

Chapter 1

A Review of Energy Subsidy Removals and Other Energy Policy Reforms: The Case of Malaysia

Han Phoumin

May 2016

This chapter should be cited as

Han, P. (2017), 'A Review of Energy Subsidy Removals and Other Energy Policy Reforms: The Case of Malaysia', in Han, P. and S. Kimura (eds.), *Institutional Policy and Economic Impacts of Energy Subsidies Removal in East Asia*. ERIA Research Project Report 2015-23, Jakarta: ERIA, pp.1-14.

Chapter 1

A Review of Energy Subsidy Removals and Other Energy Policy Reforms: The Case of Malaysia

Han Phoumin¹

Abstract

Energy is heavily subsidized across the globe and energy subsidies exert an extensive economic burden on many countries, particularly on developing economies. The Government of Malaysia has a clear objective and rationale for removing inefficient fuel subsidies that do not reach the intended beneficiaries and benefit only richer groups. As such, the government has embarked in the right direction of energy reforms during the period of low oil prices since 2014. The phasing out of energy subsidies in Malaysia will have a positive effect as the country starts to see budget growth through the narrowing of government debt over time. It will also have multiple effects and benefits on the economy and welfare in Malaysia in the near future. To support the government carry out the fossil fuel reform effectively, this paper aims to provide policy recommendations to the government to ensure that the ongoing reform process will bring positive changes to the economy and the fossil fuel reform gains public support through a transparent process.

¹ Energy Economist, Economic Research Institute for ASEAN and East Asia

1. Introduction

In the past few decades, Malaysia has achieved great economic and social development by growing from a nation with an agricultural and commodity-based economy to becoming a prosperous middle-income nation. Robust economic growth, with a real gross domestic product (GDP) average growth rate of almost 6% per annum from 1991 to 2010, has helped improve the quality of life for Malaysians and has supported widespread advances in education, health, infrastructure, housing, and public amenities (The Tenth Malaysian Plan, 2011–2015).

However, in the current environment, Malaysia has faced new challenges at a critical juncture in its developmental journey of moving away from the middle-income trap. To propel itself away from the middle-income trap and reach the next level of high income, Malaysia will require urgent reforms through new, innovative approaches for implementing the Government Transformation Programme and the New Economic Model, which are premised on high income, inclusiveness, and sustainability. These approaches incorporate the 10 big ideas identified in the Tenth Malaysian Plan: being internally driven and externally aware; leveraging on diversity internationally; transforming to high income status through specialisation; unleashing productivity-led growth and innovation; nurturing, attracting, and retaining top talent; ensuring equality of opportunities and safeguarding the vulnerable; achieving concentrated growth and inclusive development; supporting effective and smart partnerships; valuing environmental endowments; and positioning the government as a competitive corporation (The Tenth Malaysia Plan 2011–2015).

Among the sectors targeted for Malaysia's economic transformation, reform of the energy sector and alleviation of its burden on the government budget is a top priority. Energy subsidies are important if they are well targeted for people who need energy to survive and to improve their well-beings. For example, fossil fuel subsidies are important as they improve the living conditions of the poor by making fuel for cooking and heating, such as kerosene, liquefied petroleum gas (LPG), and electricity, more affordable. In developing countries, where such subsidies are common, they can considerably raise the standard of living by enabling traditional fuels to be phased out. As a result, these communities experience less indoor pollution and a reduction in time spent gathering fuel, resulting in more time for education and other productive activities (United Nations Environment Programme, 2008).

However, energy subsidies, such as those in Malaysia, are rarely targeted specifically at the low-income groups that need them but are often "blanket subsidies," available to all consumers, regardless of their wealth. As a result, these subsidies benefit energy companies, suppliers, and wealthy households in urban areas comparatively more than they do poor households. Similar evidence has been found elsewhere. For example, energy subsidies in Peru for the Amazon region (through value-added tax exemptions) have led to wasteful and inefficient use of fossil fuels. Instead of increasing economic development in the Amazon region, the subsidies have induced smuggling and encouraged illegal activities, such as illegal logging and mining in the Amazon (APEC, 2015). Another energy subsidy study by the

