

### Power in Lebanon: the time for action is now

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# ECA

*For years, Lebanon's national power utility has not had enough capacity to meet demand and has had high costs and low tariffs. Reducing the resulting fiscal burden is a high priority for the Government. Solutions exist, but they will take several years to fully implement. Will Government commit to those solutions? Or will it yield to more immediate pressures and in doing so jeopardise the sustainable solutions?*

#### Lebanon's power sector has suffered for almost two decades

Since Lebanon's civil war ended in 1990, the power sector has had a severe shortage of supply, with blackouts of up to 10 hours per day, despite significant sector investment. The national utility, Electricité du Liban (EDL), has been running a deficit for many years and has been propped up by Government subsidies.

Government subsidies to the power sector averaged 3.8 % of the Gross Domestic Product (GDP) from 2008 to 2017, amounting to half of Lebanon's fiscal deficit. In 2017 transfers were around \$1.3bn.

#### Reliance on fuel oils, high losses, and low tariffs results in high subsidies

EDL's poor financial performance is primarily due to:

- A heavy reliance on temporary and diesel-powered generation. Only 3% of the generation capacity comes from cheaper hydropower and Lebanon currently has no supply of natural gas.
- EDL's networks are very inefficient. In 2017, more than a third of the energy generated/purchased was lost before it reached customers. Much of it due to theft and billing errors.

- Electricity tariffs only cover around one third of EDL's costs and have not changed since 1996.

#### Supply from small scale private generators plays a large role in meeting demand

The long-lasting undersupply of electricity has made room for private generation companies, who have established their own mini-grids (often using EDL poles) and diesel generators. According to EDL's estimates, private generation supplied around one third of demand in 2017. For many years, most of the private generation was unmetered, with consumers paying a fixed monthly charge, and the private companies making high profits. In late 2018 the Government finally started enforcing metering and pricing of private generation.

#### Refugees have added to the challenges faced by the sector

According to Government estimates, there are now more than 1.5 million Syrians living in Lebanon (1 million of which are registered with UNHCR). As a result, Lebanon's population grew from 4.2 million in 2009 to 6.1 million in 2017 and Lebanon now has the highest number of political refugees per inhabitant of any country in the world.

This influx in population has led to steady growth in demand for electricity, rising by 6% per year on average since 2009. EDL has been chasing its tail – it adds new generating capacity, but higher than expected demand growth means there is no significant reduction in outages and therefore no apparent justification for increasing tariffs.

#### Planning investments is difficult with uncertain demand

EDL has been under-supplying for so long that it is difficult to get an accurate understanding of current demand for electricity. EDL estimates a peak load of around 3,500MW in 2017. ECA's analysis suggests that peak load could be as high as 4,000MW. There is also uncertainty around the refugee population and how people's consumption will change when tariffs are increased. So, there is a question mark around how much new capacity EDL needs to invest in. And a risk that EDL will once again invest in new generating capacity only to find that it still cannot meet peak demand.

## The solutions?

There is no silver bullet solution to the struggles of Lebanon's power sector. The sector has suffered for so long now, despite reform consistently being one of the Government's priorities. The solution lies in a multi-pronged approach, requiring a coordinated effort between various Government ministries and EDL over a five to ten-year period:

- **Shift from diesel to gas-fired generation.** Our analysis shows that the Government's plans to introduce gas-fired generation should approximately halve average fuel costs per kWh generated. We expect that these fuel savings will outweigh the costs of adding new generating capacity, which means that EDL can meet demand without increasing per unit costs. Government is committed to making natural gas available for power supply and in 2018 launched the tender for new floating LNG facilities. But Government is yet to award the contracts.
- **Increase the share of renewable generation.** Solar and wind have the potential to reduce power costs. However, that potential is constrained by availability of land and the ability of the ageing network to cope with large amounts of intermittent supply. The 1.5GW that Government plans to add over the next five years is ambitious.
- **Reduce network losses.** Activities that tackle theft and billing errors are low cost and therefore good value for money. But to be effective the activities must go together with institutional reform. Reforms of EDL will take time and strong political will.

- **Transition electricity tariffs to cost recovery levels.** To be socially acceptable, tariff increases need to be accompanied by improvements in the quality of EDL's supply, which requires significant investments. Government subsidies may need to increase in the short-term before they can reduce in the medium to long-term.

## The danger of chasing quick wins

The above solutions are not new and have been attempted at some point over the past decade. So why are households still without EDL power for up to 10 hours per day? The reasons are many and complex, but one main reason appears to be that past Governments have fallen victim to the temptation of chasing quick wins. Diversifying away from diesel to gas takes time, as does reforming EDL and stamping out theft. The election and fiscal cycles demand faster results.

The much-criticised power barges are a good example of this. First added in 2012, barges were likely a pragmatic short-term solution to the problem of undersupply – they were intended as a stop gap while cheaper permanent (ideally gas-based) generation was added. But seven years later those power barges are still running.

The medium-term solution to Lebanon's power sector woes likely lies with the introduction of LNG around 2022. Without it, it is hard to foresee costs coming down enough to significantly reduce Government subsidies – unless Government is willing to increase tariffs by more than 50%. The time for action is now and with a favourable LNG buyers' market, the Government should take the opportunity to introduce gas into the power mix over the next years.

*ECA is currently advising the Government of Lebanon, through World Bank assistance, in formulating energy sector reform strategies. This viewpoint is based only publicly available information and reflects the author's personal view.*