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Models for tackling Lebanon's electricity crisis



Key messages

1. Progress requires a recognition of reality. Efforts to reform Lebanon's electricity sector have failed because they have attempted to urge political actors to implement changes which run directly against their own political interests. There is substantive international evidence, including from SOAS ACE's work on the sector in Nigeria, that progress can only be made when there is a proper understanding of the political economy of the context and solutions are consistent with the nature of that reality.
2. 'Second best' solutions can be politically feasible – but they are uncertain and come with real risks. Finding solutions that are feasible requires a process of experimentation; it is hard to know in advance whether any particular approach will work, which creates uncertainty. Moreover, the politically feasible solutions that are found may well be 'second best' – they may yield useful improvements, but fail to address key weaknesses, leave some groups behind or even undermine faith in the central state.

Introduction

Lebanon's electricity sector is suffering severe challenges, with increasingly frequent and lengthy blackouts and a serious risk of the collapse of the entire system. The national electricity utility, Electricité du Liban (EDL), was already in a fragile financial situation, but this has been exacerbated by the severe economic crisis the country is experiencing. The confluence of banking, financial, social and health crises has resulted in the erosion of public confidence and a rapid deterioration of basic public services. The shortage of foreign currency means that the utility is unable to obtain equipment and spare parts for maintenance, while fuel supplies are also threatened. These factors compound the operational challenges of both EDL and private diesel generators, pushing citizens to seek alternative solutions.

On 4 February 2021, the Issam Fares Institute at the American University of Beirut (AUB), in collaboration

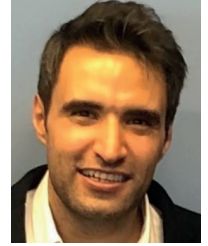
with The Policy Practice (TPP) and the SOAS Anti-Corruption Evidence (ACE) consortium, hosted a webinar entitled 'Models for tackling Lebanon's electricity crisis'. This brought together experts from Lebanon and around the world to explore different strategies to address the country's electricity challenges: from the decentralised model promoted by concessions such as Électricité de Zahle (EDZ), to the centralised government plan that advocates the expansion of thermal power generation. The discussion also examined the evolving role of renewable energy in both models and its adoption by a number of municipalities.

This briefing paper summarises the views of the key speakers and discussants. It draws together the key threads of the discussion – identifying the commonalities and the points of disagreement – and provides some tentative suggestions about the way forward for the sector.¹

1 The full webinar can be found on this [link](#)

Ali Ahmad

Senior Fellow, AUB Issam Fares Institute and Harvard Kennedy School of Government



Electricity concession models: achieving reform at the margins

The current political economy context of Lebanon has been resistant to any meaningful central reforms in the energy sector. Consequently, a reformed, concessions-based and decentralised power generation with substantial but well-regulated private-sector participation appears to be an effective model to address the country's most pressing energy needs. Although the current concession model is unsustainable – given its dependence on seemingly subsidised electricity purchased from EDL and its reliance on imported diesel fuel oil – it provides a starting point for reform for three reasons.

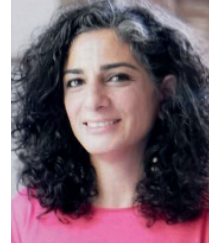
First, the currently operating concessions (EDZ and Électricité de Jbeil (EDJ)) have wide public support within their respective territories due to their track record of good service provision and their ability to navigate the local political context. Second, they have much better technical and management performance

than EDL (such as lower losses and higher collection rates), which ultimately translates into better commercial performance. Third, concessions are better positioned to gradually adjust the tariff due to their good service provision, which is acknowledged by consecutive governments as an essential condition of pricing reforms.

Our research has shown that the Lebanese public are willing to pay the full cost of electricity if they receive a reliable and high-quality service (Ahmad et al., 2020). In the longer term, the reformed concession model could be used to achieve higher penetration of renewable energy. This would be beneficial not only for environmental and sustainable development reasons, but also to minimise fuel procurement, which is a major contributor to rent-seeking and corruption in Lebanon.

Muzna Al-Masri

Anthropologist, researcher, consultant and co-founder of the Ebla Research Collective



Clientelism for improved energy services? Observations on community mobilisation

Socio-political dynamics have been key in allowing EDZ to achieve 24/7 power. EDZ fostered instrumental and affective clientelistic ties with the community to improve its position in negotiating a political settlement with the national elite. It did this through:

- 1. Quality service:** pre-dating the start of EDZ's own power generation in 2015, EDZ overhauled its services in the 1990s.
- 2. Strengthening clientelistic ties:** EDZ provided sponsorship to local sports club, schools, social and religious institutions, journalists and media outlets, and also co-opted and employed some of the generator owners who would have opposed EDZ. Since 2010, the company has created and utilised a local committee to support it publicly.

