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AN INPUT TO INDONESIAN FUEL PRICE SYSTEM REFORMS

A review of international experiences with fuel pricing systems



Authors:

Christopher Beaton
Lasse Toft Christensen
Lucky Lontoh

with input from
Hanan Nugroho

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Head Office

161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4
Tel: +1 (204) 958-7700 | Fax: +1 (204) 958-7710 | Website: www.iisd.org

About GSI

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International Institute for Sustainable Development
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

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Executive Summary

In January 2015, the Indonesian government introduced a new pricing system for gasoline and diesel fuel. The system is intended to end wasteful spending on fuel subsidies by passing through international oil price increases into domestic fuel prices. This will result in large fiscal savings—IDR 195 trillion (US\$ 15.6 billion) alone was saved in State Budget Revision 2015, allowing for a major injection of funds into infrastructure. But it will also result in higher average prices for Indonesian consumers. Going forward, will the government be able to continue passing through price changes at the same time as safeguarding the interests of consumers, particularly if world oil prices return to past highs? This paper reviews international experience to compare how other countries have dealt with the economic and political challenge of fuel pricing, and to identify what lessons this might provide for strengthening and maintaining Indonesia's new pricing mechanism and helping consumers cope with price volatility.

How do Indonesia's prices with compare with other countries?

Over the past five years, Indonesia has had among the lowest prices for gasoline and diesel in the world. At the time of the last survey of world fuel prices by GIZ, no other country in Southeast Asia had such low prices (see Table ES1). Nor did any other fast emerging economy, with all of the BRICS countries (Brazil, Russia, India, China and South Africa) and Turkey having priced gasoline and diesel above Indonesian levels (see Table ES2). The only countries with prices on par with Indonesia were either net oil-exporters or recent net oil-importers. Internationally, then, it is a norm to allow fuel prices to at least reach higher levels, more closely reflecting the costs of fuel. It is only Indonesia's recent reforms—price hikes in November 2014—in combination with falling international oil prices that have taken Indonesian prices on par with many like countries for the first time.

TABLE ES1. GASOLINE PRICES IN INDONESIA COMPARED TO OTHER COUNTRIES, NOVEMBER 2012

SOUTHEAST ASIA	US\$ PER LITER	BRICS	US\$ PER LITER
Indonesia	0.47	Russia	0.99
Malaysia	0.62	China	1.19
Vietnam	1.15	India	1.25
Philippines	1.25	South Africa	1.38
Thailand	1.56	Brazil	1.39

Source: (GIZ, 2014).

TABLE ES2. DIESEL PRICES IN INDONESIA COMPARED TO OTHER COUNTRIES, NOVEMBER 2012

SOUTHEAST ASIA	US\$ PER LITER	BRICS	US\$ PER LITER
Indonesia	0.47	India	0.86
Malaysia	0.59	Russia	1.00
Thailand	0.97	Brazil	1.02
Philippines	1.01	China	1.28
Vietnam	1.06	South Africa	1.42

Source: (GIZ, 2014).

Note: An early release of GIZ data from its November 2014 fuel price survey indicates much smaller differentials between countries than witnessed in 2012. This is because world oil prices fell dramatically in late 2014, resulting in lower fuel prices in non-subsidizing nations, with remaining differentials largely determined by efficiency and taxation. Once world oil prices rise again, larger gaps can be expected to return. Relative positions may change, reflecting the fact that some nations, such as Malaysia and Thailand, have also announced the removal of fuel subsidies.

Most Indonesians are not aware of how little they have paid for fuel compared to other countries. Recent survey research of public opinion has found that only 44 per cent of Indonesian citizens know that fuel is subsidized and only 4 per cent know how much government expenditure is allocated to subsidies.

What is good practice in a pricing system?

A pricing system can be thought of as consisting of at least two parts: the rules used to set prices; and the institutions that implement them. GIZ and the Global Subsidies Initiative have put forward four dimensions where good practice is needed: subsidies; pass-through; transparency; and enforcement (summarized in Table ES3). The extent of subsidies and pass-through is determined by the rules in place. Transparency and enforcement depends on the institution regulating the market. This could be a state-owned enterprise, Ministry, independent regulator or a mix of institutions that collectively monitor prices, communicate with the public and investigate non-compliance.

TABLE ES3. GIZ & GSI GOOD PRACTICE ACROSS DIMENSIONS OF FUEL PRICING

	DIMENSION	GOOD PRACTICE
1.	Subsidies: The degree to which subsidies reduce the retail price of fuel for consumers.	<ul style="list-style-type: none"> Prices cover production and distribution costs. Fuel taxes exist to help cover transport infrastructure, pay for environmental costs of fuel and raise revenue.
2.	Pass-through: The degree to which international price change is “passed through” into prices domestically.	<ul style="list-style-type: none"> Domestic prices are adjusted to reflect international fuel market costs, inflation and exchange rate fluctuations. Prices are adjusted to avoid large subsidy burdens.
3.	Transparency: The degree to which the composition and regulation of energy prices is open and transparent.	<ul style="list-style-type: none"> Information is available on: prices, price sub-components, who sets prices and by what rules; and on government monitoring and enforcement of price rules. Information is accessible, understandable and accountable.
4.	Enforcement: The degree to which government ensures that pricing rules are followed in reality.	<ul style="list-style-type: none"> Clear, consistent and enforced rules on handling non-compliance. Mechanisms exist to report, investigate and respond to allegations of non-compliance.

Source: Adapted from Beaton, et al. (2013); GIZ (2012); Wagner (2014).

If not fuel prices—what? Options for managing fuel price volatility

Many countries use fuel pricing systems to fully or partially prevent exposure of households and businesses to oil price volatility. Volatility still affects the country, however, by taking up government expenditure that could be used for other purposes. This strategy simply shifts risk from businesses and households onto the government budget but it does not reduce risk. Several other strategies are available for managing volatility. These focus on reducing the costs in the fuel supply system, thereby reducing the absolute cost of fuel sold domestically at any given international market price; reducing energy demand by promoting efficiency and more rational consumption, thereby reducing the importance of fuel prices on household and business budgets; and finally managing the impacts of volatility after they take place, targeting assistance to help vulnerable groups cope.

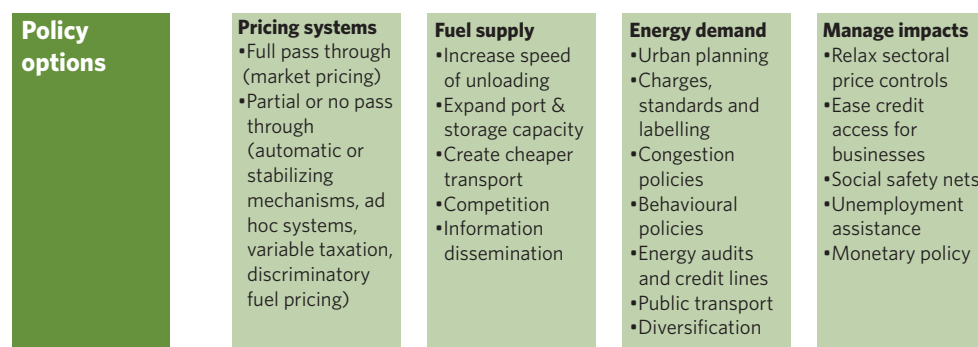


FIGURE ES1. OPTIONS FOR MANAGING FUEL PRICE VOLATILITY

Source: Authors, based on review of Kojima (2013b); Yépez-García & Dana (2012); Beaton, et al. (2013); Wagner (2014).

How Do Countries Similar to Indonesia Price Fuel?

Fuel pricing systems were examined across a range of countries considered “similar” to Indonesia: Southeast Asian nations, archipelago countries or large emerging economies. Table ES4 provides an overview of findings.

TABLE ES4. FUEL PRICING SYSTEMS IN COUNTRIES COMPARABLE TO INDONESIA

	MECHANISM	NOTABLE FEATURES
China	Fuel prices are adjusted when world oil prices fluctuate by more than CNY 50 per ton (~US\$ 1 per barrel or US\$0.006 per liter). New prices are set according to a formula based on a 10-day moving average of an undisclosed basket of reference prices, including a fuel tax. The government reserves the right not to pass through price changes. The system is administered by the National Energy Administration and the National Development Reform Commission. Pump prices are publically available but there is relatively little transparency on price components.	<ul style="list-style-type: none"> The government has regularly exercised its right not to pass through price rises. Since shifting from a 4% price change trigger based on a 20-day moving average to a CNY 50 per ton trigger based on a 10-day moving average, the passing through of prices has become more common. China’s fuel tax is adjustable and has been used to help smooth domestic prices. In Jan 2015, the tax was increased in response to falling world oil prices.
India	Fuel prices are determined by the market (gasoline since 2010, diesel since 2014), including excise duty and VAT. The oil sector is regulated by the Ministry of Petroleum and Natural Gas (MPNG) with downstream support from the Petroleum and Natural Gas Regulatory Board. Pump prices are published on the MPNG website. State-owned oil marketing companies publish price components, but regularity of updates is variable.	<ul style="list-style-type: none"> India gradually removed diesel subsidies over two years of small monthly adjustments to prices. India has adjusted its fuel excise duty to help smooth prices. In Jan and Feb 2015, the duty was increased in response to falling world oil prices.
Mexico	Fuel prices are adjusted on a monthly basis according to a fixed formula based on an international reference price and including excise tax, state tax, carbon tax and VAT. The system is administered by the Ministry of Energy and prices are set by the Ministry of Finance and the Energy Regulatory Commission. Pump prices are published on the MoE website but there is relatively little transparency on price components.	<ul style="list-style-type: none"> Mexico gradually removed diesel subsidies through small monthly adjustments to prices. Recently introduced competition to its fuel market as part of comprehensive energy sector reforms. Mexico has a supplement to help households afford energy costs in its cash transfer program <i>Oportunidades</i>.
Philippines	Fuel prices have been determined by the market since 1998, with oil companies and retailers usually adjusting prices on a weekly basis. Prices include an excise tax and VAT. The market is regulated by the Department of Energy (DoE), which monitors prices around the country and publishes them on its website. During times of high prices, the DoE engages actively with media and TV to explain the rationale behind increases.	<ul style="list-style-type: none"> During periods of high prices, the Philippines has temporarily enlarged payments in its 4P cash transfer program and issued smart cards to help Jeepney and motorized tricycle drivers. Three high-level independent panels have been called since 2005 to acknowledge and respond to public concerns about fuel pricing.
South Africa	Prices are adjusted monthly according to a fixed formula based on Mediterranean and Singaporean spot prices, including several taxes and levies. The system is managed and prices are determined by the Central Energy Fund on behalf of the Department of Energy (DoE). Price calculations are verified by independent auditors. Transparency is high, with prices and components reported on the DoE website, and regular engagement with TV, media and journalists on price changes.	<ul style="list-style-type: none"> The price formula includes: “regional variations”, to reflect costs of distribution in different areas and to narrow the price gap between urban and rural areas; a “road accident fund” levy to compensate third party victims of motor vehicle accidents; and an allowance for fuel pump attendant salaries, to ensure a fair wage.
Thailand	Fuel prices were deregulated in 1991, but Thailand’s Oil Stabilization Fund (OSF) has smoothed prices of petroleum products by variably taxing or subsidizing them at different points in time. The Ministry of Energy (MoE) administers the energy sector. It publishes daily updates of fuel prices and components on its website. The OSF is administered by an independent agency under the MoE, the Energy Fund Administration Institute. It also reports detailed information on prices.	<ul style="list-style-type: none"> The OSF has had mixed results, with high fuel subsidies and a high deficit that has needed bail-out or private loans on at least two occasions. In 2008, Thailand did not use the OSF, instead coping with high world oil prices with a range of other measures: free bus and train rides, electricity and water for poor households and a minimum wage.

Implications for Indonesia

International experience suggests a number of areas where Indonesia could build on its existing foundation. Table ES5 below sets out options across four key areas. Three of these are thematic: adapting the pricing rules to mimic some of the most useful features from other countries; investing in regulatory functions, particularly around monitoring, enforcement and transparency; and investing in non-pricing measures to address price volatility over the short, medium and long-term. Finally, a cross-cutting need for communications applies across all three areas.

TABLE ES5. OPTIONS TO STRENGTHEN FUEL PRICING IN INDONESIA

	Pricing formula	Regulatory functions	Non-Pricing Measures to Manage Volatility
	<ul style="list-style-type: none"> • Variable tax: This can prevent prices falling so low that it is difficult to raise them again, as illustrated by recent use in China and India. It also gives a release valve during periods of high prices that is more nuanced than simply not applying the formula. • Link adjustments to absolute or % changes in world prices: China has used this feature to avoid negligible adjustments and to ensure a quick response to significant world price fluctuations. Depending on design, there may be less hoarding than changes on a fixed schedule. • Create incentives for retailers to benefit by deviating downward from set prices: Such incentives—even within a state-owned company like Pertamina—can promote more efficient supply and thereby lower prices. • Consider linking assistance to high fuel prices: Rather than abandoning pass-through when prices are high, countries such as Mexico, the Philippines and Thailand have provided targeted assistance to vulnerable groups. Indonesia should consider automatically triggering temporary measures when prices are high. 	<ul style="list-style-type: none"> • Improve systems for ongoing, real-time monitoring of pricing across Indonesia: The new pricing system has ushered in an era where prices ought to change regularly, as opposed to once every few years. Incidents of non-compliance will harm consumer welfare and could bring the new system into disrepute. Real-time monitoring will allow government agencies to be pro-active in identifying and tackling such problems. • Improve capacity for responding to consumer concerns: A facility to acknowledge and respond to consumer complaints can help identify problems and build confidence in the new system. Independent enquiries such as in the Philippines can be used in the case of major issues. • Monitor and promote competition in unsubsidized gasoline markets: The new market for general gasoline in the Java-Madura-Bali area is large and can be used to identify the potential for promoting lower prices through increased competition. 	<ul style="list-style-type: none"> • Link a share of subsidy savings to investments that tackle volatility: Managing volatility through means other than pricing will often require large investments. Funding this with subsidy savings can demonstrate that the new system is promoting the best interests of consumers. • Invest in improving the efficiency of supply: Specific interventions would require an assessment of efficiency bottlenecks. Policies would likely create impact in the medium- to long-term through infrastructure in areas such ports, transport and refining. • Invest in reducing energy demand: Interventions could create impacts from short- to long-term by upscaling existing efforts on congestion, vehicle and fuel efficiency, public transport, energy diversification and urban planning. • Invest in targeting assistance to vulnerable groups: Interventions could focus on using existing capacity, or developing new facilities, such as crisis response packages or smart card systems to target assistance to key sectors such as transport operators.
Communications	<ul style="list-style-type: none"> • Transparency: It should be clear who applies the formula and what calculations take place to produce announced prices. 	<ul style="list-style-type: none"> • Transparency: Consumers should be able to access information tracking prices across regions of Indonesia. They should also be able to access information about non-compliance and related enforcement. 	<ul style="list-style-type: none"> • Awareness-raising: When world prices rise to previous highs, consumers are likely to call for subsidies to return. Communications should ensure that they are aware of other efforts to address price volatility.

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1.0 Introduction

This study looks at the fuel pricing arrangements of different countries around the world in order to provide Indonesia with information that may help inform the development of its own domestic pricing policy, particularly with an eye towards strengthening and enforcing the new pricing mechanism introduced in 2015 at the same time as identifying measures to safeguard consumers from the impacts of fuel price volatility and potential high future fuel prices.

The study's objectives are as follows:

- To set out the baseline for understanding Indonesia's current pricing system, previous experiences with non-ad hoc pricing and possible legal constraints around market energy pricing.
- To summarize existing knowledge about international pricing systems in a format that is targeted at the current needs of Indonesian policy-makers.
- To identify policy options for Indonesia to consider based on international experience.

Three main research activities took place to prepare this paper: first, a review of key data and legislation on fuel pricing in Indonesia, including experiences with an automatic pricing mechanism in 2002 and constitutional constraints on fuel pricing; second, a review of international literature synthesizing experiences with fuel pricing and publically available information on case study countries; and third, a series of interviews with international experts and national fuel price regulators conducted under the Chatham House rule, to ensure that key principles, trends and political realities of fuel pricing arrangements were adequately addressed.

The paper was produced by the International Institute for Sustainable Development's (IISD) Global Subsidies Initiative (GSI) as part of its ongoing program on fossil-fuel subsidies. The GSI was established in 2005 and is an independent, research-driven initiative, focused on how subsidies can undermine or support sustainable development. Through technical analysis, policy dialogues and communication with stakeholders, the GSI's aim is to bring about transformational change in the implementation of subsidy reform. For more information, see:

- The GSI's website: www.iisd.org/gsi
- Our other materials dedicated to fossil-fuel subsidy reform in Indonesia: www.iisd.org/gsi/supporting-country-reform-efforts/energy-subsidies-indonesia

2.0 Context: Current Fuel Pricing System in Indonesia

2.1 Background

Both before and after 2014 elections, Indonesian President Joko Widodo strongly signaled his intention to reform fossil-fuel subsidies for petroleum and gasoline. This was quickly acted upon when the new government increased prices by IDR2,000 (US\$ 0.15)¹ per liter in November 2014. From the start of January 2015, further changes were announced, this time to the underlying system that determines the price for each fuel. The government announced the removal of subsidies on Premium gasoline (except for distribution costs to areas outside Java–Madura–Bali) and the introduction of a “fixed” subsidy on Solar diesel. Due to low world oil prices, this led to two price decreases, ultimately taking the cost of gasoline and diesel back to pre-November levels (see Table 1). As of February 2015, the government has indicated that it will announce new prices on a monthly basis, with the first of these taking place in March.

TABLE 1. CHANGES IN INDONESIAN FUEL PRICES (IDR PER LITER), 2014–2015

	PRE-REFORM	NOV 18, 2014	JAN 1, 2015	JAN 19, 2015	MAR 1, 2015	MAR 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: Lontoh & Beaton (2015).

To date in Indonesia, the pricing system for gasoline and diesel fuels has kept prices significantly below market levels (see Figure 1) and all partial reforms of fossil-fuel subsidies have been conducted through government announcements of price changes. The new pricing system is an attempt to end large fuel subsidy expenditure. They key test for the new system will be its ability to pass through price increases to the domestic market in line with increases in international prices. Forecasting future oil prices is challenging and involves significant uncertainty, but current analysis suggest that prices ought to remain low throughout 2015, and only marginal price increases are expected by 2016 (World Bank Group, 2015). Over the medium term, the International Energy Agency (IEA) anticipates that robust underlying demand will lead prices to rise again to levels between US\$80–US\$100 per barrel (IEA, 2014).

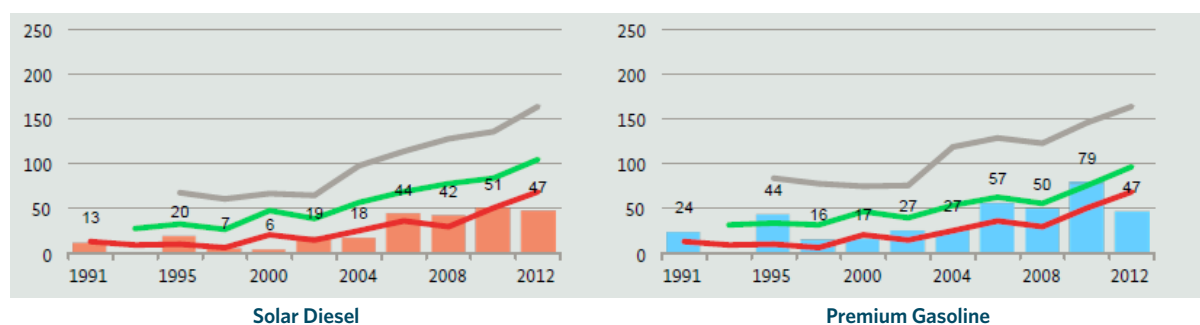


FIGURE 1. INDONESIAN PRICES FOR PREMIUM AND SOLAR (US\$ CENTS), COMPARED TO INTERNATIONAL BENCHMARKS, 1991-2012

Note: Red line: average crude price on world market. Green line: retail price in the United States, including industry margin, VAT/sales tax and approx. 10 cents for two road funds (federal and state). This represents a minimum benchmark market price internationally. Grey line: Retail price in Luxembourg, the lowest prices in Europe in November 2012, subject to VAT, specific fuel taxes and other country-specific duties and taxes.

Source: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (2014).

2.2 Indonesia’s Current Pricing System for Gasoline and Diesel

A fuel pricing system can be defined as consisting of two parts: the rules that are used to set prices and the institutions that apply the rules, communicate price changes and to enforce price changes.

¹ Unless otherwise stated, all rupiah values are exchanged at a rate of IDR 13,500 per US\$ 1.

2.2.1 Rules Used to Determine Prices

On December 31, 2014, the government of Indonesia announced the introduction of a new pricing scheme for gasoline and diesel, to take place as of January 1, 2015. The scheme introduced three new classifications of fuel product: general fuels (*bahan bakar umum*), special designated fuels (*BBM khusus penugasan*) and specific fuels (*bahan bakar minyak tertentu*) (ESDM, 2014).

TABLE 2. INDONESIA'S NEW FUEL SUBSIDY SCHEME 2015

	PREMIUM GASOLINE	SOLAR DIESEL
A. Classification		
General Fuel	✓	
Special Designated Fuel	✓	
Subsidized Fuel		✓
B. Subsidy Type		
Distribution compensation	✓	
Fixed Subsidy		✓

Source: ESDM (2014).

The first two categories, “general fuels” and “special designated fuels,” include Premium gasoline. “General fuel” is the term for such fully non-subsidized gasoline, and all gasoline sold in Java, Madura and Bali is to be sold as a non-subsidized general fuel. Special designated fuels are those sold outside Java, Madura and Bali. Their base price is to remain “non-subsidized,” but subsidies will be provided to reduce the costs of distribution.

Designated gasoline: The price is determined by a base market price plus taxes (value added tax and a motor fuel tax) and minus a 2 per cent subsidy, to compensate distribution costs, paid to the distributor. The exact retail price is to be decided by individual marketing companies, with a profit margin pegged at between 5 to 10 per cent of the base market price used by the government.

