



# Fossil-fuel Subsidy Reform and Higher Fuel Prices in Indonesia: Impacts and expectations

Liesbeth Casier and Christopher Beaton

*This issue brief discusses the impact and consequences of fossil-fuel subsidy reform in Indonesia, in particular in the light of recent policy changes. First, it outlines some of the impacts that have been witnessed to date following policy changes in November 2014 and January 2015. Second, it sets out a general framework for understanding the impacts of reform and summarizes key research on these impacts in Indonesia. Finally, it outlines some of the key policy interventions that can be used to maximize the benefits of reform.*



# Table of Contents

---

- 1.0 Introduction ..... 1
- 2.0 Impacts to Date of 2014–2015 Reforms ..... 2
- 3.0 Potential Impacts of Higher Fuel Prices ..... 5
- 4.0 Policy Implications ..... 9
  - 4.1 Measures to Assist Vulnerable Households With Higher Costs of Living ..... 9
  - 4.2 Communications ..... 9
- 5.0 Key Issues Going Forward ..... 10
- References ..... 11

## 1.0 Introduction

In late 2014 and early 2015, the new Indonesian government initiated a range of reforms for gasoline and diesel subsidies. Changing fuel subsidy policy is usually hotly opposed because it leads to higher energy prices for consumers. But international oil prices declined so rapidly at the end of 2014 that the short-term impact of January reforms has actually been two *decreases* in fuel prices. This situation has pushed forward in time the consequences of subsidy reform, avoiding today what will likely be faced in future when world oil prices rise again: higher consumer prices for automotive fuels. What impacts exactly can be expected when this takes place? What policies might be needed to cope with these impacts? How can the government act now to reduce pressure to reintroduce costly subsidies?

This issue brief summarizes some of the impacts observed to date since reforms took place in January; sets out a framework for categorizing the likely impacts of higher prices for automotive fuels, alongside a summary of key analysis to date; and discusses some of the policy interventions that are necessary to maximize the economic, social and environmental benefits of reform.

## 2.0 Impacts to Date of 2014–2015 Reforms

In 2014 and early 2015 the Indonesian government implemented a range of changes to its pricing policy for gasoline and automotive diesel fuel.<sup>1</sup> Prices were increased in November 2014, and then, reflecting falling world oil prices, decreased on two separate occasions in January 2015 (see Table 1). At the same time, from the beginning of January 2015, a new more market-price based mechanism was introduced. Subsidies for Solar-brand diesel were capped at IDR1,000 (US\$0.08) per liter and subsidies for Premium-brand gasoline were scrapped entirely, with the exception of distribution costs to non-central areas of Indonesia. In anticipation of these reforms, in November 2014, the President introduced a new social assistance scheme that, in addition to its general functions, could be used to compensate for the impact of the higher energy prices: the Productive Family Program (*Program Keluarga Produktif*), which covers financial assistance, education, and healthcare support, implemented through a range of smart cards (Harian Nasional, 2014).

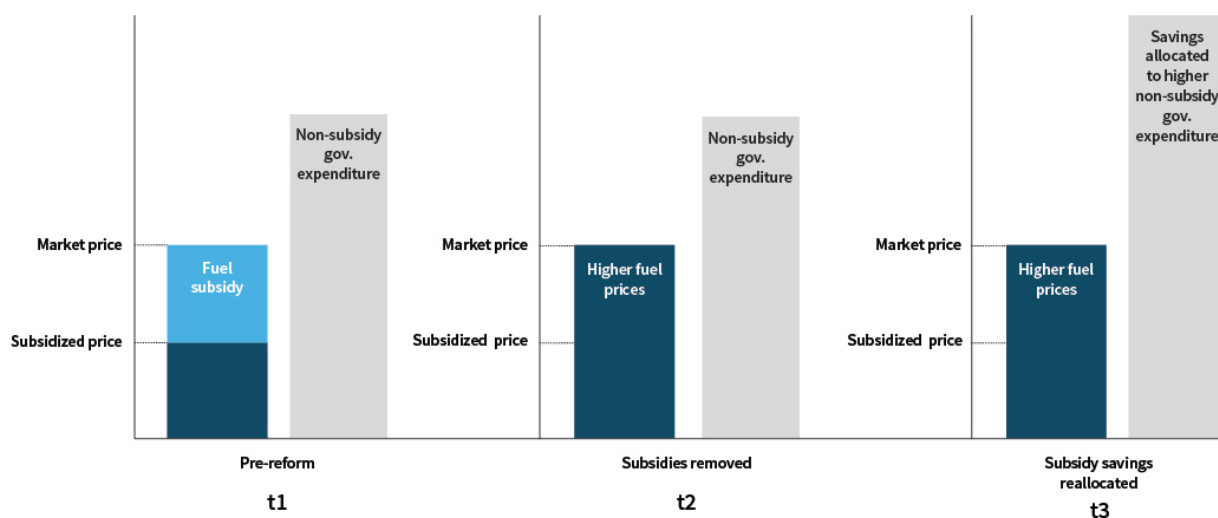
**TABLE 1. CHANGES IN INDONESIAN FUEL PRICES, 2014–2015**

	PRE-REFORM	NOVEMBER 18, 2014	JANUARY 1, 2015	JANUARY 19, 2015	MARCH 1, 2015	MARCH 28, 2015
Premium gasoline	6,500	8,500	7,600	6,600	6,900	7,400
Solar diesel	5,500	7,500	7,250	6,400	6,400	6,900

Source: IISD (2015).

Typically, attempts to predict the impact of fossil-fuel subsidy reform anticipate two different factors: a “price effect,” as prices of the subsidized fuel increase, affecting actors throughout the economy; and a “budget reallocation effect,” as subsidy savings are invested in other purposes, also potentially affecting actors throughout the economy, and ideally mitigating negative impacts caused by higher prices. These effects are often separated slightly in time, since significant reallocation of expenditure is usually not possible until subsidies have been reformed, (see Figure 1). When gasoline and diesel prices were increased in November 2014, the reform followed this pattern: the effect of higher prices was felt immediately, and savings could only be reallocated in 2015 following a process to amend the state budget.