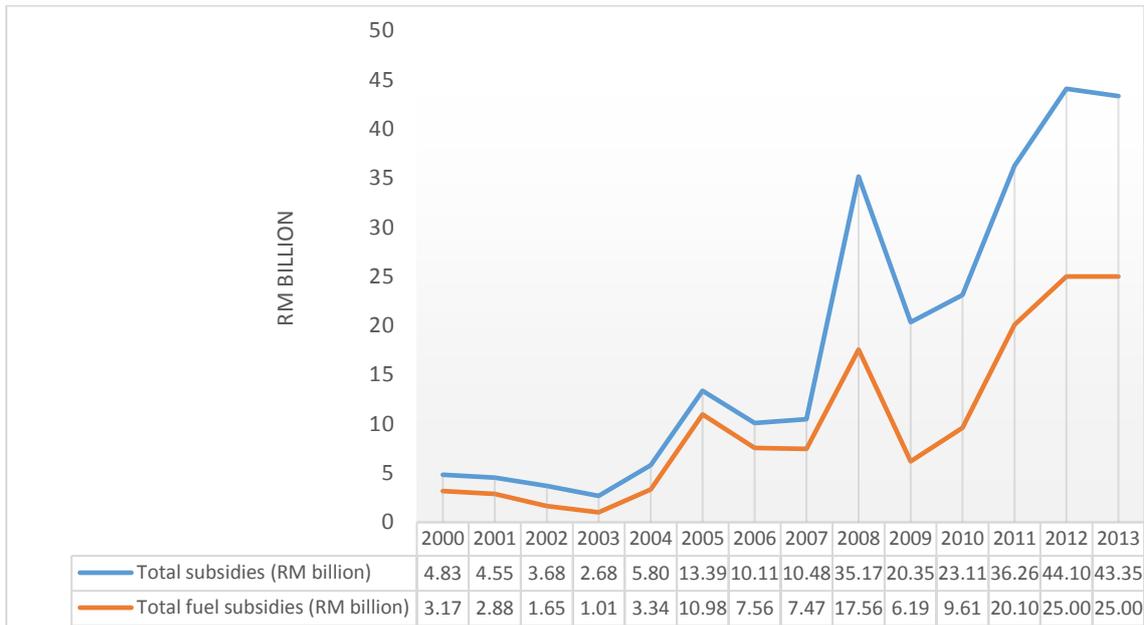
International Monetary Fund (2013) revealed that the bottom 20% of households received on average only 7% of the total subsidy, whereas the top 20% received 43%. Even kerosene subsidies, which are typically seen as being pro-poor, are not well targeted, with the top 60 % of households always receiving more than 57% of the subsidies (Baig et al., 2007).

Thus, there is a strong rationale for removing inefficient fuel subsidies that do not reach the intended beneficiaries and benefit only richer groups. Global energy prices have dropped since the end of 2014. As such, the Malaysian government has embarked in the right direction of energy reforms during the period of low oil prices. The phasing out of energy subsidies in Malaysia will have a positive effect as the country starts to see budget growth through the narrowing of government debt over time, and will have multiple effects and benefits on the economy and welfare in Malaysia in the near future.

2. The Motive for Subsidy Removals

Energy subsidies have been long existed in Malaysia, with the intention of keeping energy affordable for its citizens. Fuel subsidies have made goods and services cheaper by reducing input costs at the expense of increasing national debt. Overall subsidies were around only RM4–5 billion annually in the early 2000s, but rose exponentially to more than RM43 billion by 2013 (see Figure 1.1), at which time the government felt it was no longer possible to keep the subsidy price at the same level amid growing consumption.

Figure 1.1. Total Subsidies in Malaysia



Source: Ministry of Finance Malaysia (2014).

Although subsidies lower the costs of production, they are also a burden on government expenditure. The large federal government debt was estimated at RM582.8 billion, or 54.5% of GDP, at the end of December 2014 (Ministry of Finance Malaysia, 2014). This burden prompted a serious move by the Malaysian government to carry out reforms on energy subsidies, among other measures. As of 2011, the subsidies represented 11.18% of Malaysia’s government operating expenditure, equal to 2.3% of GDP in the same year (Ilias et. al., 2012). Among all subsidies, the fossil fuel (LPG, diesel, and petrol) and electricity subsidies represented 40% and 6% respectively, of total subsidies in the same year. The financial burden took a toll on economic growth and may have been a major hindrance to Malaysia’s aspiration to achieving developed nation status by 2020.