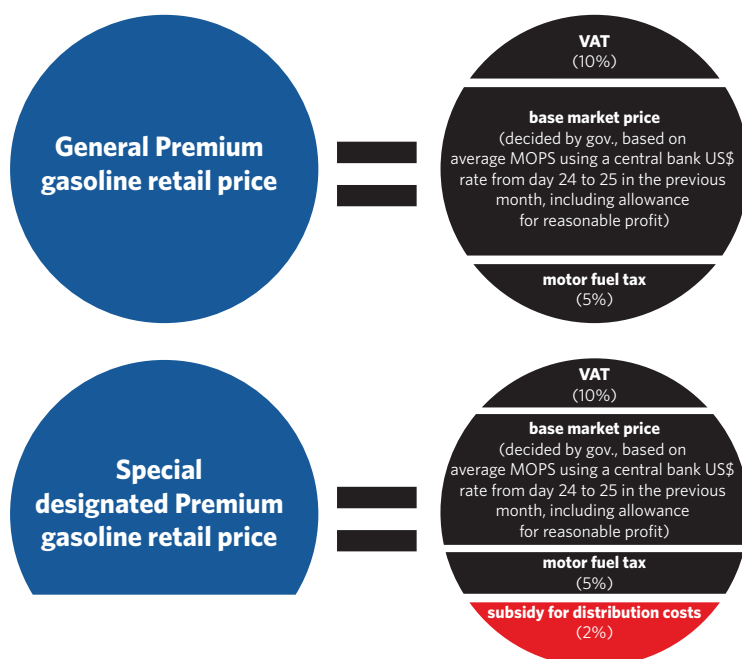


FIGURE 2. FUEL PRICING FORMULA, JANUARY 2015: “GENERAL” AND “SPECIAL DESIGNATED” PREMIUM GASOLINE

Source: ESDM (2014; 2015).

The third category, “specific fuels,” refers to fuels for which all supply remains subsidized. This is applied to Solar diesel. The new Solar diesel subsidy will run based on a “fixed subsidy” mechanism. This means that the price of Solar should vary in 2015, but with a fixed IDR1,000 margin between domestic prices and market prices, ensuring that the cost of the subsidy will remain constant, preventing any unplanned increases in subsidy expenditure.

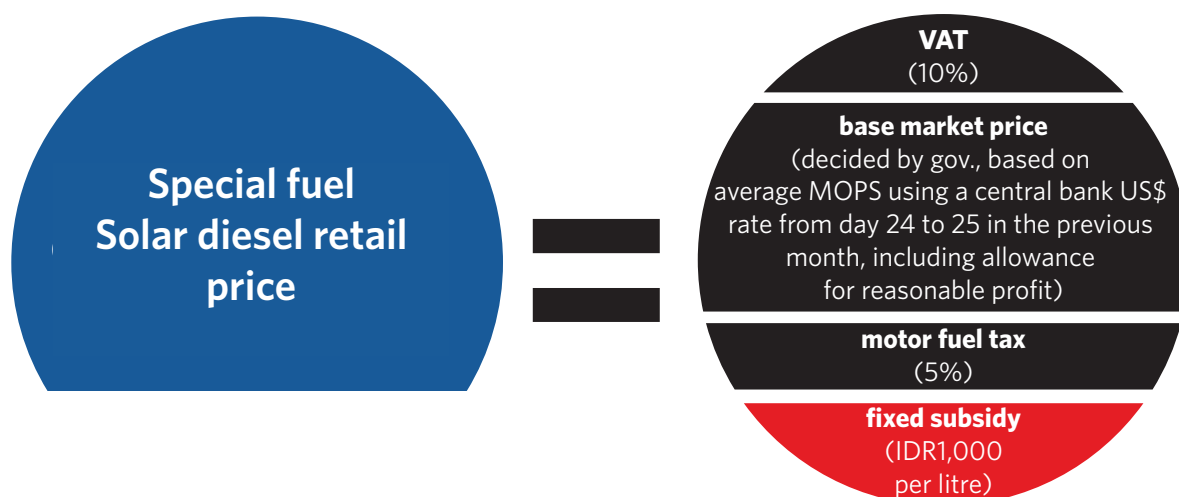


FIGURE 3. FUEL PRICING FORMULA, JANUARY 2015: “SPECIAL FUEL” SOLAR DIESEL

Source: ESDM (2014; 2015).

The government has stated that it will explore if it is possible to give greater flexibility to regional governments and retailers to determine these components of the price, if the future situation is conducive to this (ESDM, 2014). The

Up until the introduction of this system, the determination of fuel subsidies in Indonesia has largely been made on ad hoc basis. The process of determining fuel prices in this manner was complicated but can be simplified as follows: the government established a “fuel subsidy team”; the team asked companies the cost of supplying fuel, including the price of crude, import costs (if imported), refinery costs, storage costs and distribution and retail costs; the team then proposed prices for subsidized fuels; and the government consulted on the proposal with the House of Representatives (DPR), agreeing the types of fuel to be subsidized, the quotas for subsidized fuel supply and the price of subsidized fuels. This process would conclude with the final approval of an agreed plan and an issuance of a Presidential Decree. In this process, the role played by the DPR has varied, in some cases approving proposals with relative ease and in other cases imposing strict conditions before approval is given, though it has recently tended to hand over decision-making on price changes to the government. With the new pricing arrangements, it has been determined that the Minister of Energy and Mineral Resources will announce fuel prices on a monthly basis, although prices can be changed more than once per month if it is deemed necessary (ESDM, 2015).

2.2.2 System Used to Communicate Price Changes and to Enforce Prices

Indonesia’s downstream oil market is defined by Oil and Gas Law No. 22/2001 and a number of associated implementing regulations (see Box 1). This law was introduced to open up competition in the downstream market, making state oil company PT Pertamina a market participant and creating BPH Migas as the regulatory body on downstream activities (Oentoeng Suria & Partners, 2011; World Bank, 2006), although clauses that stated that the price of fuel would be set through downstream market competition alone were subsequently over-ruled by a constitutional court verdict in 2003 (Mahkamah Konstitusi Republik Indonesia, 2004).

To date, the opening up of downstream markets to supply by companies other than PT Pertamina has applied largely to Indonesia’s non-subsidized fuels, which make up a small share of the overall market: in 2012, for example,

46 million kilolitres of gasoline and diesel fuel were subsidized, equal to roughly 84 per cent of total final fuel consumption.² Rights to distribute subsidized fuel are awarded annually by BPH Migas via a tendering process. Since tendering began in 2007, these have typically been granted almost exclusively to PT Pertamina and usually in remote areas, with varying degrees of transparency (Braithwaite, et al., 2012). This reflects rulings by the Constitutional Court that the government should maintain a certain degree of control through ownership of certain state functions and that market principles alone cannot be relied upon to meet the government's social responsibility toward vulnerable groups. In 2014, for example, BPH Migas declared that the distribution of Premium and Solar fuel in 2015 will be carried out by two companies, PT Pertamina and PT Aneka Kimia Raya (AKR) Corporindo Tbk, with Pertamina awarded rights to distribute 29.46 million kilolitres of Premium and 15.045 million kilolitres of Solar, and PT AKR Corporindo Tbk awarded rights to distribute 20,000 kilolitres of Premium and 625,000 of Solar (RambuEnergy, 2014).

Following the January changes in fuel pricing rules, BPH Migas has proposed that the total volume of subsidized gasoline and automotive diesel should be reduced from 46 million kilolitres to 17.9 million kilolitres, with only Pertamina distributing the remaining supplies of Premium fuel (Liputan6, 2015). This implies that, should Indonesian policy-makers maintain their commitment to market prices, a large market is emerging for competition in the supply of non-subsidized fuel, equal to roughly 50 per cent of the total fuel supply in 2012.

BOX 1. INDONESIA'S OIL AND GAS LAW 2001 AND SUBSEQUENT RULINGS ON COMPETITION

Article 3

"The implementation of petroleum and natural gas-related business activities shall aim at:

[...]

b. assuring the effective implementation and control over the accountable processing, transport, storage and commercial businesses executed through a mechanism of reasonable, fair and transparent business competition;"

Article 28

"(1) Fuel oil and certain processed products marketed in the country to meet the public need shall comply with the standards and quality stipulated by the government;

(2) Prices of fuel oil and natural gas shall be entrusted to the mechanism of fair and reasonable business competition;

(3) The implementation of the pricing policy as meant in paragraph (2) shall not reduce the social responsibility of the government for certain groups of communities."

Constitutional Court decision 002/PUU-I/2003

Article 28 Paragraphs (2) and (3) of the a quo law prioritizes competition mechanism over the Government's intervention which is limited to specific community groups, and as such it does not guarantee the meaning of the economic democracy principle as regulated in Article 33 Paragraph (4) of the 1945 Constitution in order to prevent the strong from preying on the weak. According to the Court, the prices of domestic Oil Fuel and Natural Gas should be stipulated by the Government by paying attention to specific community groups and considering a fair and reasonable business competition mechanism. Therefore the aforementioned Article 28 Paragraph (2) and (3) must be declared contradictory to the 1945 Constitution;"

Source: Oil and Gas Law No.22/2001, 23; Mahkamah Konstitusi Republik Indonesia (2004).

Given the small share of fuel distributed by private companies, the downstream regulator BPH Migas has had a relatively small role to play in ensuring good governance in a competitive market (World Bank, 2006), although such a function is part of its stated mission (see Box 2). As the downstream regulator, BPH Migas' role regarding fuel subsidies has typically been limited to four functions: organizing the tender for rights to distribute subsidized fuel; helping ESDM implement reform plans; advising the government on issues related to oil distribution; and applying controls that attempt to limit consumption of subsidized fuel and prevent smuggling or other illegal use (Braithwaite, et al., 2012). Nonetheless, a number of enforcement problems have been reported to date, primarily related to the illegal sale of gasoline and diesel fuel at rates far above official subsidized prices, often during periods of tight supply.

² Author's calculation based on a quota of 45.27 million kilolitres of subsidized fuel in 2012, using average conversion factors from Qatar Petroleum (Qatar Petroleum, 2014) and data on total 2012 final fuel consumption from *The Handbook of Energy and Economic Statistics of Indonesia 2013* (Pusdatin ESDM, 2014).

BOX 2. VISION, MISSION AND VALUES OF DOWNSTREAM REGULATOR BPH MIGAS

Vision

“The realization of the provision and distribution of fuel in the entire territory of the Republic of Indonesia and the increased utilization of natural gas in the country through fair competition, fair and transparent for the greatest prosperity of the people.”

Mission

“Regulate and supervise independently and transparently the implementation of business activities related to the distribution of the fuel supply and the increased utilization of natural gas in the country.”

Basic Values

Legal certainty	The rules are applied fairly and consistently.
Accountability	All decisions are taken in a professional, responsible and accountable manner.
Equality	Equal treatment of all stakeholders.
Transparency	Rules and business opportunities are presented to the public with a high level of clarity.
Efficiency	Administrative procedures related to business activities are designed to be compact, solid, clear, practical, transparent and communicative, so that the submission can be done in a short time and efficiently.
Responsiveness	As much as possible, to give attention to the problems faced by stakeholders.
Participatory	Rules are designed with the participation of stakeholders.
Coordinated approach	The preparation and application of the rules is done in coordination with appropriate agencies.

Source: Oil and Gas Law No.22/2001, 23; Mahkamah Konstitusi Republik Indonesia (2004).

2.2.3 Public Awareness about Fuel Pricing

In analyzing a nationally representative survey of public opinion on fuel pricing from late 2014, Pradiptyo et al. (2015) found that public awareness about the government’s fuel pricing regime is relatively poor. Only 65 per cent of respondents knew the correct official retail price of Premium fuel and 44 per cent that the government was subsidizing fossil fuel at all. On average 4 per cent of the population knew how much the government was spending on fuel subsidies per year, with significant variation by region (see Figure 4).

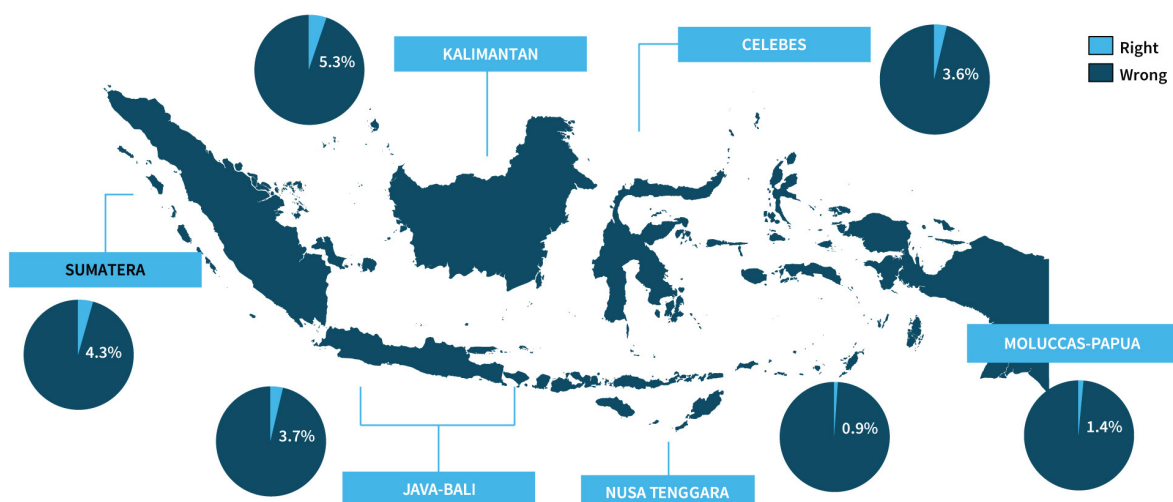


FIGURE 4. AWARENESS OF THE GOVERNMENT’S BUDGET ALLOCATION FOR FUEL, BY REGION

Source: Pradiptyo et al, 2015.

The study confirmed that higher prices were generally politically unpopular, finding that only 21 per cent of respondents were in favor of the government reforming fuel. Nonetheless, the study suggested that the provision of information was able to shift public opinion to some degree. Upon being given accurate information about expenditure on subsidies, the level of support for reform increased by around 10 per cent in all subgroups.

2.3 Lessons Learned From the Automatic Pricing Mechanism From 2002³

Indonesia has a long history of applying fuel subsidies, starting from the New Order government (1967) (Dillon, Laan, & Dillon, 2008), with costs first starting to become unmanageable late into the New Order's administration (see Figure 5). From the Energy Coordinating Agency's (BAKOREN) Public Policy of Energy Sector (KUBE) up until the National Energy Board's (DEN) National Energy Policy (KEN), efforts to reduce the real value of the fuel subsidy have also been underway since this time. The efforts of these previous generations are a valuable source of information about resolving the subsidy problem today.

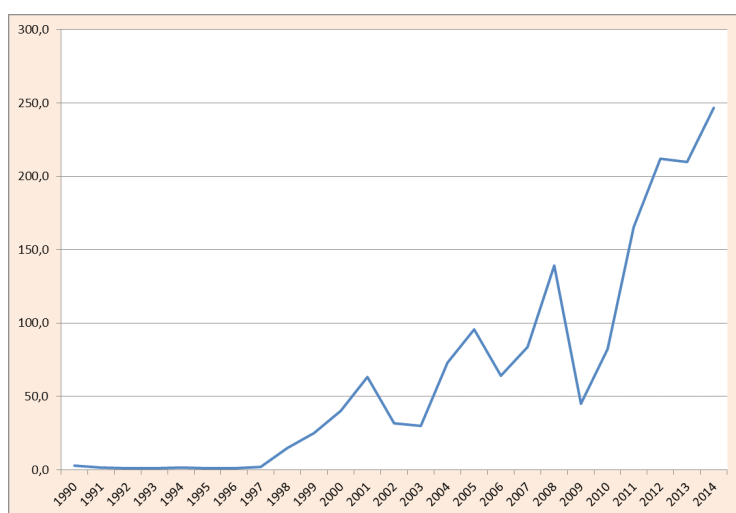


FIGURE 5. HISTORICAL DEVELOPMENT OF INDONESIAN FUEL SUBSIDY (IDR TRILLION)

Source: Memorandum Finance and Financial Statements of the Central Government, several years.

FIGURE 6. PLAN FOR FUEL SUBSIDY PHASE-OUT FROM THE EARLY 1990s

NO.	TYPE OF FUEL	PHASES							CONSUMER
		1	2	3	4	5	BEYOND		
1	Kerosene • households	R	R	R	R	R	R	UR	Households, small businesses, commercial, traditional fishermen
	• industry	R	R	R	R	UR	UR	UR	
2	Premium	R	R	R	R	UR	UR	UR	Private cars, public transport, motorcycles
3	Solar • transportation	R	R	R	R	R	R	UR	Private cars, public transport, sea freight, fishing boats
	• industry	R	R	R	R	R	UR	UR	
4	Diesel oil	R	R	PR	UR	UR	UR	UR	Industry, PLN, domestic sea freight, foreign ships, international sea freight, mining
5	Fuel oil	R	R	UR	UR	UR	UR	UR	
6	Avtur ¹	R	UR	UR	UR	UR	UR	UR	Aircraft
7	Avgas ²	R	UR	UR	UR	UR	UR	UR	

Notes: 1. Avtur = Aviation gas turbine fuel. 2. Avgas = Aviation gasoline. R = Regulated prices, UR = Unregulated prices. PR = Partially regulated. Source: quoted in BAPPENAS Energy Working Group (2009).

³ The material in this subsection was primarily researched and written by Hanan Nugroho, Energy Planner/Specialist at the National Development Planning Board (BAPPENAS) of Indonesia.

The most common method of reducing the subsidy has been to raise fuel prices via a Presidential Decree, with approval from the House of Representatives (DPR), but this has done little to reduce subsidies beyond the very short term. One attempt has, however, been made previously to introduce to a “fixed” subsidy and an “automatic” pricing mechanism. This policy began in mid-January 2002, during the administration of President Megawati, and lasted for a little under one year, eventually being abandoned in early January 2003 (World Bank, 2006).

The reforms were part of the National Development Programme (Propenas or Act No. 20 of 2000), which mandated the elimination of fuel subsidies by the end of 2004 as part of a combination of measures to strengthen the state budget by increasing revenues and reducing expenditure. The plans included the idea of developing a social safety net to address the impacts of higher fuel prices on the poor. World oil prices were relatively low and President Megawati’s party, the *Indonesian Democratic Party—Struggle* (PDI-P) was in a position of relative strength in the early days after election—but the pricing system was not a success, and no attempt to introduce a similar system was made by the government of Megawati’s successor, President Susilo Bambang Yudhoyono.

The recently announced fuel pricing policy changes by the Widodo government share many similarities with the Megawati reforms in 2002. Given this, what can be learned from 2002? How did the automatic pricing system function? What aspects of the policy resulted in unsuccessful implementation? How might this influence policy today?

2.3.1 Experiences With the 2002 Automatic Fuel Pricing System

The 2002 automatic fuel pricing mechanism was introduced by Presidential Decree No. 9, 2002 (Government of Indonesia, 2002). The decree stipulated that the retail price for Premium gasoline should be equal to 100 per cent of the market price and that the retail price of Solar diesel should be 75 per cent, where “market price” was defined as the MOPS price plus 5 per cent. Minimum and maximum bands were also introduced within which the retail prices would have to lie. For Premium, the bottom band was IDR1,450 and the top band IDR1,750. For Solar, the bottom band was IDR900 and the top band was IDR1,555. The decree gave responsibility for announcing the new prices to the Director of Pertamina, who was required to announce new fuel prices on the 1st day of each month.

Over the following year, monthly fuel price adjustments did indeed take place, but they were met with significant public demonstrations. Large student demonstrations took place in Makassar, with smaller protests also taking place in Jakarta, Surabaya, Denpasar, Manado and Bandung (Beaton & Lontoh, 2010). Structural appreciation in world oil markets also began in this period, such that by the end of the year domestic prices had reached their top bands and subsidy costs were still rising. In January 2003, an effort was made to close the gap between domestic and international fuel prices, in conjunction with an increase in electricity tariffs, but this resulted in a strong wave of protests from various elements of society, causing the price increases to be trimmed back. Bacon and Kojima (2006) report that a key motivation for the powerful protests was a belief that the government had been favouring powerful interest groups, as well as general dissatisfaction with political corruption and inefficiency. Given the fact that the automatic pricing mechanism had come up against its top bands, and ardent political opposition precluded any change in banding, the system was effectively abandoned. During its lifetime, from January 2002 to January 2003, the retail price of gasoline had increased by around 25 per cent and diesel by 83 per cent (World Bank, 2006). After this period, the Indonesian political cycle began to prepare for the 2004 elections, preventing any further price changes until President Yudhoyono’s administration in 2005.

2.3.2 Lessons Learned

A number of factors contributed to the problematic implementation of the automatic pricing mechanism in the Megawati era. Among them were:

- **Internal coordination.** Stronger internal coordination was needed among the fuel subsidy team in government at the time. This was also affected by the fact that institutions such as BPH Migas were not yet fully functioning.
- **Poverty reduction capacity.** In theory, the impacts of higher prices were supposed to be compensated for by a social safety net, but there was a relatively poor state of readiness at this time in terms of policy capacity to protect the poor.
- **Communications.** Better communication was needed with the public on the reasons for fuel subsidy reform and how it would affect the vulnerable.
- **Structural appreciation.** The pricing mechanism was introduced in an era when the government did not know that world oil markets were beginning to undergo massive structural appreciation that would cause ongoing price increases throughout 2002, ultimately concluding with prices well over US\$100 per barrel by 2008.
- **Euphoria of democracy.** Following the collapse of the authoritarian Suharto government, the “euphoria of democracy” persisted in both the House of Representatives and grassroots communities. This contributed toward a culture in which popular protest was the preferred method of exercising democratic rights, while other mechanisms for citizens to express their concerns were relatively less developed.