- 3. Building strong affective ties:** advertisement campaigns and religious/communal events have garnered support for EDZ, galvanized pride in the city of Zahle and sustained a bond between EDZ and the people of the city.

This community support was evident in 2018 when 10,000 people protested to demand the renewal of EDZ's concession. EDZ leveraged this in national-level negotiations, which resulted in the company being granted a contract extension. EDZ's actions illustrate the value of 'bottom up' dynamics, even though this was engineered by a private-sector actor.

Box 1: The impact of 24/7 electricity in Zahle

The provision of 24/7 electricity by EDZ has had a wider impact in four ways:

- 1. A decrease in stress,** connected to having to adapt to the 'rhythm' of electricity. Interviewees have spoken of 24/7 power as a 'blessing' and as 'relief from a major burden'. This largely positive effect is felt mostly at the household level, by women in relation to domestic affairs and by small businesses.
- 2. A sense of dignity.** Zahle residents see the provision of a high-quality, reliable 24/7 electricity service as much more than just the proper functioning of a technical sector; they attach their positive evaluation of the company to feelings of 'dignity' and 'humanity'. A local resident of Ferzol village described electricity in Zahle as the 'only thing that makes us feel human'.
- 3. Questioning the role of the state.** The performance of EDZ is often viewed more favourably relative to the poor performance of EDL and state institutions in general. When explaining why EDZ provides a good service, respondents elaborated on the long list of problems they have had with EDL, including frequent power cuts, low-quality service and delays and corruption in repairs. Similar complaints have been made about other state services, such as water supply and road works. One activist from Bar Elias explained: 'our experience with the state is really bad. ... [The state] has not been honest with us ... and this is why you would see us excited about EDZ, because they have been honest with us.'
- 4. Stronger support for privatisation.** The success of EDZ has led many to adopt a narrative of privatisation. EDZ's performance, compared to that of EDL and other state institutions, is seen as proof that only the private sector can resolve some of the protracted problems of the public sector in Lebanon.

Source: Ahmad et al. (2020).

Hassan Hrajli

*Programme Advisor and Project Manager, Energy and Environment Programme,
United Nations Development Programme (UNDP)*



Mitigating the barriers to the integration of distributed renewable energy schemes

While we are waiting for a new government to be formed in Lebanon and begin the overdue reforms in the power sector, distributed renewable energy (RE) can assist the country to achieve better energy security. However, there are legal, technical and administrative constraints that limit the realisation of the full potential of distributed RE.

The legal barriers are being tackled through an initiative to enact a distributed RE law, which is supported by the European Bank for Reconstruction and Development (EBRD), the Ministry of Energy and Water, EDL and the Lebanese Center for Energy Conservation (LCEC). This law will pave the way for net metering in all its categories, peer-to-peer on-site and off-site trading of RE power, and RE equipment leasing models. If enacted by Parliament, the law would facilitate and expand the distributed RE market in Lebanon.

Yet, achieving effective integration of renewables requires well governed central institutions. The key challenge remains to empower and enable EDL's autonomy, financial integrity and human capacity, as well as that of any entity that may be designated with the responsibility for the management and operation of the distribution network under a

restructured electricity market. This is needed to ensure the integration of distributed RE in the power network, to administer the allocation of exported or traded power from distributed renewables, and to enforce appropriate billing procedures. The innovations permitted by the distributed RE law also require oversight from a regulatory authority, once established, to ensure fair prices and structures for power wheeling and net metering schemes. Until such an authority is established, distributed RE systems have to be designed to maximise instantaneous on-site demand and to minimise the export of power (or use power-to-X models, including storage). Unfortunately, the central government continues to procrastinate on the implementation of Law 462/2002, which requires the establishment of an electricity authority.

As a consequence, Lebanese citizens and institutions are better off reducing their reliance on centralised sources by generating their own power through more sustainable and cost-effective technologies. However, the full possibilities or potential of distributed RE generation will not be achieved until there are efficient management, assets and operations within the centralised power market with which these systems can effectively integrate and successfully complement.

Alix Chaplain

PhD student in sociology and urban studies, Centre for International Relations Studies (CERI), Sciences Po Paris



The emergence of hybrid mini-grids in Lebanon

Over the last few years, because of the shortcomings of the Lebanese State, certain small, rural municipalities have developed collective electricity supply systems based on renewables. Comparative analysis of four hybrid photovoltaic (PV)/diesel mini-grids reveals the strategies, relationships and interests that shape the development of these socio-technical innovations.

