Centre for Strategic and International Studies
ERIA Economic Research Institute for ASEAN and East Asia
Review of Indonesian Economic Policies

FIXING INDONESIA'S ELECTRICITY SUBSIDY

Raymond Atje*

This policy brief is the result of an activity entitled "Economic Policymaking in Indonesia' which is jointly conducted by Centre for Strategic and International Studies (CSIS) and Economic Research Institute for ASEAN and East Asia (ERIA). This activity is a contribution from research community that is expected to assist the government in formulating more effective economic policies in the future. In this activity, CSIS and ERIA invited 16 economists with specific fields of expertise from some leading research institutions to conduct in-depth discussions on seven strategic issues facing Indonesian economy (infrastructure development, competitiveness, investment climate, food policy, services sector policy, fiscal policy, and social protection policy), which is then summarized into policy briefs covering each of the topics.

Dissemination of the findings and recommendations produced by this activity is conducted through several channels. First, this activity has made efforts to engage the relevant government officials through some Focus Group Discussions (FGD), the publication of High Level Policy Notes, and hearings with some strategic policymakers with regard to each of the strategic issues mentioned above. Secondly, this activity also conducts widespread public disseminations through Public Seminars on each of the strategic issues, along with publications of the Policy Briefs and supporting multimedia that can be accessed online through www.paradigmaekonomi.org.

The author is grateful for all the beneficial inputs from both anonymous reviewers and participants of FGD in which the draft of this publication was being presented. Any error or mistake that might be overlooked here is fully within the author's responsibility.

INDONESIA HAS SUFFERED from deficit in the supply of electricity in the past ten years. At the end of 2014, the number of households that has access to electricity was estimated to be at 84%, with total consumption per capita at around 690kWh. In the same year, there was a lack of electrical capacity of approximately 2000MW in Sumatera region and 1600MW in Eastern Indonesian regions. One of the main obstacles that impede the supply of electrical energy is the lack of investment in the electricity sector. Recently, the government has announced plans to increase electrical capacity to be at 35000 MW in 2024. In order to achieve this goal, it is estimated that as high as USD 92.9 billion of investment funds is needed, where the State Electricity Company, or more commonly known as PLN, is responsible for USD 50.4 billion, while the rest of investment funds will be expected from private companies. In 2015 alone, the funds to build electrical energy generation facilities, transmission and distribution reached USD 8.86 billion, where the State provided USD 8.2 billion and the other USD 400 million from private investment or independent power producers.

The government provides subsidy towards specific groups. In 2014, the total amount of electricity subsidy stood at Rp99,3 trillion, while in 2015 the amount of subsidy according to the revised state budget was Rp73,1 trillion. At this very moment, the government intends to decrease such subsidy. According to Revised State Budget for 2016, we can see that subsidy falls to Rp38,4 trillion. However, it is expected that the government will make changes with regards to the electricity sector, where a change in tariffs and subsidies will occur.

ELECTRICITY SUBSIDY FOR LOW INCOME HOUSEHOLDS

The Indonesian government maintains electricity tariffs for various consumers, which include industry, business, households, social and public service. The government decides the amount of the subsidy, which primarily is based on the net difference of the cost of average electricity forwarded by the State Electricity Company (PLN) and the average electricity tariff rate by the government. The average cost of electricity incorporates various types of costs, from generation, transmission, and distribution, supply cost, as well as profit margin for PLN.

In Indonesia, electricity subsidy has been given for a long time. The government needs to reiterate the rationale for granting the subsidies, that is, to whom and why subsidies should be given in the first place. At the moment, there is a common perception that the subsidy is typically for low-income households. The reason why it has not been stated explicitly is due to administrative and political reasons. Indeed, there are still low-income households with electricity for nonpayment of connection fees and they are not subsidized. There are also poor households located in areas where there is no access to electricity, and they do not get subsidies.

Before, there has always been a fixed cap for the electrical consumption for each household. This means that their electricity consumption is considered fixed and not subject to change. Thus, if the price of electricity increases, the expenditure for electricity will increase relative to the price increase. If the price increase is big enough then there is a possibility that the household should reduce spending on other basic needs. In other words, without subsidies then an increase in electricity price could push them into poverty. This is arguably the main argument for subsidies given to low-income households electricity users.

