE's activities to the government, which incurs a cost resulting from the under-pricing of this risk. The team asks for greater transparency on the full suite of support programmes to Pertamina and the PLN, including the potential under-pricing of fuels purchased by Pertamina and PLN.[40]

The team recognises that regional disparities in energy access are an important issue to tackle and acknowledges that the recent implementation of the "one price policy" is important for harmonising energy prices across regions and is one way to address inequalities across the archipelago. One concern the team expressed about this policy is the degree of cross-regional subsidisation since Pertamina cannot pass the high distributional costs of bringing fuel to remote regions down to consumers. The team suggests that data on transport and distribution cost for the fuels by region might help indicate the extent of cross-subsidisation.

The peer review process has delivered several lessons for both the country under review, i.e. the Indonesian Administration, and the peer reviewers. It is a revelatory and a salutary learning experience for both reviewed countries and participating countries. The preparation of the peer reviews has allowed countries to look thoroughly at their support measures and provide more information on the policies than what is provided in their respective annual reports. Indonesia's sequencing of its electricity-tariffs reform shows how better-targeting of "pro-poor" subsidies can be implemented and underscores the need for data infrastructure to accompany the reform. The case is also a good example on how reform of cross-subsidies among energy consumers groups could help to improve the overall efficiency of the subsidies scheme. The resilience of fuel pricing reforms has also been central to the discussion of fossil-fuel subsidy reform as well as the role of the political economy in driving change.

40 . The scope of support measures to SOEs can ranges from fiscal incentives, credit assistance to the under-pricing of fuels purchased by Petramina and PLN.

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Annex A. Additional information on energy prices and subsidies in Indonesia

Table A.1. Latest FiT for renewable energy in Indonesia, under 10 MW

	Max FiT end 2016 (USD cents/kWh)	Min FiT (USD cents/kWh)	Average PLN generation cost 2015 (USD cents/kWh)
Mini-hydroelectric	17.86	8.37	6.87
Solar PV	25	14.5	
Geothermal	25.4	10	
Biomass	27.2	10.8	
Biogas	17.63	7.78	
Wind	13.41	9.26	

Source: (Attwood et al., 2017[62]).

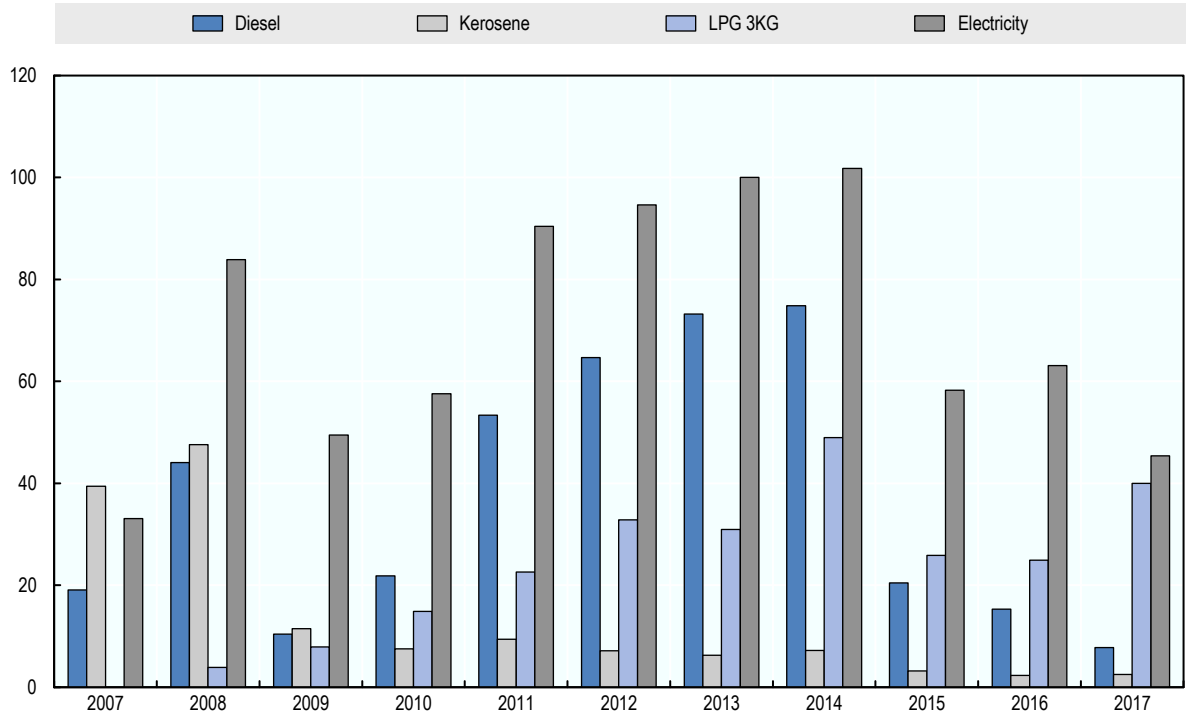
Table A.2. Electricity tariffs of non-subsidised consumer classes and the average cost of supply (IDR/Kwh), 2015-2018

