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LEBANON'S ENERGY CRISIS IN CONTEXT: POSTWAR RECONSTRUCTION AND POLITICAL FRAGMENTATION

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Cover photo: Families displaced from southern Beirut suburbs shelter in tents amid the Hezbollah-Israel conflict - Beirut, Lebanon – October 2024.

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List of Acronyms

BDL	Banque Du Liban (the Lebanese Central Bank)
CDR	Council for Development and Reconstruction
CNRS-L	National Council for Scientific Research in Lebanon
Dahiyeh UoM	Union of Municipalities of the Southern Suburbs of Beirut
DGU	Directorate General of Urban Planning
DRE	Decentralized Renewable Energy
EDL	Électricité du Liban (Electricity of Lebanon)
EDZ	Électricité de Zahlé (Electricity of Zahlé)
ERA	Electricity Regulatory Authority
IFC	International Finance Corporation
INGO	International nongovernmental organization
LCEC	Lebanese Center for Energy Conservation
LGBC	Lebanese Green Building Council
LEED	Leadership in Energy and Environmental Design
MoEW	Ministry of Energy and Water
NEEREA	National Energy Efficiency and Renewable Energy Action
OEA	Order of Engineers and Architects
UNDP	UN Development Programme
UNHCR	UN High Commissioner for Refugees
WBG	World Bank Group

Introduction

Lebanon has endured Israeli aggression for decades, most recently during the war that began in October 2023, which has completely destroyed seven towns and entire neighborhoods in at least 37 southern villages.¹ The war has so far claimed over 4,000 lives, displaced approximately 870,000 people to date, and resulted in the destruction of around 361 buildings in Beirut.² Beyond war casualties, the aggression has had profound implications for Lebanon's political and institutional landscape. It has not only weakened Hezbollah's activity across different locations and sectors (primarily in service delivery) but also reshaped the broader political arena.³ Since the ceasefire in October 2024, other major events have also altered the political landscape. A new president, Joseph Aoun, was elected on 9 January 2025, ending a more than two-year presidential vacuum. This was followed by the appointment of the new prime minister, Nawaf Salam, on 13 January 2025, and the formation of the Lebanese cabinet on 8 February 2025. While some view these changes with cautious optimism, others fear uncertainty, especially when it comes to the pace and outcome of reconstruction. The question that will mostly define the success or failure of this government is its ability to end the war and lead a credible reconstruction process.

Reconstruction presents both a critical challenge and a rare opportunity to address Lebanon's deep-rooted structural inequalities. A primary issue in this context is access to electricity, a basic service that has been unreliable for decades. The energy crisis, already existent, was exacerbated by the recent financial collapse, leaving the formal energy sector unable to provide consistent power to the majority of the Lebanese population.⁴ Decades of inadequate infrastructure, political paralysis, and economic instability have forced most people to rely

on informal, costly, short-lived, and harmful energy sources, primarily neighborhood diesel generators operated by unofficial local providers.⁵

As stakeholders begin yet another postwar reconstruction process, they will need to address a complex web of governance issues, implement inclusive energy policies, and establish proper financing mechanisms to ensure a just and resilient energy transition. A primary financial enabler in this process is international aid.⁶ While foreign aid and loans offer an opportunity, past experiences have shown that without structural reform, visionary and strategic reconstruction, transparent national oversight, and clear mechanisms of accountability, aid risks reinforcing political clientelism and social inequalities rather than enabling equitable development.⁷ There is a need to challenge this reality by relying on energy-efficient reconstruction processes that integrate renewable energy into urban environments in order to reduce dependence on fossil fuel imports.

This paper explores the challenges and opportunities for energy recovery in Lebanon's postwar reconstruction by examining three interrelated components: (1) the actors involved in the energy sector and their fragmented strategies that influence energy provision across three timeframes (before the crises, during the current emergency, and in the near future); (2) energy-related planning regulations, with a focus on how existing and proposed laws shape the reconstruction of energy systems and the potential adoption, or hinderance, of sustainable technologies; and (3) the political economy and financial gaps in the current recovery process. It argues that Lebanon's energy recovery must move beyond short-term fixes and rebuilding as was, and adopt a comprehensive reform agenda that integrates governance, legal, economic, and financial reforms.