Energy subsidies make up a large portion, about 5%, of government expenditure, and have grown exponentially from a few billion to around RM25 billion in 2014, as shown in Figure 1.1. In 2013, Malaysia’s Prime Minister Najib initiated subsidies reforms in which fuel subsidies underwent a major reform, although they were not wholly abolished. The government realised that the blanket fuel subsidies and electricity tariff had aided the rich more than the poor. The fuel subsidies had also led to fuel smuggling to neighbouring economies at the expense of Malaysia’s public funds, and this was considered to be wasteful expenditure (The Nation, 2014b).

The prices for RON 95, diesel, and LPG have been set by the Malaysian government since 1983 through what it calls an “automatic pricing mechanism”. The way in which the pricing mechanism is set, or is called “automatic”, suggests a pricing system that passes price fluctuations through to the consumer using a government predetermined formula. However, in practice, the prices of RON 95, diesel, and LPG have barely changed since 2009, and the

price fluctuations have not been passed through to the consumer. In fact, the Malaysian government has used the automatic pricing mechanism to determine the subsidy needed to cover the difference between a fixed retail price and the market price (International Institute for Sustainable Development, 2013). Likewise, the electricity tariff rate has been set to increase by 4.99 sen/kilowatt hour (kWh) from 33.54 sen/kWh to 38.53 sen/kWh (almost 15%) for the 4-year period 2014–2017. This increase in tariff rate will cover the fuel component that needs to be passed through to end-users and consumers.

In general, energy subsidies bring with them many undesirable impacts, such as encouraging inefficient energy use, undermining returns on investments, and promoting reliance on outdated environmentally unfriendly technology that has negative environmental impacts. Thus, the energy subsidies reform will try to bring the subsidised prices of fuel products closer to their market clearing levels, while targeting remaining subsidies at the needy. The overriding goal of the subsidies is to address fiscal imbalances to improve not only the production system's efficiency but also efficiency in resource allocation. In this regard, the prime minister mentioned that fiscal reform including the energy subsidies reform was important to ensure that the targeted fiscal deficit remained at 3.5% of GDP in 2014, and 3% of GDP in 2015, and that a balanced budget would be achieved in 2020 (The Nation, 2014a).

3. Energy Subsidy Reform and its Economic Impacts

In July 2010, a subsidy reform programme was initiated by Prime Minister Najib to rationalise the 10th Malaysia Plan (2010–2015) and the New Economic Model (Economic Planning Unit, 2010), which set out the government's strategy for making Malaysia a high-income nation by 2020. The attempt to remove subsidies is a serious issue for the government as the prime minister has emphasised that more than RM40 billion alone was set aside for a price support scheme, and RM 49 billion for spending on development in 2014 (The Nation, 2014b).

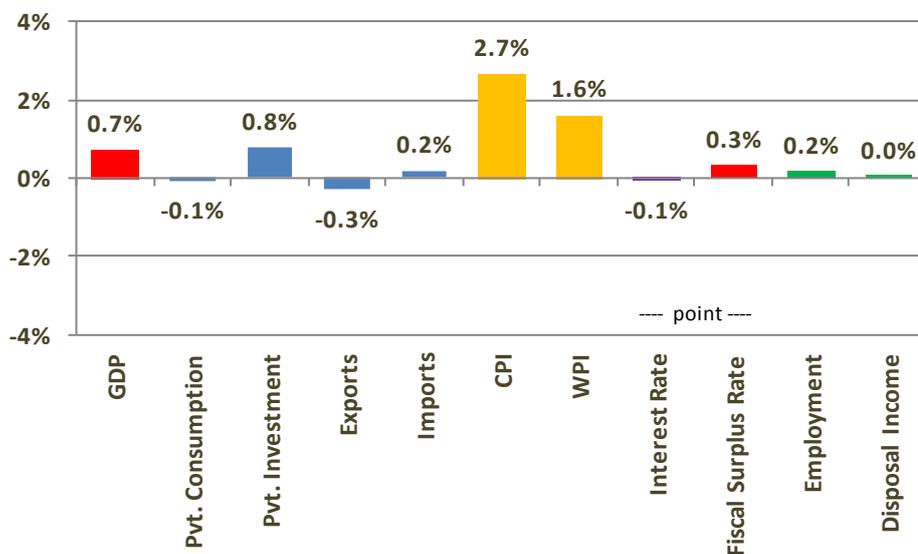
About RM25 billion was allocated to fuel subsidies in 2013 and the subsidy reduction was to save at least RM 3.3 billion. However, the reform was only partial in 2013, and costly and significant price support for fuel still exists (Najib, 2013a).

