Program Information Document (PID)

Concept Stage | Date Prepared/Updated: 04-Apr-2019 | Report No: PIDC185505

BASIC INFORMATION

A. Basic Program Data

Country	Project ID	Parent Project ID (if any)	Program Name
Lebanon	P170506		Lebanon Energy Sector Reforms Program
Region	Estimated Appraisal Date	Estimated Board Date	Does this operation have an IPF component?
MIDDLE EAST AND NORTH AFRICA	22-Apr-2019	27-Jun-2019	Yes
Financing Instrument	Borrower(s)	Implementing Agency	Practice Area (Lead)
Program-for-Results Financing	Ministry of Energy and Water	Electricite du Liban	Energy & Extractives

Proposed Program Development Objective(s)

Improve the operational, commercial and financial performance of the power sector, and strengthen the governance of Electricite du Liban

COST & FINANCING

SUMMARY (USD Millions)

Government program Cost	3,600.00
Total Operation Cost	1,009.00
Total Program Cost	999.00
IPF Component	10.00
Total Financing	500.00
Financing Gap	509.00

FINANCING (USD Millions)

Total World Bank Group Financing	500.00
World Bank Lending	500.00

B. Introduction and Context

Country Context

1. Lebanon has experienced significant political, financial, and social crises that undermine its stability in recent years. GDP growth plummeted from an average of 8 percent before 2011 to just 1 percent in 2018. Public debt reached 155 percent of GDP by end 2018, one of the highest globally. Debt service reaches around 10 percent of GDP annually, consuming approximately half of domestic revenues. The fiscal deficit in 2018 is expected at 8.3 percent of GDP. Externally, a large trade deficit drives a sizable structural current account deficit, which has averaged over 21 percent of GDP over the past 5 years. Of significant concern, deposit inflows have decelerated sharply since 2011, increasing uncertainty on the economy's ability to meet its financing needs.

2. All these challenges have been partly a result of and further exacerbated by a large influx of refugees resulting from the ongoing conflict in Syria. The number of displaced Syrians in Lebanon is estimated at 1.5 million, representing more than a 30 percent increase in the country's population in a relatively short period. The country, with large international aid, has managed to provide the refugees with basic services, but this no doubt imposes a tremendous burden on the already weak public service system. The latest available official poverty rate (in 2011) shows that nearly a third of the population is poor, which is likely further impacted by the large refugee influx.

3. Lebanon is a fragile country. In addition to spillover from the Syrian war, the country also suffers from frequent internal sectarian conflicts and violent crimes. The caution against the region has affected the tourism industry on which the economy depends. Government institutions are captured by political parties, which vie for influence and rent seeking. Corruption and failed institutions plagued the public sector. The social contract is undermined by poor service delivery, particularly electricity provision. On the other hand, Lebanon enjoys a high level of human capital as the quality of (private) education and health facilities is high. Most of Lebanon's resilience has come from a strong private sector despite a challenging political environment.[1]

4. In response, the Government initiated a large capital investment program (CIP) to raise up to US$16 billion (32 percent of GDP) over the 2018-2025 period to increase growth and alleviate the burden on both host communities and refugees. At the *Conference Économique pour le Développement, par Les Réformes et avec les Enterprises* (CEDRE), which took place on April 6, 2018, in Paris, France, the Government presented the *Vision for Stabilization, Growth and Employment* as part of this fundraising effort. It committed to an annual 1 percentage point reduction in the fiscal deficit ratio over the next 5 years. If implemented, the plan has significant potential to provide a sustained boost to the economy, attract much needed capital inflows, and catalyze job creation. The new Government, formed on January 31, 2019, promised to contain public spending and implement needed reforms that could unlock pledged aid and loans for such investment. Since the new government, domestic bank deposits are forecast to grow by US$7-8 billion in 2019 compared with US$5.6 billion in 2018.