1 "Over 40,000 housing units destroyed in 37 devastated southern Lebanese villages", *L'Orient Today*, 5 November 2024.

2 "Israeli attacks have killed 4,047 people in Lebanon, Lebanese minister says", *Reuters* 4 December 2024; Beirut Urban Lab, "Damage assessment in Beirut during the 2023–2024 conflict", Online Platform, 2024.

3 K. Alexander, "Hezbollah in decline: Between resistance rhetoric and strategic reality", *Manara Magazine*, 2 June 2025.

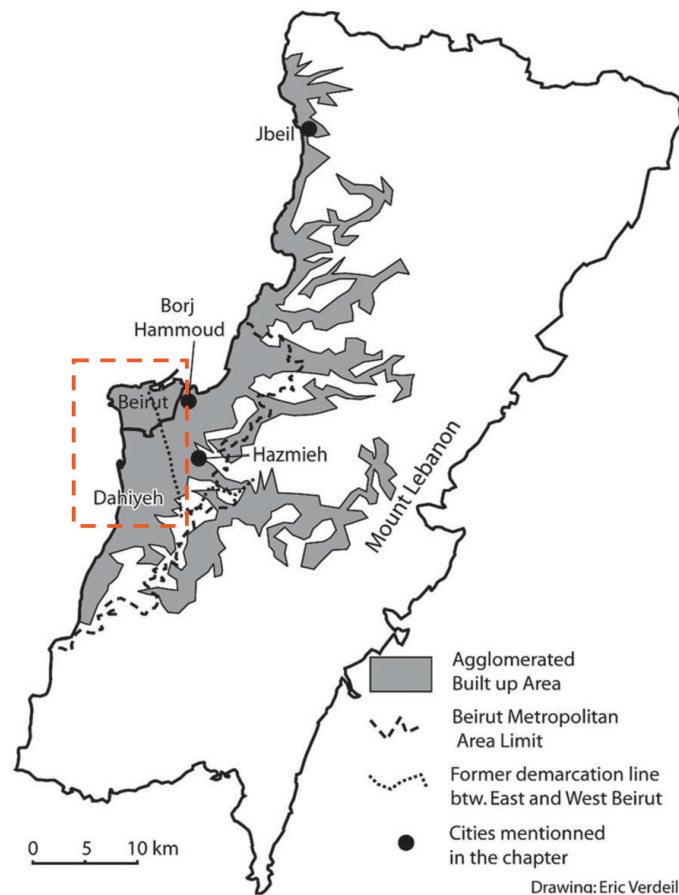
4 Human Rights Watch, "Lebanon: Electricity crisis exacerbates poverty, inequality", 9 March 2023.

5 Human Rights Watch, "Cut Off from Life Itself: Lebanon's failure on the right to electricity", Report, 9 March 2023.

6 The World Bank Group (WBG) has already committed US\$250 million, with expectations that this figure could reach over US\$1 billion.

7 M. Fawaz, "Aid, reconstruction, and the persistence of clientelism in Lebanon after the 2006 war", *Middle East Report*, Vol. 251, pp. 24–29, 2009.

Figure 1: A map showing the location of the southern suburbs of Beirut (Dahiyeh) and Municipal Beirut within the imagined boundaries of the Greater Beirut area (Source: Eric Verdeil, edited by the author).



