

Issam Fares Institute for Public Policy and International Affairs معهد عصام فارس للسياسات العامة والشؤون الدولية





KEEPING THE LIGHTS ON

A SHORT-TERM ACTION PLAN FOR LEBANON'S ELECTRICITY SECTOR

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INTRODUCTION

Lebanon is currently suffering from a confluence of deep crises combining economic, banking, financial, social, health crises which have resulted in a complete erosion of public confidence and trust and a meltdown of basic public services. However, the country is presented with an opportunity to build back better. A return to "business as usual" is no longer tolerated.

The country's power sector has long been at the centre of its economic and fiscal challenges with high generation costs, operational inefficiency and weak governance. It has also been particularly prone to corruption and vested political interests. Since 1992, the share of the electricity sector spending, including subsidies, has accounted for around \$40 billion, which is around 40 percent of Lebanon's government debt.

Lebanon's reliance on fossil fuels for power generation (heavy fuel oil and diesel oil) means the sector is both a contributor to and a victim of the unfolding economic and financial crises. The dwindling of foreign currencies' reserves is threatening fuel supply, which has compounded the operational challenges of both Electricité du Liban (EDL) and private generators. Additionally, the Central Bank (BDL) has started the process of lifting subsidies on fuel imports of all kinds, while the government has not yet finalized the needed preparations to distribute the cash cards on those who are most in need.

Building back better the electricity sector means securing affordable, secure, sustainable, and cleaner energy to the Lebanese people. It also means enacting policy that will reduce the likelihood of future shocks and increase the sector's resilience to crises. While the sector has been extensively studied and the solutions are widely understood and available, lack of political will for reform has been the key impediment for execution. Nevertheless, reforming the ailing electricity sector has never been more pressing.

With this in mind, Konrad-Adenauer-Stiftung (KAS), Natural Resource Governance Institute (NRGI), and the AUB Issam Fares Institute for Public Policy and International Affairs (IFI) have organized on 21 October 2020 a panel discussion for a strategic vision of Lebanon's Energy future, with the aim to outline the key problems of the sector, and provide recommendations for priority actions to be taken by the new Government as an immediate crisis management plan within the first 6 months. As a government was formed on 10 September 2021, this paper has been updated to take into account the latest developments as well as the worsening facts the sector has been witnessing.

We believe that the recommended actions below would support future governments in regaining the trust of its citizens as well as of the international community, and would set proper standards of transparency, integrity, and accountability.

A SET OF PRESSING CHALLENGES AT ALL LEVELS

The mismanagement of Lebanon's electricity sector has been damaging to the Lebanese economy and to the public trust in the state and its institutions. It has posed, along with the financial crisis, serious threats at all levels.

Among those pressing challenges, we can mention the following:

1) Drastic power rationing triggered by the heightened risk of fuel imports disruptions and the government inability to honour previous financial commitments:

a) Fuel import disruptions:

The contract with the major supplier of EDL's fuel Sonatrach expired end of December 2020, and the government had since procured EDL's fuel supply relying on spot cargo and using parliamentary approvals for short term budget advances. This has led to multiple fuel supply disruptions. In August 2021, the ministry agreed on a swap deal with the government of Iraq which will help EDL secure one third of its fuel needs over 12 months. The ministry has failed to launch a tender to award a new fuel supply contract. The matter is further aggravated by the Central's Bank depletion of foreign currency reserves necessary for the fuel purchases.

b) Previous financial commitments:

The government has accrued outstanding payments to the power barges suppliers, Karadeniz, to the power plants operation and maintenance contractors, and to the Distribution Service Providers (DSPs), amounting around \$450 million and risking a termination of their operations. These contracts are settled by the government at the official US Dollar to Lebanese Pound exchange rate (\$1 = LBP 1,500), whereas the latter has depreciated by 90 percent already, limiting the contractors' ability to import necessary equipment, especially in the case of DSPs and maintenance contractors, which import the electricity meters and other equipment. This crisis would not only result in lower power generation capacity, but also threaten a significant deterioration of the power grid and increase in losses.

c) Potential Interruption in temporary power supply:

As at September 2021, EDL was only able to supply about 600-700MW of electricity; 250MW of which were sourced from the power barges. The power barges contract expired on September 30, 2021, and the ships are expected to leave the country soon with no clarity regarding their dues as well as the ongoing legal cases in the Lebanese courts.

d) Potential Imports of Gas and Electricity:

In September 2021, the government initiated talks to import gas from Egypt through the Arab Gas Pipeline and electricity from Jordan through Syria. The gas would supply the Deir Ammar plant which has a capacity of around 450MW. The amount of electricity that can be supplied from Jordan is estimated at up to 270MW¹ given the state of the infrastructure. Such agreements are pre-conditioned with receiving a waiver from sanctions from the US government. Moreover, investments in upgrading the electricity grid (in Syria and Lebanon) and on rehabilitating the Arab Gas Pipeline especially in Syria would be needed to allow for the wheeling of the gas and electricity through Syria. This will require funding and time from the date of initiation of works.

2) The urgency is beyond fiscal and technical challenges, it also includes rebuilding a public trust deficit created due to the lack of transparency, oversight, and governance in the sector. In fact, donor and private sector investments in the sector are contingent on structural reforms to restoring public trust and building confidence.

3) The bankability of the Lebanese Power Purchase Agreement (PPA) model needs to be addressed to promote investments into the sector.

4) The sector governance has been mostly disregarded. Improving the governance requires strengthening institutions, implementing an independent regulatory body, and improving procurement practices.

5) The absence of an overall sector vision developed with proper public consultations, especially when it comes to the energy mix² and evidence-based planning with a focus on least-cost solutions.

6) Over expectations on Lebanon's Oil and Gas wealth, that has been perceived as the saviour and the solution to the crises facing the country, prior to any exploratory activity. With only estimates of both the recoverable reserves and the funds it could generate, the sector has been represented as the main source of investment funds for the coming decades.

1 According to EDL sources.

2 A list different primary energy sources from which secondary energy for direct use - such as electricity - is produced. The term energy mix refers to how final energy consumption in a given country breaks down by primary energy source.

KEEPING THE LIGHTS BY ADDRESSING THE IMMEDIATE NEEDS

As such, we urge the new government to take the following actions during the immediate and short-term period (6 months) :

At the government level:

a) Secure a new fuel supply contract through negotiating a favourable contract with renowned exporters (governments or international and large oil trading companies); and at a later stage, creating a public tender platform that complies with accountability and transparency requirements.

b) Finalize all required approvals and commercial agreements to secure the import of electricity from Jordan and gas from Egypt to Deir Ammar.

At the parliament level:

a) Enact a distributed renewable energy law in order to encourage small-scale generation and reduce the load on the bankrupt electricity utility. A focus on the peer-to-peer trading of renewable energy power through on-site and off-site corporate power purchasing agreements and/or renewable energy equipment leasing would be encouraged on the short-term.

b) Energy Efficiency: Support the enactment of an energy efficiency law that will promote, through the use of a combination of commandand-control and economic incentive policies, the reduction and efficiency in energy use in the residential, commercial and industrials sectors of Lebanon, targeting both behavioural changes and a more efficient stock of appliances and equipment.

REGAINING TRUST THROUGH PUBLIC REFORMS

Unlocking investment into the sector requires certain minimum prerequisites at the government and the sector levels. The pre-conditions listed below are only a subset of initiatives needed to recover the sector financial and technical viability but are paramount to kick-start the process for recovery:

1) Pre-conditions at the government level:

a) As a government has been formed, It is imperative for it to take the necessary decisions and implement previous commitments towards a reformist and transparent action plan within the sector, in order to regain the trust of the Lebanese people.

b) Macro-economic stabilization with an IMF program to ensure public finances are put on a stable trajectory and the government default on Eurobond can be remedied.