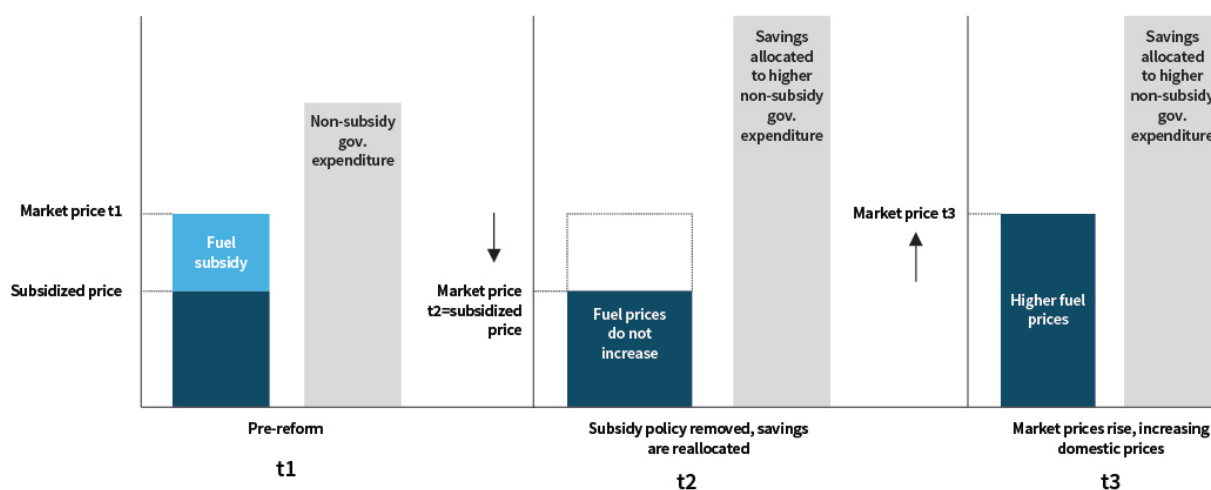
<sup>1</sup> Via separate reform prices, prices of 12kg-cylinder LPG and various electricity classes were also changed. For a full summary of recent policy changes in Indonesia, see International Institute for Sustainable Development (IISD) (2015).



**FIGURE 1. REFORM DURING A PERIOD OF HIGH WORLD OIL PRICES**

Source: Authors' diagram.

Since January in Indonesia and in other countries that are taking advantage of low oil prices to reform fuel pricing these effects are taking place in reverse order (see Figure 2). Low world oil prices have created immediate savings from subsidy removal, but the economy has yet to experience the consequence of higher energy prices as a result.



**FIGURE 2. REFORM DURING A PERIOD OF LOW WORLD OIL PRICES**

Source: Authors' diagram.

## Price Effects

The November 2014 price increase of gasoline and diesel caused inflation to rise to 7.9 per cent according to the Indonesian National Bank. The Bank estimated that the move would contribute to an additional annual inflation of 2.6 per cent to 3 per cent (Liputan6, 2014). Despite this, economic growth in the last quarter of 2014 did not seem to have been significantly affected by the price reforms: GDP growth in the fourth quarter reached 5.01 per cent, compared to 4.92 per cent in the third quarter. While it is difficult to estimate the growth rate without reforms, this strong performance implies that the shock to domestic production was not significant. Economic performance in the fourth quarter was attributed to strong domestic demand, particularly due to construction investment and government consumption (Bank of Indonesia, 2015). Other macroeconomic indicators responded positively to the price increases. The exchange rate of the rupiah strengthened against the dollar, British pound, euro, yen and yuan;

and the Jakarta Stock Exchange rose in the days following the announcement, seen to reflect improved investor confidence (Bank of Indonesia, 2014; IISD, 2015).

For the 2015 revised state budget the Ministry of Finance adjusted the macroeconomic assumptions as follows: GDP annual growth for 2015 was reduced from 5.8 per cent to 5.7 per cent and inflation was increased from 4.4 per cent to 5.0 per cent. This reflected the impact of November fuel subsidy reforms, but also other factors, most notably the slowdown in China's economy—a major source of demand for Indonesian exports—and low world oil prices, and subsequent fuel price reforms in January 2015, which decreased the prices of gasoline and diesel, reflecting the decline in world oil prices (Ministry of Finance, 2015b). This latter development has generally been positive, likely moderating some of the short-term impacts of the November price reforms: the exchange rate remained relatively stagnant despite other pressures, and the stock exchange reacted positively, with the index rising by 0.07 per cent (Jakarta Post, 2015a); while it is thought to have had a chilling effect on some of the additional inflation that was predicted after the November 2014 price rises (Jakarta Post, 2015e; Jakarta Post, 2015d). The prices of other goods and services, however, have been slow to decrease as a result of declining fuel prices (see Box 1).

The transport and automotive sector were, as energy-intensive industries, key sectors affected by the price increases in November. The auto manufacturing industry in Indonesia was reported to have been hit hard, with car sales not expected to grow in the next year (Reuters, 2014a). The Indonesian Land Transport Operators Association called for protests and a one-day strike after the November 2014 reforms because operators of public transportation were not allowed to pass the higher cost for fuels onto their consumers. The government controls the prices of public transportation and placed a 10 per cent ceiling on tariff increases (IISD, 2015).

#### BOX 1. PRICE STICKINESS

Due to low world oil prices, the reforms in January 2015 actually led to two energy prices decreases in Indonesia. The prices of goods and services that use energy, however, did not proportionally decline in kind as anticipated. This phenomenon of “price stickiness” caused agitation among consumer protection agencies, who argue that the government has not sufficiently taken into account the impact of removing price controls. The government states that it has encouraged suppliers to adjust their prices in line with the declined energy prices. It is thought that suppliers are reluctant to do so, as they expect energy prices to rise globally, at which point their costs will increase (IISD, 2015).

In economic theory this phenomenon is described as “rockets and feathers” or “asymmetric pricing.” Output or retail prices do not symmetrically react to input prices. The gasoline market is often used as the textbook example for this phenomenon. When the international oil price rises, retail prices rise like a “rocket.” However, when they drop, retail prices decrease like a “feather,” i.e., not at the same pace as they increased earlier (Tappata, 2009). While the phenomenon is well-documented, the reasons for why it occurs are less clear (Kojima, 2013; Tappata, 2009). One explanation is that in certain markets collusion will occur. In this case, governments may intervene by implementing price ceilings and by increasing transparency on pricing policies (Kojima, 2013). Tappata (2009), however, argues that this is not the only plausible explanation. Indeed, asymmetric pricing has also been observed in non-cooperative markets where collusive behaviour by definition does not occur. Another explanation is that consumers react differently to a price increase than to a decrease: when prices go up, they are more likely to look elsewhere for better prices than when prices go down (Tappata, 2009).