For households who are unable to pay for electricity, these subsidies are provided to those households with connections of 450 VA and 900 VA. Such method is practical. But there is a possibility that there are households that are more capable or deserving to reap the benefits of a subsidy. To overcome such problems, the State Electrical Company will manage a database of low-income households, which has already been collected by the government under (TNP2K) to determine which households are eligible for the electricity subsidy; those that are eligible will be requested to raise their electric power usage to 1300 VA. Thus, it will make it easier for the government to target the appropriate households.

The obvious weakness from this proposal is the constant changes for subsidy targets that are created by changing social conditions. It is safe to assume that with economic growth, the number of poor households will decline. However, it is not always the case, as some households could fall into poverty for various reasons, even during a period of healthy economic growth. It is very complicated for State Electricity Company to constantly change the power connection to the various households based on recurring social changes. In addition, subsidies also distort prices and do not provide incentives for consumers to save money. Therefore, the government should consider changing the form of the subsidy from price subsidy into direct subsidy. This means that all customers will pay the price according to the cost of providing electricity supply and poor households will receive direct subsidies in lump sum payments. Transfers can be made to a special account that can be accessed by the households concerned. There are several advantages to this approach. It could reduce the risk of inflationary pressures due to transfers. Secondly, it could also educate and train low-income families to use banking services. Finally, it could encourage banks to improve their services for poor customers.

Technological issues should also be addressed. Today consumers can add or purchase electricity credit (pulsa listrik) in the same way as buying a cellular phone credit, as the State Electric Company calls this 'smart electricity'. This development allows them to control their electricity usage according to their needs and demands. A wide range of electrical appliances that exist today, such as LED lights, are very cost efficient. Thus, the reason for the electricity subsidy as proposed above seems is unnecessary, since households can now control their electrical expenditure. There are already poor households that do not have access to electricity because they cannot afford the fees. These same households do not receive any subsidies. In the long run it makes perfect sense to remove the subsidy so that the cost savings are used to aid poverty reduction programs and create jobs for the poor. In addition these programs will increase their income and thus reduce their dependence on aid, consequently increasing welfare.

Recommendation # 1: In the short to medium run, the government should change the form of electricity subsidy from price subsidy into a lump sum transfer. This transfer could be distributed through an account that is specifically created for poor households who are subsidy recipients.

Recommendation #2: In the long run, State Electricity Company needs to introduce the notion of 'smart electricity', which will help low income households. They should also provide counseling on ways to save electricity simultaneously with the government slowly reducing electricity subsidy elsewhere.

CHANGING TARIFFS AND ELECTRIC SUBSIDIES

In addition to subsidies, the method of determining electricity tariffs also need to be overhauled. The aim is to encourage electricity providers, especially the Electric State Company, to improve its efficiency. Over the years, the government uses the *cost plus* method for determining electricity tariffs. This is based on how the *cost plus* electricity rates, which are as follows:

Tariff = BPP (1 + m),

Where **tariff** is the price of electricity per kWh for a particular fare class, ***BPP*** is the cost of the provision of electricity supply per kWh on the voltage for the same tariff group, and **m** is the net profit for State Electricity Company. As mentioned above, the subsidy is the difference between the cost of procuring electricity on average filed by State Electricity Company and average electricity tariffs set by the government:

Subsidy = - (Rates - BPP (1 + m)) × V,

Where V is the volume of sales of electricity.

From the first formula, it can see that the *cost plus* method does not provide incentives for the company to improve the efficiency of electricity supply. If there is an increase in the cost of procurement of electricity will in itself increase the income. Thus there is no incentive for the company to absorb BPP. At the same time, subsidies will also increase where all the extra costs will act as a burden by the government.

In 2017, government will change the method of determining the rate from a *cost plus* to be *performance-based regulation* (PBR). The formula for the PBR is still unclear, but this scheme will provide costs towards the government with regards to inflation, economic growth, and operational and investment costs. It is expected that the company will strive to become more efficient in its efforts to provide electricity.