Since 2002, significant progress has been achieved on many of the above issues, which should increase the strength of the government’s hand in maintaining its new fuel pricing policy. This includes the development of a great deal of internal government experience with fuel price increases; the increased involvement of BPH Migas as a regulator of the downstream oil and gas industry; the growth of a much more sophisticated social safety net; a drastic reduction in the consumption of kerosene, due to the kerosene-to-LPG conversion program; an improved (but still limited) understanding of the fuel subsidy issue among some classes of society; policy-level recognition that we have moved into an era of higher average oil prices; and an additional decade of capacity building in democratic governance.

The stronger position of the government in 2015 should not, however, lead to complacency. Experiences from the Megawati era emphasize in particular the extent to which the acceptability of fuel price changes is highly dependent on shifting political fortunes. When oil prices peak again, higher domestic fuel prices (and associated inflation) can have a significant impact on the economy of average people—and, over time, public perceptions on this can shift depending on the broader economic and political context. Indonesia is already a country with relatively high inflation rates (exceeding 8 per cent in 2013 and 2014) and with considerable economic gaps between income groups and different regions. In addition, prices in Indonesia are biased toward upward movement: the increase in world oil prices has led to rising prices of goods and services (especially the cost of transportation and food and daily necessities in the market), while the decline in world oil prices was not followed by a significant decrease in the cost of goods and the services. The fixed subsidy scheme has shifted the burden of higher oil prices from the state budget onto individual economic actors, including the poor and vulnerable. Managing the economic, social and political impacts of ongoing price increases will be central to the ongoing success of reforms.

2.4 Possible Constitutional Constraints on Fuel Pricing Systems⁴

As noted in the description of current market regulation, constitutional rulings in Indonesia have previously placed constraints on the extent to which competitive markets can be relied upon to deliver fair prices to consumers. Understanding these constitutional rulings is important in understanding the “operating space” for energy price reforms in Indonesia. How does the constitution define subsidies and what implications might it have for attempts to improve or entirely remove subsidy policies?

2.4.1 Legal Definition of “Subsidy” in Indonesia

There is no regulation that explains the definition of “subsidy” in Indonesian law. The introductory memorandum of RAPBN 2014 describes subsidies as one of the mechanisms used to implement the government’s “distribution” function, related to the equalization of people’s welfare. The State Budget Memorandum explains that subsidy expenditure is aimed at maintaining the stability of the domestic price of goods and services, providing protection to people on low incomes, increasing agricultural production and providing incentives for business and society. Subsidy expenditure is also allocated in order to alleviate citizens’ economic burdens in meeting their basic needs, and maintaining producers’ ability to produce goods, especially to supply society its basic needs at an affordable price.

Each Law on the State Budget regulates that the government should classify subsidies into two categories: energy subsidies; and non-energy subsidies. The category “energy subsidies” includes subsidies for petroleum fuels, biofuels, LPG (3-kg pack), LGV and electricity. The category “non-energy subsidies” covers agricultural subsidies that include food, seed and fertilizer; as well as the Loan Interest Program Subsidy, Public Service Obligation (PSO), Tax Subsidy/DTP and other policies.

2.4.2 Clauses in the Indonesian Constitution Relevant to Energy Subsidies

The government’s responsibility to ensure the people’s welfare is set out in the preamble of the Indonesian 1945 Constitution. This states that it is the government’s role to “protect all the people of Indonesia and all the independence and the land that has been struggled for, and to improve public welfare, to educate the life of the people and to participate toward the establishment of a world order based on freedom, perpetual peace and social justice.”⁵ Energy subsidies are commonly considered one of the key tools used by the government to deliver on this role, although they are not explicitly mentioned in the Constitution.

Linkages between the government’s social welfare obligations and subsidies may be interpreted in three other areas. First, in setting out provisions on human rights, Article 28H of the 1945 Constitution regulates that:

“(1) Every person shall be entitled to a prosperous life both physically and spiritually, to reside, and to obtain good and healthy environment and shall be entitled to obtain medical services.

“(2) Every person shall be entitled to receive facilitation and special treatment to attain equivalent opportunity and benefit in order to achieve equality and fairness.

“(3) Every person shall be entitled to social security which makes it possible to develop oneself fully as a dignified human being.” (Emphases added)

Depending upon the definitions of these terms, this clause could be interpreted as a constitutional assurance to subsidized services, which in turn could be argued to include energy.

⁴ The material in this sub-section was primarily researched and written by Zainal Arifin Mochtar, Lecturer at the Law Faculty of Gadjah Mada University, Yogyakarta. The content has been prepared for informational purposes only and does not constitute legal advice. Readers should not act upon the information or decide not to act based upon the information without first seeking appropriate professional counsel.

⁵ All English translations of the Indonesian 1945 Constitution are adapted by the authors from World Intellectual Property Organization (2005).

Second, in requiring the state to create an economic model where state wealth is used to optimize people's prosperity, Article 33 of the 1945 Constitution states that:

- “1. The economy shall be organized as a common endeavor based upon the principles of the family system;*
- 2. Branches of production which are critical for the country and of far-reaching consequence to the livelihood of the people shall be controlled by the State; and*
- 3. The land, the water and the natural resources within them shall be controlled by the State and shall be used for the greatest prosperity of the people.” (Emphases added)*

In this regard, energy subsidies are one effort, among other possible efforts, that the state can provide to realize the prosperity of all Indonesian people.

Third, there is the idea that government has a responsibility to protect specific groups. Article 34 of the 1945 Constitution states that “impoverished persons and abandoned children shall be cared for by the State.” This concept implies that the state has a duty to protect and provide special treatment to the poor through poverty eradication programs, which could be argued to include energy poverty. Again, however, subsidies are one tool that could be used to target poverty, among others.

2.4.3 Interpretations of Constitutional Clauses Relating to Subsidies

Previous verdicts reached by the Constitutional Court provide several key corridors of interpretation in relation to energy subsidies in Indonesia. This includes several verdicts on judicial review on Law No. 22 of 2001 on Petroleum and Gas, registered as Case No. 002/PUU-I/2003 (Mahkamah Konstitusi Republik Indonesia, 2004); and in rejecting judicial review of Law No. 4 of 2012 on the Amendment of Law No. 22 of 2011 on the 2012 State Budget (Amendment Law), registered under Decision No. 34/PPU-X/2012 (Mahkamah Konstitusi Republik Indonesia, 2012).

In Constitutional Court Case No. 002/PUU-I/2003, a broad set of complaints were brought against Law No. 22 of 2001 on Petroleum and Gas, encompassing upstream and downstream governance of the energy sector. On fuel pricing, the claimants objected strongly to the clause “Prices of fuel oil and natural gas shall be entrusted to the mechanism of fair and reasonable business competition.” Their arguments included the following ideas: Indonesia would become vulnerable to price manipulation by foreign powers and this could jeopardize Indonesia's national integrity; that a government inability to ensure the energy supply could be detrimental to the people's welfare; the government would lose revenues previously collected when fuel was sold by Pertamina (see Box 3). More generally, it was seen as prioritization of the welfare of business and entrepreneurs over the rest of Indonesia's people.

The Constitutional Court set out limits on the state's duties in managing the energy sector that should not be violated. On fuel pricing, most analysis was focused on Article 33(3) of the 1945 Constitution, which states that “The land, the waters and the natural resources within shall be controlled by the State and shall be used for the greatest prosperity of the people.” The Court elaborated that “controlled by the state” is a concept of public law related to the principles of the people's sovereignty both in politics (political democracy) and the economy (economic democracy), where the earth, water, and the natural resources within the legal territory of the state basically belong to the public, and have been collectively mandated to the state for the greatest benefit of the collective prosperity. The claimants in the case argued that greatest benefit could only be achieved through government-determined pricing, while the government argued that regulation was a form of control that could be used to achieve greatest benefit. The court ruled that both interpretations were incorrect, since “controlled by the state” was more than just “regulatory authority” but that it did not always necessitate “full public ownership,” as neither individually would be adequate in utilizing the state's power to achieve “the greatest benefit of the people.” It judged that the idea of “controlled by the state” must be comprehended through a full understanding of the meaning of the word “control” as is used in the Constitution.

BOX 3. VULNERABILITY TO PRICE MANIPULATION, NATIONAL DISINTEGRATION, SUPPLY RISKS AND FOREIGN INTERESTS

In Case No. 002/PUU-I/2003, the following objections to market pricing were brought before the court:

- **Vulnerability to foreign powers and national integrity:** “The sovereignty and territorial integrity of the state territory will be jeopardized just because prices of energy supply (BBM) can be manipulated by foreign oil business actors who control the majority of oil and gas reserves and national production in comparison to those controlled by Pertamina as the state’s Business Entity (BU). With the manipulation of price and supply stability, it is very likely that a region in this state will demand to separate itself from Indonesia’s territory or it will be more determined to become an independent region.”
- **Risks to supply and social welfare:** “Pertamina, [...] pursuant to Law Number 22 Year 2001, no longer constitutes a production branch which affects the livelihood of the public and therefore, there is no more guarantee or certainty for all the people to obtain oil fuel and natural gas with affordable price, which also harms the economy of the state, and which will in the end deteriorate the welfare and prosperity of Indonesian people;”
- **Lost revenues:** “If the oil fuel market structure has been in the form of competition market and the selling price has been similar to the market price (where the market price is far higher than the principal cost of the natural monopolist of Pertamina), the state will lose the potential revenues from the Net Profit from Oil (LBM), and so on.”
- **Influence of foreign lobbies:** “The energy war is a power war, whoever controls the energy will control the world. Indonesia can be entrapped and is unable to refuse the foreign pressure due to the powerless government. The expert does understand that the formulation of this Oil and Natural Gas Law has been affected by powerful foreign lobbies. Therefore, the Oil and Natural Gas Law is covered by free market and neo liberalism which is clearly contradictory to Article 33 of the 1945 Constitution;”

Note: the first three arguments put forward are part of the body of evidence submitted by the claimants. The final argument put forward was part of a statement submitted on behalf of the claimants by Dr. Sri Edi Swasono.

Source: (Mahkamah Konstitusi Republik Indonesia, 2004)

Specifically, it reiterated that the people’s mandate to the government includes regulatory control over markets and direct involvement through state-owned enterprises (see Box 4). This led it to conclude that a fuel pricing mechanism driven by competition would prevent the government from exercising its obligation “to prevent the strong from preying on the weak”, and that while the government should consider a “fair and reasonable business competition mechanism,” it should also ultimately stipulate prices taking into account “specific community groups” (Mahkamah Konstitusi Republik Indonesia, 2004).

In Constitutional Court Ruling No. 43/PUU-X/2012, complaints were brought against Law No. 4 of 2012 on the Amendment of Law No. 22 of 2011 on the State Budget of 2012, specifically with respect to a clause that allowed the government to increase subsidized fuel prices if the Indonesian Crude Price exceeded the assumed price by at least 15 per cent for six months. It was perceived that this ran in contradiction to the Court’s earlier ruling that oil and gas prices should not be left to the market to determine (Sahbani & Arkyasa, 2012).

In this case, the Court rejected the claims, ruling that the price adjustment still involved discussion between the government and the DPR, as was therefore not entirely dependent upon a market mechanism or business competition (Mahkamah Konstitusi Republik Indonesia, 2012).

In addition to the areas covered by these two Constitutional Court rulings, a number of other areas of legal uncertainties relate to fuel pricing. First is the question of targeting: one interpretation of the government’s constitutional responsibility to the people views that it must grant assistance that is equally targeted to all citizens without limitation; while a second interpretation views that the government is only obligated by the constitution to target subsidies such as fuel subsidies only to certain groups, namely the impoverished. Second is the legal basis for revoking fuel subsidies. Historically, the fuel subsidy has been raised and lowered using presidential beleid (Presidential Decree), as the legal basis. The President is elected and mandated by people who own the state. In

BOX 4. STATE FUNCTIONS INCLUDED IN THE TERM “CONTROLLED BY THE STATE”

“Whereas based on the above mentioned, the definition of “controlled by the state” must be construed as covering a broad meaning of control by the state that originates and is derived from the concept of sovereignty of the Indonesian people over all resources: “*land, water and natural resources contained therein*,” also including the definition of public ownership by the people collectively of such resources. The people as a collective is constructed by the 1945 Constitution as giving the mandate to the state to create policies (*beleid*) and acts of administration (*berstuursdaad*), regulation (*regelendaad*), management (*beheersdaad*), and supervision (*toezichhoudensdaad*) for the greatest prosperity of the people. The function of administration (*berstuursdaad*) by the state is performed by the Government with its authority to issue and revoke permit (*vergunning*), license (*licentie*), and concession (*concessie*) facilities. The regulating of the state (*regelendaad*) is performed through legislative authority by DPR with the Government, and regulation by the Government. The function of management (*beheersdaad*) is performed through share-holding mechanism and/or through direct involvement in the management of State-Owned Enterprises or State-owned Legal Entities as institutional instrument, through which the State, c.q. the Government optimizes the exercise of its control of the resources to be used for the greatest prosperity of the people. Likewise, the function of supervision by the state (*toezichhoudensdaad*) is performed by the State, c.q. Government, in the context of supervision and control so that the exercise of the control by the state of the intended resources is truly implemented for the greatest prosperity of the people.”

Source: Mahkamah Konstitusi Republik Indonesia (2004).

consequence, the President is entitled to authorize setting the fuel price. Legal complications could arise if the absolute authority of the President to increase or decrease fuel prices is questioned. A prominent interpretation says the President does not individually have the authority to raise or cut fuel prices that would greatly affect the state since resources come from the state, belong to the state and, imported to the state, will be subsidized by the state for the benefit of its people. The principles in the 1945 Constitution provide space to the President to take certain measures, yet there must be public involvement (at least through DPR) in any decision-making process that would be imperative to the state and affect the life of the people. Furthermore, similar arguments regarding the involvement of local governments in the provision of subsidies have appeared. The argument discusses the responsibility of ensuring that subsidies are targeted to suitable beneficiaries, and whether this is the duty of the central or the local government. The argument states that local governments are believed to best understand local conditions, hence they should be involved in the process of subsidy distribution.

2.4.4 Summary

In sum, there are two major legal issues pertaining to the subsidies and their distribution. First, the degree of government intervention required in fuel pricing mechanisms, including the degree of consultation required over fuel price increases and the involvement of local governments. Second, whether target of a subsidy should be all Indonesian people or to certain groups.

Fuel subsidies in Indonesia are a problem due to the absence of clear legal principles regarding the purpose of subsidies, their targeted beneficiaries and how they should be implemented. In the current form of subsidies, the 1945 Constitution basically provides a blank cheque with respect to subsidy mechanisms and procedures, while the Constitutional Court provides some further guidance in terms of implementing the constitutional regulations. Consequently, the issue of subsidies tends to be used by politicians as a tool for enhancing their political positions, instead of their intended purpose, i.e., for the best interests of the Indonesian people. Some forms of legal principles become crucial, therefore, in order to implement the ideals of the 1945 Constitution: achieving a prosperous society and caring for the impoverished.

3.0 International Experience: Fuel pricing in other countries

3.1 Review of International Literature

A significant body of international literature exists on the subject of pricing mechanisms, particularly in understanding how different countries around the world have coped with structural appreciation in world oil prices over the last decade. This review presents key thinking from this literature on three issues:

- What kinds of pricing systems are used by different countries around the world? What is considered to be good practice?
- What pricing and non-pricing tools do different countries use to manage oil price volatility?
- What is known about how best to transition from one pricing system to another?

3.1.1 What Pricing Systems Are Used to Set Fuel Prices Internationally and What Is Considered Good Practice?

There is a broad diversity in how different countries around the world choose to set fuel prices. Based on a comprehensive review of petroleum product pricing and complementary policies in 65 developing countries, Kojima (2013b, p. 25) concludes that fuel pricing is highly country-specific and contingent upon a number of factors, including the energy system, politics and social welfare capacity: “Each [country’s pricing policy] has its own history and reflects the state of oil supply and consumption in the country, as well as the political economy of the downstream oil sector and the state of social service delivery by the government.”

There is no comprehensive inventory of the exact fuel pricing systems employed by different countries, in part because of the complexity of documenting systems that are often in a state of ongoing change, and in part because of varying levels of transparency. For this reason, literature seeking to understand pricing from a global perspective tends to track and compare price levels in different countries as a proxy for the type of pricing system that is being used, and to supplement this with case studies. This may focus on the comparison of average prices at a given point in time (GIZ, 2014), or on a metric of “pass-through” of world price fluctuations into domestic price fluctuations over a given period of time (Kojima, 2013b).

When comparing price levels between countries, analysts generally compare prices against a benchmark for market prices. The most commonly used benchmark is the price of gasoline and diesel in the United States. Embedded in this are a number of costs related to processing, distribution and marketing in the United States (a retail and industry margin) as well as taxes and levies (a sales tax and around 10 cents for a federal and state road fund). The U.S. benchmark is therefore sensitive to costs of processing, distribution and marketing, which may be lower or higher in other countries (distribution and marketing costs, for example, being on average higher in an archipelago country or a country that cannot harness the same economies of scale), as well as different countries’ approaches to the taxation of gasoline and diesel. This makes it a rough benchmark for identifying different approaches to pricing: small differences may reflect similar pricing systems and different country contexts, while large differences are generally a good indicator of a different approach to pricing.

Based on an index of price levels from 2012, GIZ (2014) identifies four broad groups of countries internationally (see Figure 7 and Figure 8):

- **High subsidizers:** Largely consists of oil-rich net fuel exporters, with Venezuela, Saudi Arabia and Libya with the lowest prices in the group. The net importers in this group tend to be countries that have transitioned from being net exporters to net importers, such as Indonesia and Malaysia. Indonesia is the only member of the BRIICS countries (Brazil, Russia, India, Indonesia, China, South Africa) in this group.

- Subsidizers:** For gasoline fuel, this group is relatively small and predominantly made up of oil-rich countries; for diesel, this group is larger, including a mixture of net exporting and net importing countries. This reflects the fact that in many countries diesel prices are perceived to play a more important role than gasoline in determining inflation and general welfare, due to its use in a wide variety of economic activities, including freight, shipping, agriculture, fisheries and captive power generation. In some cases, it may also reflect differential taxation of diesel fuel. At one period of time it was considered good practice to levy lower taxes on diesel than gasoline to reflect its higher efficiency, though this has recently come into question, given new evidence on the contribution of diesel-fuelled vehicles to local air pollution. There are no BRIICS countries in this group for gasoline, while in 2012 Russia and India were both categorized as subsidizers of diesel. Following a series of diesel price increases in 2014 (Clarke K. , 2014), India has likely moved out of this group as of 2015.
- Market prices & low taxes:** A diverse group of countries, mostly consisting of net energy importers. All of the BRIICS countries, with the exception of Indonesia, were in this group for gasoline in 2012; while for diesel, Brazil, China and South Africa were in this group in 2012.
- Market prices & high taxes:** Reflecting the historic practice of high fuel taxation in Europe, this group is defined as beginning with the lowest price in a European Union country—in November 2012, this was Luxemburg. This price benchmark includes industry and retail margins, as well as VAT, specific fuel taxes and other country-specific duties and taxes. By definition, the group includes all European countries. It also includes a number of sub-Saharan African countries and Turkey, which had the highest gasoline prices and second-highest diesel prices in the world in 2012.