Sectoral (or multi-sectoral) and Institutional Context of the Program

5. The electricity sector has dual impact on both Lebanon's fiscal and current account positions. On the fiscal side, and with the overall fiscal balance in deficit since 1992, subsidy to the sector, reaching US$1.3 billion in 2017 and US$1.8 billion in 2018 (3.5 percent of GDP), have been effectively paid through borrowing. The sector is also dependent on import of fuel oil and natural gas, adding to the country's current account deficit.

6. The sector is dominated by a vertically integrated national utility, Electricité du Liban (EDL) established in 1964, with exclusivity over generation, transmission, and distribution and operating under the administrative oversight of the Ministry of Energy and Water (MEW). Assessment of EDL's organizational, operational, and financial performance shows

[1] Malaeb, Bilal (2018). State fragility in Lebanon: Proximate causes and sources of resilience. International Growth Centre's Commission on State Fragility, Growth and Development.

serious deficiencies. Its organization structure is obsolete, which does not take into account changing operational requirements (distribution contracts, improved generation, technology, etc.). The workforce is also ageing, and staff capabilities are low while recruiting quality personnel is constrained by civil service processes. As a result, EDL relies on contractual arrangements of daily workers, with limited control over their competency and quality. Business processes are inefficient across all activities and functions and many operations are not yet digitalized. The sector also lacks a regulatory authority to ensure adequate level of service.

7. Supply is insufficient to meet growing demand. Even with a likely underestimated peak electricity demand of approximately 3,458 MW, the utility supplied only 67 percent of this demand in 2017 from its 2,100 MW of installed and rented generation capacity, leaving the balance of demand to be satisfied by diesel-fired private generators that are illegally connected to the distribution low-voltage network. Most households (estimated at 85 percent) rely on this source with very high prices (around US$0.24/kWh) and low wattage. The shortfall is also partly because of generation curtailment to reduce the fuel bill, particularly by running inefficient open cycle gas turbine (OCGT) plants at below capacity. Recent World Bank surveys indicated that availability of reliable electricity is the second biggest obstacle to private sector growth, after political instability. Rolling blackouts are 3-13 hours per day.

8. The electricity need of the refuges has added to this growing demand, overtaxing the already deteriorating network, creating overloads and voltage fluctuations in some areas.[2] UNDP estimates that the direct and indirect power generation needed to cater for Syrian demand amounts to approximately 486 MW at its peak, which has a significant impact overall on EDL's system. Further aggravating matters, many displaced Syrian refugee households do not have metered electricity connections, thus increasing non-technical losses. There is also indirect power consumption caused by schools working an additional four-hour shift to host displaced Syrian students, and by municipalities/water establishments due to water pumps having to operate for longer hours to cover the increase in water demand. Overall, UNDP estimates that government transfers to EDL to cover the costs of electricity provided Syrian refugees totaled approximately US$1 billion during the 2012-2016 period.

9. The cost of electricity generation is high (ranging from US$0.07/kWh to US$0.16/kWh) since, although the bulk of EDL's generation fleet as well as its barge-mount rented reciprocating engines can use natural gas, they continue to rely on expensive diesel and fuel oil because of unavailability of gas. Lebanon is connected to the Arab Gas Pipeline (AGP), which was completed in 2008 and links Egypt and Lebanon through Jordan and Syria, but it was only able to purchase gas from Egypt through this pipeline in 2009 before Egypt's domestic demand absorbed available supplies. While Egypt now has excess gas capacity and is willing to export it to Lebanon, pipeline integrity needs to be tested, given that it has not been used for 10 years. The geopolitical challenges also need to be addressed to facilitate the sale, which will require government-to-government dealings and assurances for the security of the line and gas shipments. As such, it is unlikely that Lebanon can exclusively depend on this pipeline for its energy security in the short- to medium-term.