To ground the analysis, this paper presents a case study of the southern suburbs of Beirut and municipal Beirut (see Figure 1). The southern suburbs were severely affected by the recent war (at least 417 buildings destroyed), while municipal Beirut, as the adjacent capital, experienced relatively less damage (two compounds of buildings destroyed).⁸ Exploring these two geographies in relation to each other is essential to understanding whether they have coordinated efforts toward improving services for the greater Beirut area (which includes its suburbs). Both regions are characterized by informal energy networks and monopolized diesel generator systems.⁹ This case study highlights the governance,

policy, and economic challenges of achieving energy justice amid Lebanon's volatile political and economic landscape. The purpose of this research is to seize the opportunity presented in reconstruction to establish actionable frameworks that aim to achieve efficient energy recovery nationwide. The research and stakeholder engagement conducted throughout the study further aims to contribute to a more just and inclusive reconstruction of Lebanon's energy sector: one that ensures marginalized communities are not left behind in the country's recovery.

8 The New Arab, "Lebanon ceasefire: What dangers do Dahiyeh's residents face?", 2 October 2024.

9 Ebla Research Collective, "'I am, as you can see, the local government,

the electricity company and much more': Building committees as space of social organizing in Beirut", Research report, 2024 (Ebla Research Collective, "'I am, as you can see'").

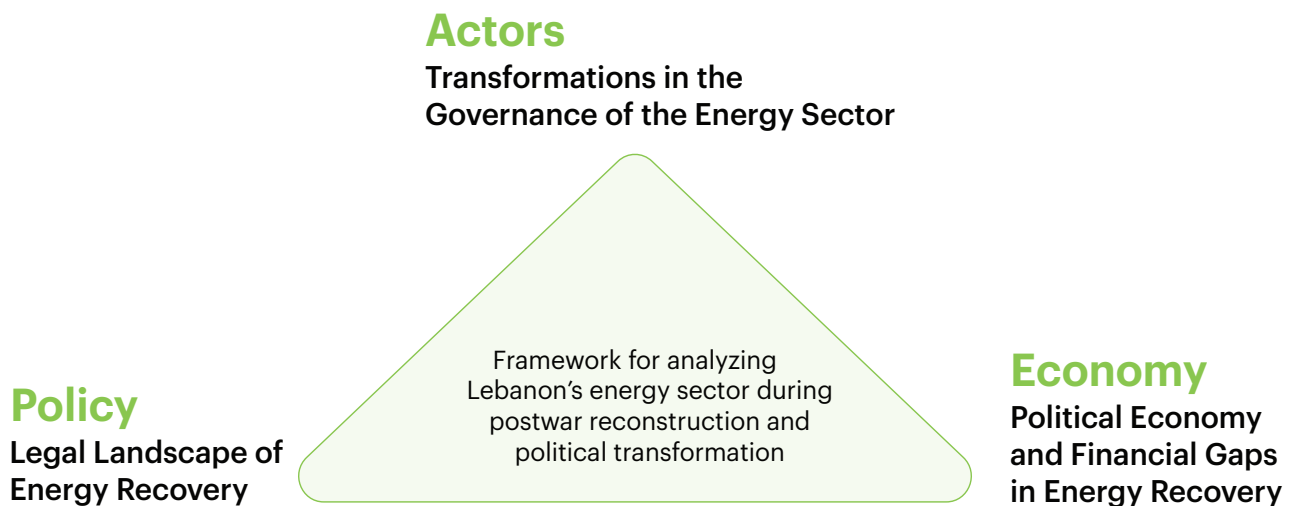
Methodology

The research methodology of this paper consisted of: desk reviews of existing reports, news articles, and existing and proposed laws and decrees (e.g., building regulations, reconstruction laws, and proposed legislation); site visits to the southern suburbs of Beirut and municipal Beirut; in-depth interviews with 13 key stakeholders; and conversations with informal actors of the studied area. The interviewed stakeholders were from the public sector, syndicates, think tanks, NGOs, and standard-setting bodies (see Annex for the full list).

The collected data were analyzed thematically using the framework presented below (see Figure 2). In the governance section, associations between different actors involved in the energy sector were derived from the interviews, in which stakeholders described the types of coordination they either had or lacked with one another.

The research findings were validated through a policy dialogue involving the interviewees, members of the Arab Reform Initiative energy sector's advisory board, and additional stakeholders involved in the sector. This dialogue also served to further develop and refine the recommendations.