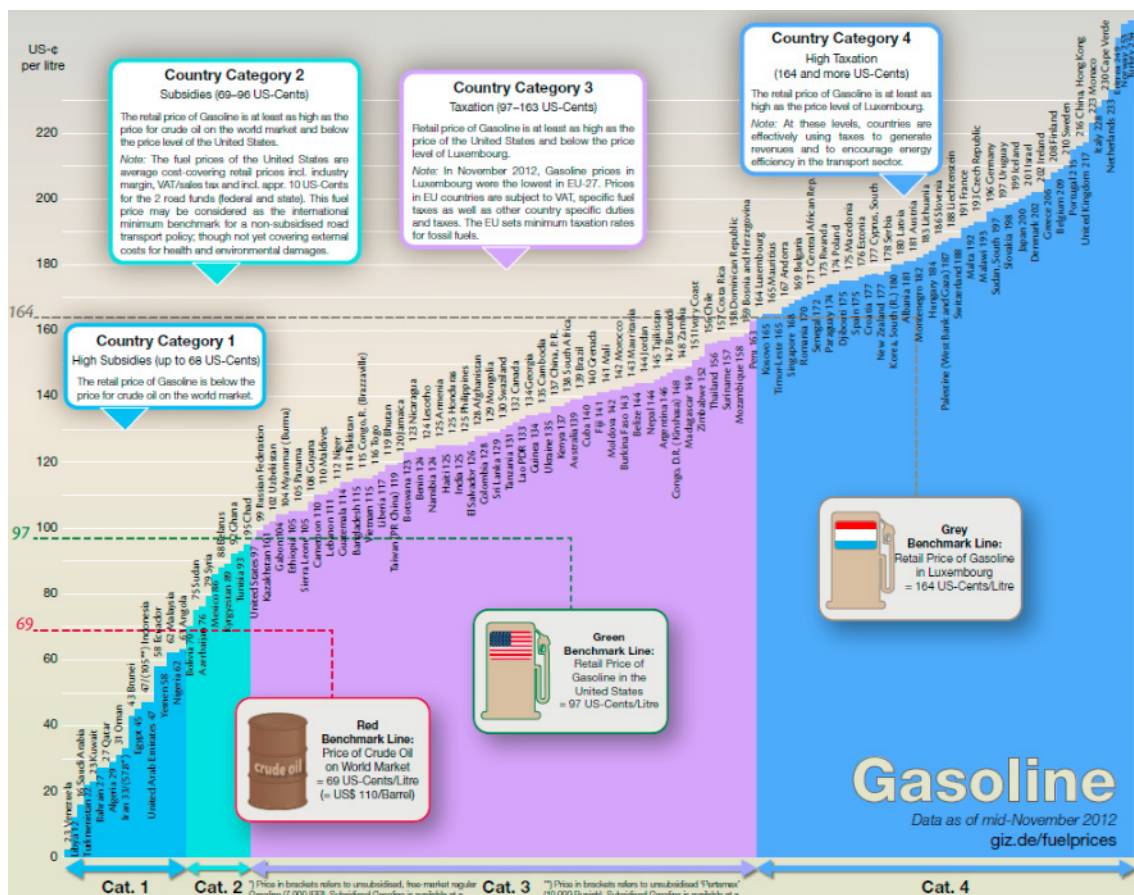


FIGURE 7. RETAIL PRICES OF GASOLINE IN 171 COUNTRIES AS OF NOVEMBER 2012

Source: GIZ

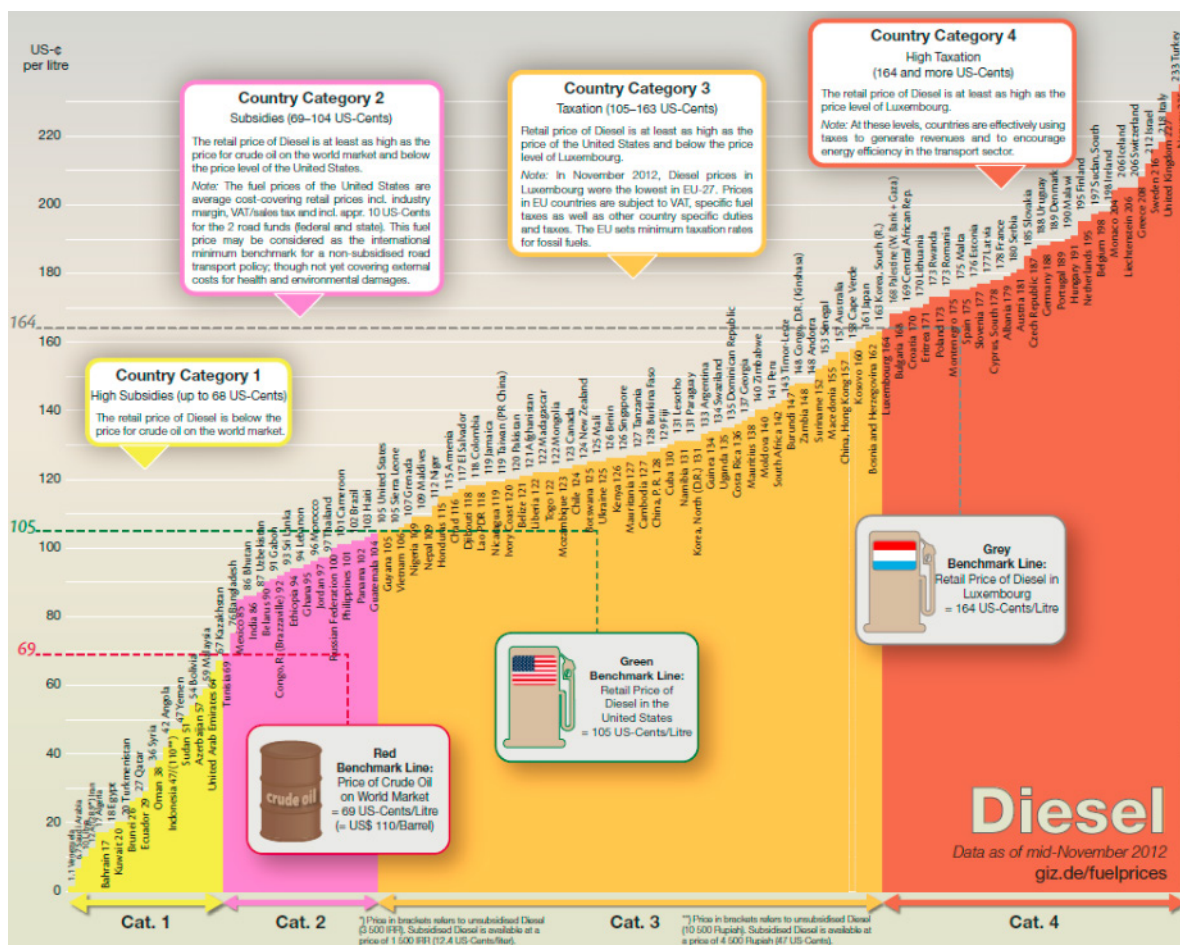


FIGURE 8. RETAIL PRICES OF DIESEL IN 171 COUNTRIES AS OF NOVEMBER 2012

Source: (GIZ, 2014).

Note: An early release of GIZ data from its November 2014 fuel price survey indicates much smaller differentials between countries than witnessed in 2012. This is because world oil prices fell dramatically in late 2014, resulting in lower fuel prices in non-subsidizing nations, with remaining differentials largely determined by efficiency and taxation. Once world oil prices rise again, larger gaps can be expected to return. Relative positions may change, reflecting the fact that some nations, such as Malaysia and Thailand, have also announced the removal of fuel subsidies.

Broadly speaking, international literature finds a rough trend between pricing policy, energy dependence and development status. Vagliasindi (2012) has hypothesized that the two main drivers of a shift toward market pricing are energy dependence and per capita income. This is due to the fiscal burden of subsidization for net fuel importers and the fact that the distributional impact of fuel subsidies (commonly heavily skewed toward the richest segments of society) is likely to create challenges in countries with higher income per capita. This is substantiated by Kojima (2013b), who finds average prices to be lowest among lower-middle income countries, followed by upper-middle income countries, low-income countries and finally high-income countries, and a significant difference in average prices between net importers and exporters (see Table 3).

TABLE 3. MEDIAN RETAIL PRICES IN JANUARY 2013 (US\$)

INCOME	GASOLINE, \$ PER LITER	DIESEL, \$ PER LITER
Low	1.34	1.22
Lower middle	1.12	1.02
Upper middle	1.21	1.08
High	1.97	1.52
Oil trade		
Net importers	1.28	1.22
Net exporters	0.87	0.93

High prices in high-income countries are partly a reflection of the trend in high-income OECD countries to abandon price controls. Deregulation and the promotion of competition has resulted in fuel that is priced at the marginal cost of supply, while the majority of non-high-income countries continue to intervene in fuel markets in some way, shifting costs elsewhere through subsidies. The use of high fuel taxation throughout the European Union as an instrument to raise revenue and drive fuel efficiency improvements serves to further widen average prices between high-income and non-high-income countries. Evidence from the period of structural appreciation of oil markets from 2003-2008 suggests that high prices in low-income countries could be attributed to the scarcity of resources to sustain expensive fuel subsidies, while lower-middle and upper-middle income countries may have resources but lack targeted non-pricing policy instruments for helping vulnerable households and businesses cope with higher oil prices (see Box 5). Low-income countries may also be likely to have smaller markets and poorer infrastructure, leaving them unable to take advantage of economies of scale and without efficient options for distribution and storage, also leading to higher prices. Political factors may also come into play, as there is generally high populist political demand for subsidies, which is likely to carry greater weight in countries with less capacity for evidence-based policy-making and lower levels of educational attainment.

BOX 5. STRATEGIES FOR COPING WITH HIGHER OIL PRICES IN DEVELOPING ASIA IN 2005

In 2005, the Asian Development Bank (2005) reviewed how developing Asia was coping with rising oil prices. It found two contrary responses. In some countries, higher prices had increased the cost of fuel subsidies, causing countries to increase prices in order to reduce or entirely remove subsidies, largely due to fiscal pressure. Such strategies were pursued in Thailand, which announced that all fuel subsidies would be removed by February 2006, and Malaysia, which increased gasoline and diesel prices three times. In other countries, such as Indonesia, Bangladesh and India, efforts to increase prices, if they took place, were insufficient to narrow the gap between domestic prices and rising international prices, leading to growing subsidy expenditure and decreasing foreign exchange reserves.

The benefit of hindsight also provides some measure of perspective on the extent to which countries' announced coping mechanisms matched their actual policy changes. Since 2005, both Thailand and Malaysia have provided fuel subsidies, with both Malaysia and Thailand announcing the end to their fuel subsidies in late 2014, coinciding with a significant decline in world oil prices.

Source: ADB (2005).

Based on research and a series of international dialogues with fuel price regulators, the Global Subsidies Initiative (Beaton, Gerasimchuk, Laan, Lang, Vis-Dunbar, & Wooders, 2013) has collaborated with GIZ to propose principles for good practice in motor fuel pricing (Beaton, et al., 2013; GIZ, 2012; Wagner, 2014) This results in a set of practices collected around the four pricing dimensions set out in Table 4 below: subsidies; pass-through; transparency; and enforcement.

Of particular importance are the third and fourth dimensions of pricing, transparency and enforcement. These are not well captured by international reviews of fuel prices in different countries, but they are fundamental to the functioning of any price system, whether it be regulated or deregulated, and there is a high degree of agreement over how they should operate in most countries. The role of transparency is to ensure that the general public can find out what rules exist and how they are being applied. This includes making available regulations, information on fuel markets (prices and break-down of prices by component) and information about whether energy companies are operating as legislated, including instances of illegal activity and resulting government action—in a way that is easy to access and to understand (Kojima, 2013b; Wagner, 2014). The role of enforcement is to monitor the behaviour of organizations in the energy supply system on an ongoing basis, to investigate specific instances of alleged criminality and to ensure that punitive measures for non-compliance exist and are applied to offending parties. For example, monitoring should include checks to ensure that fuel prices are actually set according to the rules of the pricing system and that fuel is being sold at the quality that has been regulated or advertised. It might also involve systems to respond to reports of non-compliance from consumers. Without strong institutions to ensure transparency and enforcement, it is likely that prices in a given country can deviate significantly from government regulations or competitive prices, resulting in high prices or poor fuel quality for consumers and the growth of poor governance.

TABLE 4. GOOD PRACTICE ACROSS GSI & GIZ DIMENSIONS OF FUEL PRICING

	DIMENSION	POSSIBLE FEATURES OF PRICING DIMENSION	GOOD PRACTICE
1.	Subsidies: The degree to which subsidies can reduce the end-price of fuel by shifting costs onto the government, state-owned energy companies, private energy companies and other actors.	<ul style="list-style-type: none"> • Below-market fuel pricing (fixed prices, price ceilings, funds to smooth prices across time or oil products, export restrictions) • Tax exemptions, rebates and credits • Energy-related handouts • No subsidies 	<ol style="list-style-type: none"> 1. Prices at a minimum cover production and distribution costs. 2. Fuel taxes exist to help cover transport infrastructure. 3. Fuel taxes exist to help pay for environmental costs of fuel. 4. Fuel taxes exist to help raise revenue.
2.	Pass-through: The degree to which domestic pricing fluctuations match international price changes—literally, the degree to which an international price change is “passed through” into prices domestically.	<ul style="list-style-type: none"> • Ad hoc prices (e.g., price changes announced by government decree) • “Active” price regulation (e.g., automatic pricing mechanisms) • “Passive” or no price regulation (e.g. market pricing) 	<ol style="list-style-type: none"> 1. Fuel prices are adjusted to reflect: <ol style="list-style-type: none"> a. market costs b. inflation; and, c. exchange rate fluctuations. 2. Fuel prices are adjusted to avoid subsidy burdens on government budgets.
3.	Transparency: The degree to which the composition and regulation of energy prices is open and transparent.	<ul style="list-style-type: none"> • Public announcements, websites, apps and use of other media to post: <ul style="list-style-type: none"> o Price formulae (incl. costs in production, import, processing, distribution, marketing, taxation and other charges) o Prices (at min. across different regions, at max. down to individual retailers) o Constituent components of prices o Timelines for price adjustments o Underlying legislation o Measures taken to ensure enforcement 	<ol style="list-style-type: none"> 1. It is known who is involved in setting prices. 2. It is known what principles are used to set prices. 3. Information on price composition is available. 4. Information on prices and price setting is made public in an easy-to-access, easy-to-understand and accountable way. 5. Information on monitoring and enforcement of price rules is publically available.
4.	Enforcement: The degree to which government ensures that fuel pricing in real life actually follows officially proclaimed energy pricing arrangements.	<ul style="list-style-type: none"> • Regulatory authority monitors and enforces rules • If prices are deregulated, emphasis on implementing competition policy and enforcing quality and quantity standards • If prices are regulated, emphasis on compliance with price regulations and prevention of illegal marketing • Complaints mechanisms • Punitive measures for non-compliance 	<ol style="list-style-type: none"> 1. Fuel pricing is fully enforced. 2. Mechanisms exist for reporting and investigating non-compliance. 3. Clear and consistent rules on dealing with non-compliance 4. Allegations of corrupt behaviour are publically investigated.

Source: adapted from Beaton, et al. (2013); GIZ (2012); Wagner (2014).

3.1.2 What Pricing and Non-Pricing Tools Can Be Used to Manage Oil Price Volatility?

In many countries, fuel pricing systems are designed as a principal tool to help manage oil price volatility. This has historically been the case in Indonesia, and the recent transition toward a system of monthly fuel price adjustments is likely to make fuel price volatility an ongoing concern in 2015, particularly as households and businesses have little experience with regularly changing prices. Looking to international experience, what tools can be used to manage oil price volatility when oil prices are increasing, particularly when it involves large structural appreciation?

International experience shows that pricing systems are just one tool to help manage oil price volatility. This is because volatility in itself is neither good nor bad. Rather, it is the impacts of oil price volatility that can be negative, specifically when prices are high, unanticipated and sustained. There is a chain of causation for how oil price volatility passes through into negative impacts and government policy can be used to intervene at any point in this chain of causation to avoid, minimize or manage impacts. Figure 9 illustrates this and identifies four broad categories of policy option for addressing volatility: controlling pass-through into domestic prices; improving efficiencies in fuel supply and marketing; reducing energy demand; and addressing impacts directly on an issue-specific basis. None of these strategies are exclusive and most countries pursue a mixture.

It should be noted that interventions can be further subdivided according to how they contribute to managing oil price volatility. One kind of policy is designed to alter the way that risk is shared, the other to reduce the net impacts of higher oil prices (Yépez-García & Dana, 2012). A domestic pricing system that sets fixed prices, for example, takes the burden of risk away from businesses and consumers, and places it upon government budgets, but it does not reduce the overall cost of higher energy prices for the economy. It simply alters who pays (government budgets instead of consumer budgets) and how (state debt or opportunity costs instead of consumer debt or opportunity costs). Similarly, a social assistance policy that compensates poor households during periods of high prices is not reducing the net costs of higher prices—it is reducing risk for one targeted subsection of society and placing it on the budget allocated to social assistance. Such policies can be used to protect vulnerable or strategically important groups, but they are generally ineffective at reducing the net impacts of high prices—indeed, when they dampen price signals, they can even be counter-productive and increase the net impacts on a country. The second kind of policy intervention is designed to reduce a country's vulnerability to higher prices by reducing costs. Costs can be reduced in two ways: lowering the overall cost of fuel in the country by ensuring that the price components related to processing, distribution and retail systems are as efficient as possible; and reducing the amount of fuel that consumers and businesses require for an average unit of economic activity or consumption, through energy efficiency, conservation or diversification. It can also include pricing systems when those systems are designed to pass through high prices to consumers: this sends a market signal that drives investments in efficiency, thereby reducing the fuel intensity of GDP.

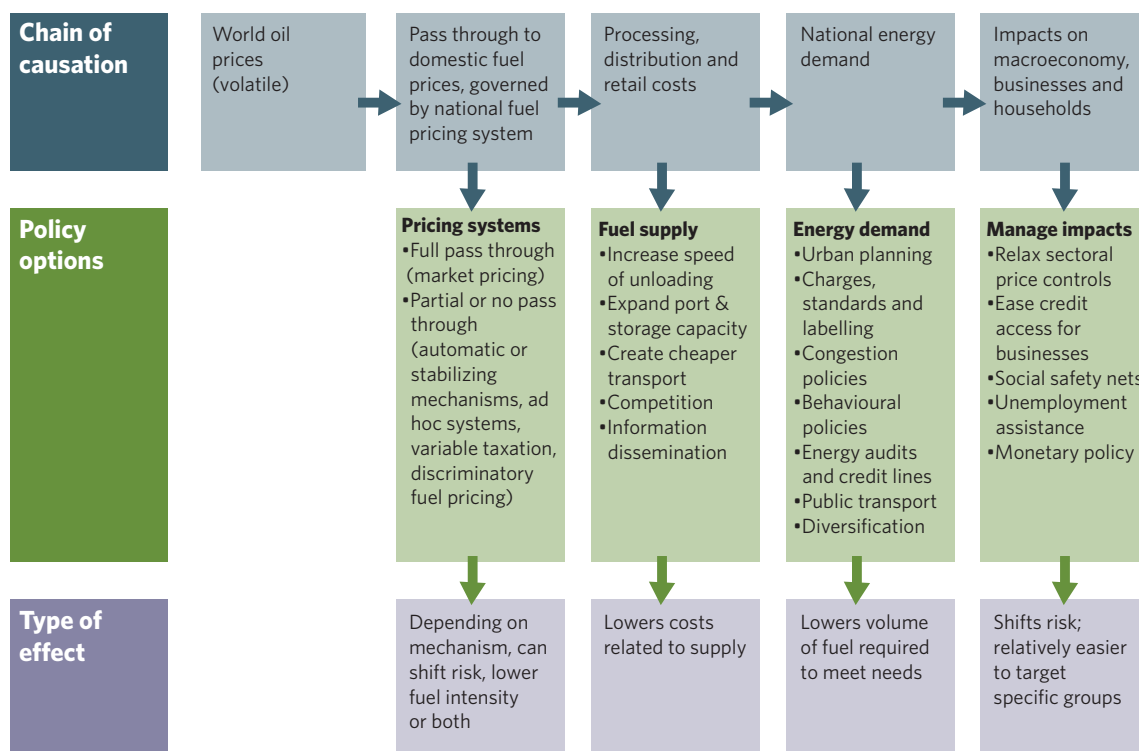


FIGURE 9. POLICY OPTIONS TO MANAGE THE IMPACTS OF OIL PRICE VOLATILITY

As emphasized by Yépez-García and Dana (2012), different policy options operate across different time frames. For example, an ad hoc pricing system can be introduced in the very short term, while energy diversification is a long-term strategy. The timeframes for different kinds of policy option are set out in Table 5, assuming the starting point of a highly fuel-dependent economy that sets prices using a fixed-price ad hoc system and that has few tools available to manage impacts.

TABLE 5. TIMEFRAMES FOR POLICY OPTIONS TO MANAGE FUEL PRICE VOLATILITY

	SHORT TERM (<1 YEAR)	MEDIUM TERM (1-4 YEARS)	LONG TERM (4+ YEARS)
Pricing systems	Ad hoc pricing, regular pre-determined changes, tax exemptions, discriminatory fuel pricing, rationing	Automatic pricing, stabilization mechanisms, partial deregulation (e.g. individual fuels)	Full deregulation, introduction of competitive markets
Fuel supply	Information dissemination	Improved infrastructure for unloading and storage	Improved infrastructure for ports, transport, and refining; introduction of competition
Energy demand	Charges, congestion policies,	Efficiency standards, labelling, promoting of efficient driving, some public transport infrastructure, energy audits, credit lines	Urban planning, comprehensive public transport infrastructure, energy diversification
Managing impacts	Existing capacity to assist businesses and households, relaxation of sectoral price controls, monetary policy, hedging instruments	Investments in improving capacity to assist businesses and households (targeting, delivery mechanisms)	Investments in improving capacity to assist businesses and households (targeting, delivery mechanisms)

Source: Author, with energy demand section adapted from (Yépez-García & Dana, 2012). Timelines are indicative only.

Pricing systems

Kojima (2013a, p.32) has conducted a detailed analysis of different kinds of pricing systems in developing countries and their advantages and disadvantages. A summary table from this work is presented below as Table 6 Kojima generally concludes that most countries' attempts to dampen energy price volatility with price control mechanisms have proved to be costly, and that "no smoothing scheme in the past decade has managed to achieve substantial smoothing without a corresponding fiscal burden or necessitating large loans."

TABLE 6. ADVANTAGES AND POTENTIAL PROBLEMS OF DIFFERENT FUEL PRICING MECHANISMS

	MECHANISM		ADVANTAGES	POTENTIAL PROBLEMS
Market pricing	Deregulation, with anti-trust regulations		Minimizes market distortions, no subsidies, price signals drive fuel efficiency, competition can drive down costs and prices.	Requires competitive downstream sector or may result in high consumer prices; oil price volatility is immediately transmitted.
Automatic adjustment	Adjustments based on some link to world prices & domestic costs	(1) Frequent adjustments, based on world prices averaged over 1-4 weeks	Tracks world prices well while providing some stability, limits scope for mounting subsidies.	World price volatility is quickly transmitted.
		(2) Frequent adjustments, based on world oil prices averaged over 1 month or longer	Prices are more stable.	World and domestic prices can move in opposite directions; potential large scope for mounting subsidies.
		(3) Adjustments made when world prices change by more than +/- X%	Stability within the price band.	If X is relatively large, potentially large adjustments could be made; possibility of losses exceeding savings within the band.
		(4) Price flotation within a band, changes smoothed outside	Large price changes avoided.	Can lead to large subsidies unless price bands are frequently adjusted.
	Steady pre-determined price increases at regular time intervals until cost-recovery levels are reached		Each increase is small and predictable and is not affected by sudden price spikes and collapses	Could lose political will or be unpopular if world prices are falling; if world price changes are larger than domestic price changes, subsidies could continue for years
Stabilization mechanisms	Fund saves revenue if domestic prices are higher than world levels; revenues are used to keep domestic prices low when world prices are high. Can be ongoing, or temporary with an initial transfer.		Prices are smoothed. In theory, self-financing. If temporary, can help deal with large price shocks while limiting the period of artificially low prices.	Seldom if ever self-financing because a period of under-recoveries can last a long time, creating serious cash flow problems. If temporary, be pressured to continue indefinitely, potentially resulting in losses.
	Tax adjustments		Prices are smoothed.	Less transparent than subsidies financed out of the budget.
Discriminatory fuel pricing	Cross-subsidize certain fuels		Can reduce price risk for sensitive fuels while targeting a net "zero subsidy."	Subsidies often exceed the "zero" target. Fuel price distortions can drive fuel switching and adulteration.
	Deregulate prices for higher grade fuels		Consumers of higher grade fuels are typically better able to bear price risk	Fuel price distortions can drive fuel switching and adulteration.
	Ration heavily subsidized fuels, charge higher prices outside the quota		Limit subsidies and protect vulnerable groups	Invites corruption and fuel diversion from entitled consumers
	Shift subsidy from one product to another		Subsidy for one product is eliminated	Could lead to a growing subsidy on the product to which the subsidy is shifted
Ad hoc	Ad hoc: No clear rules; prices may be frozen for months or years at a time for one or more fuels		Stable prices between changes	Adjustments tend to be large, delayed and unpredictable; can create costly subsidies; pricing highly politicized.
Other	Lower domestic price by imposing large export tariffs or export quantity restrictions such as export bans		No setting of domestic prices by government, depoliticizes price control for consumers.	Friction with oil companies; if it affects investments, may affect fuel supply over the long term.
	Set different pricing rules depending on world oil price		Limit subsidies to times of high world prices	Price bands may need to be adjusted if world prices remain high
	Set fixed subsidy budget and adjust prices, volume or both accordingly		Limit the total subsidy bill	Politically difficult to raise prices when money runs out

Source: Adapted from Kojima (2013b).