In many countries, regulatory agencies and consumer watchdog organizations monitor the behaviour of markets to ensure that businesses are pricing products fairly. Typically, such organizations act as a body protecting consumer rights and increase transparency. In Kenya consumer watchdogs have urged to decrease retail fuel prices to reflect the international oil price (The Global Post, 2015). In Australia they have brought collusion problems in the gasoline market to the attention of the government and they have brought these cases before national court (The Guardian, 2014). In Indonesia, the anti-graft watchdog has announced a massive investigation in 2015 into the energy industry to increase transparency and support the Widodo government in cleaning up “the oil and gas mafia” (Reuters, 2014b).

---

## Budget Reallocation Effects

Although the price effects of January 2015 reforms are likely to lag until at least next year, budgetary reallocation as a result of the November 2014 and January 2015 reforms has already taken place. The parliament recently approved the revised 2015 budget, after the opposition had already declared its support for the reallocation (Jakarta Post, 2015c; Ministry of Finance, 2015b; The Jakarta Globe, 2015a). The impacts of this reallocation will be crucial in demonstrating that subsidy savings can be better used to promote economic performance in the medium and long terms (World Bank, 2014a).

The APBN (Indonesian state budget) has been restructured to decrease the budget for fuel subsidies from IDR276 trillion (US\$22.8 billion) to IDR81 trillion (US\$6.48 billion). The proposed budget for infrastructure increases from IDR190 trillion (US\$15.2 billion) to IDR290 trillion (US\$23.2 billion) (Jakarta Post, 2015c). The government has declared that it will increase the contributions to a range of state-owned enterprises active in the transportation and construction business (IISD, 2015). In addition to increased capital investment, the deficit has been reduced significantly, being set at IDR222.5 trillion (US\$17.8 billion) or 1.9 per cent of GDP instead of the originally budgeted IDR245.9 trillion (US\$19.67 billion) or 2.21 per cent of GDP (Ministry of Finance, 2015a).

This reallocation to more productive sectors of the economy is a significant step forward for Indonesia, but is not without its own challenges. For example, it is not clear that Ministries will be able to effectively spend additional resources before the end of the financial year. The World Bank has reported a trend of significant under-spending when it comes to infrastructure, regardless of the budget available. In 2014 only 38 per cent of the budget allocated for capital expenditures was realized (World Bank, 2014a). Issues such as land acquisition will also need to be tackled by the new government if it wants to achieve its ambitious plans to provide the country with 5,000 kilometres of railway, 2,600 kilometres of roads, 1,000 kilometres of toll roads, 49 dams and energy infrastructure to generate an additional 35,000 megawatts of electricity (Jakarta Post, 2015b; World Bank, 2014a). The government has recently filed a revision of the Law on Land Procurement for Public Infrastructure with the aim of speeding up the processes for land acquisition but the impact of the revisions is uncertain (Jakarta Post, 2015b). Public skepticism regarding spending on infrastructure is significant (The Jakarta Globe, 2015b).

### 3.0 Potential Impacts of Higher Fuel Prices

When global oil prices rise again it is likely that the Indonesian population will experience the “price effect” usually associated as the first-order impact of subsidy reform. The size of these shocks will depend upon the size of fuel price increases, determined by volatility and any structural appreciation in international markets. It is currently unclear over exactly what timeline such changes can be expected, but most commentators expect prices to return to levels of US\$80–100 per barrel (IEA, 2014), and the current period of low prices to last for at least a year (IEA, 2015).

Anticipating the potential impacts of higher prices on the Indonesian economy and consumers is necessary to ensure that any negative impacts can be adequately managed through policy interventions. A recent study on the impacts of fossil-fuel subsidy reform in Indonesia by the Asian Development Bank (ADB) (ADB, 2015) proposes breaking down impacts into three main categories: a short-term shock; the new equilibrium; and the introduction of price volatility.

THREE CATEGORIES OF IMPACTS	
<b>Short-term shock</b>	A phase-out of a fossil- fuel subsidy leads to an immediate increase in the price of the subsidized energy product. In the short -term, this usually has a negative effect on GDP growth, and leads to increases in the prices of any good or service that uses the energy product as an input, resulting in higher inflation. This can reduce the buying power of households. Indonesia has avoided a short-term shock by reforming gasoline and diesel subsidies when world oil prices are low. But any sharp rise in world oil prices will result in an equivalent shock to the economy, particularly as the government’s new regime involves an announcement of new prices on a monthly basis.
<b>Medium- to long-term equilibrium</b>	Over the medium- to long -term, studies generally predict that fossil- fuel subsidy reform will result in positive changes. GDP will improve due to the more efficient allocation of resources, particularly if savings can be redistributed in ways that promote economic development and boost consumer welfare. Inflationary impacts subside relatively quickly and inflation returns to business- as -usual levels. The cost of living is likely to increase, but this may be offset by increased incomes due to economic growth and any reallocation of subsidy savings into social assistance programs.
<b>Price volatility</b>	International oil prices are volatile. When subsidies are removed, depending on how governments design their energy pricing mechanism, this volatility will be partially or wholly passed through into domestic prices. For economies such as Indonesia’s, which has never experienced volatile energy fuel prices, this may cause problems for consumers or businesses, who have not built up the capacity to cope during periods of higher-than-anticipated prices. In addition, enforcement may be needed to ensure that international price decreases are properly passed through to consumers, and not only increases. Quite different impacts may be witnessed from day-to-day micro volatility and periods in which there is a structural appreciation in prices, such as the 2005 to 2008 period of significantly increasing fuel prices.

This framework can be used to set out different stages in impacts on the economy, social welfare, businesses and the environment.

#### Economic Impacts

Various studies have modelled the impact of fossil-fuel subsidy reform on GDP and inflation (see Table 2). Generally, it is expected that the short-term effect on GDP is negative due to the shock effect of higher prices. These impacts are typically small, so they would likely result in slightly lower growth compared to business as usual (BAU). In the medium and long term the effect is positive and can even increase GDP against BAU.