The reform process gained momentum in 2014 and seemed to have a positive effect on the government budget. For instance, a government policy (the implementation of a managed float fuel pricing mechanism effective from 1 December 2014) to increase fuel prices through a 20-sen reduction in fuel subsidies for RON 95 petrol and diesel, and the increase of the electricity tariff from 33.54 sen/kWh to 38.53 sen/kWh, contributed to a decline in subsidy payments by 21.2% in fiscal year 2014 (Ministry of Finance Malaysia, 2014).

An empirical study by Rashid (2012) suggests that a subsidy reduction of 1 cent for the retail price of petrol could represent a reduction of government expenditure by as much as RM134 million. Another study by the Economic Research Institute for ASEAN and East Asia (ERIA) and the Institute for Energy Economics, Japan (IEEJ) in 2016 in a quantitative analysis of the

economic impacts of an energy subsidy removal in Malaysia showed that the optimum positive economic effect could be observed if the Malaysian government uses all of its saved energy subsidy budget to reinvest into other sectors, such as investment in social infrastructure and expenditure for education, GDP would increase by 0.7 percentage points, the fiscal deficit would improve by 0.3 percentage points, and private investment would improve by 0.8 percentage points compared to the baseline case assuming no subsidy removal (see Figure 1.2).

Figure 1.2. Economic Impacts of Removing Energy Subsidies and Reinvesting in Other Social and Infrastructure Sectors (Changes from the Reference Case in 2020)



CPI = consumer price index, GDP = gross domestic product, WPI = wholesale price index.

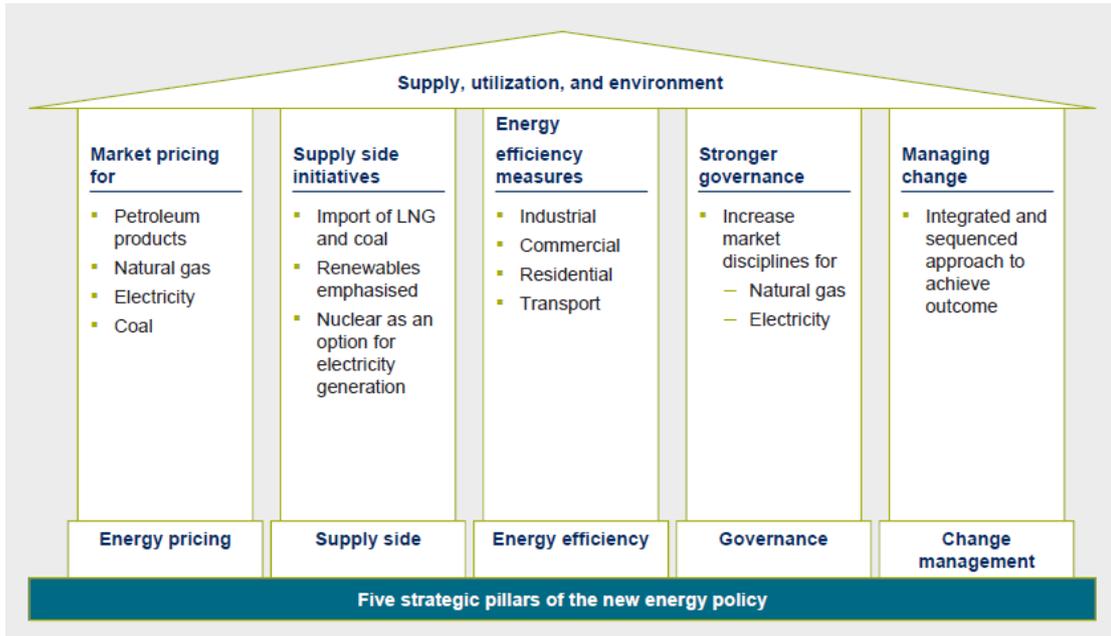
Note: Changes are shown as percentage points.

Source: Quantitative Analysis for Economic Impacts by Removing Energy Subsidies in Malaysia. ERIA and IEEJ (2016).