But this change will not affect the purchase price of electricity by State Electrical Company from the private sector, especially from the independent power producer (IPP), which is generally fixed under the power purchase agreement, as agreed by both parties. Of course, the IPP will strive to be more efficient because such efforts will increase profits. However, this will not affect the price that would be paid by SEC and thus by consumers. Most power purchase agreement applies to long-term, usually up to 30 years and usually includes provisions take-or-pay, meaning that the SEC have to purchase electricity in a certain minimum amount and at a certain price anyway. Nevertheless there are still things that can still be negotiated by SEC and IPP. One of them is the fuel cost pass-through; that is not all of the increase in fuel prices will affect all consumers, providing an incentive for IPPs to be more efficient when it comes to fuel consumption.

Recommendation # 3: With the change in the method of determining tariffs from *cost plus* to performance based regulation, the electrical climate from IPPs should also be considered in the future, especially since most of the electricity supply in Indonesia will come from them. The newly PBR system should also provide an incentive for IPPs to be more efficient in order to bring benefits not

only for the producers but also for consumers. For example if there is an increase in fuel prices the burden increase will not only be towards the consumers but also IPPs.

ELECTRICITY REGULATORY BODY

But the subsidy reform and change in calculating rates do not necessarily eliminate all the problems that may arise in the electricity sector. Bureaucratic issues such as regulatory capture and agency problems may arise during the process of tariff determination and implementation. Therefore the institutions that regulate the electricity industry also need to provide further urgency.

During this process, the Ministry of Energy, Mineral and Natural Resources bear the responsibility as the main regulator. But there are others who also have an interest in electricity but are not represented in the regulatory agencies such as the Ministry of Finance, consumer organizations and associations pertaining to the IPP. It clearly makes sense if representatives from this organization also participate in the regulatory body. Their presence will strengthen the main regulatory body and can reduce the likelihood of regulatory capture.

Recommendation # 4: Electricity Regulatory Board should expand its membership, which should include representatives from the Ministry of Finance, consumer organizations, IPP and other stakeholders.

CONCLUDING REMARKS: RESTRUCTURING ELECTRIC STATE COMPANY

Restructuring the Electricity State Company (PLN), be it vertically or horizontally, is essential in making the company better respond to incentive structures. The main goal of any restructuring efforts is to improve the company performance. This is possible through increased transparency of fees and the corporate structure as well as better control over all elements of the value chain through so-called regulatory benchmarking.

In 2015, the PLN went through horizontally organizational restructuring, as Indonesia was split into seven regions or territories. There are now company locations in Sumatra, West Java, Central Java, East Java and Bali, Kalimantan, Sulawesi, Nusa Tenggara, Maluku and Papua. The restructuring was necessary given the geographical condition of Indonesia, which is an archipelago of islands with different level of development of electrification. The focus of attention of each location will naturally vary according to the needs of the development of electricity in their respective operating regions.

In addition to horizontal restructuring, PLN also needs to consider vertical restructuring to make it a holding company with three subsidiaries, which are respectively, the Generator, Transmission and Distribution. The main PLN is the company responsible for the supply of electricity, from planning to generate electricity. PLN Pembangkit is responsible for planning, building and maintaining electricity transmission facilities and infrastructure. PLN Transmisi acts as a transmission system operators (transmission system operator) that is responsible for electricity from power plants to the distribution network. Lastly, PLN Distribusi is responsible for planning, constructing and maintaining the electricity distribution network and delivering electricity to customers.

With this division, the transactions that occur between the three subsidiaries

are as if they were independent companies. Thus, they create activities in the so-called 'internal market', which resembles the external activities of the electricity market. This means that there will be activities of sale or lease between Generation and Distribution, both of them will also have to pay for the services and the transmission system operator fee to Transmission.

There are several benefits from this restructuring. First, it will improve the performance of each subsidiary. The parent company and the regulatory body could manage the performance of each subsidiary. With the PBR, the board can formulate a system that rewards for subsidiaries that perform well and penalties for poorly performing firms. Of course, it is not necessary to implement this vertical restructuring in every region. However, it may be started in more advanced regions, such as Bali and Java.