Most international literature argues that price systems that quickly pass through international costs to domestic markets are best for dealing with oil price volatility. The rationale for this is that high energy prices are required to encourage investments in energy efficiency, conservation and diversification that will render the economy less vulnerable to volatility in the long term, while the cost of attempting to control prices is often highly costly, drawing expenditure away from other government priorities. Encouraging downstream competition in fuel supply and retail is also often encouraged as a way to drive efficiency and improvements in the fuel supply system. In a highly state-controlled market, increasing private sector participation is recognized as a long-term undertaking that is likely to require legal, institutional and regulatory changes that encourage new market entrants, provide third-party access to infrastructure and to ensure strong regulatory authorities and monitoring and enforcing the rules on both price and quality (ADB, 2005; Kojima, 2013b). In markets that are too small to sustain price competition, price ceilings are suggested as a way to ensure that profits are not set too high, along with other tools, such as information dissemination, to encourage price competition (Kojima, 2013b).

In practice, many countries around the world attempt to delay the pass-through of price increases onto the national economy through some form of price stabilization measure, either through the structure of an automatic pricing mechanism, a price stabilization fund or varying the level of taxation. Price stabilization funds in particular tend to result in large and unsustainable subsidies (World Bank, 2006), as they are often structured to support fixed fuel prices, while well-functioning automatic pricing mechanisms and tax exemptions tend to allow a greater degree of pass-through. Kojima (2013a) analyzes several scenarios for automatic pricing mechanisms that set prices at the average over a set time period. This demonstrates an unsurprising trade-off between smoothing and the costs of smoothing as shorter time periods are used, but also concludes that the inclusion of futures prices in the averaging period “reduces cumulative losses markedly without sacrificing the benefit of volatility reduction.” This suggests that countries that have made the decision to set prices over an average period should consider the inclusion of futures prices within their chosen timeframe.

Fuel supply

Competition and good monitoring and enforcement of competition law are generally recommended as the key policy interventions to help improve the efficiency of the fuel supply system. Kojima (2013a) notes a number of other interventions, including: increasing fuel storage capacity; using cheaper forms of transport such as rail rather than road; allowing non-discriminatory third-party access to reduce duplication of infrastructure and allow small players to operate at an economy of scale; and, for countries importing refined fuel products, expanding port capacity so that large fuel carriers can dock and increasing unloading speeds to reduce demurrage charges.

Energy demand

Energy demand interventions are generally focused on reducing metrics such as the oil intensity of GDP, the proportion of oil in the energy supply or the share of oil among all imports (Kojima, 2013b; Yépez-García & Dana, 2012).

Energy efficiency and conservation are, again, generally considered to be best promoted by a combination of market pricing, competition and good monitoring and enforcement of competition law (ADB, 2005). Other policy interventions can however make a significant contribution. Dalkmann and Sakamoto (2011) promote a “avoid, shift and improve” approach to reducing oil intensity in the transport sector. This is defined as an approach that aims to “avoid” the number of transport journeys that must to be taken, “shift” consumers to use more fuel-efficient forms of transport and “improve” vehicle and fuel technology. This requires a transport sector strategy that addresses structural, behavioural and technological factors. Policies to promote transport avoidance are largely structural, consisting of urban planning that promotes dense, compact living arrangements and localized production and consumption. Telecommunications technology can also play a role. In the short term, the authors also recognize

the role of road charges, parking charges, congestion charges, vehicle taxes and fuel taxes in dissuading consumers from unnecessary journeys. Such tools are also referenced by much international literature (Kojima, 2013b; Yépez-García & Dana, 2012; ADB, 2005). Policies to promote shifts to less fuel-intensive transportation include the provision of frequent, reliable, affordable and comfortable public transport, as well as the promotion of walking and cycling, usually requiring large investments in infrastructure. Policies to improve vehicle and fuel technology also to be longer-term, due to the long time that regulations and standards take to improve the fuel economy and weight of a country's vehicle fleet, though such policies can be combined with regulatory and informational tools to improve consumer awareness of vehicle efficiency, increase the rate of vehicle occupancy, reduce congestion and encourage more efficient driving behaviours, which may hasten the rate of change. Longer-term strategies include the promotion of alternative technologies such as electric vehicles, CNG or biofuels, though Kojima (2013b) notes that the economic feasibility of such technological diversification is often dependent on national circumstances

Reducing energy demand outside the transport sector can be important for reducing demand for diesel fuel, which is used in agriculture, fisheries and any sector or business that is highly reliant on diesel-fuelled captive power generation. Here, energy demand may be tackled through the provision of energy audits and credit lines to help businesses identify and invest in fuel efficiency (Guillaume, Zyteck, & Farzin, 2011); and efforts to reduce captive power generation, through expansion of electricity infrastructure or encouraging the take-up of decentralised, small-scale renewable power generation (Winarno, Wiese, Tripradipta, & Afandi, 2013; Yépez-García & Dana, 2012).

Managing impacts

The impacts of oil price increases are well documented (Beaton et al., 2013; Yépez-García & Dana, 2012). For a net fuel importing country such as Indonesia, world oil market price increases—if passed through into domestic prices—will result in higher costs of doing business for fuel-intensive sectors, such as agriculture, fisheries, transport or any sectors reliant on diesel-fuelled captive power generation. This may result in a degree of unemployment and will also pass through into higher costs for fuel, transport services and fuel-intensive goods for households, increasing their costs of living. Uncertainty as to the level of future fuel prices also adds higher risk to investment decisions. At a macroeconomic level, this is reflected as a fall in productive activity and higher inflation. If price rises are ongoing, this can create “anticipatory inflation,” where employers become accustomed to a certain level of background inflation and respond by routinely providing wage adjustments, which in turn serves to further entrench an ongoing rate of background inflation. In addition, the higher cost of importing fuel will result in a weaker trade balance.

Rather than avoiding higher prices, governments may choose to let world prices pass through into domestic prices and then address impacts on an issue-specific basis. At the level of households and businesses, governments can employ any policy tool that they might otherwise use to support vulnerable households and businesses during times of economic difficulty. As summarized by Beaton et al. (2013), for businesses, this includes relaxing other price controls (for example, where government regulations fix the cost structures of companies in the food or transport sectors), providing short-term compensation to key sectors and providing access to favourable loans and credit facilities, particularly where this can help businesses with little financial reserves invest in efficiency improvements and spread out costs over a longer time period. For households, this includes increasing the budgets of existing social assistance programs, such as for health, education and public works, and providing cash or in-kind welfare transfers. The available policy options are likely to be constrained by existing government capacity, so investments in improving such assistance schemes are also valuable over the medium and longer-term. In particular, Kojima (2013b) emphasizes the importance of improving the system for identifying beneficiaries, the mechanism for delivering assistance in an efficient and timely manner and safety nets to assist unskilled workers if higher oil prices lower demand for labour, wages or both. Kojima also cautions against attempting to protect the vulnerable in every instance where prices increase, recommending instead a social protection system that is linked to rising prices in the entire basket of goods and services purchased by the poor.

At a macroeconomic level, the ADB (2005) notes that increased fiscal expenditure to protect the vulnerable can help to automatically compensate for reduced consumer demand, while pre-emptive tightening of monetary policy can help to reduce the impacts of fuel price increases on inflation. It also advises that allowing exchange rates to depreciate will help to move non-traded goods to the traded sector, improving the trade balance, although in the short-term this will worsen the impact of high fuel prices and could be constrained depending on a country's level of external debts. Where price controls are in place and governments are concerned about the budgetary impacts of higher prices, Yépez-García and Dana (2012) note the possibility of exploring price-risk management instruments, including “physical” instruments (strategic pricing, timing of physical purchases and sales, forward contracts, minimum/maximum price forward contracts, price-to-be-fixed contracts, and long-term contracts with fixed or floating prices) and “financial” instruments (exchange-traded futures and options, over-the-counter options and swaps, collars, commodity-linked bonds, trade finance arrangements, and other commodity derivatives). Experience with such policies, however, has been mixed and usually not positive. The authors note that if governments are considering the use of such price-risk management instruments, they should consider a careful risk assessment and evaluation of alternative hedging strategies.

3.1.3 What Is Known About How Best to Transition From One Pricing System to Another?

Generally speaking, there is little information in international literature on transitioning from one pricing system to another. Most of the planning that takes place to prepare for pricing system changes is not published. Similarly, governments are hesitant to conduct evaluations of transitions, as successes are unlikely to be reported, while failures could provide ammunition to political opponents.

One important principle is that policy-makers should not expect or measure success by the arrival at some end point where it is clear that the “right” pricing system has been established and there is no longer discussion or debate about the role of fuel prices in the economy. Rather, international experience suggests that “pricing reform often does not have a clear end and should instead be viewed as a continuous process of adjustment and search for mechanisms that take into account the country's institutions and political system, and the oil sector's market structure, infrastructure and history” (Kojima, 2013b). In other words, “transition” is likely to be an ongoing state for most countries, and this should be factored into the way that pricing policy is managed and communicated.

This shift toward the establishment of a deregulated and competitive market is generally recognized as a major undertaking, with potential challenges including legislative changes to open up markets, encourage competition and set up or strengthen regulatory institutions, as well as potentially restructuring state-owned energy companies (World Bank, 2006). Depending on the country context, such changes may have a significant implications for traditional positioning of national identity, particularly in a context of oil producing countries that have provided low-cost oil through high-profile state-owned companies as part of a social contract. These combined technocratic and political challenges are likely to take beyond the medium term to resolve. Where countries have announced deregulation over relatively short-time scales—such as India's announced deregulation of gasoline in 2010 and diesel in 2014—this is only made possible by many years of prior preparation. Where competition is low, governments can set price ceilings based on a price formula that includes profit margins. The extent of downward deviation from the price ceiling can then be used to measure the success of interventions in promoting competition in the market (Kojima, 2013b).

The monitoring and enforcement of new rules is likely to play an important role in any transition, as consumers and consumer associations will pay close attention to the actual impacts of price changes, and widespread deviation from government policy is likely to brand the price changes as badly managed and damaging for consumers. In particular, the problem of “rockets and feathers” may cause consternation, whereby fuel price increases are found to result in higher general prices immediately upon announcement, while fuel price decreases may take much longer to result in an equivalent downward shift (Bacon & Kojima, 2006). International literature suggests that this phenomenon is witnessed in many countries when commodity price fluctuations take place, but that the exact

mechanisms that cause it to take place are not well understood. On theory posits that rather than price collusion, the cause is consumer behaviour, as consumers are likely to look for alternative vendors when prices go up, but when prices go down they are less likely to go to other vendors to compare if price reductions elsewhere are comparable or lower (Tappata, 2009). Governments should be prepared to launch investigations into such issues and to develop informational tools to help consumers identify which businesses have acted fasted to pass through downward “sticky” prices, thereby promoting competition.

Finally, the role of communications in energy price reforms in general is considered to be critical to the success of energy price reforms. Based on a broad review of case studies on energy subsidy reform, the Global Subsidies Initiative recommends that governments should develop systems of internal organization to ensure clear and consistent messages from different parts of government as well as researching and consulting with key stakeholders and developing communications targeted at key audience segments through specific media (Beaton et al., 2013). Such measures can be important in building confidence in government and ensuring that the technocratic and political design of reforms is fully taken into public concerns and what is politically viable.

3.2 Country Case Studies

3.2.1 China

Background

China is the world’s second-biggest oil consumer. The country’s energy sector, including the way it is regulated, has historically played a key role in its development. China’s energy regulation can be divided into three main periods; the planned economy model (1950s to 1980s), the Economic Transition Period (1980s to 1990s) and the New Era for Legislation on Energy Regulation (2000 and onwards) (Qiu & Li, 2012). This last period has seen major reforms to the downstream oil sector, particularly in 2009 and 2013. In 2009, a fixed pricing mechanism was introduced. In 2013, this mechanism was adjusted in order to better reflect fluctuations in international oil prices (Zhang, 2014). These reforms have among other things supported the ability and efforts of the government of China to raise domestic fuel prices over the last few years.

In relative terms, from 1991 to 2012, China has transitioned from a pricing system that set prices at or around levels in the United States to a pricing system that sets prices roughly midway between the United States and the lowest-pricing European Union country (see Figure 10). In most years over the same period, diesel prices were set below gasoline prices. China’s fuel sector is primarily dominated by National Oil Companies (NOC), although international oil companies have in recent years been allowed to work with the NOC’s, mainly on upstream projects.

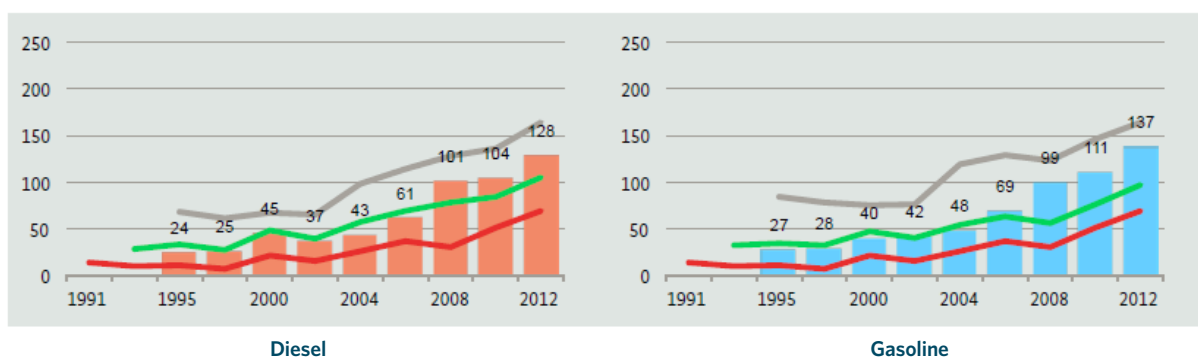


FIGURE 10. AVERAGE GASOLINE AND DIESEL PRICES IN CHINA, 1991-2012

Source: GIZ (2014). The figure compares China’s petrol and diesel prices to crude oil prices (the red line), retail pump prices in the United States (the green line) and the lowest prices for fuel in the European Union, Luxembourg (the grey line).

Current Fuel Pricing System

China's overall regulatory body for energy sector planning and policy development is the National Development and Reform Commission (NDRC). However, other governmental entities are also involved and oversee various parts of China's oil sector policies. Most notable in this regard is the National Administration Energy (NEA). The NEA works with the NDRC and it is, among other duties, tasked with determining domestic pump prices (EIA, 2014a).

The current fuel pricing system is based on the pricing mechanism introduced in 2013. This mechanism adjusts pump prices according to a 10-day moving average on the condition that price fluctuations are greater than CNY50 per ton (approximately US\$1 per barrel) during the period (Energy Tribune, 2013). The aim for introducing the new mechanism was to increase the pass-through of international price variations to domestic pump prices. The 2013 reforms also introduced changes to the composition of the crude oil basket, but the government has not elaborated on the exact nature of this (Bloomberg, 2013). Under the previous formula, the basket included Brent, Dubai and Cinda crudes (Beaton et al., 2013).

China's domestic fuel prices also include a fuel tax. The tax is somewhat regularly adjusted, often as a response to developments in international oil prices. For example, in January 2015, the fuel tax was increased slightly to CNY1.52 (US\$0.42) per liter. This was the third increase since November 2014 (Out-Law, 2015). Retail margins for the NOCs are also included in the price structure (Kojima, 2012).

Information about pump prices in China is publicly available. It is, however, very hard to track further information about the actual values of the various price components in the price structure.

Policies Used to Cope With Volatility Prices

China has a long history of subsidizing and smoothing domestic fuel prices in order to cope with oil price volatility. Prior to the 2009 reform, the government of China implemented an ad hoc approach to subsidizing fuel prices. This effectively led to consumer prices being significantly lower than international prices, causing large deficits for China's NOCs (Beaton et al., 2013).

Despite the introduction of the new price mechanism in 2009, the government continued significant intervention to smooth pass-through of increases in international prices. The pricing mechanism introduced in 2009 was based on a 22-day period within which world prices were required to increase or decrease by more than 4 per cent compared to the previous period in order to trigger a fuel price adjustment. In principle, the system was designed so that prices would fluctuate fairly freely when average prices were below US\$80 a barrel. From US\$80 to US\$130, it set out provisions for refinery profit margins to be reduced to smooth domestic pump prices. For averages above US\$130, the government would make use of tax breaks in order to reduce domestic price increases (Kojima, 2012; Beaton et al., 2013). In practice, however, the government retained the prerogative to not apply the formula and remained reluctant to actually allow adjustments to be passed through to the consumer price.

Between 2009 and the introduction of the new mechanism in 2013, fuel prices in China were adjusted no more than 25 times, with 15 of these being upward adjustments and 10 being downward (Zhang, 2014). In 2011, two of China's most dominant refiners, Sinopec and PetroChina (affiliated with China National Petroleum Corporation), reported deficits equaling CNY96 billion (US\$15 billion) (Kojima, 2009).

With the introduction of the new price mechanism in 2013, the government aimed to improve the pass-through of international prices and to better reflect actual refinery costs in consumer prices. As an aside, it should be noted that the pricing mechanism was introduced shortly after the three biggest NOCs had made announcements of decreasing profits due to the inconsistency between international and domestic prices (Energy Tribune, 2013). The new price mechanism altered significantly the way in which international prices were passed through to

domestic pump prices. The 22-day adjustment principle was replaced by a 10-day adjustment period and the 4 per cent threshold was removed and instead prices were to be adjusted whenever fluctuations were greater than 50 CNY per ton (approximately 1US\$ per barrel) (EIA, 2014a).

Under the new price mechanism China has been able and willing to better reflect international prices in its fuel price structure and it has led to increasing domestic pump prices. In the first year after its introduction, China adjusted its pump prices no less than 17 times. Eight of these were price increases (Zhang, 2014). The government, however, still retains the prerogative to not apply the formula in order to pursue other political objectives, including concerns around inflation or social welfare targets.

China has also used other measures than smoothing fuel price increases in order to cope with oil price volatility. For example, in 2012 China provided a monthly subsidy of CNY300 (US\$48) to taxi drivers across the country as a way of mitigating the effects of increasing fuel price (EnergyPedia China, 2014). Subsidy schemes were also introduced for fishermen and state-owned forestry companies by offering cash transfers when fuel prices reached a certain threshold (Kojima, 2013b). In 2012, the government also imposed temporary restrictions on diesel exports in order to increase supply and lower domestic consumer prices (Kojima, 2013b).

Despite progress in recent years in terms of better reflecting international oil price fluctuations, it should also be noted that China—prior to transitioning to its new fuel pricing structure in 2013—experienced significant issues with hoarding. Due the 22-day price adjustment period, it was relatively easy to anticipate changes to the fuel prices and thus adjust behaviour accordingly. The prevention of hoarding was mentioned as one of the reasons behind replacing the formula in 2013 (Kojima, 2009).

Lessons Learned

- China's fuel pricing mechanism is based on a combination of prices on a moving average and a minimum threshold for triggering adjustments. This provides a balanced approach to the number of price changes needed while at the same time reflecting the need to pass through international prices.
- The government has retained the power to authorize whether the fuel pricing mechanism is applied in any given month. This power has been exercised frequently, resulting in significant subsidies.
- China has recently transitioned from a system based on a 22-day moving average to a system based on a 10-day moving average. This increases the frequency with which volatility can be passed through to the domestic market and reduces incentives for hoarding.
- China has increased the fuel tax rate three times since November 2014, a period during which world oil prices have been decreasing. This has served to reduce the extent to which fuel price decreases have been passed through to the domestic market.
- China's system is not highly transparent. This makes it difficult to understand and report on the exact composition of fuel prices.
- On some occasions, China has provided targeted payments to taxi drivers, fishermen and forestry companies as a way to help them cope with high prices.

3.2.2 Mexico

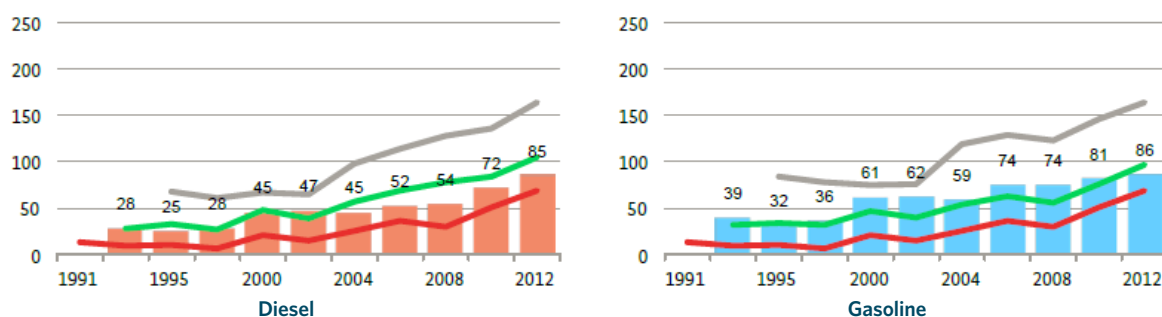
Background

For decades, Mexico has counted among the world's top 10 oil producers. Nonetheless, Mexico still imports a large amount of refined oil products, particularly from the United States, in order to meet its domestic fuel demand. Since 1958, Mexico's state-owned company Petroleos Mexicanos (PEMEX) has been the sole operator with regards to both upstream and downstream activities, including wholesale, refinery and distribution (Vagliasindi, 2013). Mexico's pricing system has set gasoline and diesel products at below-market prices for decades. In relative terms, diesel prices have been significantly below average prices in the United States over much of the past decade, while gasoline prices have tended to slightly exceed average U.S. prices, though with some significant downward deviations depending on the year (see Figure 11).

