



LEBANON: Social Impact Analysis For the Electricity and Water Sectors

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Introduction: This Quick Note, is based on the report “Lebanon: Social Impact Analysis for the Electricity and Water Sectors”, issued by World Bank’s Middle East and North Africa Region’s Social and Economic Development Group in June 2009. The report considers implications for the consumer of current service provision and impending reforms in Lebanon’s utility sector. It assesses: i) how different categories of households, and especially the poor, are affected by deficient electricity and water service; ii) the potential social impact of alternative reform scenarios, including tariff changes in the case of electricity and metering in the case of water; and iii) implications of better cost recovery measures in both sectors.

The findings are based on analysis of primary data collected from households ; sector assessments undertaken recently by the World Bank and by other domestic or external agencies; and from consultations with stakeholders. Relatively little research on the energy and water sectors in Lebanon has been conducted to date on the household/consumer perspective².

The Electricity and Water Sectors in Lebanon:

The electricity and water sectors face major challenges in increasing supply and improving

service. A striking aspect of the electricity sector is its heavy dependence on informal private generation operating outside any state supervision or guiding framework. In both the formal and informal water sector, quality concerns are of paramount importance—quality is a public health issue and there are serious additional socioeconomic consequences.

The report points to the following key similarities and differences between the two sectors from a social impact perspective:

- Both sectors suffer from inadequate supply. In the electricity sector this takes the form of highly uneven rationing. Water supply on the other hand, is constrained in every region by limited infrastructure capacity, population density and demand. Both sectors experience high commercial and technical losses. Beirut households enjoy good electricity supply, with rationing limited to three hours a day, but the city receives the lowest water supply per household in Lebanon.
- A key problem in the water sector is a disconnect between supply and demand. The absence of a metering system means households pay a fixed fee for a fixed amount of water supply (or allotment). Solving this issue would rationalize water consumption to a degree. There appears to be an informal understanding between water companies and households: many households don’t receive their water allotment, and the water companies often don’t pressure households to pay their bills. The key problem in the electricity sector is high cost of alternative supply, which is utilized by 58 percent of households.

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² The report should be read in conjunction with the “Republic of Lebanon Electricity Sector Public Expenditure Review, Report No. 41421-LB, Washington DC, January 31”; and “World Bank (forthcoming), Republic of Lebanon Water Sector Public Expenditure Review, Washington DC” which provide in-depth analysis of technical and institutional issues.

- Virtually all households are connected to the electricity network. Connection rates for water are 80 percent. However, given that water supply is inadequate in terms of both quantity and quality, connected households tend to purchase from alternate sources.
- Households have limited choice (on quality and cost) when it comes to electricity generation, with most buying from generator companies operating in the grey economy. There is a somewhat larger menu of options for purchasing water, available from tanker trucks, to wells, to large gallon bottles, and small bottles.
- Willingness to pay for improved electricity service is much higher for electricity than for water, reflecting the high cost and limited choice of electricity alternatives.

Conclusions and Recommendations: The overarching challenge facing Lebanon's public electricity and water sectors will be to establish trust with consumers. Major investments in each sector targeting infrastructure, management and while simultaneously improving performance human resources will need to take place while increasing revenue from consumers who have little faith in the system and want to see concrete results or credible action. The following remarks consider each sector separately.

Electricity: *Design a more effective and simplified tariff structure.* The current tariff structure is regressive and will do little to shield the poor from any future tariff increases. The inverted tariff block is not progressive—this is partly because it subsidizes all households and partly because effective kWh prices differ markedly from the quoted prices. This is especially so for low electricity consuming households.

Ensure proper sequencing in implementing policy measures. The burden resulting from EdL's (Electricite du Liban) service decline has increased significantly, despite the fact that the cost of electricity purchased from EdL has remained relatively low for consumers. However, increasing tariffs to cost recovery

levels without introducing commensurate service improvements would likely meet with resistance. Consumers must feel that the burden of reform is not placed entirely on their shoulders but is shared with EdL.

Reduce rationing, especially in the areas outside Beirut which experience long blackout hours. Among other things, this will have the effect of readjusting the burden imposed by rationing from the poor to the non-poor. Although there may be good reasons for keeping rationing in the capital to a minimum, it gives rise to social inequities. Beirut households have higher welfare levels and they are most able to afford paying for expensive substitutes. Most households in other regions must choose between going without electricity and spending significant amounts on private generation.

Establish operating guidelines for the informal electricity sector. The informal electricity sector, served by hundreds of private generator businesses, provides up to 30 percent of Lebanon's electricity and is an indispensable service to many households. Yet the sector lies entirely outside the legal framework and does not pay taxes to the state. It must be acknowledged that private generation will play a significant role in electricity generation for years to come. Hence, identification of proper operating guidelines that will protect and benefit consumers while ensuring continued availability of this alternative source should be given consideration and merit additional research work. Without dampening private sector activity, or generating layers of bureaucracy, the guidelines should attempt to:

- bring private generator businesses into the formal sector so that customers have access to means of redress for losses or damage incurred through faults on the supplier's side;
- enable the state to tax the sector like other businesses;
- set technical standards for service;

Water - Invest in improving water quality. In Lebanon, the burden on poor households comes from poor quality and low water supply, rather than high expenditures. Water expenditures by the low income households are

in line with World Bank recommendations of 3 to 5 percent of household budget, but could be reduced if households relied less on alternative sources. Although compared to other problems in water provision, reducing expenditures for consumers is not the top priority, the costs which consumers bear in terms of quality of service—poor reliability and potential health risks—are significant. A focus on improving quality and reducing losses, if accompanied by a public awareness campaign, would have a direct effect on welfare.

Expand metering - The current flat fee system is not serving providers or consumers **well**. Water companies cannot charge the marginal cost of production, and consumers do not get what they pay for. Pilot programs show that metering can be introduced, but unless metering is either region-wide or metered households are able to pay by volume, the benefits of metering will be limited.

To increase revenues, RWAs will need to address household concerns. RWAs can increase revenues in two ways, through improved bill collection and through tariff increases. In either case, RWAs will need to revise the informal and formal contractual

contractual agreements with households, raising tariffs and installing meters to link supply with demand, while also investing in improvements in quality. They will also need to strengthen collection enforcement mechanisms. To be successful, the new contractual arrangement will need to spread the benefits and costs between consumers and water companies in a manner acceptable to both.

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