Similarly, inflation is expected to rise in the short term but to subside relatively quickly, within the first few months after price increases take place (World Bank, 2014a). One recent study has projected that the consumer price index in 2020 would be 3.2 per cent higher than BAU, but that beyond this point year-on-year inflation would actually be lower (ADB, 2015).

**TABLE 2. PROJECTED ECONOMIC IMPACTS RELATED TO FFSR**

POLICY	PROJECTED IMPACTS	SOURCE
October 2005 reforms (price of gasoline increased by 188%, diesel 205%, kerosene 285%)	1.15% reduction in GDP growth, 2.89% fall in employment (short term)	(Susilo, 2013)
May 2008 reforms (price of gasoline increased by 33%, diesel by 28%, kerosene 25%)	0.21% reduction in GDP growth, 0.68% fall in employment (short term)	(Susilo, 2013)
Price of gasoline increased from IDR 4,500 to IDR 5,500 (22% increase), base year 2008	0.1% increase in GDP growth annually	(Aswichyono et al., 2011)
Full removal of gasoline subsidies (price increase from IDR 4,500 to IDR 7,950), base year 2008	0.8% increase in GDP growth annually	(Aswichyono et al., 2011)
Complete removal of all fossil-fuel subsidies in 2012 (22% price increase in prices for all petroleum fuels, 9% increase for electricity)	GDP impacts dependent on reallocation, between -2.7% and +1.0% in short-term, -0.09% and +0.27% in long-term. Consumer price index 3.2 higher than BAU by 2020, but thereafter year-on-year inflation lower than BAU	(ADB, 2015)

## Impacts on Social Welfare

In the short term, higher prices for automotive fuels will on average leave households with less disposable income. The impacts of this are likely to be clustered on higher-income households, who are more likely to own vehicles and who spend a greater absolute sum on fuel. Poorer households will, however, still be affected, through increases in the costs they are charged for energy services and any increases in the costs of non-energy goods and services that use automotive fuels as an input—including, for example, food. Understanding the exact scale of these impacts on lower-income households is important, because they have less capacity to change their consumption habits than richer households, and even a small decline in their income may leave them in poverty. Generally, it is recommended that governments estimate carefully the impacts on lower-income households and that they provide targeted social assistance policies to mitigate short-term impacts on vulnerable households. In order to prevent households from entering poverty, this may need to include the near-poor as well as the poor. The previous experiences with fossil-fuel subsidy reform in Indonesia indicate that poverty is unlikely to rise if the reform is coupled with social impact mitigation measures (World Bank, 2014a).

Over the longer term, improved GDP growth due to reform can have a positive impact on income levels. Similarly, if reform leads to an improved supply of energy—for example, in some parts of Indonesia, the supply of subsidized fuels has proved so unprofitable that it has caused repeated shortages—then this can also improve welfare. There is no clear consensus on how long mitigation measures for higher energy prices should be provided. In addition, in emerging economies such as Indonesia's, it is highly likely that the ongoing development of social safety nets is a key priority for development plans, and may therefore be a focus of reallocated savings, without being explicitly related to a higher cost of living caused by the removal of subsidies. If mitigation measures are to be continued in the long-term, however, they are likely to require very different design to policies intended to compensate for short-term impacts.

A review of studies on social welfare effects of fossil-fuel subsidies in Indonesia scopes out the most important impacts that have been noted after subsidies reforms in Indonesia in the past (Pradiptyo, Wirotomo, Permana, & Susanto, 2015). The following table provides an overview of impacts that have occurred or were predicted to occur after earlier price reforms in Indonesia. The research demonstrates that without mitigation measures for the most vulnerable groups, poverty will increase compared to BAU. Subsidy reallocation programs can also reduce poverty in Indonesia compared to BAU, but the magnitude of reductions varies from 1 to 15 per cent depending on the modelling exercise that has been undertaken (Widjaja, 2009; Yusuf A. A., 2013; Chung, 2011-2013).



**TABLE 3. PROJECTED SOCIAL IMPACTS RELATED TO FFSR**

POLICY	PROJECTED IMPACTS	SOURCE
Increase of fossil-fuel prices by 45% in 1983	Households with a budget of more than IDR 5,000 per month have to increase spending by around 13% for the same basic needs. Those with a budget of less than IDR 5,000 per month have to increase spending by 25%.	(Budiman, 1984)
2005 diesel, gasoline & kerosene subsidy reforms without Unconditional Cash Transfer Program	Increase in poverty level from 16.66% to 22.05% in 2005.	(Chung, 2011-2013)
2005 diesel, gasoline & kerosene subsidy reforms with Unconditional Cash Transfer Program	Decrease in poverty rate from 17.75% in 2006 to 16.58% in 2007.	(Chung, 2011-2013)
FFS (diesel, gasoline, kerosene) reform that is worth IDR 50 trillion (US\$ 4 billion) that is injected as cash transfer into the economy	Reduction of Gini coefficient by 0.021 in case of cash transfer to the poorest 20%, reduction by 0.022 in case of cash transfer to poorest 10% and reduction by 0.015 in case of cash transfer to all households (in year of reform).	(Yusuf A. A., 2013)
FFS (diesel, gasoline, kerosene) reform under different scenarios (25%, 50%, 75% and 100% reduction combined with different percentages of reallocation), base year 2005	In case of 100% removal without reallocation to government expenditure or transfer, the poverty gap index increases with 0.255 percentage points. In case of 25% removal but with 100% reallocation to government expenditure and transfer, the poverty gap index decreases by 0.534 percentage points and the poor benefit from these reforms.	(Dartanto, 2013)
Complete removal of all fossil-fuel subsidies in 2012 (22% price increase in prices for all petroleum fuels, 9% increase for electricity), assuming no reallocation	Projected to reduce households' effective income by 4.38% in the short-term, 0.77% in the longer-term. The bottom 40% of households projected to experience a 1.6% reduction in real income in short-income, with higher impacts in urban than rural areas.	(ADB, 2015)

Today the Indonesian government has several options for mitigation measures, including short-term options such as cash transfers and investments into the country's social increasingly sophisticated social safety net system (World Bank, 2014b).