- A community-led project in Baaloul embodies a cooperative and participatory model and has strengthened the local community by providing a collective and local electricity service. Initially, inhabitants wanted their own diesel generation system, but they then received a grant from Caritas and the United States Agency for International Development (USAID) to build and install a mini-PV grid system.
- A similar arrangement is in place in Menjez, with the difference being that management of the system is not participatory but rather comes from a local leader/individual. The municipalisation of the hybrid PV/diesel mini-grid in Menjez is a tool for local government to legitimise a newly created municipality, through a collaboration with a politicised non-governmental organisation.
- The mini-grid in Qabrikha embodies an international experiment led by Country Entrepreneurship for Distributed Renewables Opportunities (CEDRO) and UNDP to reform Lebanon's monopolistic model. This initiative proposes national regulation to allow municipalities to benefit from net-metering and inhabitants to reduce their electricity bills.
- Finally, in a fourth, anonymous, case study, several private companies decided not only to bypass the public grid, but to compete with it by offering consumers an autonomous energy supply with batteries. These mini-grid configurations aim to supply electricity 24/7 for the inhabitants of poor and isolated villages through a market-driven strategy with private regulation and a tariff that enables providers to make a profit.

However, in the face of persistent shortages and the need for renewable solutions, it remains unclear how municipal and private actors can be given more opportunities without deepening territorial divisions in Lebanon.

Jamil Moawad

Senior Fellow, Arab Reform Initiative (ARI) and Lecturer in Politics, AUB



Reforming the electricity sector through the lens of a 'kind' state

At a time when the Lebanese people are witnessing both the collapse of the economic model and an increasing lack of trust in the government and its institutions, what does it mean to reform the electricity sector? Leaving aside the technical aspects of reform, from a political perspective, our efforts should prioritise the well-being of citizens and equitable access to services.

In particular, reforming the electricity sector is a way for the state to re-establish its sovereignty, to enhance state–society relations and to revive public trust. The mission should be to move from the post-civil war, security-based division of the country into several states towards a single civil state that acts as a neutral developmental actor. The reform of electricity is a window of opportunity to reassert the central state's control over the country and to guarantee equality for the population.

As a company, EDZ has succeeded because of its close connection with the community and because it provides 24/7 electricity. However, if we take into account environmental concerns, as well as concerns over the type of society and state we want to build, EDZ is not a success story. Rather, EDZ promotes separatism (through its advertisements and geographical focus) and localism (by involving only people from the area of Zahle). It also promotes a decentralised model of power generation and supply, which does not acknowledge the important role of the central state in monitoring to avoid further spatial inequalities.

Generally, when organisations behave in this way, people call them mafias. Instead of further entrenching clientelism and patronage, which only benefits the wealthy, the central state should be revived through reform of the electricity sector to provide a service that benefits all Lebanese citizens.

Eric Verdeil

Professor, Sciences Po and researcher, Centre for International Relations Studies (CERI), Sciences Po Paris



Towards a more just model for decentralised electricity

Several research studies on the topic of electricity in Lebanon have addressed the question of whether to continue to push for the reform of EDL or if reforms 'at the margins', such as those by EDZ, would be a more effective way forward. The four speakers have shown that attempts at decentralised electricity provision have three common characteristics:

- 1. Partial autonomy from state supply.** Because of chronic shortages and unreliability of supply from EDL, additional power is provided by a hybrid of diesel generators, solar PV and sometimes batteries.
- 2. The involvement of private companies** able to invest and efficiently manage local distribution.
- 3. Reliance on municipal and local powers or communities,** which are supposed to represent the interests of local citizens. This is a form of political decentralisation, whether official or not.

However, this approach begs several questions: do these models represent an effective way of solving the electricity problem in Lebanon? Is it possible, or desirable, to move towards complete autonomy from the central grid? Is it possible to scale up from these municipal projects?

The EDZ model has achieved a reasonable level of service while avoiding changing the entire system and, critically, not challenging the interests in the fuel supply chain for the city. But the claim that the model could be replicated is doubtful. One key issue is the low tariff that EDZ pays to EDL for centrally provided electricity, which allows EDZ to extract a profit. At the political level, local authorities have disagreements among themselves when it comes to the replicability of the model, but they share the desire to obtain the same profitable arrangement as in Zahle. Yet, this arrangement has a cost for the whole country, which, in effect, subsidises the EDZ model. It also shows that privatisation should not be implemented without the presence of a strong public body to monitor and control the finances. Also, since the EDZ model depends on external funding and expertise, this raises questions about whether all municipalities could garner such support; if not, pursuing this model will generate spatial inequalities.

Overall, the examples of decentralised provision show that there is a need for models where tariffs to customers are based on the costs of the service and not on the extraction of rents, as well as for mechanisms to reduce the large inequalities in provision between regions.