In recent years, declining oil production and reliance on refined product imports have caused controlled pricing to result in an increasingly large fiscal burden on the state budget (Plante & Jordan, 2013). In 2010, the government decided to regularly increase pump prices by 1 per cent per month in order to reduce the differentiation between international and domestic prices (Ministry of Finance, Mexico, 2014). A number of other reforms to the energy sector then took place in 2013. This was arguably the most comprehensive reform of the energy sector, compared to previous efforts in 1995, 2003 and 2008. The 2013 reform package paved the way for a more open oil market in Mexico, especially, but not exclusively with regards to the downstream sector in which private actors are now allowed to be providing services (Lajous, 2014). Nonetheless, the government continues to exert significant control over fuel prices and the overall development of Mexico's downstream oil market (Pemex 2014; 2015).

FIGURE 11. AVERAGE GASOLINE AND DIESEL PRICES IN MEXICO, 1991–2012

Source: GIZ (2014). The figure compares Mexico's petrol and diesel prices to crude oil prices (the red line), retail pump prices in the United States (the green line) and the lowest prices for fuel in the European Union, Luxembourg (the grey line).



Current Fuel Price System

Mexico's fuel pricing system is overseen by the Ministry of Energy which is responsible for the overall strategic direction of the oil sector. Fuel prices are set on a monthly basis by the Ministry of Finance and the Energy Regulatory Commission (Vagliasindi, 2013) whose chairman is nominated by the Energy Minister and approved by the President of Mexico (Comisión Reguladora de Energía [Energy Regulatory Commission, or CRE], 2015).

The current fuel price structure consists of an international reference price; costs for quality adjustment, logistics and storage; an excise tax, state tax, carbon tax and VAT; and finally distribution and retail costs (see Figure 12). Fuel prices are published on the Ministry of Energy's website (Ministry of Energy, Mexico, 2015). Recently updated information about the relative size of each component of the price structure or when and how they are updated is not easy accessible (Energypedia Mexico, 2015).

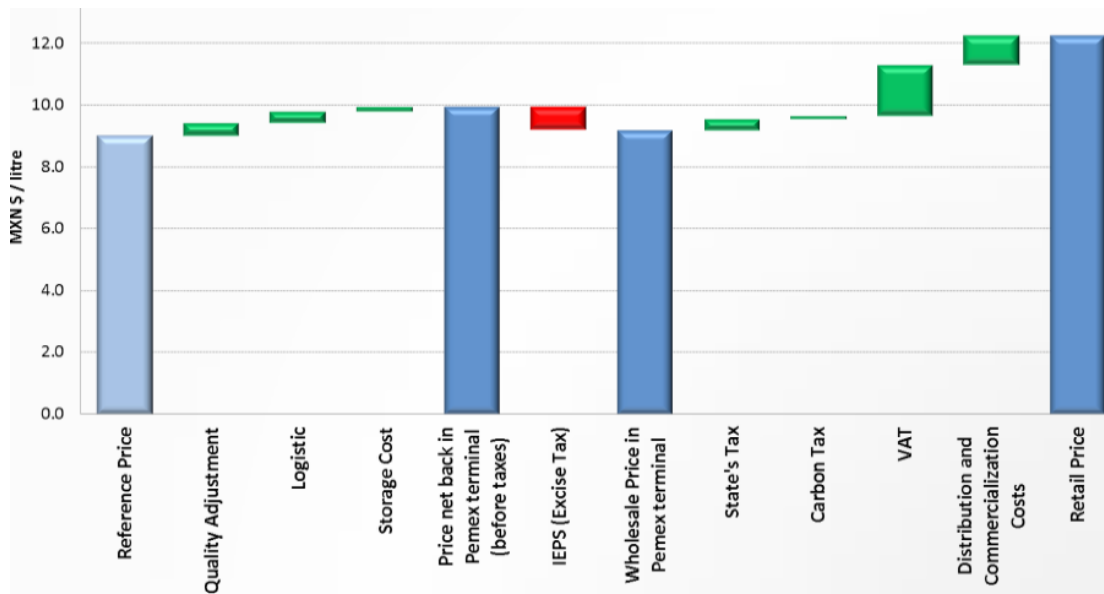


FIGURE 12. OVERVIEW OF PRICE STRUCTURE FOR GASOLINE AND DIESEL PRODUCTS IN MEXICO

Source: Ministry of Energy, Mexico (2015).

Policies Used to Cope With Volatility Prices

One of the most important components of the fuel price structure is the Excise Tax on Products and Services (IEPS). It plays an integral part in the fuel price structure, not least because the government uses this component to either smooth pump prices or collect tax revenue. When international oil prices are lower than fixed domestic prices, the IEPS is applied as a normal tax and it contributes to central government revenue; and when international prices are soaring, the IEPS is applied as a negative tax, in order to keep domestic prices low (Plante & Jordan, 2013; OECD, 2015). Figure 13 shows the pesos per liter that the IEPS has raised or foregone between 1995 and 2011.

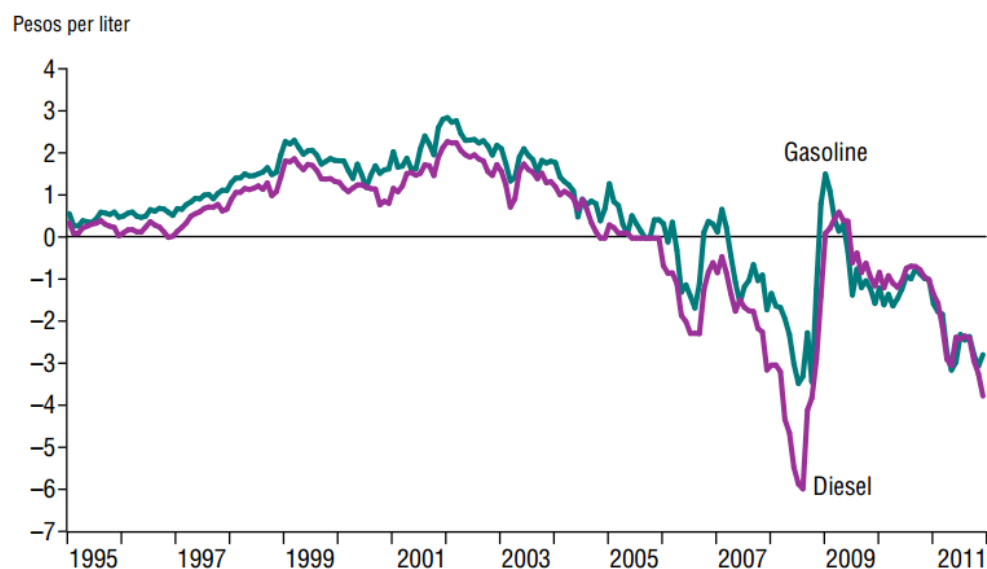


FIGURE 13. MEXICO'S EXCISE TAX ON GASOLINE AND DIESEL

Source: Plante & Jordan (2013).

Besides smoothing domestic fuel prices via the IEPS, Mexico has also introduced social welfare systems to assist vulnerable households in coping with higher energy prices. These include *Oportunidades* and *Oportunidades Energeticas*. *Oportunidades* was introduced in 1997 as a social welfare program targeting poor households by providing conditional cash transfers linked to access to health or education. *Oportunidades Energeticas* is a supplement, not a replacement to the former and is providing targeted cash transfers to vulnerable households to support them in covering energy-related expenses. In 2010 more than 5 million people were enrolled in *Oportunidades* (Vagliasindi, 2013).

Experiences With Transition

In recent years, Mexico has made some substantive changes to its domestic fuel market. First of all, as a means to reduce subsidies to gasoline and diesel, the government implemented regular monthly price increases. By the end of 2013, this policy had almost brought Mexico's pump prices on par with international prices (Plante & Jordan, 2013). Plummeting oil prices during 2014 have likely closed the gap.

The most notable reforms to its energy pricing were implemented in 2013 by President Pena Nieto. This was part of a complex larger legislative process intended to help Mexico transition to a more efficient, transparent and open domestic oil market and break up the dominance of PEMEX, including changes to the Mexican constitution (Negroponte, 2013). Because national oil production is closely linked to concerns about national sovereignty, energy sector reform in Mexico is highly politically sensitive. Serving as an example of the sensitivity involved, the government decided on political grounds to postpone the planned presentation of the reform package until only the day before it was originally scheduled to be made public (The Economist, 2013).

For decades, resources in the Mexican subsoil enjoyed constitutional protection, prohibiting private companies from engaging in extraction, production and distribution. The government thus had to make changes to the constitution as well as to approve nine new laws and amend 12 existing ones in order to implement the energy reform. The constitutional changes were enacted in December 2013 and secondary legislation followed in August 2014. While the reform itself still keeps the Mexican government in control of the oil sector, it does, nonetheless, allow for increased participation from private actors, both within the upstream and downstream sector. On the downstream side, the reform allows the government to provide for-profit contracts to private entities for activities such as refining, transportation and marketing (Negroponte, 2013). A number of changes in the upstream sector were also introduced, allowing PEMEX to retain a large share of its production rights over currently known proven and probable reserves, but also increasing the extent to which PEMEX will have to compete with private companies for exploration contracts going forward (PEMEX, 2014; Negroponte, 2013; Mayer Brown, 2014).

The reform also makes substantive changes to the organization of PEMEX, requiring it to transition to a "State Productive Enterprise" within a two-year period, implement a more corporate structure and focus more on its own financial performance (PEMEX, 2014). This means that the company will still be state-owned, but have greater budgetary and administrative autonomy in order to prepare itself for a more competitive Mexican oil business (EIA, 2014b).

Finally, a key part of the reform package was the creation of the Mexican Petroleum Fund for Stabilization and Development. Its role and organization will be similar to that of Norway's oil fund and it will be based within the Mexican Central Bank. The fund will be responsible for handling revenue from upstream activities and will be a vehicle to secure long-term savings (and subsequent investments) from oil and gas production. However, until the fund's revenues reach 4.7 per cent of GDP, revenues will be included in the federal budget to support public finances and the Mexican economy in general. After this threshold, revenues will added to the Fund's long-term savings.

Lessons Learned

- Recent reforms to the pricing system in Mexico have been implemented as part of comprehensive energy sector reforms. This has allowed private entities to participate in both downstream and upstream activities on a for-profit basis. At the same time it has taken steps to support the national oil company PEMEX in the transition to a more open and competitive oil sector in Mexico.
- The key tool it has used to maintain low prices is a tax that has at times been applied as a “negative” tax to lower prices beyond the level that would be achieved by an exemption. This has led to significant subsidy expenditure.
- In the past few years, Mexico has successfully implemented a system of gradual fuel price increases on a monthly basis to bring domestic prices on par with international prices.
- Transparency on the principles underlying prices and price composition is good, but up-to-date information on current prices is not easily available.
- Mexico has developed a number of non-pricing tools to help cope with volatility, including supplementary parts of its social safety net and a dedicated fund for stabilization and development.

3.2.3 India

Background

India has a long tradition of controlling the price of gasoline and diesel fuel. Although it attempted to deregulate its downstream market in 2002 by abolishing a system known as the “Administrative Pricing Mechanism,” the government continued to set prices via an ad hoc system in the first decade of the 21st century, leading to a significant amount of subsidy expenditure, paid for through a combination of direct cash transfers, bonds and uncompensated under-recoveries by state-owned oil marketing companies (GSI, 2012).

Since 2010, however, India has embarked on a process of price system reform, moving away from ad hoc prices and toward deregulated markets. In 2010, the government announced the removal of price controls on gasoline and declared that it would do the same for diesel at an unspecified future time. Decontrolling the price of diesel was seen as particularly sensitive because of its use by the military, public transportation systems and the agricultural sector (Clarke, 2010). Diesel prices were formally deregulated in October 2014 (GSI, 2014). This was achieved through an early 2013 decision to make small adjustments to diesel prices on a monthly basis, in combination with falling international oil prices and a strengthened Indian Rupee (GSI, 2014).

In relative terms, India has—despite price controls—tended to price gasoline midway between prices in the United States and the lowest-pricing European Union country, and diesel at or slightly below the U.S. benchmark (see Figure 14).

The domestic fuel market in India is dominated by three state-owned companies: Indian Oil Corporation, Hindustan Petroleum Corporation and Bharat Petroleum Corporation (Ministry of Petroleum and Natural Gas, India, 2015). Following the deregulation of the downstream market in 2002, private players started to enter the market. As time passed and price controls returned, however, it was hard for private actors to compete because the government only compensated its state companies for selling fuels at below-market prices. This has resulted in the three state-owned companies still retaining a substantial share of the market (Joshi, 2015).

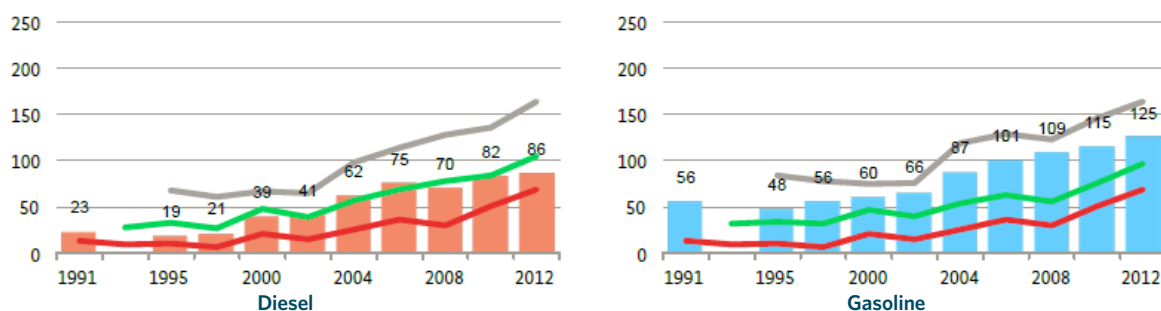


FIGURE 14 AVERAGE GASOLINE AND DIESEL PRICES IN INDIA, 1991-2012

Source: GIZ (2014). The figure compares India's petrol and diesel prices to crude oil prices (the red line), retail pump prices in the United States (the green line) and the lowest prices for fuel in the European Union, Luxembourg (the grey line).

Current Fuel Pricing System

The oil sector in India is regulated by the Ministry of Petroleum and Natural Gas (MPNG). In 2006, the Petroleum and Natural Gas Regulatory Board was established as a sub-organizational branch to support downstream management, regulation and the registration of new market entities (Petroleum and Natural Gas Regulatory Board, 2015).

The MPNG posts petroleum and diesel price details on its website. This includes specific information on crude oil prices, dealer commission, excises and tariffs as well as actual retail prices from all over the country. Table 7 is an example of such reporting from the MPNG website, showing the per-unit under-recoveries for different fuels as of February 2015, including the now zero under-recovery on diesel. The MPNG also posts information about prices in neighbouring countries and information about under/over recoveries for Oil Marketing Companies.

TABLE 7. PRODUCT WISE UNDER-RECOVERY OF PUBLIC SECTOR OIL MARKETING COMPANIES

PRODUCT	UNIT	UNDER / (OVER) RECOVERY (EFFECTIVE 1ST FEB 2015)
Diesel	IDR per liter	-
PDS Kerosene	IDR per liter	13.32
Domestic LPG (subsidized)	IDR per cylinder	139.23

Source: Ministry of Petroleum and Natural Gas (2015b).

While the MPNG posts detailed information about end-prices, it is left to the three state-owned oil companies to inform the government about the different component parts that make up the price of petroleum and diesel. This information is provided on an irregular basis and, at the time of writing, two of the three big oil marketing companies (OMCs) did not have updated information on the makeup of petroleum and diesel prices. An example of what is reported is summarized in Table 8.

TABLE 8. COMPONENTS ON PETROL PRICE IN DELHI, EFFECTIVE JANUARY 2, 2015

NO.	ELEMENTS	UNIT	
1	C&F (cost & freight) price of gasoline (petrol) BS III equivalent	\$/barrel	67.09
2	Average exchange rate	IDR/\$	63.26
3	Refinery Transfer Price (RPT) on landed cost basis for BS IV Petrol (price paid by the oil marketing companies to refineries)	IDR/liter	27.26
4	Price charged to dealers (excluding excise duty and VAT)	IDR/liter	33.68
5	Add: specific excise duty @ IDR 15.40/liter (IDR 14.95/liter+ 3% Education Cess)	IDR/liter	15.40
6	Add: Dealer Commission	IDR/liter	2.03
7	Add: VAT (including VAT on Dealer Commission) applicable for Delhi @ 20%	IDR/liter	10.22
8	Retail Selling Price at Delhi (rounded)	IDR/liter	61.33

Source: Indian Oil Company (2015).

Policies Used to Cope With Price Volatility

India has a long history of smoothing fuel prices in order to keep consumer prices low, and from 1976 to 2002 fuel prices were regulated via the Administrative Pricing Mechanism (APM) (Vagliasindi, 2013). After disbanding the APM in 2002, the government allowed OMCs to set prices based on an import parity pricing formula (IEA, 2009). Subsequently, OMCs adjusted pump prices frequently during the first few years. However, the new system came under substantial pressure as international oil prices started to increase throughout 2004 (ESMAP, World Bank, 2006).

As a result, the government started to look for ways to limit the ability of OMCs to pass on price increases to consumers (IEA, 2009). The government introduced a formula that allowed prices to fluctuate only within 10 per cent of the mean of rolling average import parity prices of the previous 12 months and previous three months (ESMAP, World Bank, 2006). In cases where price adjustments would exceed the price band, OMC's would have to notify the government, which would then consider lowering excises or taxes in order to smooth price increases. By mid-2004, consistently increasing international oil prices forced the government to effectively abandon this pricing mechanism (IEA, 2009).

Subsequently, the government took over price setting, and until 2009 pump prices for petroleum and diesel were adjusted no more than a dozen times (IEA, 2009). India has used several fiscal measures to pay for under-recoveries occurred by the OMCs. Part of this has been directly covered via budgetary transfers to OMCs. However, a substantial part has also been covered by the government issuing oil bonds to the OMC's as well as by requiring the upstream sector to share the burden (International Monetary Fund, 2013).

The oil bonds have been a particularly popular off-budget tool for the government to balance fuel pricing without increasing the fiscal deficit. The government has issued several types of oil bonds with only some of them being allowed to be sold immediately on the market (IEA, 2009). Others have a maturing period of five to seven years before they are allowed to be sold. Initially, the hopes were high for the oil bonds to solve some of the fiscal issues around subsidizing fuel. However, experience later showed that the impact had been somewhat limited and that they still carried significant fiscal consequences for the government (IEA, 2009).

In January and February 2015, India hiked up its excise tax on both gasoline and diesel in response to the rapid decline in world oil prices. This has caused domestic prices to increase rather than decrease. The government has not commented on its rationale, but it has been speculated that the government has taken the measures to help strengthen its position in climate change negotiations (Deccan Herald, 2015). It may also be a strategy to minimize the extent to which prices will have to increase once world oil prices rise again.

Experiences With Transition

India's transition toward a deregulated market that allows free price setting by market forces, has long been underway (ESMAP, World Bank, 2006). In the period from 2005 and onwards, several committees were convened by the government to provide recommendations on how to solve the fuel pricing issue. Many of the committees' recommendations, however, were merely taken note of but not implemented. Actual reform of India's fuel sector did not happen until 2010 when the downstream gasoline market was liberalized (Clarke, 2010).

Up until the reform in 2010, the issue of fuel pricing had been intensively debated since the national elections in May 2009. Although the government, led by Prime Minister Singh, had been hesitant to undertake large-scale reform before the elections, his re-election provided a window of opportunity to implement downstream gasoline sector reform. As part of the preparations for reform, the government formed yet another expert committee to look into and advise on fuel pricing. One of the key recommendations of the committee was an immediate and full liberalization of the downstream diesel and petroleum market (Clarke, 2010).

In 2014, India made yet another important transitioning step in its fuel pricing policies, as the government decided to decontrol diesel prices. The run-up to the reform started already in 2013, when the government at the time decided to raise the pump prices for diesel on a monthly basis to reduce under-recoveries. This led to a substantial reduction of the under-recovery on downstream diesel in 2013 and 2014 (GSI, 2014) and the policy was continued even after the change of government in May 2014, when Narendra Modi took over office. This led to diminishing under-recoveries and was combined with falling international oil prices and improved exchange rates. In October 2014, Modi announced his decision to formally give up control of diesel prices.

Lessons Learned

- India has fully deregulated the downstream markets for both gasoline and diesel fuel. These reforms were separated in time, with the deregulation of gasoline taking place first in a single policy change, while diesel prices were increased regularly on a monthly basis for over a year and a half before deregulation was announced. The policy of diesel price increases was continued even after a change of government in 2014.
- Previous attempts to remove government controls over India's fuel pricing faltered for political reasons.
- In recent months, India has responded to the rapid decline in world oil prices by hiking up its excise taxes on both gasoline and diesel, resulting in price increases.
- The state of transparency about fuel prices in India is relatively good, with the Ministry of Petroleum and Natural Gas providing specific information about different fuel price components from different parts of the country.

3.2.4 The Philippines

Background

The Philippines deregulated its downstream fuel market during 1996–1998 in the wake of the Asian financial crisis. As of today, the fuel market remains liberalized, and changes in international oil prices are being passed on to domestic fuel prices in a competitive marketplace (International Monetary Fund, 2013).