## Impacts on Businesses

Attempts to project the impacts of subsidy reform in Indonesia have tended to pay relatively little attention to businesses. Impacts are generally expected to be most clustered on those industries that use subsidized fuels relatively intensively and are largely export oriented, as they are less able to pass on price increases to consumers (Coady & Newhouse, 2006; ADB, 2015). As with macroeconomic impacts in general, impacts on businesses are usually expected to consist of a negative shock which is reduced with time, in the case of businesses as they are able to rebalance their factors of production and invest in energy-efficient technologies.

In Indonesia, impacts on energy-intensive industries may be more limited than in many countries, as industries have had to pay market prices for diesel fuel since 2005—although in practice there may be substantial flows of subsidized consumer fuel for industrial purposes. Otherwise, key affected sectors are likely to include the transport sector, which cannot alter much of its pricing structures without authorization by government, and the automotive sector, both of which have been significantly affected by recent price increases; as well as the fisheries sector, which has resisted attempts to pay higher prices for diesel in 2014 (Clarke, Lontoh, & Beaton, 2014). It has also been suggested that impacts on micro, small and medium-sized enterprises (MSMEs) may deserve particular attention, due to the role that SMEs play in economic diversification and providing employment to low-income households. However, this has been under-researched to date (Tambunan, 2013).

Ongoing price volatility is not generally considered to be highly problematic for businesses to cope with, although it is possible that in the short term smaller businesses might require assistance to help them recoup the upfront costs of energy efficiency, particularly as they have been historically protected from price volatility. For example, when Iran introduced very large pricing reforms in 2010, policies were prepared to extend cheap lines of credit to businesses (Guillaume, Zyteck, & Farzin, 2011).

## Impacts on the Environment

In the short term, higher energy costs should promote increased conservation and efficiency in fuel use, resulting in lower local and global pollution. For example, local air pollution would be reduced if higher prices caused any reduction in the growth of vehicle ownership—growing at a rate of 10 per cent per year over the past six years. This could have major quality of life and health gains, given the worsening air quality in Indonesia's cities, increasingly reported as a public concern over lung and heart disease (The Jakarta Globe, 2014). If reform leads to the supply of higher-quality fuels—as recently recommended by a special task force—this could also significantly reduce local air pollution.

Another concern relates to deforestation in Indonesia. The Friends of the Earth Indonesia (Wahana Lingkungan Hidup Indonesia, WALHI) has been warning that a shift away from fossil fuels, due to subsidy reforms, is likely to increase the consumption—and production—of Indonesian biofuels, largely palm oil-based. In the 2015 Revised State Budget (RAPBN-P) the government proposed to shift a part of the fossil-fuel subsidy savings to increased subsidies for biodiesel and bioethanol and to increase the total budget for biofuel subsidies from IDR3.09 trillion (US\$0.25 billion) to IDR17.4 trillion (US\$1.39 billion). This was not ultimately passed into the budget but may be likely to be reconsidered in future years. Such a shift could lead to significant expansion of palm oil plantations and increase the rate of deforestation (Jakarta Post, 2015f), and land-use changes could lead to a net increase in greenhouse gas emissions.

As regards global pollution, the national greenhouse gas (GHG) emissions inventory estimates that energy accounted for around 18.5 per cent of Indonesia's emissions in 2005 (Dewi, 2011).<sup>2</sup> Changes in energy consumption could therefore significantly affect Indonesia's global carbon footprint.

Over the medium to long term, environmental impacts are harder to predict. Outcomes depend on how consumers shift their consumption when fuel prices increase. If there is a shift towards more efficient vehicles, and subsidy savings are used for investment in public transport services and alternative transport fuels, the removal may have significant environmental benefits. The reallocation of subsidy savings, however, can significantly alter net impacts. For example, Phase II of Indonesia's Fast Track Program sets out plans to increase coal-fired power plants by over 10,000 megawatts (Ministry of Energy and Mineral Resources [MEMR], 2014). If savings are invested in such plans, and result in higher built capacity than would have taken place under BAU, reform could result in increased levels of local pollution and GHG emissions, though with different patterns of distribution geographically. Most studies, however, project that fossil-fuel subsidy reform will result in net GHG emissions reductions (see Table 4).

**TABLE 4. PROJECTED ENVIRONMENTAL IMPACTS RELATED TO FFSR**

POLICY	IMPACT	SOURCE
Increase of fuel (gasoline, diesel, kerosene) price by 25% for households and road transportation sector through removal of FFS fossil-fuel subsidies (based on 2003 data)	Decrease in CO <sub>2</sub> emissions by 3.0211% (no reference year given)	(Yusuf & Ramayandi, 2008)
Complete removal fossil-fuel subsidies FFS (diesel, gasoline, kerosene) in 2009	Decrease in GHG emissions between 6% and 7% by 2050; Decrease in 11% CO <sub>2</sub> emissions by 2050	(OECD, 2011)
Complete removal of all fossil-fuel subsidies in 2012 (22% price increase in prices for all petroleum fuels, 9% increase for electricity)	Decrease in CO <sub>2</sub> emissions between 5% and 7% by 2015 Decrease in CO <sub>2</sub> emissions up to 9.3% by 2030	(ADB, 2015)

<sup>2</sup> This estimate includes land-use change and forestry (LUCF) in total emissions. If LUCF is not included, energy accounts for 55.5 per cent of Indonesia's GHG emissions.

---

## 4.0 Policy Implications

Low-income households may require assistance to ensure that they can cope with the impact of higher fuel prices, and various other impacts may create political pressure on the Indonesian government to reintroduce higher prices. What policy interventions can help deal with these challenges?

### 4.1 Measures to Assist Vulnerable Households With Higher Costs of Living

There are three categories of mitigation measures that can be taken when reforming energy price mechanisms or subsidies (Beaton, Gerasimchuk, Laan, Lang, Vis-Dunbar, & Wooders, 2013).

**Improving the targeting of subsidies so that they reach only the poor:** This approach may make sense for some energy products, but it rarely applies to motor fuels. Most low-income households do not own vehicles and cannot afford to purchase diesel and gasoline directly.

**Subsidizing other goods, services or public works:** Investing subsidy savings in areas such as education, health care, public transportation, food or public works can free up income that helps vulnerable households pay for higher costs of living. However, subsidizing other commodities—such as food—can often involve the same problems as energy subsidies.

