

# **Terms of Reference for ESMAP Support Assessing the Impact of Reduction of the Fuel Subsidy on the Poor in Indonesia**

## **A. Background**

The Indonesian government provides a substantial subsidy to lower the price of fuels, which surpasses their total development expenditure. This provision, however, is rapidly becoming untenable as the soaring world oil prices are exerting significant pressure on the government's fiscal condition. Consequently, the Government reduced the subsidy amount for certain fuels, but left support for others, such as kerosene, unaltered. Despite the initial changes to the fuel subsidy, the budgetary burden persists as a result of ever-rising world fuel prices. Therefore, the Government of Indonesia would like to further reduce the fuel subsidy in line with sound fiscal policy as well as to reign in budgetary expenditure to a more manageable level. Although prices are expected to rise for all fuels, a particular concern is the cost of kerosene, which is subsidized upwards of 80% of market prices. Despite the regressive nature of the kerosene subsidy, it still benefits a large number of the poor in Indonesia.

The Government of Indonesia is seeking World Bank assistance in assessing the impact of changes to the fuel subsidy and its potential impact on the poor. They would also like the World Bank to propose potential measures that could mitigate the adverse impact of fuel price increases on the poor while maintaining fiscal prudence. The East Asia Energy Sector Team for Indonesia has been tasked with providing this advice, and we are seeking assistance from ESMAP in order to develop and deliver a quality assessment to help the client assist the poor.

## **B. Scope of Analysis**

The World Bank proposes to utilize expertise from within the institution as well as outside experts to analyze the following key aspects:

- **Fuel Switching:** Assess how consumers of fuels will substitute with other energy sources as the fuel subsidy is reduced and prices increase. This work will utilize current consumption and expenditure surveys to identify consumers' propensity to switch to alternative fuels. Particular attention should be given to the impact on kerosene users, many with relatively low incomes, and their likelihood to switch to sources such as LPG, natural gas, charcoal briquettes and firewood.
- **Barriers to Switching:** The availability of alternative sources of fuels should also be assessed including the supply chain and availability of distribution networks for options such as LPG and charcoal briquettes. Many of the poor may have limited access to sources other than kerosene, which can compel them to bear a significant burden due to a subsidy reduction. Supply through

institutions with monopoly power may also limit the options and impact the price of alternative fuels. The initial cost of switching, such as the price of switching to LPG stoves and the cost of the canisters, will also be factored in the analysis.

- Fuel Smuggling: There is evidence that smuggling of cheaper subsidized fuels to neighboring countries also has an impact on the availability of supply in Indonesia. To the extent that information is available, the proposed assessment will estimate this impact and how it affects access.

## C. Data and Methodology for the Study

### 1. Literature Surveys and Direct Interviews

This study will involve evaluating relevant literature related to fuel—particularly kerosene—consumption in Indonesia and other similar economies. Direct interviews with concerned government agencies, research institutes/think tanks, private sector representatives, as well as World Bank experts will be conducted in Jakarta and other Indonesian cities as necessary.

The focus of the literature surveys and direct interviews will be on evaluating the fuel distribution and supply chain across Indonesia, both on- and off- the Java region. The survey will also address the issue of switching costs, both one time and recurrent costs, to alternative fuels.

### 2. Regression/Econometric Analysis

With the assumption that sufficient data is available, econometric analysis will be used to estimate fuel own- and cross-price elasticities. Single equation models relate fuel demand to key driver variables, usually a demand indicator (e.g., income or GDP), and fuel prices or relative prices. These models often include dynamic equations, that is, they include not only current fuel prices, but also past fuel prices and quantity demanded. The price elasticities would then be used to assess the quantity demanded of different categories of fuels and the implication for the consumers. The basic approach is to estimate an econometric relationship between the share of a particular fuel in the total expenditure, the price of that particular fuel and its alternatives, and an indicator of gross activity.

Whenever possible, the fuel demand will be modeled for the following sectors:

- residential/domestic sector
- industrial sector;
- commercial sector, and
- transport sector.

In addition, the analysis will be broken down by urban and rural regions, and between on- and off-Java region, which may be further divided into western and eastern part of Indonesia.

### **3. Typical Household Analysis**

The typical household expenditure analysis will be used to evaluate the impact of fuel price increase on purchasing power of typical household within various income groups.

### **4. Smuggling Assessment**

To the extent that the information is available, the assessment of smuggling will be done by comparing the supply to domestic market and the domestic absorption for the same period. One alternative would be to use the input-output table to estimate the domestic fuel absorption.

#### D. Timeframe and Deliverables

This assessment will be conducted in a number of stages throughout the 2006 fiscal year, and can also change to some degree based on the client's requirements. The work will include several field assessments in Indonesia as well as desk-based reviews. The output will include a final report and presentation in addition to any ad-hoc proposals, presentations, and briefing notes as requested by the client.