10. In addition to reliance on expensive fuel oils, high losses add to the cost of electricity service. EDL's networks are inefficient, with total losses (technical and non-technical) of around 36 percent in 2017. Constituting 21 percent of energy sent out, non-technical losses (theft and billing errors) are the primary cause for concern. Taking into account these losses, the total cost is estimated at around US$0.20 per kWh sold. In comparison, EDL's average tariff, which has not changed since 1994, is around US$0.095/kWh, covering only 45 percent of average operating costs. The low collection rate (68

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[2] A study by the Ministry of Water and Energy and UNDP, 2017, entitled "The Impact of the Syrian Crisis on the Lebanese Power Sector and Priority Recommendations", found that around 45 percent of displaced Syrians do not have metered connections. Similarly, in a UNCHR Vulnerability Assessment of Syrian Refugees in Lebanon, 34 percent of households who reported to have legal connections no electricity bills were available amounting to around 44 percent of unbilled connections, which is consistent with the UNDP and MEW report. Regarding differentiated access, the UNHCR finds little difference between male and female head of households in shelters, however, female head of households resorted to coping strategies more often (i.e. in the case of a power cut, etc.) and are reportedly more vulnerable.

percent in 2017) – primarily a one-time shock due to the strikes of EDL staff – means that the tariff revenue collected covers only 33 percent of operating costs.

11. In 2012, the Government awarded contracts on a competitive basis to private sector distribution service providers (DSPs) – BUS, KVA, and NEUC – to improve operational and commercial efficiency of electricity distribution and customer service, including investments to reduce technical and non-technical losses on the grid. While some progress was made, the original objectives of these contracts were not met for various institutional and technical reasons which necessitated a 4-year extension in 2016 to continue providing some of the original services and to complete the original scope.

12. Lebanon does not lack insight regarding the technical solutions for power sector challenges. These have been reiterated in numerous studies, publications and plans, including a 2008 WBG Electricity Sector Public Expenditure Review, Paris III commitments, and the Government's 2010 electricity sector policy (2010 Sector Policy). The most recent articulations for the sector are in the Emergency Energy Sector Reform Plan (EESRP), which is estimated at US$3.6 billion and structured along the following lines:

(a) **Security of supply:** Improving the efficiency of existing plants; Increasing generation capacity to meet growing demand by installing new plants under an independent power producer (IPP) arrangements – these new plants will also include RE to reduce reliance on imported fossil fuels; Expanding the transmission and distribution networks to accommodate the additional capacity from new IPPs.

(b) **Operational performance:** Reducing transmission and distribution network losses and strengthening customer services.

(c) **Cost recovery:** Reducing generation costs by switching fuel use to natural gas and adjusting tariffs with a view to reducing electricity subsidies as part of the broader fiscal strategy. According to Government estimates, elimination of electricity subsidies would achieve 80 percent of its structural adjustment target.

(d) **Governance:** Establishing a regulatory authority to regulate the sector with a view to updating Law 462 and providing a strong framework for regulation of tariffs and quality of service; Modernizing EDL's operations and internal systems based on commercial principles under a sound governance structure.

13. Political factors have obstructed progress on power sector reforms in the past and are likely to challenge implementation of new policies in the future. Sectarian interests and patronage practices may supersede the interests of the country, including in the power sector. Vested interests linked to corruption may aggravate the ability to plan and implement successful reforms. Nevertheless, there seems to be growing recognition that the country is moving closer to the brink as a result of growing fiscal deficit, debt-to-GDP ratio and massive transfers to EDL. Failure to implement reforms will risk not only the funding mobilized at the CEDRE but also the reputation of the major parties which promised to solve the problems in the power sector during the parliamentary election campaign and which put forward candidacy for the 2022 presidential election. These threats are creating the conditions for urgent action to be taken and increasing pressure on parties and individuals to advance reform.