Figure 2: Analytical framework of the study during postwar reconstruction and political transformation (by author).



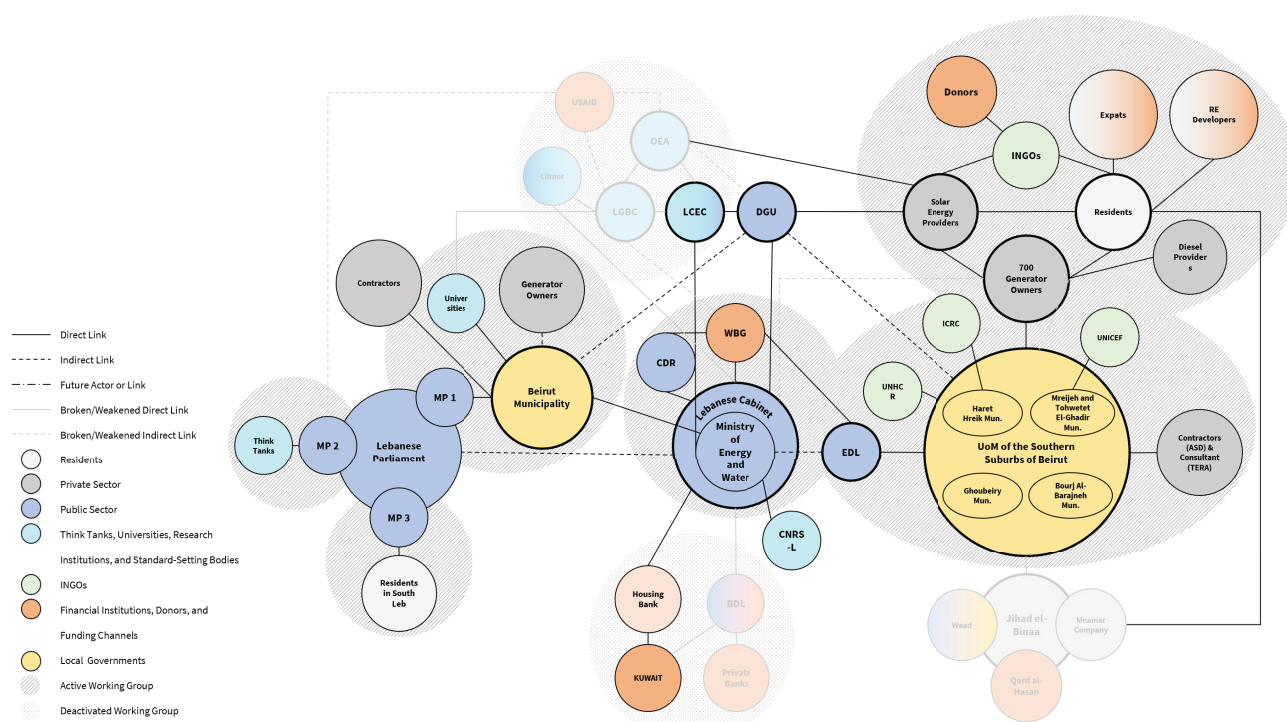
Transformations in the Governance of the Energy Sector

The actors involved in energy-related policymaking, planning, and execution in Lebanon have changed over the past decade; this transformation has been shaped by several national and regional political and economic events. Beyond the ongoing war on Lebanon – which has both diminished the influence of established actors and created entry points for new ones such as the World Bank Group (WBG) – two major national events since 2019 have reshaped the

governance of this sector.¹⁰ The first is the financial collapse that began in 2019, which weakened the role of the public sector and financial institutions across various sectors, primarily local governments; this also includes the energy sector (see Figure 3). The second is the October 17 revolution, which

¹⁰ Lebanon's parliamentary finance committee, acting under the cabinet's direction, approved legislation enabling the World Bank electricity sector loan, reflecting coordination between the government and WBG financing. L'Orient Today, "Finance Committee approves World Bank loan for power sector and 2025 budget changes", 26 May 2025, available at: <https://today.lorientlejour.com/article/1461849/finance-committee-approves-world-bank-loan-for-power-sector-and-2025-budget-changes.html>; World Bank, "Lebanon: New US\$250 million project to kickstart the recovery and reconstruction in conflict-affected areas", 25 June 2025.