No	Consumer classes	Power connection	2015	2016	2017	2018
1	R-1/TR	900 VA-RTM				
2	R-1/TR	1300 VA	1 377.12	1 407.75	1 467.28	1 467.28
3	R-1/TR	2200 VA	1 377.12	1 407.75	1 467.28	1 467.28
4	R-2/TR	3500-5500 VA	1 505.27	1 407.75	1 467.28	1 467.28
5	R-3/TR	Up to 6600 VA	1 505.27	1 407.75	1 467.28	1 467.28
6	B-2/TR	6600 VA-200 kVA	1 505.27	1 407.75	1 467.28	1 467.28
7	B-3/TM	Above 200 kVA	1 176.90	1 072.39	1 114.74	1 114.74
8	I-3/TM	Above 300 kVA	1 176.90	1 072.39	1 114.74	1 114.74
9	I-4/TT	Up to 30 000 kVA	1 041.54	965.91	996.74	996.74
10	P-1/TR	6600 VA-200 kVA	1 505.27	1 407.75	1 476.28	1 467.28
11	P-2/TM	Above 200 kVA	1 176.90	1 072.39	1 114.74	1 114.74
12	P-3/TR		1 505.27	1 407.75	1 467.28	1 467.28
13	L/TR, TM, TT		1 597.61	1 584.63	1 644.52	1 644.52
Average tariff			**1 370.87**	**1 301.83**	**1 354.70**	**1 354.70**
Average cost			**1 300**	**1265**		

Note: Electricity tariffs for 2015-17 are yearly average while electricity tariff for 2018 are average tariffs for the period January-March.

Figure A.1. Transport fuel and LPG subsidy expenditure by the central government, 2007

Subsidy expenditure in IDR trillion



Source: (Indonesian Administration, 2017[22]).

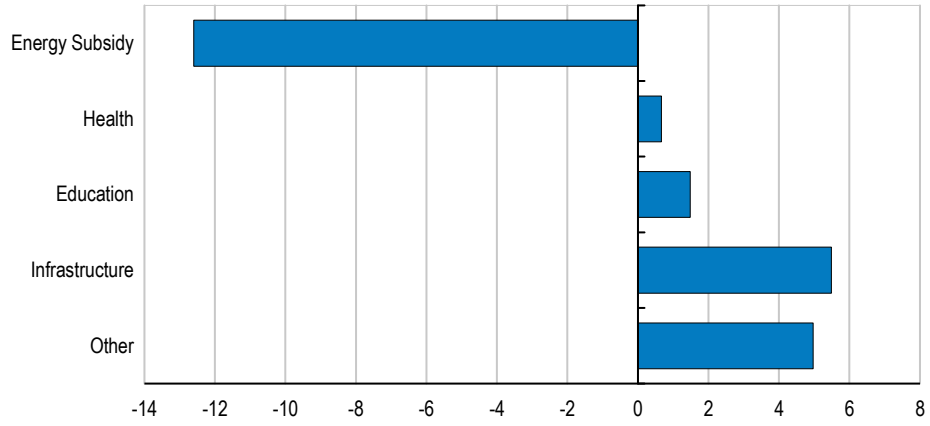
Table A.3. Price adjustments for subsidised fuels since November 2014 (IDR per litre)