14. The proposed Lebanon Energy Sector Reforms Program (Program) will seek to contribute to three of the four pillars of the EESRP and focus on (i) reducing the non-technical losses of the sector; (ii) strengthening EDL's financial practices and the sector's financial viability; and (iii) promoting modernization of EDL's commercial, technical, legal, and human resources policies and systems as well as reforming its institutional and governance structure.

Relationship to CAS/CPF

15. The Country Partnership Framework (CPF) (FY17-FY22) aims at mitigating the immediate, and potentially long-lasting impact of the Syrian crisis on Lebanon, while strengthening state institutions, addressing existing vulnerabilities, and bolstering efforts on longer term development challenges, all through interventions that foster inclusion and shared prosperity. Specifically, the CPF works through two focus areas to renew the social contract between the state and the

citizens: (i) expand access to and quality of service delivery; and (ii) expand economic opportunities and increase human capital.

16. The proposed Program will contribute significantly to advancing the CPF's objectives. In fact, reforms of the energy sector were identified in the Systematic Country Diagnostic as a binding constraint to Lebanon's economic development. Inefficiencies in the electricity sector have ripple effects on the lives of Lebanese citizens, not just because they increase the cost of living as people cope with deficiencies in the quality of electricity services, but they can also have deleterious impacts on job opportunities, education, and healthcare services. For women, limited access to reliable electricity can increase the time they conduct specific household chores. It can also negatively impact their ability to engage in entrepreneurial activities, both inside and outside of the home.[3] Moreover, studies have demonstrated that improved infrastructure has strong positive impacts not only on long-run economic growth, but also on income equality. This is particularly significant because substantial investments, primarily from the private sector, are needed along the energy value chain, from upstream fuel supply and mid-stream generation and transmission to downstream distribution networks and retail operations, to address the sector's historic challenges. These benefits can contribute to the country's inclusive growth, and, in turn, the World Bank's twin goals of poverty reduction and shared prosperity.

17. The proposed Program is aligned with the MENA Strategy's Renewing Social Contract pillar as well as the Mashreq Maximizing Finance for Development (MFD) Strategy 2019-2021. The EESRP supported by the Program is focused on promoting public-private partnerships (PPPs) to provide the necessary infrastructure. Public investments, such as those proposed under the Program, are used to provide the enabling environment for these PPPs, as well as for strengthening EDL for efficient service delivery. Private sector investments, both commercial or through IFC and other international financial institutions' private sector windows, constitute the bulk of the investments and efforts needed to achieve the Government's CEDRE plan. The Program is also implemented together with the Social Protection Global Practice's effort to reform Lebanon's social safety net to provide adequate protection for the most vulnerable (including gender-sensitive considerations) as energy subsidies are gradually phased out.

18. The Program also supports the World Bank Climate Action Plan (2016). For many years, Lebanon has largely depended on polluting liquid fuels for power generation, and, although the country adopted a national renewable energy (RE) plan, RE resources have not been appropriately integrated in the planning process to meet prevailing demand. Even then, a significant obstacle to scaling up RE is expansion and modernization of the transmission system and improvement of the sector's financial sustainability to improve its bankability. The Bank's proposed broader program of engagement in the sector targets both issues, with the proposed Program focusing on increasing sector efficiency and revenue generation by supporting efforts to reduce network losses and increase prevailing tariffs. This is consistent with the Action Plan's Priorities I (Support Transformative Policies and Strengthening Institutions), II (Leveraging Resources), and III (Scale Up of Climate Action).

19. Lastly, in line with the Energy and Extractives Gender Follow Up Note (2017), which sets gender priorities for the World Bank's engagement in the energy sector globally, the Program addresses three of the four pillars identified as priorities, namely to address differentiated impacts of subsidy reform on households, enhance women's leadership, and remove constraints to women's employment in the sector. The proposed Program is also aligned with government commitment to support women's economic empowerment, as announced with the launching of the Mashreq Gender Facility in January 2019.