Figure 3: The landscape of active and inactive actors involved in energy recovery in the case of Beirut (by author).



paved the way for the 2022 parliamentary elections and the rise of new nonsectarian MPs, known as “change MPs”, who have been engaged in drafting and advocating for new energy-related laws and decrees over the past three years, including regulations that aim to mitigate the compounded impacts of the financial crisis and the ongoing war.¹¹ Though these new and existing actors have been governing the energy sector differently, this has not necessarily translated into harmonious processes of work that align national visions with practical solutions.

The landscape of actors is fragmented, and they lack a unified vision regarding energy sources and strategies for energy reduction. In the studied area of Beirut (including municipal Beirut and its southern suburbs, as seen in Figure 3), there are six distinct groups of actors operating at different levels, each following a different strategy with minimal coordination.

At the local level, the municipality of Beirut and the four municipalities constituting the Union of Municipalities of the Southern Suburbs (Dahiye UoM) operate independently, each relying on its own networks of consultants, contractors, partners, and resources.¹² Although Figure 3 shows indirect institutional linkages through Électricité du Liban (EDL), the Directorate General of Urban Planning (DGU), and the Lebanese cabinet, these interactions are limited in practice.¹³ Municipal coordination with national institutions is typically restricted to routine administrative tasks, such as issuing construction permits for solar panel structures. As documented in several studies, the absence of coordination between adjacent municipalities, which is common across Lebanon, has hindered effective service delivery particularly in infrastructure projects that require collective planning and implementation.¹⁴

¹² “Dahiye” is a southern suburb of Beirut.

¹³ EDL is Lebanon’s state-owned electricity company, responsible for the generation, transmission, and distribution of electricity. Established in 1964, it has long suffered from chronic underinvestment, political interference, and operational inefficiencies.

¹⁴ H. Cheaito, “Local governance in Lebanon: The great mirage”, The Tahrir Institute for Middle East Policy, 18 May 2023; A. Ray, “Crushed ballot: Ending the suppression of Lebanon’s municipalities”, *The Badil*, 24 May 2023; S. Atallah, S., “Decentralization in Lebanon”, Lebanese Center for Policy Studies, 1 March 2012.

¹¹ For more, see A. Chérif-Alami, “Twenty days of Lebanese protests: Between continuity, innovation and uncertainty”, Arab Reform Initiative, 2019, available at: <https://www.arab-reform.net/publication/twenty-days-of-lebanese-protests-between-continuity-innovation-and-uncertainty/>; D. Sabaghi, “One year since elections, have Lebanon’s new opposition MPs made a difference?”, *The New Arab*, 1 June 2023.

At the national level, two actor groups are active, although so far with little integration with local entities. The first group includes the Lebanese cabinet, the Council for Development and Reconstruction (CDR), the WBG, EDL, and the National Council for Scientific Research in Lebanon (CNRS-L). This group has been working in parallel on financing energy recovery and law enforcement in specific areas. The second group consists of smaller groups connected to members of parliament, particularly the reformist change MPs, who have launched various energy-related policy initiatives. However, these efforts remain fragmented.

A third active group includes private sector actors, donors, diaspora, and political parties who are in direct contact with local communities and residents. The interventions of these actors are pragmatic and quick but mostly uncoordinated with formal institutions. Coordination between formal private sector actors and public sector institutions only occurs when permit approvals are required for the installation of household-level solar panels;

in certain instances, political parties report to representatives in local governments regarding relief efforts.

The following section provides a detailed breakdown of the composition and functions of the actor groups that we find currently operating in silos, as illustrated in Figure 3 above.