2) Pre-conditions at the sector level:

a) Defining the sector plan in light of the current crises with public consultations and information disclosure to the general public to regain public trust and buy-in.

b) Immediately launch the process for the appointment of an independent Electricity Regulatory Authority (ERA) based on law 462/2002 and secure the support necessary for the new entity to be fully operational while ensuring that its members are independent, autonomous, empowered to perform their duties.

c) Allow, in the ERA appointment decrees, the provision of a transition period of maximum 1 year for an orderly transition of authority from the Ministry/Cabinet to the regulator when the regulator can effectively assume its full responsibilities. Transition period should be specific in both time and milestones.

d) Set up a unit within the regulator whose function is to support developers in obtaining licenses and permits required to construct and operate power projects. Such unit would also have standardized lists of required licenses and permits for each type project and the required documents/steps to procure such licenses and permits. It will also support in their renewal and in notifying developers in case any new permit or license are needed throughout the project lifetime.

e) Implementation of Law 462/2002 with a vision for unbundling EDL's generation and distribution assets taking into account the utility's future role, and establish and empower a renewable energy department at EDL to manage and administer all matters related to utility scale renewable energy and distributed renewable energy (including net metering, power wheeling etc.)

REVISITING BANKABILITY

A non-exclusive list of certain key impediments facing the investments in the power sector and potential solutions could be summarized as follows:

1) Credit worthiness of the off-taker:

A key requirement for financing projects in developing countries is Government recourse as the local utilities are often not creditworthy. This is usually achieved by way of a government guarantee or direct government recourse to the government under the PPA (as is the case of the Lebanese current PPA model). Following the default of the Lebanese government on its Eurobonds in March 2020, the country rating has fallen to the 'defaulting' category, in other words, on a pure credit basis, financing to Lebanon cannot be approved.

To solve this issue the following steps are required:

a) For large investments especially in thermal power, donor support is necessary either as a guarantee or through export credit to the public sector;

b) For renewable energy projects, whereby financing appetite is large, an IMF program would be needed to ensure public financing is put on a sustainable path forward;

c) Moreover, sector specific reforms, specifically in terms of (i) reducing grid losses and (ii) tariff reform to ensure EDL's financial viability (hence ability to service payments under the PPA). The tariff of EDL needs to be adjusted to cater for:

(1) Lira foreign exchange rate,

(2) Fluctuations in oil prices, while making sure sufficient protection from price hikes is provided for the most vulnerable.

2) Transferability and convertibility of the currency in order to avoid subjecting the power producer and financiers to currency risk which is currently uninsurable (or unhedgeable):

In light of the current financial, monetary, and banking crisis which have resulted in the shortage of foreign currency and de-facto capital controls, the payment under the PPA needs to be denominated in foreign currency without limitations or additional approvals required to transfer funds to offshore accounts. Investments into the sector require the payment to foreign suppliers of equipment in addition to obtaining foreign long-term loans, therefore, payment under the PPA needs to allow for the recovery of such investments. Since EDL bills' collection is in Lebanese Lira, two prerequisite conditions are required:

- (1) floating the lira, and
- (2) adjusting the EDL tariff.

3) Off-taker liquidity status:

Given the above condition for free transferability of funds in the current market conditions, a short-term Government-to-Government instrument, a liquidity facility and/or a guarantee from the donor community and/or multilateral agencies that bypasses EDL's contracts is required to support the payment obligations.

4) Reducing Transmission or Interconnection Risk:

The state of Lebanon's grid needs significant investments to (i) reduce system losses (both technical and non-technical) and (ii) connect the new generation pipeline. New public financing needs to be secured to strengthen and expand the grid to absorb the new planned generation. While investors and financiers in Lebanon's case require the interconnection risk to be borne by the government, best practice entails that the produced electricity is successfully injected to the grid; ensuring that payment under the PPA is for electricity actually delivered to consumers.

5) EDL technical and administrative capabilities post August 4 blast:

The National Control Center "NCC" which controls the nation-wide power system operations, located inside EDL's headquarters, was destroyed by the August 4, 2020 Beirut port blast. Moreover, EDL's data centre for the billing system as well as customer meters laboratory were destroyed. Public sector emergency funding by the donor community for rebuilding such capabilities is needed to comfort investors that the utility will have the required capabilities to handle the new generation projects. Moreover, all rebuilding efforts need to consider the role of the utility as envisioned by law 462/2002, focusing mainly on transmission system operations.