**Cash transfers:** Unconditional or conditional cash transfers can directly compensate for the loss in income caused by higher energy prices, and associated rises in the cost of living. Cash transfers are less distorting than subsidies and they give households flexibility to spend money in accordance with their priorities. However, they require a good administrative system to be well managed. Cash transfers can be temporary and targeted at compensating for short-term price shocks, or longer-term and part of larger strategies for poverty eradication.

In 2014, the government introduced a new welfare policy before increasing the prices of gasoline and diesel in November, intended to help compensate for the impacts of higher prices, as well as targeting larger welfare goals: the Productive Family Program. The program covers financial assistance, education and health care support and was financed directly from the planned government budget, not deriving from subsidy savings (IISD, 2015). For the 2015 reforms, no specific mitigation measures were implemented, due to reforms resulting in price decreases. It is unclear whether mitigation measures will be used to compensate for potential future price increases.

### 4.2 Communications

Recent research on public attitudes to the fuel subsidy in Indonesia indicates that public awareness is generally very low about the scale of energy subsidies and the rationale for change. Data collected from 3,000 respondents demonstrates that fewer than 19 per cent of the surveyed people knew that the government is subsidizing fossil fuels, and fewer than 10 per cent were aware of how much money was allocated to subsidies in the budget (Pradiptyo, Wirotomo, Adisasmita, & Permana, 2015). Statistical analysis based upon survey data points to the lack of communication by the government as one of the factors that potentially contributes to the poor knowledge of the public on fossil-fuel subsidies (Pradiptyo, Wirotomo, Adisasmita, & Permana, 2015).

This implies that there is still a need for government to:

- Communicate clearly on the rationale for removing price controls on gasoline and diesel.
- Send clear messages on how savings are being better spent to the benefit of average Indonesian citizens.
- Explain how vulnerable households will be protected when price increases take place.

The government has already established a good foundation on high-level communications on the need for reform. During his election campaign, President Jokowi announced his intention to reallocate subsidies towards infrastructure and education. It is important for the Indonesian government to continue in this vein and to prepare clear communications in anticipation of future increases in energy prices.

---

## 5.0 Key Issues Going Forward

Indonesia is one of the world's largest economies and—until 2015—it was one of the world's largest subsidizers of fossil fuels. The impacts that have been experienced following major reforms in November and January dramatically illustrate the extent to which a period of low world oil prices can ease the challenges of fossil-fuel subsidy reform, smoothing over shocks to the economy and welfare—and indeed, creating significant development opportunities thanks to saved expenditure.

Nonetheless, the impacts of higher energy prices on the Indonesian economy must still be anticipated when world oil prices rise again. It is important for Indonesia to take full advantage of the period of low world oil prices, preparing mitigation measures and communications for eventual price rises that are anticipated to once again return to the era of US\$80 to US\$100 per barrel. Key recommendations for 2015 therefore include the following:

**Monitoring.** The new subsidy mechanism envisages monthly fuel price adjustments. Most studies on the impacts of reform are based on economic modelling, as there have been few opportunities to study real-time fuel price changes in Indonesia. Monthly adjustments should therefore be carefully analyzed to develop a more sophisticated understanding of actual impacts on the economy, households and businesses. In particular, exploring impacts on pricing (including price stickiness) and relatively under-researched groups such as SMEs should help to develop evidence-based and targeted government interventions.

**Evaluation.** The 2015 developments present a huge opportunity for the government to show Indonesian citizens that there is a better way to spend government funds than fuel subsidies—and also to show that successes are being replicated and failures abandoned. It is therefore vital to support independent evaluation of reallocated subsidy savings and to show that the government is taking active measures to promote quality of spending.

**Mitigation, communication and regulation.** The first monthly price adjustments that involve fuel price increases are likely to prove controversial. It will be important to clearly establish that the government is ready to intervene to ensure that negative impacts—particularly on households—are fully mitigated through social welfare interventions. At the same time, ongoing communications will be required on a number of fronts: ensuring that the public continues to understand the rationale for reforms, and the steps taken by the government to protect the vulnerable. Finally, steps may be required to ensure that new energy prices are properly regulated and enforced, to ensure that upward revisions to consumer prices obey government rules and that “price stickiness” is minimized.