Current Organizational Groups in Energy Governance

The Dahiyeh Group

The Dahiyeh UoM has been coordinating with EDL, international NGOs (INGOs), and its own network of trusted consultants and contractors to assess damage and reconstruct infrastructure networks in two sites identified as the most severely affected (see Figure 4). These sites correspond to the locations of the assassination of the third secretary-general of

Figure 4: The Dahiyeh Group (by author).

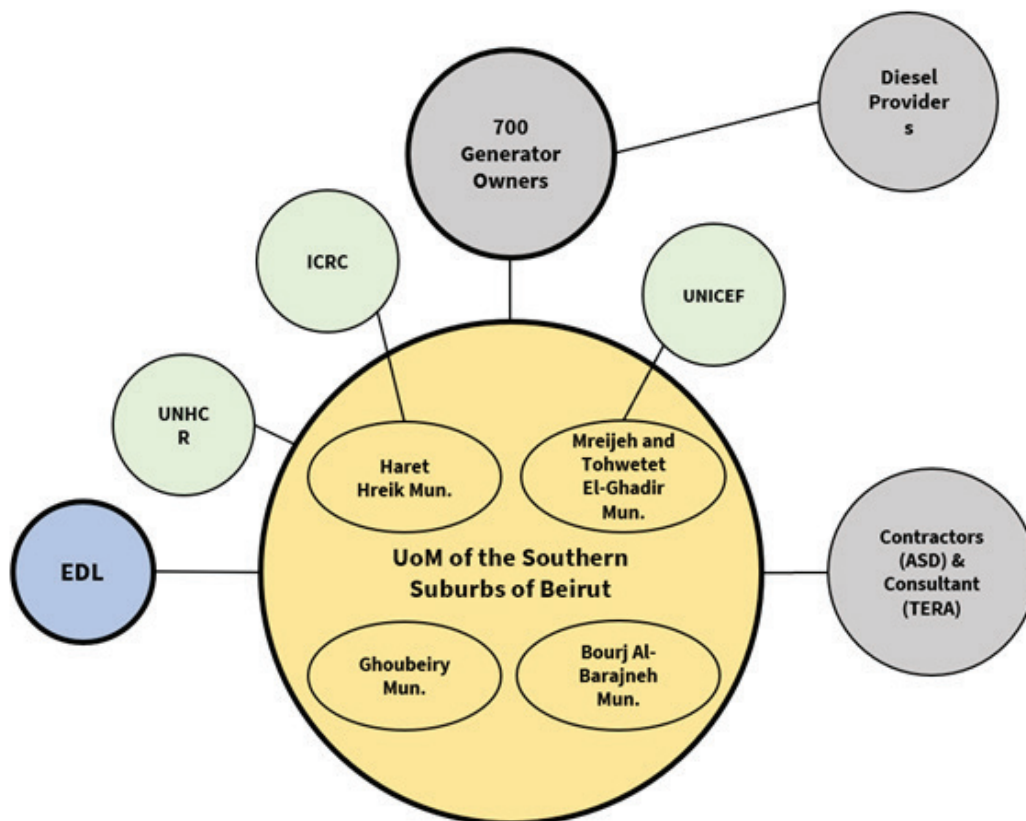


Figure 5: Map showing the new energy lines in one of the most severely affected sites by the Israeli aggression.



Hezbollah, Sayyid Hassan Nasrallah, and the head of Hezbollah's executive council, Sayyid Hashem Safieddine; they fall under the jurisdictions of the municipalities of Haret Hreik, Mreijeh, and Tohwet El-Ghadir.¹⁵ Beyond these targeted infrastructure reconstruction efforts, the Dahiye UoM considers the broader responsibility for reconstruction to lie with the central government. In addition to its coordination with EDL for reconstructing the formal energy line, the Dahiye UoM has also been involved in creating another energy line as part of the reconstruction process: one that services the informal diesel generator networks operating in the area (see Figure 5). INGOs such as the UN High Commissioner for Refugees (UNHCR), UNICEF, and the Red Cross have been providing raw materials to Dahiye, while local governments have provided

labor, local data, and assessments.