6) Insurance:

Financiers in Lebanon's power sector currently require political violence insurance coverage for business interruption and asset destruction linked to political events. There is current uncertainty about the ability to receive such insurance coverage at reasonable cost - or at all - in the current market environment. Therefore, some degree of political and security stability is needed to ensure projects can secure the proper insurance coverage for the financing.

In addition, it is worth noting that due to the high market risks for doing business in Lebanon, projects need to mitigate other risks including

(1) Environmental and social risks, through the development of environmental and social management plans adhering to the highest standards after proper public consultations,

(2) construction risks through preferably entering into turnkey EPC contracts with experienced contractors, especially for first of their kind and large projects and

(3) experienced developers with previous experience managing and developing high risk projects.

THE NEED FOR ENERGY PLANNING

The world is currently witnessing a renewable energy revolution, driven by technological advancement which has seen the cost of solar and wind power drop exponentially over the last decade, combined with advanced storage alternatives. Scaling up renewables would significantly benefit Lebanon in terms of cost savings for the power sector in addition to energy security and environmental sustainability. In fact, Lebanon is blessed with plentiful solar, wind and hydro resources that would lead to renewable energy generation that is, on average, lower in cost than thermal generation and to improved energy security through reduced fuel imports.

In February 2020, the World Bank confirmed the need for a new electricity vision by including 4700 MW of renewables³ in the White Paper submitted to the government.

As a follow-up to that report, the World Bank has commissioned an internationally renowned consultant, Electricité De France (EDF), to prepare a Least Cost Generation Plan, with the aim to evaluate how Lebanon can optimize its energy production, minimize costs, and reduce pollution from fossil fuels, based on technical, economic, and environmental grounds, and away from politics and cronyism. By defining the optimal energy mix to reach in order to satisfy its medium and long-term energy demand, Lebanon will be able to improve its balance of payments, enhance its energy security, and create thousands of jobs mainly in Lebanon's poorest regions.

The findings of EDF's study are still unpublished, but knowing its importance, we believe that public consultation and transparent debates should be made open to the public to discuss this future energy vision for the country.

On the other hand, the International Renewable Energy Agency (IRENA) has released in June 2020 its 2030 Renewable Energy Outlook for Lebanon⁴. This came after Lebanon pledged to produce 30% of its electricity from Renewable Energy sources by 2030. The outlook recommends achieving a 10-fold increase on the roughly 3% rise recorded in 2014, and that renewable energy could provide around 10% of Lebanon's total final energy supply in 2030, up from less than 1% overall in 2014. This is achieved through the following individual target capacities for each technology: 1 000 MW of wind; 601 MW of hydro; 2 500 MW of centralized solar PV; 500 MW of decentralized solar PV; and 13 MW of biogas.

3 World Bank Group Lebanon Power Sector Emergency Action Plan – White Paper 2020

4 Retrieved from: https://www.irena.org/-/media/Files/IRENA/ Agency/Publication/2020/Jun/IRENA_Outlook_Lebanon_2020.pdf

THE NEED FOR ENERGY PLANNING

Investments stimulate the economy. There is no doubt that the future of energy is in renewables and Lebanon needs to invest in the "future". Moreover, renewable energy projects are labour intensive. Those investments create hundreds of jobs. Increased demand can increase low skilled labour wages. In other words, those investments have a large multiplier impact on the economy and can kickstart a virtuous cycle.

Ensuring energy security for Lebanon needs a complementary energy mix based on least-cost solutions.

TARRIF RESTRUCTUREAND LOSSES REDUCTION

The sustainability of the sector will require cost recovery and for those different factors should be met including: Significant reduction of technical and non-technical losses, reduction of power generation costs, and tariff restructure.

Addressing the power generation cost is directly linked to the above mentioned least-cost planning. While the reduction in losses require investments in the power grid, improving the billing and collection rates and cutting down the non-technical losses, building citizens' trust is especially important in achieving the latter, in addition to standardised smart-meters deployment.