Rationale for Bank Engagement and Choice of Financing Instrument

20. The proposed Program is an important part of the World Bank's contribution to the CIP. In the first phase of CEDRE (which covers 2018-2021), the Bank pledged US$4 billion and allocated US$1 billion to the power sector under a Series of Projects (Figure 2). The first of this Series is the proposed Program; the second, scheduled for FY20, supports the

[3] World Bank EEX Gender Follow Up Note, 2017

construction of floating storage regasification units (FSRUs) to import liquidified natural gas (LNG) to replace the more expensive and polluting diesel and gasoil currently used for power generation. The Series also includes projects to construct concentrating solar power (CSP) facilities and upgrade the transmission network to strengthen supply reliability and integrate RE, as part of the larger government program for RE expansion. This Program is built upon multiple years of policy dialogues and analytical work, including the completion of a political economy assessment of the power sector, a least-cost generation plan, a cost of service and tariff study, a review of the DSP contract implementation, a diagnosis of EDL's operational and organizational performance and recommendations for its transformation, a gender impact study as well as TA services for CSP development under the MENA CSP Knowledge and Innovation Program. An ongoing TA is being rolled out with impact analyses and preparation of a communication plan to accompany the Government's subsidy reform.

21. The proposed Program will be financed by an IBRD loan with a hybrid of a PforR covering selected reforms and an IPF to provide technical assistance (TA). The Bank will add value by not only providing low-cost financing in the short-term to meet key Government priorities but also help improve the sustainability of sector operations. The PforR instrument ensures channeling of funds though a rule-based and transparent mechanism. Through the Disbursement-Linked Indicators (DLIs), which require achievement of verifiable outcomes and outputs, the PforR framework strengthens the focus on results and provides leverage to promote stronger enforcement of performance contracts, institutional accountability, and financial sustainability. Moreover, by utilizing existing fiduciary and safeguards systems (with support, as necessary, to strengthen institutional capacity), the PforR instrument will not introduce additional burden on Government systems in an already challenging implementation environment. While the responsible agency for the PforR will be EDL, the TA will be under the responsibility of the MEW and therefore designed as a separate instrument. It is also important to have the TA as an IPF to ensure that the selection of consultancy firms and individuals will follow the Bank's Procurement Regulations while EDL's procurement practices are being enhanced.

C. Program Development Objective(s) (PDO) and PDO Level Results Indicators

Program Development Objective(s)

Improve the operational, commercial and financial performance of the power sector, and strengthen the governance of Electricite du Liban

PDO Level Results Indicators

The proposed Program is expected to contribute to three key results areas with corresponding PDO-level results indicators as follows:

(a) Decrease total system (technical and non-technical) losses (percentage)
(b) Increase the cost recovery of tariff revenue (percentage)
(c) Roll out the modernization of EDL (percentage)

D. Program Description

PforR Program Boundary

22. The Program is a hybrid with a PforR and an IPF. The PforR component (US$490 million), covering 2019-2023, will support three key objectives of the Government's CEDRE reform program: operational performance, financial viability, and governance of the sector (Figure 2). It is structured around three results areas: (i) improving the operational and commercial performance of the sector (US$200 million); (ii) enhancing the sector financial viability (US$200 million); and (iii) strengthening EDL's governance and transparency (US$90 million). The IPF component (US$10 million) will finance TA to MEW and EDL to support their implementation of the DLIs and overall capacity building. The Program expenditure, to

which the PforR financing contributes, covers the costs of activities required to achieve the Program objectives, including AMI system installation, implementation of EDL's modernization plan, and EDL's labor cost (as the plan involves staff across all EDL's functions), and adds up to US$999 million. The remaining financing comes from the Government budget as part of its continued subsidy to EDL before the sector achieves cost recovery.