Prior to liberalizing its fuel market, the Philippines had regulated its fuel market since the oil crisis in the 1970s. However, with the transition to democracy in 1986, consecutive governments started to push for fossil-fuel subsidy reform in a broader effort to open the Philippine economy to market forces (Bernardo & Tang, 2008). The Downstream Oil Industry Deregulation Act from 1998, which effectively liberalized the market, aimed to promote investment and competition while at the same time prohibiting government interference with fuel pricing (Beaton et al., 2013). After

a transitional period with an automatic pricing mechanism, domestic prices have fluctuated with international prices since this time. In relative terms, the Philippines has priced diesel at rates similar to the United States since 2006, and since the same time prices of gasoline have been a little under midway between U.S. prices and the lowest European Union country price (see Figure 15).

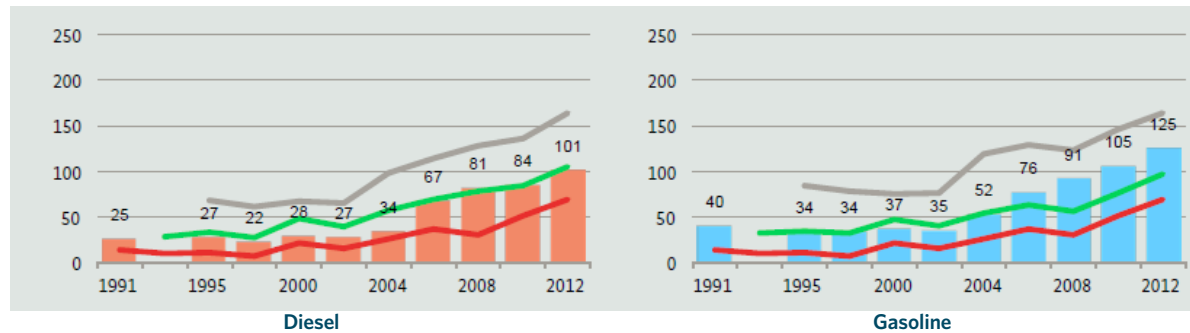


FIGURE 15. AVERAGE GASOLINE AND DIESEL PRICES IN THE PHILIPPINES, 1991-2012

Source: GIZ (2014). The figure compares the Philippines petrol and diesel prices to crude oil prices (the red line), retail pump prices in the United States (the green line) and the lowest prices for fuel in the European Union, Luxembourg (the grey line).

Current Fuel Pricing System

As of today, fuel prices in the Philippines fluctuate according to international oil prices. Market actors compete not only on the actual pump price, but also on elements such as the strategic location of retail stations, as well as facilities and services provided by retailers. Some even note that the introduction of competition—among other things—has resulted in cleaner and better restrooms at retailers across the country (Bernardo & Tang, 2008).

With regards to pricing, oil companies and retailers normally adjust their pump prices every week on either Monday or Tuesday according to changes in international prices and exchange rates. Oil companies notify the Department of Energy (DOE) prior to adjustments and also announce publicly the price changes via the media (Manila Standard Today, 2015). Often, price adjustments are initiated by one of the larger oil companies, prompting other players in the market to follow (Mendoza, in press).

The DOE monitors the pump prices at gasoline stations around the country and publishes these on its website weekly. For comparison (and political reasons), the DOE also calculates what would have been the pump prices under the previous pricing mechanism implemented prior to 1996 by the dissolved Energy Regulatory Board⁶ (Mendoza, in press). During times of consistently rising fuel prices, the DOE engages actively with the public via media and TV to elaborate and explain the reasons behind continued fuel price increases (Mendoza, in press). Among other things, these efforts by the DOE feed into an ongoing discussion in the Philippines as to whether or not fuel prices should be subsidized. Moreover, the Philippines imposes a VAT rate of 12 per cent on its diesel and petroleum products. For petroleum products an excise tax per liter is also added. Import duties are effectively set at zero (Mendoza, in press).

Policies Used to Cope With Volatility Prices

In 1984, the Philippines created the Oil Price Stabilization Fund (OPSF) to mitigate oil price volatility. As with other stabilization funds, the idea was to have oil sales contribute revenue to a fund when world oil prices were lower than fixed domestic prices, and vice versa, to use funds to keep domestic prices low when international oil prices were on the rise (Department of Energy, Philippines, 2012). However, as international oil prices increased during the 1990s, domestic prices did not increase accordingly—mainly due to political reasons—which led to a direct government subsidy amounting to PHP15 billion by 1996 (Beaton et al., 2013). The large OPSF deficits, and the lack of political

⁶ The Energy Regulatory Board was created in 1987 to—among other things—set prices for petroleum products.

will to pass through international prices, contributed significantly to the Philippines' poor fiscal situation in the early 1990s, which had it characterized as the "sick man of Asia" (Bernardo & Tang, 2008).

Since deregulation in 1998, consecutive Philippine governments have not reintroduced subsidies. Instead, a range of non-pricing efforts have been used to mitigate the impact of high world oil prices. On several occasions, the government has called on domestic oil companies to assist public transportation in the Philippines by discounting diesel prices. Likewise, the Philippine government negotiated an agreement with oil companies in 2003, allowing public transportation companies to buy diesel at a discounted rate (Bacon & Kojima, 2006). In May 2011, the government launched a temporary Public Transportation Assistance Programme (PTAP) to support Jeepney and Tricycle drivers during a period of high fuel prices. The government issued electronic debit cards to legitimate beneficiaries which contained a lump-sum that drivers could use for purchasing diesel within a six-month period (Mendoza, in press).

Although not directly linked to increases in fuel prices, it should also be noted that the Philippines has expanded its social welfare programs. Notably, the *Pantawid Pamilyang Pilipino* Program (4P), introduced in 2007, has been central in enhancing the ability of the government to target vulnerable households in poorer parts of the country (Fernandez & Olfindo, 2011). While the 4P normally adheres to specific eligibility criteria, the government expanded the program temporarily in 2008 in order to alleviate the impact of increasing fuel and food prices in the wake of the financial crisis (Fernandez & Olfindo, 2011). In June 2012, 4P included more than three million registered households in the Philippines (Mendoza, in press).

Experiences With Transition

When the Philippines deregulated its fuel market in the mid-1990s, it happened during a time of general economic liberalization with many reform efforts taking place (International Monetary Fund, 2013). Still, the issue of deregulating the fuel market was highly politicized and played into a long history of civil concern and unrest related to changing fuel prices (Bernardo & Tang, 2008). Thus, as early as 1993, several years prior to the deregulation, the government at the time, led by President Ramos, started its efforts to promote liberalization of the fuel industry. These efforts included a widespread communications campaign and a national roadshow to inform people about the potential benefits of a liberalized fuel market (Bernardo & Tang, 2008).

On the policy side, the President also engaged intensively with opposition parties in the years prior to reform in order to create a broad legislative alliance. During his first tenure, Presidents Ramos formed the Legislative Executive Advisory Council (LEDAC). This brought together parliamentarians from both houses of congress in an effort to enhance coordination and corporation around political initiatives. The LEDAC consisted of 40 members and met every week during congressional sessions. The LEDAC was closely involved in the legislation process that led to liberalizing the Philippine fuel market (Bernardo & Tang, 2008).

Actual liberalization happened gradually from 1996 to 1998. Initially, the Transition to Oil Price Deregulation Act was passed in April 1996. This included a transition phase during which monthly price increases were subject to a price cap for six months before prices were allowed to move freely. However, a petition by members of congress who did not support the bill led the Supreme Court in 1997 to declare parts of the act to be unconstitutional (Department of Energy, Philippines, 2012). The government was, however, quick to respond and asked Congress to sign a revised bill, taking into account the rulings of the Supreme Court. Finally, in February 1998, the new Downstream Oil Industry Deregulation was passed.

Political debate about market pricing did not end with the introduction of market pricing. Some transport and consumer groups have continued to argue over the past decade for the re-establishment of the OPSF and government control of fuel prices. Likewise, others argue for a re-nationalization of the oil industry as a whole (Bacon & Kojima,

2006). In recent years, a number of disputes have arisen over claims that domestic prices were higher than they should have been as a result of collusion between oil companies. Since 2005, the Philippine government—as a response to such debates—has commissioned three independent studies (2005, 2008 and 2012) to analyze the downstream fuel industry, including issues around profit margins and pricing (Department of Energy, Philippines, 2012). It should be noted, though, that critics have argued the reviews are merely a tool for the government to dampen voices of discontent during times of increasing fuel prices (Mendoza, in press).

By and large, the reviews to date have concluded that market pricing is the best way to meet the Philippines' policy objectives, and have helped to articulate a consistent, evidence-based set of messages to deal with key public concerns. In 2005, for example, one focus area for the review was to investigate whether rising oil prices had been caused by deregulation, rather than structural appreciation in world oil markets, a phenomenon the review was able to explain in detail (Mendoza, in press). The most recent review, in 2012, concluded—among other things—that profit margins for oil companies were in fact lower than they had been during periods of government regulation.

The 2012 review also served to identify areas where existing regulatory controls could be improved. In 2012, oil companies estimated that up to one third of total diesel consumption was smuggled into the country, resulting in huge revenue losses for the government (Rappler.com, 2012). Smuggling often occurs via under-declarations of the actual value of oil shipments or simply via outright smuggling without reporting imports to customs. The review recommended therefore that monitoring and enforcement mechanisms should be strengthened, as well as the use of additional mechanisms to promote competitive behaviour and allow new players access to the market (Mendoza, in press; Department of Energy, Philippines, 2012).

Lessons Learned

- The deregulation of the downstream market for gasoline and diesel has not ended debates about fuel pricing in the Philippines. Over the past decade, a number of high-profile independent reviews have been conducted to respond to public demands related to fuel pricing and the costs and benefits of deregulation.
- The growth of the Philippine social safety net has reduced the significance of oil price controls. In addition, the Philippines has successfully implemented a number of non-pricing measures to mitigate impacts during periods of increasing fuel prices, including targeted compensation measures to the transport sector.
- The state of transparency in the Philippines is high, with the Department of Energy not only publishing information on its websites but actively engaging with media to explain fuel price changes. Transparency has been further strengthened by the successive independent reviews, which have created a public space for recognizing complaints, exploring and publishing findings on the evidence basis behind complaints, and recommending improvements to price regulations and enforcement.

3.2.5 South Africa

Background

Since the 1950s, South Africa has maintained a relatively stable automatic pricing mechanism. In relative terms, it has set fuel prices at or above levels in the United States for most years in the past two decades (see Figure 16). While the long-term objective of the automatic pricing mechanism is a non-regulated market, the mechanism is expected to be held in place for years to come (International Monetary Fund, 2013). The current fuel pricing mechanism includes retail and wholesale margins, allowing companies to operate in a pre-defined competitive environment (International Monetary Fund, 2013). South Africa's domestic fuel market is characterized as an oligopoly and is dominated by seven big companies.

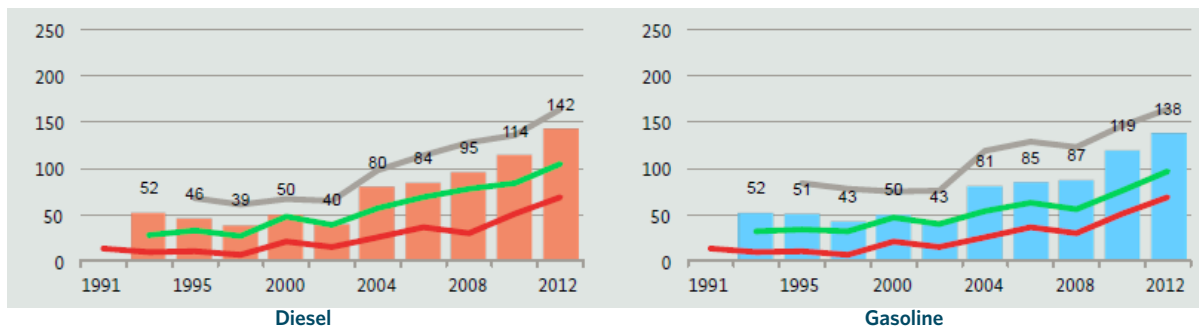


FIGURE 16. AVERAGE GASOLINE AND DIESEL PRICES IN SOUTH AFRICA, 1991–2012

Source: GIZ (2014). The figure compares South Africa’s petrol and diesel prices to crude oil prices (the red line), retail pump prices in the United States (the green line) and the lowest prices for fuel in the European Union, Luxembourg (the grey line).

The Current Fuel Pricing Mechanism

The current fuel pricing mechanism in South Africa was introduced in 2003 and is structured around the Basic Fuel Price (BFP) (Department of Energy, South Africa, 2015). The only vehicle fuel regulated by the BFP mechanism is gasoline; diesel is sold in a fully liberalized market (Shell, 2015).

The BFP is based on an import parity pricing principle, equaling the costs for a South African importer to buy petrol from an international refinery and bring it to South Africa (South African Petroleum Industry Association, 2015). The BFP uses international spot prices as quoted by independent price reporting agencies (South Africa Petroleum Industry Association, 2012). Prior to introducing the BFP, South Africa based its fuel price on the In Bond Landed Cost principle, using refinery posted prices. However, due to inconsistencies between posted prices and actual prices, the government—in agreement with industry parties—decided to change this element of the fuel price structure and start using spot prices (Department of Energy, South Africa, 2010; South Africa Petroleum Industry Association [SAPIA], 2015). Mediterranean and Singaporean spot prices are used to determine the international oil price component in the BFP (Department of Energy, South Africa, 2015). Also included in the BFP are free on board values, freight costs, insurances, levies and other fees, ensuring that the principle of import parity pricing is maintained.

Building on the BFP, the petrol pump price is then calculated by adding a range of domestic components. Figure 17 illustrates the various domestic components of the petrol pump price on January 7, 2015.

Particularly noteworthy components include:

- **“Road accident fund” levy:** The petrol pump price includes a special levy, revenues from which are used to compensate third party victims of motor vehicle accidents.
- **Salaries for fuel pump attendants:** In the “retail margin”, an allowance is set aside for the salary for fuel pump attendants at service stations. This is intended to contribute toward boosting employment and alleviating poverty (Department of Energy, South Africa, 2014).
- **Regional variations:** The formula allows for differentiation between prices in various parts of the country through its “zone differential.” This reflects differences in distribution costs, narrowing the gap between prices in urban and more rural parts of the country.
- **Competition:** Margins for retailers and wholesalers are included in the price structure to allow for some degree of competition between the market players.

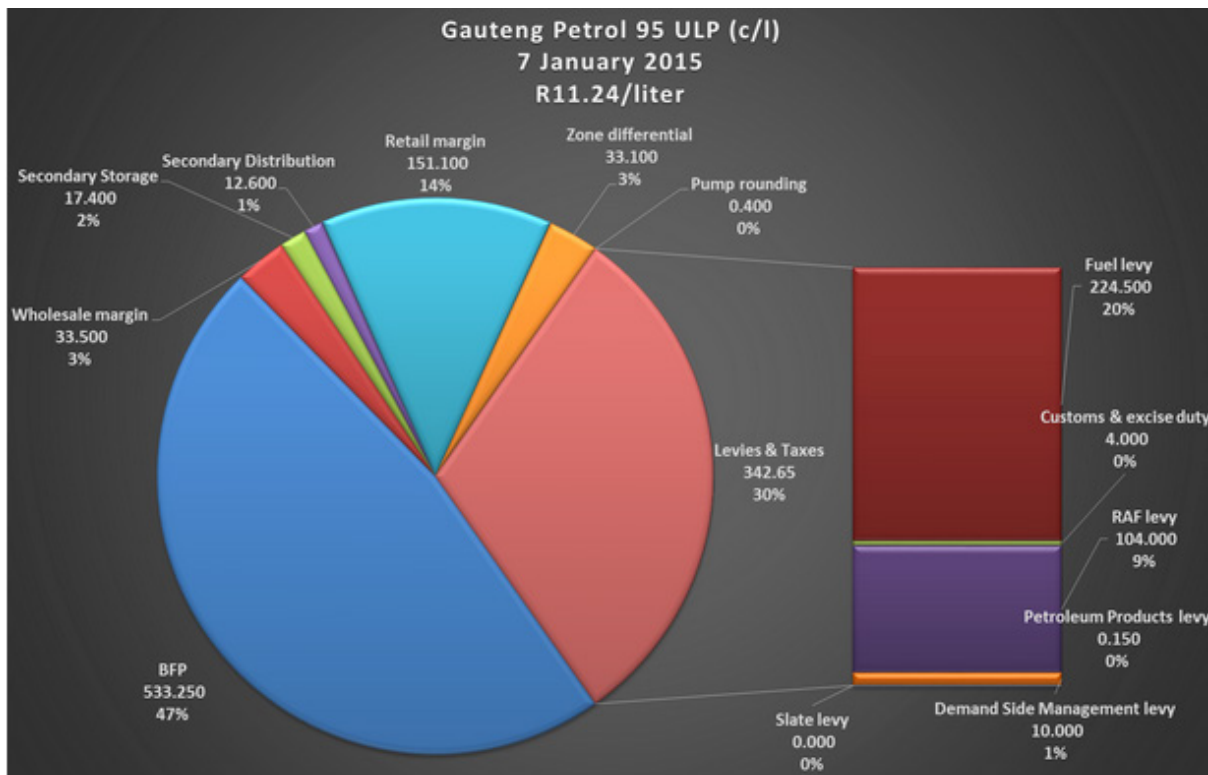


FIGURE 17. COMPONENTS OF PETROL PUMP PRICES IN SOUTH AFRICA, JANUARY 7, 2015

Source: (Road Accident Fund, South Africa, 2015)

Supporting Institutions—The Central Energy Fund

While the government has the overall responsibility for updating the pricing mechanism, it is the Central Energy Fund (CEF) that manages the pricing formula and is tasked with determining prices on behalf of the Ministry of Energy.

The CEF was set up as a state-owned entity in 1977 and reports to the Minister of Energy (International Monetary Fund, 2013). Concretely, the Central Energy Fund updates the formula on a daily basis with relevant information about fluctuations in international oil prices, over/under-recoveries, exchange rates, etc. (Central Energy Fund, South Africa, 2015). At the end of each month the Central Energy Fund presents the formula findings (i.e., the new fuel prices) to the Department of Energy, which verifies the calculations via independent auditors.

The government publicly announces any changes to the fuel price to the public, and pump prices are adjusted accordingly every first Wednesday of the month. Changes to the fuel price are determined in such a manner that over- or under-recoveries incurred during the previous period are cleared in the following period (SAPIA, 2012).

Policies Used to Cope With Volatile Prices

South Africa has maintained relatively high fuel prices over the last two decades. Since introducing the BFP in 2003 it has not found itself in position where it had to subsidize fuel prices. Previously, however, several attempts to smooth prices have been attempted. Most notably, in 1977, South Africa created the Equalization Fund in an attempt to develop a mechanism that would allow for price smoothing during times of high oil prices. Eventually, however, the fund ran out of money after a prolonged period of high oil prices and the government decided not to continue to finance the deficits. The Equalization Fund is still present in the fuel price formula, but levies have effectively been set to zero since 2003 (International Monetary Fund, 2013).

Another, and more effective, way that South Africa is coping with price volatility is by enforcing a consistent and fully transparent pricing regime. Each component of the price structure is publicly available and published on the website of the Department of Energy. Prices are reported on a daily basis in the media and newspapers, just as it is a recurring exercise for the Department of Energy (and the Minister) to engage with TV, media and journalists to inform about and elaborate on the various components of the formula.

Experiences With Transition

Even though South Africa has a decade-long history of regulating its fuel prices, it has—inter alia due to changes in the political situation—undergone several reforms of its fuel pricing system.

During the apartheid regime, most of the regulatory system was made up of non-public and informal arrangements between the government and major oil companies. International sanctions and embargos put pressure on international companies working in the South Africa, and the government paid premiums as well as other incentives in order to develop its domestic fuel market (Swart, 2010). Following the new political situation with the end of the apartheid rule in 1994, South Africa introduced a range of regulatory and legislative changes to enforce a more open and transparent fuel pricing system.

Another very significant reform of South Africa's fuel pricing system is the changeover from the in-bond landed cost principle to the BFP in 2003. In 2003, the in-bond landed cost had formed the backbone of South Africa's fuel prices since the 1950s. The transition to the BFP was negotiated in an open and public manner among the government and important industry players such as the African Minerals and Energy Forum and the South African Petroleum Industry Association (Swart, 2010). To support the negotiations, the government commissioned independent research and launched a series of consultations with relevant stakeholders to discuss and explore how to best design the new pricing mechanism. The process involved stakeholder participation from across the value chain including wholesalers, retailers, logistical companies, etc.

The open and engaging process contributed to strong buy-in and ownership toward the new pricing mechanism. This is for example illustrated by the South Africa Petroleum Industry Association which states—on its website—that the BFP was negotiated in a “positive spirit” (SAPIA, 2015).

Lessons Learned

- South Africa sets fuel prices using an automatic pricing mechanism. While the government is still responsible for updating the mechanism, the day-to-day application of the formula is depoliticized by delegating its management to an independent body, the CEF.
- The fuel pricing mechanism includes a provision for retail workers' wages. This is intended to help contribute to social welfare and decent employment.
- Wide and intensive engagement of stakeholders helps to create ownership and buy-in toward the pricing mechanism.
- A high degree of transparency has been consciously pursued as a strategy to help reduce the impact of volatile oil prices.

3.2.6 Thailand

Background

In 1991, the Thai government lifted regulations on petroleum products and allowed free price setting by market players. The aim of the deregulation was to increase competition in the domestic fuel market, improve the price setting of refinery and import products and to improve the tax and retail price structure for domestic petroleum products (IISD, 2013). However, in 2003, price controls were brought back to prevent domestic gasoline and diesel subsidies from fully reflecting the structural appreciation that had begun to take place in world oil markets. Gasoline subsidies were subsequently phased out again in October 2004 and diesel subsidies in August 2005, but subsidies on diesel have been reintroduced periodically since 2008 both as a response to increasing international prices, but also as a political tool prior to the national election in 2011 (EnergyPedia, 2015). In relative terms, Thailand's pricing system has resulted in diesel prices over the past 20 years that have been periodically on par with prices in the United States and periodically significantly lower than this benchmark, depending on the status of subsidy policies. Its gasoline pricing generally matched U.S. prices fairly closely until 2010, after which it has chosen to price gasoline at rates comparable with a European Union benchmark price (see Figure 18).