4. Making Energy Reform Meaningful with Other Necessary Energy Policies

The New Energy Policy within the Tenth Malaysian Plan (2011–2015) emphasises energy security and economic efficiency as well as environmental and social considerations. The policy focuses on five strategic pillars (see Figure 1.3): initiatives to secure and manage a reliable energy supply; measures to encourage energy efficiency; the adoption of market-based energy pricing; stronger governance; and managing change. Another key pillar in Malaysia's energy strategy is to become a regional oil and natural gas storage, trading, and development hub that will attract technical expertise and downstream services that can compete in Asia as well as promote energy efficiency measures and the use of alternative energy sources.

Figure 1.3. Five Strategic Pillars of the New Energy Policy



Source: *The Tenth Malaysia Plan 2011-2015*.

4.1. Renewable Policy and Initiatives

The National Renewable Energy Policy and Action Plan (2008) of Malaysia have set a national target to diversify the country’s energy mix, including feeding 975 megawatts (MW), or 5.5%, of renewable energy into the grid by 2015 (see Table 1.1). By 2020, this is targeted to double to 2.065 MW, or 11%. Solar power is expected to contribute a minimum of 220 MW to the total capacity mix. The Ministry of Energy, Green Technology and Water’s Green Technology Financing Scheme, worth RM1.5 billion (about US\$500 million), offers incentives to green technologies.

The Small and Renewable Energy Programme, launched in May 2001, allows renewable projects with up to 10 MW of capacity to sell their electricity output to Tenaga Nasional Berhad (TNB) under 21-year license agreements. Any renewable energy plant, including biomass, biogas, municipal waste, solar, mini-hydropower, and wind energy plants, may apply to sell energy to the grid. The programme was limited to 219 MW in 2011 but increased to nearly 1 gigawatt in 2015. While participation has steadily increased and the results have been encouraging, the total volume of electricity generated is still small. With an attractive feed-in tariff rate (adopted in 2011) and abundant natural resources, Malaysia is ripe for foreign investment in renewable energy projects. For example, ABB – the leading power and automation technology group – has delivered and commissioned key components to integrate renewable energy from Amcorp Power Sdn Bhd’s Gemas 10.25 MW solar power plant into Malaysia’s electricity grid (ABB, 2014). Amcorp Power’s solar plant located in Gemas, Negeri Sembilan, about 100 miles from the Malaysian capital, Kuala Lumpur, is the country’s largest solar power plant and represents approximately 11% of its nearly 116 MW of grid-connected solar photovoltaic capacity.

Table 1.1. Renewable Energy Policy Planned Outcomes

Year Ending	Cumulative Total Renewable Energy(MW)	Share of Renewable Energy Capacity (%)	Annual Renewable Energy Generation (GWh)	Share of Renewable Energy Mix (%)	Annual CO ₂ Avoidance (t)
2011	217	1%	1,228	1%	773,325
2015	975	6%	5,374	5%	3,385,406
2020	2,065	10%	11,227	9%	7,073,199
2030	3,484	13%	16,512	10%	10,402,484
2050	11,544	34%	25,579	13%	16,114,871

GWh = gigawatt hours, t = tonnes.

Source: The National Renewable Energy Policy and Action Plan (2008).

According to the renewable energy country profile of IRENA (2015), there are completed and ongoing renewable projects from the government and the private sector, including 36 MW of geothermal capacity addition by the end 2015 (1 project); 10 MW of solar photovoltaic capacity addition by mid-2013 (1 project); more than 20 MW announced (6 projects); around 1,100 million litres of biodiesel per year capacity addition announced (8 projects); more than 220 MW of biomass-fired capacity addition announced; and 45 MW of small hydro capacity addition announced (9 projects).

4.2. Energy Efficiency Policy and Initiatives

The National Energy Efficiency Master Plan (2010) has been a holistic implementation roadmap to drive efficiency measures across sectors with the target of achieving cumulative energy savings of 4,000 kilo tonnes of oil equivalent by 2015. Initiatives to drive energy efficiency efforts are shown in Table 1.2.

4.3. Power Generation Developments and Initiatives

Malaysia's electricity demand, mostly met by natural gas and to a lesser extent coal, continues to expand rapidly. In recent years, fuel availability to the power sector has been challenged by tightness in the supply of natural gas. Although gas shortages in Peninsular Malaysia and growing electricity demand in recent years have spurred the use of other fuels such as coal, diesel, and renewable sources, most of Malaysia's electricity generation capacity is natural gas fired.