For the tariff reform, there is currently a lack of fairness on equity in electricity supply and cost as the different regions receive various EDL supply hours resulting in wide discrepancies in the need, and consequently bills, for the private diesel generators subscription. Additionally, 35 percent of the subsidies have been benefitting the richest share of the population, whereas the poorest share has only been receiving 16 percent of the subsidies. Thus, the subsidies should be eliminated on the highest electricity consumers while a comprehensive strategy for the tariff restructure should be undertaken, taking into account the socio-economic and political implications.

A safety net should be established to protect the vulnerable population, through direct cash transfers programmes in collaboration with international donors.

TOWARDS A NEW, SUSTAINABLE, AND VISIONARY ENERGY MODEL

Putting the sector on a path of long-term recovery and sustainability would need collective action in order to implement the following:

1) Enabling Investments:

Such investments are crucial to manage the increased intermittency and stress from renewable energy resources in terms of:

a) Base load power:

A scale up of renewable energy investments will require investments in approximately 1.8GW base load power⁵ in the form of gas fired power plants (Combined Cycle Gas Turbines -CCGT) to bridge the supply deficit and provide grid stability. Such investments need to be procured via competitive transparent tendering process as well as adhere to a least cost generation plan.

b) Gasification of the sector:

Assess and evaluate the existing Floating Should the government reach an agreement to secure gas from Egypt to Deir Ammar, the ministry should then reassess its strategy to gasify the electricity sector and also the industrial/residential sectors as well. This could be achieved via tendering the construction and operation of a north to south gas pipeline. An FSRU could be still procured in the South for the Zahrani plant to ensure our gas supply security in the event of a disruption in supply via the Arab Gas Pipeline.

The decisions should be based on an assessment on clearly defined criteria (feasibility, efficiency, agility, financing likelihood, public good).

c) Transmission and distribution:

Transmission:

Start implementing the upgrades to the transmission network based on an updated masterplan that reflects the least-cost generation plan.

Distribution:

DSPs: Develop and implement a strategy for the distribution sector that is consistent with Law 462's vision, given that the expiration of the Distribution Service Providers (DSP) contracts are in 2021.

Smart meters: Develop a plan to accelerate the deployment of smart meters that is in line with the plan for evolution of the distribution sub-sector.

5 According to a recent World Bank study

TOWARDS A NEW, SUSTAINABLE, AND VISIONARY ENERGY MODEL

2) Licensing and Projects Tenders: Targeting the "low hanging fruits"

a) Immediately launch the tender for a CCGT power plant with gas procurement and needed grid infrastructure "Gas to Grid" in the Zahrani area;

b) Reach a resolution for the existing arbitration case with JP Avax concerning a second CCGT power plant in Der Aamar [Der Aamar-2] and re-tender the whole project;

c) Finalize the licensing process for the 180 MW solar farms under the Round I solar tender, comprising twelve 15 MW plants distributed across Lebanon, after finalizing the price negotiation with the bidders;

d) Further develop the MEW's capacity to significantly scale-up renewable energy projects and launch procurement for 300 MW solar photovoltaic farms plus storage capacity;

e) Progress assessment of the next wave of wind power projects;

f) For all new renewable energy tenders, assess the possibility of using public land to optimize tariff levels;

g) Assess possibility of launching large scale renewable energy projects in line with the least cost generation plan.

3) Financing:

a) Work with development banks to standardize a set of bankable project documents (including a template Power Purchase Agreement, Lenders' Direct Agreements with a government guarantee to be approved by parliament);

b) Discuss and secure additional credit enhancement solutions (such as Political Risk Insurance and liquidity support) to reduce the cost of borrowing and attract the needed financing and equity investments in the sector.

LEBANON'S OIL AND GAS WEALTH: NOT THE SAME GAME-CHANGING IMPACT

The disappointing but expected drilling results of the offshore block 4 should be an opportunity to better manage citizens' expectations, delink the sector from politics, and more importantly rethink Lebanon's energy strategy, especially during the crisis period.

Lebanon has set many objectives for its oil and gas sector; mainly seeking energy security, a reduction in the national deficit, the use of cleaner energy, generation of wealth, and the exertion of some kind of political influence in the region. However, from the plethora of official statements, there is a sense that the political class is more focused on the potential of the sector to generate revenues for the State especially in the light of the economic and monetary problems.