---

## References

- Asian Development Bank (ADB). (2015). *Assessment and implications of rationalizing and phasing out fossil-fuel subsidies*. Metro Manila: Asian Development Bank.
- Aswichyono et al. (2011). *Penyesuaian Subsidi BBM: Pilihan Rasional Penyelamatan Ekonomi*. Center for Strategic and International Studies.
- Burniaux, J., Chateau, J., & Sauvage, J. (2009). *The economics of climate change mitigation: How to build the necessary global action in a cost-effective manner* (OECD Economics Department Working Papers no. 701). Paris: OECD.
- Bank of Indonesia. (2014). *Exchange Rate Transaction*. Retrieved from <http://www.bi.go.id/id/moneter/informasi-kurs/transaksi-bi/Default.aspx>
- Bank of Indonesia. (2015, February 5). *Economic growth accelerates in fourth quarter of 2014*. Retrieved from [http://www.bi.go.id/en/ruang-media/siaran-pers/Pages/sp\\_170815.aspx](http://www.bi.go.id/en/ruang-media/siaran-pers/Pages/sp_170815.aspx)
- Beaton, C., Gerasimchuk, I., Laan, T., Lang, K., Vis-Dunbar, D., & Wooders, P. (2013). *A guidebook to fossil-fuel subsidy reform for policy-makers in Southeast Asia*. Geneva: International Institute for Sustainable Development. Retrieved from [http://www.iisd.org/gsi/sites/default/files/ffs\\_guidebook.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_guidebook.pdf)
- Budiman, A. (2014). *Dampak kenaikan harga BBM bagi golongan termiskin di dua desa*. Retrieved from [http://www.reocities.com/ekonomipolitik/ekopol/ariefb\\_bbm.pdf](http://www.reocities.com/ekonomipolitik/ekopol/ariefb_bbm.pdf)
- Chung, K.R. (2013). *Fuel subsidy reform in Indonesia*. Seoul-Washington: KDI School & World Bank Institute. Retrieved from [https://www.kdevelopedia.org/Resources/industry-technology/fuel-subsidy-reform-indonesia--04201311140129007.do?fileIds=TP\\_IND%20TP\\_IND\\_EN%20TP\\_TER%20TP\\_TER\\_EN#.VP9Z8PnF98E](https://www.kdevelopedia.org/Resources/industry-technology/fuel-subsidy-reform-indonesia--04201311140129007.do?fileIds=TP_IND%20TP_IND_EN%20TP_TER%20TP_TER_EN#.VP9Z8PnF98E)
- Clarke, K., Lontoh, L., & Beaton, C. (2014). *Indonesia energy subsidy review. A biannual survey of energy subsidy policies*. March 2014. Retrieved from [http://www.iisd.org/gsi/sites/default/files/ffs\\_indonesia\\_review\\_i1v1.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_indonesia_review_i1v1.pdf)
- Clements, B., Jung, H.-S., & Gupta, S. (2003). *Real and distributive effects of petroleum price liberalization: The case of Indonesia* (IMF Working paper series No. 204). Washington: International Monetary Fund. Retrieved from [http://siteresources.worldbank.org/INTPSIA/Resources/490023-1120845825946/indonesia\\_petrol\\_price\\_lib.pdf](http://siteresources.worldbank.org/INTPSIA/Resources/490023-1120845825946/indonesia_petrol_price_lib.pdf)
- Coady, D., & Newhouse, D. (2006). Evaluating the fiscal and social costs of increases in domestic fuel prices. In A. Coudouel, A. Dani, & S. Paternostro (Eds.), *Poverty and social impact analysis of reforms: Lessons and examples from implementation*. Washington D.C.: World Bank.
- Dartanto, T. (2013). Reducing fuel subsidies and the implication on fiscal balance on poverty in Indonesia: A simulation analysis. *Energy Policy*, 58 (C), 117-134.
- Dewi, R. (2011, July 13-15). *Session I: Report of the latest NCs (Inventories) Recently Submitted. Indonesia's Second National Communication*. Presentation at The 9th Workshop on GHG Inventories in Asia (WGIA9) - Capacity building for measurability, reportability and verifiability, Phnom Penh, Cambodia. Retrieved from: [http://www-gio.nies.go.jp/wgia/wg9/pdf/1-1\\_retno\\_gumilang\\_dewi.pdf](http://www-gio.nies.go.jp/wgia/wg9/pdf/1-1_retno_gumilang_dewi.pdf)
- Global Post. (2015, January 15). *Africa Focus: Kenya's consumer watchdog calls for further drop in fuel prices*. Retrieved from <http://www.globalpost.com/dispatch/news/xinhua-news-agency/150115/africa-focus-kenyas-consumer-watchdog-calls-further-drop-fue>
- Guardian. (2014, August 21). *Caltex denies using website to collude with rivals on petrol prices*. Retrieved from <http://www.theguardian.com/world/2014/aug/21/caltex-denies-using-website-to-collude-with-rivals-on-petrol-prices>

- Guillaume, D., Zyteck, R., & Farzin, M. (2011, July). *Iran - The Chronicles of the Subsidy Reform*. Retrieved October 26, 2012, from IMF website: <http://www.imf.org/external/pubs/ft/wp/2011/wp11167.pdf>
- Harian Nasional. (2014, November 13). Ini Penjelasan Sistem 'Kartu Sakti' dalam Inpres No 7 Tahun 2014. Retrieved from <http://www.harnas.co/2014/11/13/ini-penjelasan-sistem-kartu-sakti-dalam-inpres-no-7-tahun-2014>
- International Energy Agency (IEA). (2014). *World energy outlook 2014*. Paris: International Energy Agency. Retrieved from <http://www.worldenergyoutlook.org/publications/weo-2014/>
- IEA. (2015). Executive summary. In *IEA, Medium-term Oil Market Report 2015*. Paris: International Energy Agency. Retrieved from <https://www.iea.org/Textbase/npsum/MTOMR2015sum.pdf>
- International Institute for Sustainable Development (IISD). (2015). *Indonesia energy subsidy briefing*. February 2015. Retrieved from [http://www.iisd.org/gsi/sites/default/files/ffs\\_newsbriefing\\_indonesia\\_feb2015\\_eng.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_newsbriefing_indonesia_feb2015_eng.pdf)
- Jakarta Globe. (2015a, February 15). *2015 Budget Revision Approved*. Retrieved from <http://thejakartaglobe.beritasatu.com/business/2015-budget-revision-approved/>
- Jakarta Globe. (2015b, February 15). *Commentary: On infrastructure, challenges and opportunities for Jokowi's administration*. Retrieved from <http://thejakartaglobe.beritasatu.com/business/infrastructure-challenges-opportunities-jokowis-administration/>
- Jakarta Globe. (2014, May 9). *Jakarta's air quality takes a toxic turn for the worse*. Retrieved from <http://thejakartaglobe.beritasatu.com/news/jakarta/jakartas-air-quality-takes-toxic-turn-worse/>
- Jakarta Post. (2015a, January 19). *JCI rises slightly at Monday's close*. Retrieved from <http://www.thejakartapost.com/news/2015/01/19/jci-rises-slightly-monday-s-close.html>
- Jakarta Post. (2015b, February 17). *Land rule revised to speed up projects*. Retrieved <http://www.thejakartapost.com/news/2015/02/17/land-rule-revised-speed-projects.html>
- Jakarta Post. (2015c, January 20). *Lawmakers support Jokowi's budget*. Retrieved from <http://www.thejakartapost.com/news/2015/01/20/lawmakers-support-jokowi-s-budget.html>
- Jakarta Post. (2015d, January 19). *Rupiah Closes Rp 12,590 per dollar on Monday*. Retrieved from <http://www.thejakartapost.com/news/2015/01/19/rupiah-closes-rp-12590-dollar-monday.html>
- Jakarta Post. (2015e, January 19). *Rupiah Opens Rp 12,603 per dollar on Monday*. Retrieved from <http://www.thejakartapost.com/news/2015/01/19/rupiah-opens-rp-12603-dollar-monday.html>
- Jakarta Post. (2015f, February 16). *Transfer of subsidy to biofuel accelerates deforestation, says Walhi*. Retrieved from <http://www.thejakartapost.com/news/2015/02/16/transfer-subsidy-biofuel-accelerates-deforestation-says-walhi.html>
- Kojima, M. (2013). *Reforming fuel pricing in an age of \$100 Oil*. Washington: The World Bank. Retrieved from <https://openknowledge.worldbank.org/handle/10986/16524>
- Liputan6. (2014, November 18). *BI: BBM Naik, Inflasi 2014 di Level 7,9%*. Retrieved from <http://bisnis.liputan6.com/read/2135980/bi-bbm-naik-inflasi-2014-di-level-79>
- Ministry of Energy and Mineral Resources (MEMR). (2014, March). *Electricity policy development & investment opportunity in Indonesia*. Retrieved from Energy Indonesia: <http://energy-indonesia.com/03dge/0140317dge.pdf>
- Ministry of Finance. (2015a, February 16). *Budget Deficit set at 1.9 Percent in APBN-P 2015*. Retrieved from <http://www.kemenkeu.go.id/en/Berita/budget-deficit-set-19-percent-apbn-p-2015>