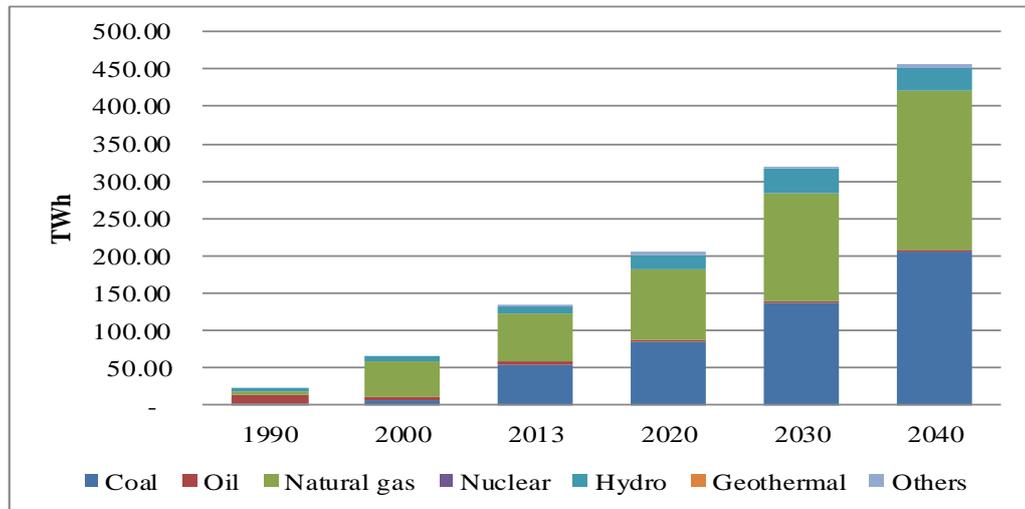
Table 1.2. Initiatives to Drive Energy Efficiency Efforts

Sector	Initiatives
Residential	<ul style="list-style-type: none"> - Phasing out of incandescent light bulbs by 2014 to reduce carbon dioxide emissions by an estimated 732,000 tonnes and reducing energy usage by 1,074 gigawatts a year - Increasing energy performance labelling from 4 (air conditioners, refrigerators, televisions, and fans) to 10 electrical appliances (six additional appliances: rice cookers, electric kettles, washing machines, microwaves, clothes dryers, and dishwashers) - Labelling appliances enables consumers to make informed decisions as they purchase energy efficient products.
Township	<ul style="list-style-type: none"> - Introduction of guidelines for green townships and rating scales based on a carbon footprint baseline and promoting such townships, starting with the towns of Putrajaya and Cyberjaya
Industrial	<ul style="list-style-type: none"> - Increasing the use of energy efficient machinery and equipment, such as high-efficiency motors, pumps, and variable speed drive controls - Introduction of minimum energy performance standards for selected appliances to restrict the manufacture, import, and sale of inefficient appliances to consumers
Building	<ul style="list-style-type: none"> - Revision of the Uniform Building By-Laws to incorporate the Malaysian Standard: Code of Practice on Energy Efficiency and Use of Renewable Energy for Non-Residential Buildings (MS1525). This allows for the integration of renewable energy systems and energy saving features in buildings. - Wider adoption of the Green Building Index to benchmark energy consumption in new and existing buildings - Increasing the use of thermal insulation for roofs in air-conditioned buildings to save energy

Source: The National Energy Efficiency Master Plan (2010)].

Kimura and Han (2016) conducted the study, *Energy Outlook and Energy Saving Potential in East Asia Region 2016*. The study's country estimates show that Malaysia's current total power generation is expected to grow by around 4.7% per year from 2013 until 2040, reaching 457 terawatt hours (TWh). Power generation from coal is projected to increase to almost 206.14 TWh in 2040 compared to 53.37 TWh in 2013. Power generation from natural gas will experience an annual growth rate of 4.6% per year from 2013 until 2040, from 63.32 TWh in 2013 to 211.93 TWh in 2040. Power generation from other sources (biomass and other renewable sources) will have the fastest growth at 6.6% per year from 2013 until 2040 (see Figure 1.4 and 1.5).