Pallavi Roy

Senior Lecturer in International Economics, SOAS University of London,
Research Director SOAS-Anti-Corruption Evidence Consortium



Aligning interests for feasible reform

One thing that emerges from the discussions is that both economic and political risk mitigation are necessary for investments in the electricity sector where the national grid is dysfunctional or underperforming. In such situations, disaggregated strategies of supply make sense, because it may be easier to make progress using local networks and efficient informal arrangements. However, such arrangements may be opposed by players who have an interest in maintaining the status-quo. Consequently, it is necessary to choose strategies that align with the interests of powerful local players, and that also link the interests of the community with those of the electricity suppliers. Unfortunately, such strategies of political risk mitigation – as used so effectively by EDZ – are likely to be less scalable than strategies of economic risk mitigation. This poses a challenge for the replicability of the model.

There are interesting comparisons between the Lebanese experience and the work of the SOAS Anti-Corruption Evidence (SOAS-ACE) research programme on the power sector in Bangladesh (Khan et al., 2020) and Nigeria (Roy et al., 2020). In those countries,

anti-corruption strategies rely on 'insiders' having an interest in all actors upholding the rules in their sector. Such horizontal enforcement is more effective than top-down vertical enforcement, which entails attempting to discipline powerful, politically connected players who have little incentive to adhere to the rules.

In general, our research has found that it is extremely important to study the political economy context of the sector, particularly when looking at disaggregated or decentralised models of power supply. While in the long run, there is no substitute for the reform of the grid, useful progress can be made at the disaggregated scale first. Indeed, precisely because there may be feasible ways of navigating the political economy context at the local level when national-level progress is blocked, disaggregated models flip the grid-based model with investors looking at non-urban community supply as economically viable. Such disaggregated strategies can also solve (but occasionally create) distributional justice issues. Either way, the bottom line is that anti-corruption efforts in the electricity sector have to be feasible to have an impact.

Neil McCulloch

Director, The Policy Practice



Finding a way ahead

There are many points of agreement between the various speakers and discussants of the webinar. All agree that the central state's role in the electricity sector is in urgent need of reform. All agree that it would be best if Law 462/2002 – which calls for a series of governance reforms in the sector, including the creation of an independent regulator – was implemented. All appreciate that electricity is a core part of daily life not just a technical service; something that provides dignity and which shapes people's views of the state. All would like to see a greater role for renewables to reduce the dependence on polluting diesel generation. And all understand that the political system in Lebanon is driven by clientelism, while recognising that, sometimes, local clientelist ties can be used to create the policy space for innovation.

But there are also two major points of disagreement.

The first is about *the extent to which reform at the centre is a necessary condition for progress*. Hassan Hrajli and Jamil Moawad have emphasised the critical role of an effective central state in building an efficient electricity sector. They see reform at the centre as the core issue that must be addressed. While other speakers don't deny the value of such reform, Ali Ahmad and Alix Chaplain highlight examples where significant improvements have been achieved by regional or local players either by bypassing the centre, or through strategic collusion with central actors.

The second issue is about *fragmentation and inequality*. Jamil Moawad and Muzna Al-Masri regard EDZ as a model of clientelism and localism, inimical to the creation of an effective central state. Eric Verdeil points to the way in which EDZ extracts rents from the rest of the country (as well as its own customers); and doubts whether other locations would have the resources and influence to follow a similar path. All three suggest that this would not be a good model

for the country since it would exacerbate spatial inequalities. By contrast, Ali Ahmad and Alix Chaplain suggest that it might be possible to adapt decentralised models in a way that would reduce their negative impact on the state while promoting innovation and leading to better services, at least in some locations.

While there is no easy resolution of these differences, it is possible to draw two important conclusions from the debate:

1. **Progress requires a recognition of reality.** For too long, efforts to reform Lebanon's electricity sector have failed because they have attempted to urge political actors to implement changes which run directly against their own political interests. As Pallavi Roy's contribution shows, there is substantive international evidence that progress can only be made when there is a proper understanding of the political economy of the context and solutions are consistent with the nature of that reality.
2. **'Second best' solutions can be politically feasible – but they are uncertain and come with real risks.** Finding solutions that are feasible requires a process of experimentation; it is hard to know a priori whether any particular approach will work, which creates uncertainty. Moreover, the politically feasible solutions that are found may well be 'second best' – they may yield useful improvements, but fail to address key weaknesses, leave some groups behind or even undermine faith in the central state.

By recognising the political reality and experimenting with solutions, while attempting to ameliorate their disadvantages, it is hoped that Lebanon may find a pathway out of its electricity crisis.

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