---

Ministry of Finance. (2015b, February 16). *DPR Passes the 2015 Revised State Budget Bill into Law*. Retrieved from <http://www.kemenkeu.go.id/en/Berita/dpr-passes-2015-revised-state-budget-bill-law>

Organisation for Economic Co-operation and Development (OECD). (2011). *Fossil-fuel support. OECD Secretariat background report to support the report on Mobilizing Climate Finance. G20 Meeting of Finance Ministers, 14-15 October 2011*. Paris: OECD.

Pradiptyo, R., Wirotomo, A., Adisasmita, A., & Permana, Y. H. (2015). *Does Information Matter in Households' Perception Towards Fossil-Fuel Subsidy Reform? Evidence from Indonesia*. Universitas Gadjah Mada, Department of Economics, Faculty of Economics and Business. Geneva: International Institute for Sustainable Development.

Pradiptyo, R., Wirotomo, A., Permana, Y. H., & Susanto, A. A. (2015). *Fossil-fuel subsidy reform and social welfare in Indonesia: A literature study*. Universitas Gadjah Mada, Department of Economics, Faculty of Economics and Business. Yogyakarta: Universitas Gadjah Mada.

Reuters. (2014a, November 23). Higher fuel prices expected to put Indonesia auto sales on slower path. Retrieved from <http://uk.reuters.com/article/2014/11/23/uk-indonesia-autos-idUKKCN0J70Z320141123>

Reuters. (2014b, November 27). Indonesia's graft watchdog to target energy sector in 2015. Retrieved from <http://www.reuters.com/article/2014/11/27/indonesia-energy-corruption-idUSL3N0TH29Z20141127>

Susilo, Y. (2013). The elimination of fuel subsidies to increase the education budget in Indonesia. *Journal of Economics and Sustainable Development*, 4(3). Retrieved from <http://www.iiste.org/Journals/index.php/JEDS/article/view/4344>

Tambunan, T. (2013). *Fossil-fuel subsidy reform and small and medium-sized enterprises (SMEs): The impacts and possible responses*. Geneva: International Institute for Sustainable Development. Retrieved from [http://www.iisd.org/gsi/sites/default/files/ffs\\_indonesia\\_briefing\\_SMEs.pdf](http://www.iisd.org/gsi/sites/default/files/ffs_indonesia_briefing_SMEs.pdf)

Tappata, M. (2009). *Rockets and feathers: Understanding asymmetric pricing*. The RAND Journal of Economics, 40(4), 673-687.

Widjaja, M. (2009). *An economic and social review on Indonesian Direct Cash Transfer Program to Poor Families, Year 2005*. Working Paper Department of Economics.

World Bank. (2014a). *Indonesia Economic Quarterly. December 2014. Delivering Change*. Washington: The World Bank.

World Bank. (2014b, September 18-24). *Transitional policies to assist the poor while phasing out inefficient fossil-fuel subsidies that encourage wasteful consumption. Contribution by the World Bank to G20 Finance Ministers and Central Bank Governors*. Retrieved from <http://www.worldbank.org/content/dam/Worldbank/document/Climate/Transitional-Policies-Assist-Poor-Phasing-Out-Inefficient-Fossil-Fuel-Subsidies.pdf>

Yusuf, A. A. (2013). *The direct and indirect effect of cash transfers: The case of Indonesia*. Department of Economics, Center for Economics and Development. Padjadjaran University.

Yusuf, A., & Ramayandi, A. (2008). *Reducing fuel subsidy or taxing carbon? Comparing the two instruments from the economy, environment and equity perspective for Indonesia* (Working Paper in Economics and Development Studies No 200808). Center for Economics and Development Studies, Padjadjaran University. Retrieved from <http://econpapers.repec.org/paper/unpwpaper/200808.htm>



© 2015 The International Institute for Sustainable Development  
Published by the International Institute for Sustainable Development.

## About IISD

The International Institute for Sustainable Development (IISD) contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, and management of natural and social capital, as well as the enabling role of communication technologies in these areas. We report on international negotiations and disseminate knowledge gained through collaborative projects, resulting in more rigorous research, capacity building in developing countries, better networks spanning the North and the South, and better global connections among researchers, practitioners, citizens and policy-makers.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the International Development Research Centre (IDRC), from the Danish Ministry of Foreign Affairs and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

### International Institute for Sustainable Development

#### Head Office

161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4

Tel: +1 (204) 958-7700 | Fax: +1 (204) 958-7710 | Web site: [www.iisd.org](http://www.iisd.org)

---

## About GSI

GSI is an initiative of the International Institute for Sustainable Development (IISD). GSI puts a spotlight on subsidies—transfers of public money to private interests—and how they impact efforts to put the world economy on a path toward sustainable development. In cooperation with a growing international network of research and media partners, GSI seeks to lay bare just what good or harm public subsidies are doing; to encourage public debate and awareness of the options that are available for reform; and to provide policy-makers with the tools they need to secure sustainable outcomes for our societies and our planet.

### Global Subsidies Initiative

International Environment House 2, 9 chemin de Balexert,

1219 Châtelaine, Geneva, Switzerland

Tel: +41 22 917-8373 | Fax: +41 22 917-8054



**GSI** Global  
Subsidies  
Initiative



International  
Institute for  
Sustainable  
Development

Institut  
international du  
développement  
durable