Figure 1.4. Power Generation by Fuel, Business-as-Usual Scenario



TWh = terawatt hours.

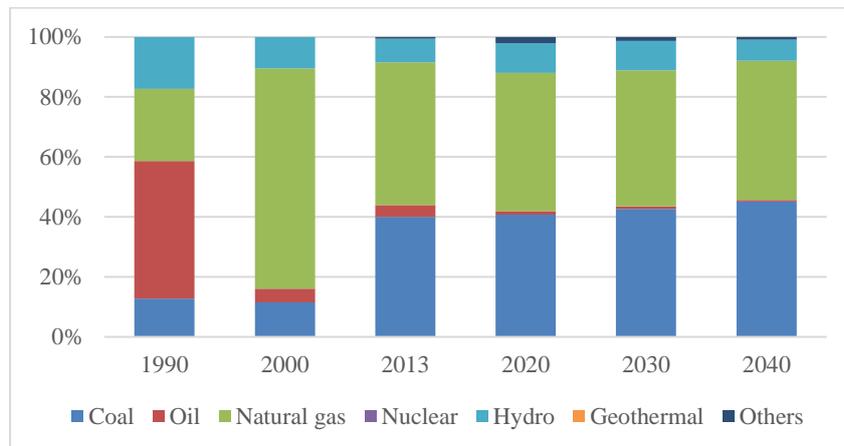
Source: Kimura and Han (2016).

In terms of share, the power generation mix will be dominated by natural gas and coal in 2040, with shares of 46.4% and 45.1%, respectively. Hydro follows with a share of 7.0% in 2040 compared to 7.9% in 2013. The share of others will be 0.9% of the total power generation in 2040 compared to 7.9% in 2013. The oil share will be at 0.6% in 2040 compared to 3.9% share in 2013.

In the future energy mix, energy from nuclear power plants could be one of the sources that allows Malaysia to keep its options open as part of diversifying its energy mix strategy to support the country's economic growth. Considering this, a Nuclear Power Development Committee, headed by the Ministry of Energy, Green Technology and Water, was set up in June 2009 to plan and coordinate the preparatory efforts for a Nuclear Power Infrastructure Development Plan. A year later, the National Nuclear Policy was adopted by the Malaysian government on 16 July 2010 (The Malaysian Economic Transformation Programme, 2010).

The Malaysian Economic Transformation Programme in October 2010 considered nuclear energy to be important as a fuel option for electricity supply post-2020, especially for the Malaysian Peninsula. In 2011, the Malaysia Nuclear Power Corporation was registered under the Companies Act of Malaysia as a fully government-owned company, placed under the jurisdiction of the Prime Minister's Department as a new, fully dedicated Nuclear Energy Programme Implementation Organization. The Malaysia Nuclear Power Corporation focuses on critical enablers as identified in the Economic Transformation Programme, including public acceptance of the project and the readiness of the correct regulatory framework in Malaysia. Within the study plan conducted by the Nuclear Power Development Committee, Malaysia plans to have a total capacity of 2 gigawatts, with the 1st Unit of 1 gigawatt in operation by 2021. The plan under development lays out a development timeline of 11 to 12 years from pre-project to commissioning. However, this plan was delayed due to Japan's Fukushima nuclear disaster, and thus the expected construction of the first plant may be later than 2021.

Figure 1.5. Share of Power Generation by Fuel, Business-as-Usual Scenario



Source: Kimura and Han (2016).

5. Conclusions

While energy subsidy reforms have shown positive signs in the Malaysian political context, energy subsidies need to be well-targeted to those who need energy for their basic needs for cooking, lighting, and transportation. The removal of energy subsidies will affect the basket of consumption, especially the inflation of commodity prices that are related to the transportation of basket of commodities/ products, and the services that produce the products. In this regard, a well-designed programme to target and safeguard the poor will be needed, either through well-targeted fund transfers to the poor or through energy consumption rations for the poor. The Malaysian government has prepared to do so, but it needs to keep monitoring how the subsidies' funds reach the intended beneficiaries, and recommend any required corrective actions during the course of programme implementation.