A key feature of Thailand's energy sector is its Oil Stabilization Fund, which the government utilizes to smooth diesel prices and cross-subsidize fuels for other purposes (Beaton et al., 2013).

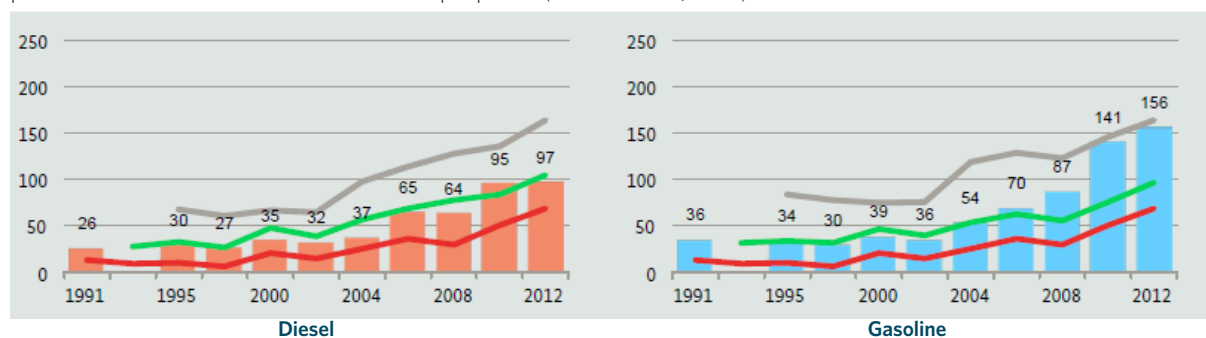


FIGURE 18. AVERAGE GASOLINE AND DIESEL PRICES IN THAILAND, 1991-2012

Source: GIZ (2014). The figure compares Thailand's petrol and diesel prices to crude oil prices (the red line), retail pump prices in the United States (the green line) and the lowest prices for fuel in the European Union, Luxembourg (the grey line).

Current Fuel Pricing System

While the energy sector in Thailand is administered by the Ministry of Energy, it is the National Energy Policy Council (NEPC) that is responsible for developing the overarching strategic policy goals (Ministry of Energy, Thailand, 2001). The NEPC is composed by Ministers from all related branches of government and includes Ministers of defense, finance, foreign affairs, agriculture, transport, industry, science etc. (FAO, 2015). The council is chaired by the Prime Minister.

The Ministry of Energy publishes daily updates on fuel prices on its website including details on the various components of the fuel price structure (Kojima, 2009; Ministry of Energy, Thailand, 2015).

The ex-refinery price is the amount that downstream companies are paying refineries to purchase diesel and petroleum products. The ex-refinery price—along with the marketing margin—are the only components of the pricing structure that are solely determined by downstream oil companies (Thiraphong, 2013). The price structure also includes a levy for the Energy Conservation Fund, which is the key financial vehicle in Thailand to support projects relating to energy efficiency and renewable energy (FAO, 2015). The fund has accumulated approximately US\$50 million annually and is disbursing funds through grants, loans, subsidies, tax-incentives and other means (Jue, Johnson, & Vanamali, 2012).

Moreover, the Ministry of Energy publishes monthly updates of the revenue of the oil fund including monthly inflow or outflow (Ministry of Energy, Statistics, 2015).

Policies Used To Cope With Price Volatility

In 1973, Thailand established the Oil Stabilization Fund (OSF) with the objective to avoid oil shortages and to stabilize fuel prices. The Fund works by applying a levy to domestic petroleum products when international oil prices are below average in order to build a monetary buffer. When international prices go up, the OSF spends its reserves to smooth consumer prices (Thiraphong, 2013).

The oil fund is managed by the Committee on Energy Policy Administration (CEPA). CEPA is responsible for managing the oil fund and for evaluation and proposing the amount of oil fund levies. CEPA is chaired by the Minister of Energy (Beaton et al. , 2013) and reports to the National Energy Policy Council (Ministry of Energy, Thailand, 1992). As indicated in Table 9, below, the oil fund manages prices for a wide range of fuel products.

TABLE 9. ANNUAL AVERAGE OIL FUND TAX LEVELS LEVIED ON PETROLEUM PRODUCT (THB PER LITER)

	GASOLINE		GASOLINE-ETHANOL BLENDS				KEROSENE	DIESEL		FUEL OIL	LPG COOKING (THB/KG)
	ULG95	ULG91	ULG95			ULG91		HSD	LSD		
			E10	E20	E85						
1996	0.11	0.11					0.03		0.12	0.03	-0.64
1997	0.08	0.08					0.06		0.04	0.03	-1.89
1998	0.16	0.16					0.10		0.13	0.06	0.40
1999	0.09	0.09					0.10		0.08	0.06	-2.94
2000	0.34	0.22					0.10		0.11	0.06	-7.31
2001	0.50	0.30					0.10		0.50	0.06	-5.55
2002	0.50	0.30	0.27			0.27	0.10		0.50	0.06	-2.45
2003	0.49	0.30	0.27			0.27	0.10		0.50	0.06	-3.05
2004	-0.34	-0.59	0.24			0.27	0.10		-2.27	0.06	-2.55
2005	1.28	1.03	0.13			0.16	0.10	-0.92	-1.02	0.06	-2.54
2006	2.70	2.50	0.84			0.84	0.10	1.47	1.47	0.06	-1.93
2007	3.67	3.37	0.85			0.62	0.10	1.39	1.39	0.06	-1.02
2008	3.78	3.31	0.77	-0.21		0.28	0.10	0.40	0.31	0.06	0.30
2009	6.94	5.31	1.78	-0.80	-7.88	1.17	0.10	0.78	1.20	0.06	0.22
2010	7.50	6.65	2.74	-0.41	-10.93	1.43	0.10	0.66	1.20	0.06	0.61
2011	4.90	4.38	1.87	-1.80	-13.50	-0.40	0.10	-0.60	1.20	0.06	1.14*
2012	5.23	4.73	2.03	-1.30	-12.40	-0.16	0.10	0.69	1.20	0.06	0.89*

Source: Energy Policy and Planning Office (2013b).

In theory, an oil price stabilization fund ought to incur losses when prices are high and to make a surplus when they are low, being structured in such a way that the losses and surpluses balance out exactly over the medium term. In practice, most such funds end up incurring more losses than surpluses and must eventually be bailed out using government funds. In Thailand, the OSF functioned relatively well during the 1980s and 1990s and managed to a large extent to balance domestic fuel prices in a fiscally sustainable manner. However, when structural appreciation in world oil markets began in 2003 and 2004, its funds rapidly depleted and world oil prices remained high. The government paid off its deficit by transferring THB92 billion (IISD, 2013).

In 2008, when international oil prices peaked, the Thai government implemented a range of non-fuel pricing measures to mitigate the impacts of higher gasoline and diesel prices (Kojima, 2009). Among other things, it provided free electricity, water and bus and train rides for poorer households, as well as introducing a minimum wage (Energypedia, 2015). It continued to stabilize prices for a number of non-motor fuels.

In 2011, however, Thailand returned to using the OSF to subsidize gasoline and diesel. In April 2011, the government reintroduced subsidies for gasoline and diesel prior to the national election in July 2011 (Energypedia, 2015). Post-election, it decided to remove the OSF levy on fuels for the last four months of the calendar year to lower the cost of living for the population. The OSF paid for this by borrowing money from the commercial sector with down-payments transferred once the inflow of funding had been restored (Beaton et al., 2013).

Experiences With Transition

Thailand deregulated its fuel markets in 1991 as a result of falling international oil prices after the end of the Kuwait war. Three governmental entities were closely involved in the process. Besides the NEPC, the provincial authorities and the Department of Internal Trade were also involved. The government also liaised closely with both state-owned and private oil companies throughout the process (Ministry of Energy, Thailand, 1995).

Prior to the deregulation, the Thai government implemented a range of changes in order to prepare the market for the transition. This included efforts to reflect international oil prices more accurately in the domestic price structure, improving the tax and retail price structure as well as increasing public communication about how the fuel sector functions. Moreover, the government aimed to improve competition in the market by abolishing import controls, allowing new companies to build refinery capacity and allowing for the construction of smaller gasoline stations (Ministry of Energy, Thailand, 1995).

The actual deregulation happened in two phases. By the end of May 1991, the government implemented a semi-deregulation of the market; and then on August 19, 1991, the market was fully liberalized (Amranand, 2002). A key concern for the government during the transition period was to ensure a consistent and fair setting of prices for fuel products. Thus, during the three-month transitioning period, the government introduced a series of market modifications to prepare for the new fuel pricing regime. Among other things, it allowed retail and wholesale prices to fluctuate within certain limits and required gasoline stations to report actual pump prices to the NEPC. Gasoline stations were also required to clearly advertise their prices (Amranand, 2002). Moreover, price checks were conducted regularly to ensure that posted prices corresponded to actual pump prices—price comparisons between retailers were also conducted (Ministry of Energy, Thailand, 2001). Finally, in order to provide protection for domestic refineries and producers, the Thai government introduced a differentiated approach to import taxation of oil products and levies to the oil fund, which made international companies pay higher taxes and duties than domestic refineries (Amranand, 2002).

In the early days after the deregulation, Thailand did experience some challenges as a result of the transition. Many of these, however, revolved around people smuggling fuel into the country. The government managed to largely overcome this issue by implementing stricter inspection and enforcement mechanisms at Thailand's borders (Ministry of Energy, Thailand, 1995). More recently, Thailand has also experienced notable challenges around “fuel tourism” (Kojima, 2009): prices have been cheaper in neighbouring Malaysia, which has led to people crossing the border to purchase fuel. However, the Malaysian government has implemented several measures to tackle this issue, for example by requiring cars registered in Thailand to have a certain level of fuel in the tank when crossing the border and by restricting Thai-registered vehicles from fuelling within 50 kilometers of the border (Kojima, 2009).

Lessons Learned

- The National Energy Policy Council, responsible for the overarching strategy and direction of Thailand's energy policy, is made up of members from all relevant ministries. This ensures coordination and ownership as well as a strong political and institutional setup behind energy-related decisions.
- Thailand's transition to a deregulated fuel market was implemented in phases and, prior to reform, several efforts were undertaken to prepare the market for the transition.
- Deregulation did not prevent Thailand from intervening in fuel prices with the Oil Stabilization Fund. The effort to stabilize prices, however, did not operate as intended, resulting in high fuel subsidies that were not counter-balanced by sufficient revenue collection.
- In 2008, Thailand successfully made use of a number of non-pricing mechanisms to manage impacts of rapidly increasing oil prices.

4.0 Implications for Indonesia

Indonesia is at a transformative moment in the history of its fuel pricing system, having announced the complete removal of subsidies for gasoline and the introduction of a “fixed” subsidy system for diesel set at IDR1,000 per liter. Its pricing system up until the end of 2014 left Indonesia with the lowest gasoline and diesel prices of all the BRIICS countries, more consistent with net oil-exporting countries, despite having transitioned to a net oil-importing country over 10 years ago. Going forward, the challenge will be to harness the momentum of these reforms, as well as the current period of low world oil prices, in order to ensure that the new pricing system can be maintained once world oil prices eventually increase, at the same time as ensuring that consumers are adequately protected against potential future periods of high fuel prices.

International literature on fuel pricing generally recommends that the best pricing mechanism—from a perspective of fiscal sustainability and oil price volatility—is a deregulated market with prices determined by competition, a high degree of transparency and a strong independent regulator to enforce rules. This also serves to depoliticize fuel pricing, taking pressure of government to intervene in energy markets. This model does not seem well suited to Indonesia at the current time, given previous rulings by the Constitutional Court that such full deregulation could be judged unconstitutional, or at least challenged as such. This suggests that in the medium term at least a better solution for Indonesia is to identify measures that will allow for the development of a robust pricing mechanism, involving government decision-making, that can pass through international price rises into the domestic market, and thereby avoid the return of large fuel subsidies that overburden the budget. The case studies in this review show that many countries like Indonesia have such pricing systems, which have operated to a greater or lesser degree of success, depending on their design and political will. Generally, such systems result in a degree of price intervention and as a result a degree of fuel subsidization. But such subsidies are generally lower than in the case of fixed pricing, and fuel pricing systems can be a transitional step as part of a longer-term pathway away from fuel subsidies entirely.

This review suggests that there are at least four key areas of options where Indonesia’s existing pricing system could be built upon and strengthened: adapting its pricing rules to mimic some of the most useful features from other countries; investing in regulatory functions, particularly around monitoring, enforcement and transparency; investing in non-pricing measures to address price volatility over the short, medium and long-term; and, finally, cutting across all of the three previous areas, developing improved communications around fuel pricing, particularly with respect to transparency and non-pricing measures being used to safeguard consumers from volatility and high fuel prices.

Adapting the Pricing Rules

Currently, Indonesia’s pricing formula is set up so that prices are adjusted on a monthly or bi-monthly basis, including a retail margin, excise tax and VAT, and retailers must sell fuel according to the prices are announced. This system is relatively inflexible to changing market conditions. In January 2015, low world oil prices resulted in Indonesia’s domestic market prices falling dramatically, such that politically costly price rises from only a month and a half before were effectively reversed. Similarly, a number of reports have suggested that the government may not continue to pass through prices if world oil prices reach sufficient highs, effectively abandoning the pricing system and returning to an ad hoc pricing system above a certain ceiling, such as IDR 9,500 (Jakarta Post, 2015). The system also does not necessarily encourage fuel retailers to seek improve their efficiency and thereby reduce the size of the retail margin. Options that could address these issues include the following:

- **Variable tax:** China, India and Mexico have a tax within their fuel pricing formula that can be adjusted. In the cause of China and India, this has already been used in early 2015 to prevent the full crash in fuel prices from passing through to domestic markets. This provides revenue that can be used to invest in non-pricing measures to address volatility and it reduces the political challenge of eventually increasing prices again. The reduction of a tax on fuel in the case of higher prices is essentially a subsidy, but a much smaller one than not passing

through prices at all, and as such provides a “release valve” to reduce political pressure on the formula during periods of high prices. The risk of such a tax is clear in the case of Mexico, where its subsidies on fuel were in the past conferred largely through a “negative” tax rate in its pricing formula. The design of a variable tax in a pricing formula should set out clear guidelines around how the tax can be varied, ideally ensuring that revenue collection should not fall below levels originally targeted given initial budgetary assumptions of average oil price in any given year.

- **Link adjustments to absolute or % changes in world prices:** Monthly pricing adjustments are easy to predict and may encourage hoarding. When price changes are very small, they may cause unnecessary political friction. When changes are large, monthly adjustments may lag behind markets, resulting in either subsidies, ad hoc adjustments or the need for some mechanism to cover losses. China has established a system in which changes take place based on an absolute change of CNY 50 per ton (around US\$ 1 per ton or US\$ 0.006 per liter). This leads to a more responsive mechanism that is less prone to hoarding and that establishes a clear linkage between domestic prices and international market fluctuations.
- **Allow and encourage downward adjustment from the formula by retailers:** In Indonesia, subsidized fuel is supplied by state-owned company Pertamina. Nonetheless, it could be explored whether incentive structures could be created within Pertamina that would give individual retailers and other parts of the supply system a motivation to increase the efficiency of the fuel supply and sell fuel at prices below the levels set by government.
- **Linking social and economic assistance to high fuel prices:** If world oil prices return to very high levels, there will be pressure for policy-makers to abandon their commitment to passing through price increases to the domestic market. This is likely to be politically popular but to prevent resources from being used to assist consumers in more efficient ways. International experience shows that there are a range of alternative options that can be taken in such circumstances, with countries such as Mexico, the Philippines and Thailand having provided targeted assistance to vulnerable groups such as cash transfer supplements, smart cards for the public transport sector or free public services for the poor. Indonesia has significant experience with measures of this kind, such as the compensation packages that have been provided in the past during ad hoc fuel price increases. No case study country appeared to have formally linked social or economic assistance to its pricing formula, but Indonesia could consider options for doing so, or at least guidelines on how social assistance could be prepared and used in this way on consistent basis. The key criteria for such provisions to work well would be setting an appropriate magnitude and duration of assistance and accurately targeting it at vulnerable groups.

Investing in Regulatory Functions

Any fuel pricing system requires the government to perform regulatory functions, as illegal activity can take advantage of any set of rules for personal gain. Indonesia’s new pricing system, however, is likely to require a bolstered set of regulatory powers. First, gasoline is no longer supposed to be subsidized at all in the Java-Madura-Bali area, such that independent operators can now presumably supply fuel in these areas. This is a large market and in order to ensure that consumers receive fuel that meets quality and pricing rules, it will need to be well regulated. Second, prices of subsidized gasoline and diesel are now to change as often as every two weeks where previously they have changed every two of three years. This creates more opportunities for hoarding and for non-compliance with official price changes. Third, political acceptance of the new system could be negatively affected by instances of restricted supply or non-compliance with price changes, particularly if these are not quickly identified and addressed by the government. Throughout the previous era of fixed fuel prices, it has been common for supply in areas outside of Java to be restricted at times and for illegal fuel sales to take place at much higher prices than official levels. Ensuring adequate supply and cracking down on such activity will show that the new pricing system is indeed administrated in a way that promotes the people’s welfare. Options that could address these issues include the following:

- **Improve systems for ongoing, real-time monitoring of pricing across Indonesia:** Real-time monitoring will allow government agencies to be pro-active in identifying and tackling problems with hoarding and non-compliance with official prices. The information that is collected can also be used to improve transparency around fuel pricing in Indonesia and to build consumer confidence in the new system. Several of the case study countries in this study monitor pricing this way and make the information available to the general public through websites and engagement with the media.
- **Improve capacity for responding to consumer concerns:** In addition to monitoring, a facility to acknowledge and respond to consumer complaints can help identify problems and build confidence in the new system. Independent high-level enquiries—such as the Philippines has established on several occasions—can be used to address major issues that have developed into broad public concerns.
- **Monitor and promote competition in unsubsidized gasoline markets:** The new market for general gasoline in the Java-Madura-Bali area is large and additional effort may be required to ensure that it is well regulated. Efforts to promote increased competition in this market—in combination with provisions that allow for retailers to price below officially announced prices—could be used to identify potential gains for consumers from a non-subsidized fuel supply.

Investing in Non-Pricing Measures to Manage Volatility

Indonesia's new pricing system does mean that consumers will be faced with more fuel price volatility and higher fuel prices than they have experienced before. The impacts of this should be taken seriously, both for the real adversity it may create for vulnerable households and businesses, as well as the likely political challenges that may arise if the new fuel pricing system cannot be shown to safeguard the interests of the people. Options that could address this include the following:

- **Link a share of subsidy savings to investments that tackle volatility:** This review identifies a wide set of measures that can be used to manage the impacts of volatility but many of them require large investments. Since the government has already committed to reallocating energy subsidies to investments, it is reasonable to expect that a share of the fiscal space created by removing the subsidy could be reallocated to measures that tackle volatility. This will also demonstrate that the government is serious about addressing high fuel prices through means other than the pricing system.
- **Invest in improving the efficiency of supply:** This study did not conduct a review of the fuel supply system in Indonesia and is therefore not able to identify specific interventions that could be used to improve efficiencies. Such a review could be conducted to identify efficiency bottlenecks. Resulting policies might focused on reducing fuel costs in the medium- to long-term through investments in port, transport and refining infrastructure.
- **Invest in reducing energy demand:** Similarly, a review should be conducted of energy and fuel efficiency needs in Indonesia to identify the extent of current efforts in this area and policies that can be used to upscale these efforts or address current gaps. Such policies could address volatility in the short- to long-term by upscaling existing efforts in areas such congestion, vehicle and fuel efficiency, public transport, energy diversification and urban planning.
- **Invest in targeting assistance to vulnerable groups:** Similarly, a review should be conducted of how vulnerable households and businesses are affected by higher fuel prices and what existing capacity or new facilities could be used to assist them. This could include crisis response units to marshal resources in assistance of poor households or smart card systems to target assistance to key sectors such as transport operators.

Communications on Fuel Pricing

In 2002, Indonesia's first attempt to introduce an automatic pricing system was wound down after only a year due to public protests and the changing political fortunes of the government at the time. Public attitudes toward fuel pricing have changed since this time but the subject remains a politically controversial one that could become more or less important depending on surrounding political circumstances. This suggests that government communications on fuel pricing could be vital in building understanding and support for the new regime with targeted sets of stakeholders. Such efforts need to be cross-cutting with government activity on the pricing rules, system regulation and non-pricing measures to target volatility. Options that could address these issues include the following:

- **Transparency on fuel pricing rules:** The part of government that takes on regulatory responsibility for applying the new pricing rules should aim to establish high-levels of transparency. This includes creating easily accessible and understandable information on the unit responsible for setting prices, the formula it is using and the exact calculations that are conducted to establish the price level after each adjustment. Clearly articulating the basis of the fuel price and the source of price changes can play an important role in building public awareness of the factors in international markets that determine fuel prices and are outside of government control.
- **Transparency on monitoring and enforcement:** Similarly, the part of government that takes on regulatory responsibility for monitoring and enforcement of the pricing system across Indonesia should aim to establish high levels of transparency in this area. Consumers will have more confidence in the new system if they can confirm that prices throughout the country actually follow official levels, adequate levels of fuel are supplied and that government is taking an active role in acknowledging and responding to concerns and complaints.
- **Awareness-raising about how the government is tackling volatility:** When world prices rise to previous highs, consumers are likely to call for subsidies to return. A communications strategy could seek to explicitly link the new pricing system with investments in efficiency of supply, energy demand and assistance for the vulnerable, particularly emphasizing the trade-offs between on the one hand subsidizing fuel and on the other hand Indonesia's ability to assist the poor and to improve its energy security.

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**International Institute for Sustainable Development
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



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