E. Initial Environmental and Social Screening

23. **The potential environmental risks associated with the PforR Component are expected to be Moderate.** No civil works or maintenance of the distribution network will be financed under this Component. The replacement of old meters will result in the generation of electrical and electronic wastes as well as solid wastes. These types of wastes, if improperly handled or disposed of, will result in polluting soils and may have public health and environmental concerns. There are no electrical waste recyclers in Lebanon who are environmentally certified. However, there are several recycling facilities which dismantle and recycle different types of wastes including some electrical appliances. The newly introduced smart meters will have rechargeable batteries which, at end of their life, need to be either recycled or safely disposed of since they contain harmful materials for the environment (such as nickel, cadmium & copper). There are very few NGOs in Lebanon which started battery collection programs and are shipping them out of Lebanon following the accords of Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.

24. Lebanon has adequate environmental policies, guidelines and legal and regulatory systems in place. There are environmental laws and regulations in Lebanon which can manage the risks associated with the proposed PforR activities. However, due to weak enforcement of national legislations and lack of resources to monitor and ensure compliance with legal requirements, the PforR will need to include clear and specific actions to address such challenges.

25. The Bank team is preparing an Environmental and Social Systems Assessment (ESSA). The ESSA will thoroughly assess the adequacy of the environmental legislations and management systems within the country to deal with the identified environmental risks. it will also identify existing gaps between the World Bank policy requirements and the national systems and will propose specific actions to ensure that any gaps are adequately covered during implementation. The ESSA will identify any capacity development needs to be addressed during project implementation.

26. **The initial social screening shows that the risks for the PforR component are Substantial.** The Program is expected to have potential social benefits, particularly through reducing losses and improving the metering and billing system, which will in turn support customers to pay for their actual consumption and protect the different segments, including the poor, from false over charges and metering inaccuracies. The Program will specifically have a positive gender dimension because the installation of smart meters will minimize the current practices of bill collection that are affecting household privacy. Savings from subsidy reduction can be better directed toward investments that have more social benefits. EDL reform process will entail considerable amount of opportunities for the local staffing including capacity building and training. The strengthened accountability, transparency and citizen engagement system in EDL will also help in ensuring that the organizations in charge are more responsive to the local communities.

27. However, the risks are still classified as substantial because of a number of factors related to this operation, particularly the lack of trust between citizens and the State and the potential impact associated with tariff increases. In the meantime, and while the tariff structure is meant to ensure transparent billing system based on consumption, there is a risk that certain groups will encounter the impacts of potential tariff increase more severely (poor households and vulnerable groups) if the tariff structure is not developed in a pro-poor manner. There is also the risk that the installment of the automated billing system might negatively affect the demand on certain jobs. However, EDL has a mitigation strategy in place and will provide training to staff in other aspects as needed. Among other risks, those are currently being carefully examined in the ESSA and mitigation measures are designed and integrated in the potential risks related to the operation. The design of the Program will also include the implementation of a comprehensive multi-stakeholders

engagement plan which should help in a systematic process for transparent sharing of information and will help in rebuilding trust and establishing accountability mechanisms.

28. **The IPF-TA Component has relevance to the Environmental and Social Standard 1 on Assessment and Management of Environmental and Social Risks and Impact.** The relevancy to ESS1 is due to the fact that this is a TA. However, since the TA will only finance consulting services related to operational reforms of EDL and no studies will be conducted that will result in activities which may have environmental impacts, there are no environmental risks related to this Component and no specific environment commitments are required from the Borrower side. Similarly, the social risks are low as the TA does not involve any interface with households or citizens but rather aims to build the capacity of the staff of the energy sector which has positive impacts. In this case, and from a social perspective, such trainings could include social accountability, customer beneficiary feedback, grievance redress mechanism and gender-related aspects which could also be beneficial for successful implementation of the Program.

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Legal Operational Policies	**Triggered?**
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts of the IPF Component

Environmental and Social Risks are low because of the stated justifications above

Note To view the Environmental and Social Risks and Impacts, please refer to the Concept Stage ESRS Document**.**

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