Though several studies have linked sectarian political parties and informal diesel generator networks, the president of the Dahiye UoM has denied these affiliations.¹⁶ He further emphasized a preference for more sustainable energy solutions that are not harmful to health or the environment, highlighting the growing trust in INGOs, a lack of trust in the central government, leading to Dahiye's consideration of a nonlegislative form of decentralization driven by distrust in the cabinet's political agendas.¹⁷ According to the Dahiye UoM

¹⁵ These sites were heavily bombed, resulting in twenty-meter-deep craters and significant damage to infrastructure; Al Jazeera, "Hassan Nasrallah, Hezbollah leader, killed in Beirut in Israeli strike", 28 September 2024; Al Jazeera, "Israeli strikes pound Lebanese southern coastal city of Tyre", 23 October 2024.

¹⁶ J. Choucrair Vizoso, "Lebanon's environmentalists and the fight for nature: Reflecting on successes and failures of recent mobilizations", Arab Reform Initiative, 4 January 2024; J.R. Nucho, *Everyday sectarianism in urban Lebanon: Infrastructures, public services, and power*, Princeton University Press, 2017, pp. 108-114; Ebla Research Collective, "Negotiating a global energy crisis on our stairwell: Lessons from Lebanon", Transnational Institute, 8 February 2024.

¹⁷ As discussed during the interview and the policy dialogue, the Dahiye UoM president noted that he believes the Lebanese government is not allowed to generate energy for political reasons, and that they will not

president, previous cabinets have hindered his attempt to obtain gas turbines from the UAE for electricity generation. He further emphasized that parliament has failed to consider the budget deficits of local authorities when passing laws that grant tax breaks to residents affected by the war. In fact, local authorities have lobbied MPs to amend the law and increase municipal taxes so they could hire experts and municipal police, but their attempts have failed. Lacking financial resources, local authorities emphasized the need for the central government to imprison diesel generator providers who do not comply with the government-set tariffs. The Dahiyeh municipalities have tried doing so in the past and found that it effectively deters providers from continuing their business, which, according to them, shows the effectiveness of proper monitoring and law enforcement. However, residents have reacted angrily, as imprisoning these providers leaves them without much-needed electricity services. The UoM president understands the challenges faced by Dahiyeh's local population, stating that overpopulation and violations were a result of civil war displacement and such practices have continued. These dynamics reflect the lack of alternatives for energy services and the coordination required between different levels of government in energy recovery.

Turning to coordination efforts, the Dahiyeh UoM president also pointed to the lack of tangible outcomes from cooperation with the municipality of Beirut, particularly regarding water and sewage infrastructure, where – in his view – the current arrangements disadvantage Dahiyeh while benefiting municipal Beirut.

Municipal Beirut

The new municipal council of Beirut lacks a clear vision regarding the energy sector and reconstruction efforts, partly because the area is not recognized as heavily affected by the recent Israeli aggression. Despite the common perception that the area was unaffected by the war, several buildings within municipal Beirut were bombed, and two massacres took place in Basta, a Beirut neighborhood, which also completely destroyed

two groups of buildings.¹⁸ With regards to energy, however, there is a growing inclination toward privatization by contracting a private company to supply electricity to municipal Beirut. The specific energy source, whether gas turbines or solar, has yet to be determined, and the municipal council president believes that financial cost will be the main criterion for selecting the contractor. This option was discussed with an MP who drafted a law to provide electricity for municipal Beirut and presented it to parliament in June 2025. The proposed law allows the municipality to produce energy or outsource energy production independently from other public sector institutions (see Figure 6). It was rejected in parliament, with opposing political blocs arguing that such legislation cannot be passed before establishing the Electricity Regulatory Authority (ERA).

Despite these unsuccessful attempts, the president of the municipality of Beirut stated very clearly that there is a state of emergency that they need to address, and that he remains open to suggestions and coordination with different entities while reviewing previous assessments completed by former municipal councils. The municipality's main asset is the land it owns, which it can make available, indicating a willingness to work with other adjacent municipalities and potential partners to advance energy recovery.