No one is ignoring the benefits that could occur from an active oil and gas sector but for the time being and under a crisis management scenario, oil and gas does not play a role. In the medium and longer term, gas could have an important role in the Lebanese economy, but it might not have the game changer effect and transformative impact on the economy that is being portrayed and promised. The next Minister must deal with the following realities:

• Block 4:

After the submission of the detailed report of the first exploratory well to the ministry in November 2020, Total submitted its 2021 workplan for the block as a sign for continued interest in the area it drilled its first exploratory well in March/April 2020. And with the recent decision of the government to extend the first exploratory period till August 2022, Total and its partners will have to decide if any work would be necessary beyond that date and if they want to extend for two more years starting 2022 till 2024 to drill an additional well in block 4.

• Block 9:

With the decision to extend the first exploratory period to August 2022, the government released Total and its partners from the pressure to drill before May 2021 as initially planned and agreed per the contract; and released them for paying the \$40 million guarantee provided by the consortium under the contract. In addition, the ministry announced that Total and its partners presented their work plan for 2021 for the drilling of the first well. Therefore, it could be that drilling would start after Q2, 2021 or could be extended till Q3 2022.

LEBANON'S OIL AND GAS WEALTH: NOT THE SAME GAME-CHANGING IMPACT

Second licensing round:

After it extended the first exploration period to August 2022, the current ministry - according to its workplan wants to re-launch the second licensing round that was postponed two times. The launch will come at difficult times in the country; and the ministry might decide to loosen some criteria to attract companies to participate in the bid. The changes in the criteria should not be seen as backsliding from best practices that the LPA adopted.

Unitarization with Cyprus:

The ministry needs to finalize the unitization agreement between Lebanon and Cyprus which had been ongoing for a while, but that will also require to define the EEZs between both countries.

Maritime borders dispute:

Since the disputes with both Israel and with Syria have implications on the licensing rounds as well as on the offshore blocks attractiveness, the ministry should be engaged at the decision making level and communications with existing and potential investors shall be done with more clarity regarding the expected solution of these disputes. Currently, seven blocks out of 10 (blocks 1,2,3,5,8,9, 10) are either in disputed (1,2,8,9,10) or unidentified (3,5) areas. That means there might be less appetite from investors to come up with offers on these blocks; without forgetting all the financial, economic and political challenges facing the country.

• Transparency decrees:

The ministry needs to continue with its transparency measures and submit to the CoM all necessary decrees related to transparency such as the petroleum registry and the beneficial ownership decrees.

FUTURE OF OIL AND GAS AND LEBANON'S ASPIRATIONS

Covid-19 caused an unprecedented harm to the oil and gas sector with the historical drop in demands that caused a drop in prices never seen before. This crisis led energy analysts, IOCs, and others to discuss the future of demand; and the International Energy Agency (IEA) developed its roadmap to net zero by 2050, where it has recommended to immediately stop investing in new oil and gas projects. Investors are under pressure and many financial institutions are betting big on alternative energies rather than fossil fuels.

With such a future, Lebanon needs to manage its expectations of how much longer it could wait for this sector to be "productive" and how much it could rely on this sector to get its benefits. It is Lebanon's right of to develop this sector, but it needs to reassess if developing its own gas resources will be beneficial more than importing natural gas or LNG, and it needs to understand that the future is leaning towards renewables, and it might be more adequate for the ministry to support the renewable sector in the coming years and push for more energy coming from the renewables.

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KONRAD ADENAUER STIFTUNG

Freedom, justice and solidarity are the basic principles underlying the work of <u>the Konrad-Adenauer-Stiftung (KAS)</u>. The KAS is a political foundation, closely associated with the Christian Democratic Union of Germany (CDU). It encourages people to lend a hand in shaping the future along these lines. With more than 70 offices abroad and projects in over 120 countries, Adenauer foundation makes a unique contribution to the promotion of democracy, the rule of law and a social market economy. To foster peace and freedom KAS strives at fostering continuous dialog at the national and international levels as well as the exchange between cultures and religions.

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