Date	Premium gasoline (non-Jamali)	Diesel
Nov-2014 (pre-reform)	6 500 (USD 0.455)	5 500 (USD 0.385)
18-Nov-14	8 500 (USD 0.595)	7 500 (USD 0.525)
01-Jan-15	7 600 (USD 0.532)	7 250 (USD 0.507)
19-Jan-15	6 600 (USD 0.462)	6 400 (USD 0.448)
01-Mar-15	6 800 (USD 0.467)	6 400 (USD 0.448)
28-Mar-15	7 300 (USD 0.511)	6 900 (USD 0.483)
07-Oct-15	7 300 (USD 0.511)	6 700 (USD 0.469)
05-Jan-16	6 950 (USD 0.486)	5 650 (USD 0.395)
Since Apr-16	6 550 (USD .492)	5 150 (USD 0.387)

Source: (GSI, 2016[72]).

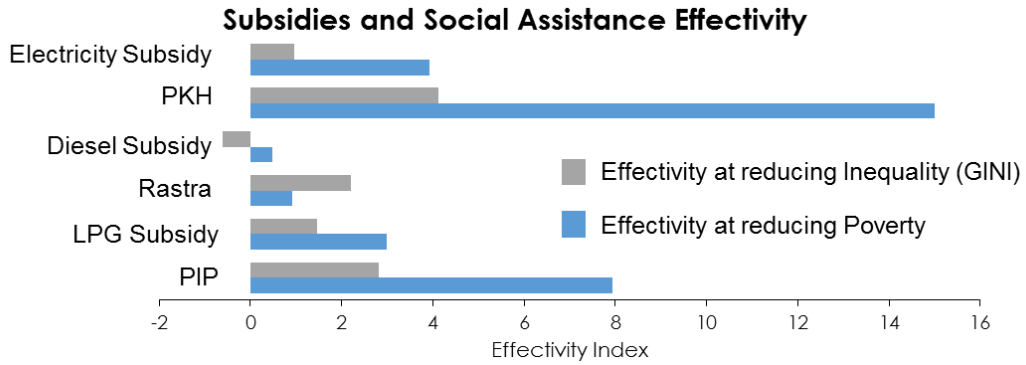
Figure A.2. Change in Indonesia's general government spending

Different between 2014 and 2015, percentage point of total expenditure



Source: (OECD, 2016[73]).

Figure A.3. Effectiveness of fossil-fuel subsidies and social assistance programmes



Note: PKH: Family Hope Program, conditional cash transfer launched in 2007. On average, PKH households in 2013 received IDR 1 400 000 (US 140) per year.
Rastra: Rice for the poor
PIP: Program Indonesia Pintar, a cash transfer given to enrolled students or school-age children from the poorest 25% of households.
Source: (Indonesian Administration, 2017[22])

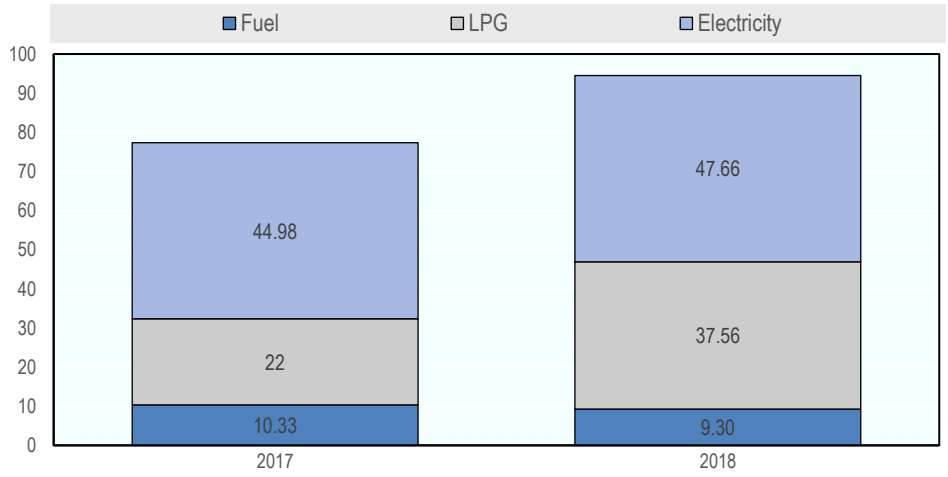
Table A.4. Comparison of pump and estimated market prices of 88-octane gasoline in Indonesia, 2015