It is important that the government publicises the cash transfers to support the poor during the gradual removal of the energy subsidies. Transparency will gather public support in the reform process. Public campaigns and education outreach on the energy subsidies removal will be needed to clearly show how energy subsidies impact welfare, discourage investment, reduce competition, and obstruct Malaysia's goal of achieving high-income status by 2020. The lessons learned from the past reform initiative – the Subsidy Rationalization Programme, which aimed to gradually adjust fuel prices, but was put on hold in March 2012 due to large public opposition to the fuel price increase – could offer an important lesson on how to move the energy subsidy reform in a more transparent direction to gain public support.

While the reform process gained positive momentum since 2014, a well-established monitoring programme on the reform's successes and impacts needs to be in place. Reporting, monitoring, and disseminating the reform process with a clear timeframe, sector by sector, will allow all stakeholders to envisage the costs incurred to individuals and businesses in the future. This will ensure larger success of the reform programme in Malaysia.

The reform process needs to be good for the welfare, investment, and future growth of Malaysia, so government strategy will need to be built around these arguments and facts to convince the public in a transparent and timely manner.

In addition to the energy subsidy policy reform, the Malaysian government has carried out other reforms, such as for the promotion of energy efficiency and energy security through increasing the renewable energy share, and the coordinating the right mix of power generation, including the option of nuclear energy in the future. Accordingly, meaningful reform will take a holistic view of the energy issues, and the Malaysian government has undertaken the right policy direction.

References

- ABB (2014), ABB Inverters Help Connect Malaysia's Largest Solar Plant to Grid. Available at: <http://www.abb.com/cawp/seitp202/d265daad340e4430c1257d410029f79e.aspx> (accessed February 2015).
- Asia-Pacific Economic Cooperation (2015), *Review on Fossil Fuels Reform in Peru*. Produced by Nathan Associates Inc. for the US-APEC Technical Assistance to Advance Regional Integration Project. USA.
- Baig, T., et al. (2007), *Domestic Petroleum Product Prices and Subsidies: Recent Developments and Reform Strategies*. Washington, DC: International Monetary Fund.
- Economic Planning Unit (2010), the New Economic Model. IRENA (2015). Renewable Energy Country Profile of Malaysia. Available at: <http://www.irena.org/REmaps/countryprofiles/asia/Malaysia.pdf> (accessed February 2015).
- ERIA and IEEJ (2015), *Economic Impact of Removing Energy Subsidies in Malaysia*. ERIA Research Project Report 2015-13. Jakarta: ERIA. Available at: http://www.eria.org/publications/research_project_reports/FY2015/No.13.html
- Ilias, S., et al. (2012), 'Low Inflation, but at a High Price', Malaysia CPI: Inflation and Subsidy. Malaysia: Maybank IB Research.
- International Institute for Sustainable Development (IISD) (2013), *A Citizen's Guide to Energy Subsidies in Malaysia*.
- International Monetary Fund (IMF) (2013), *Energy Subsidy Reform. Lessons and Implications*, Washington, DC: IMF.
- Kimura, S. and P. Han (2016), *Energy Outlook and Energy Saving Potential in East Asia 2016*. Jakarta: ERIA. Available at: http://www.eria.org/publications/key_reports/FY2015/No.5.html
- Ministry of Finance Malaysia (2014), Malaysian Economy: Fourth Quarter 2014.
- Najib Tun Haji Abdul Razak. (2013). Fiscal Policy Committee (FPC) press statement. Prime Minister's Office.

- Petroleum Incentives (2010), Oil, Gas and Energy. Available at: [http://etp.pemandu.gov.my/30 November 2010-@-Petroleum_Incentives.aspx](http://etp.pemandu.gov.my/30_November_2010-@-Petroleum_Incentives.aspx) (accessed 14 June 2015).
- Rashid, Z.A. (2012), 'Economic Impacts of Subsidy Rationalization Malaysia', *ERIA Project Report 2011*, pp. 207–252.
- The Malaysian Economic Transformation Programme (2010).
- The Nation (2014a), 'PM: Subsidies not Wholly Abolished', 2 April.
- The Nation (2014b), 'Subsidies Taking Toll, Says Prime Minister', 22 January.
- The National Renewable Energy Policy and Action Plan (2008).
- The Tenth Malaysia Plan (2011-2015).
- United Nations Environment Programme (2008), Reforming Energy Subsidies. Available at; http://www.unep.org/pdf/PressReleases/Reforming_Energy_Subsidies2.pdf (accessed March 2015).