Date	Politically determined (pump) price (IDR per litre)	Estimated market price (IDR per litre)	Price gap (IDR per litre)	Total losses to Pertamina (IDR billion)
1 January	7 600	7 600	0	0
19 January	6 600	6 600	0	0
1 February	6 600	6 600	0	0
1 March	7 000	6 800	-200	-202.18
28 March	7 300	7 900	-600	-596.36
1 May	7 300	7 950	-650	-663.54
1 June	7 300	8 950	-1 650	-1 640.79
1 July	7 300	9 100	-1 800	-2 015.51
1 Aug	7 300	8 450	-1 150	-1 207.70
1 September	7 300	7 700	-400	-412.53
Total	n.a	n.a	n.a	**-6 738.61**

Source: (Inchauste and Victor, 2017[74]).

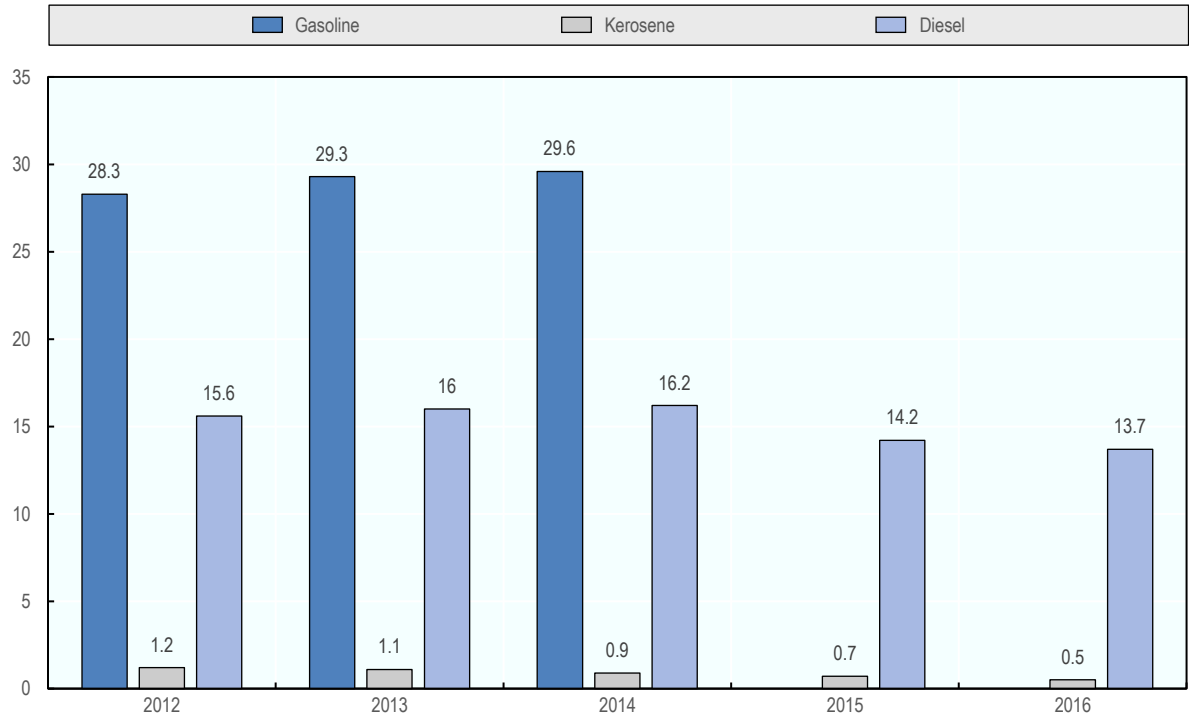
Figure A.4. Energy subsidy allocation in 2017 and 2018 in the state budgets

IDR trillion



Source: (GSI, 2018[35]).

Figure A.5. Subsidised fuel consumption in million kilolitre, 2012-2016



Note: For 2015 and 2016, subsidised gasoline consumption dropped to zero as premium gasoline stopped being subsidised by the government in January 2015.
Source: (Indonesian Administration, 2017[22]).