Before the last municipal elections in May 2025, the former municipal council made limited interventions in reconstruction, focusing mostly on infrastructure repairs and leaving the reconstruction of superstructures to NGOs.¹⁹ The governor of Beirut has also previously attempted to standardize fees for informal diesel generator operators across Beirut. Although roughly half of them agreed to this regulation on paper, full compliance is yet to be achieved.²⁰ Recently, these efforts were restarted when the current cabinet issued a statement requiring all generator providers to comply with the tariffs set by the state. This has been a particular concern in municipal Beirut, where private

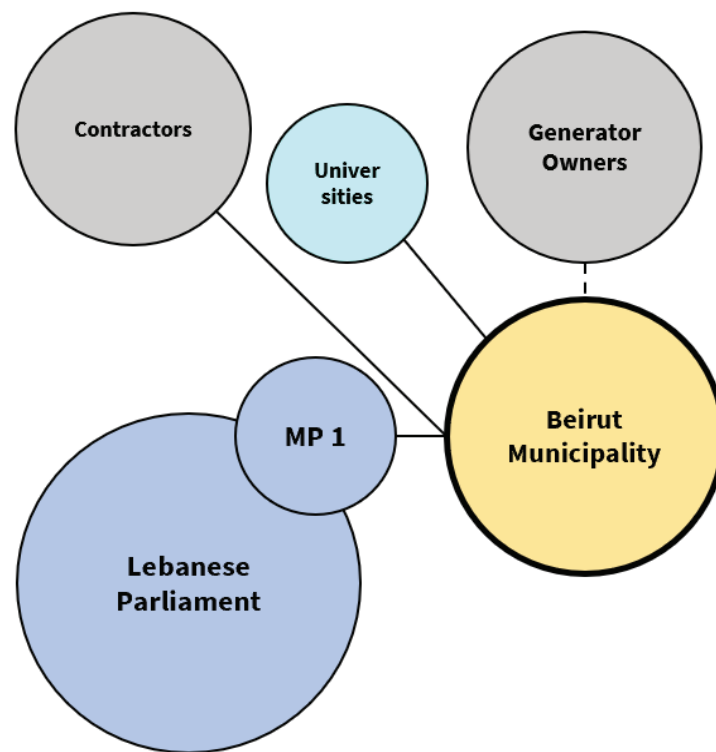
fully adopt any study (and here he highlighted the CDR studies). According to him, the World Bank loan must be approved in parliament and will go through a lengthy bureaucratic process to secure approvals and clarify responsibilities. He further points to the problem of the private sector being responsible for collecting taxes.

18 M. Gebeily and E. Madi, "Deadliest Israeli strike yet on central Beirut leaves gruesome scenes", *Reuters*, 25 November 2024.

19 This information is based on fieldwork and conversations with the local NGO during construction. Superstructure is everything built above ground level, as opposed to the infrastructure, which is the foundation or parts below ground.

20 National News Agency, "Beirut governor to generator owners: Municipal inspectors will begin inspections to ensure meters are installed, under penalty of legal action", 15 May 2025.

Figure 6: The Municipal Beirut Group (by author).



generators are a relatively new phenomenon, having become widespread with the financial collapse. In contrast, neighboring municipalities such as Furn el-Shebbak have succeeded in standardizing generator fees, since these areas have faced longer electricity shortages for decades; their local authorities have had much more time to coordinate with generator operators. The case of Furn el-Shebbak and its ability to enforce the law on diesel generators deserves further investigation.

The Cabinet–WBG Group

This group includes the Lebanese cabinet, the WBG, the CDR, EDL, and the CNRS-L.²¹ These actors have been coordinating with each other since before the war, though previous coordinated efforts had achieved little in the energy sector (see Figure 7). Under the current cabinet, ties with the WBG are stronger, as evidenced by the recent approval of a US\$250 million WBG loan for the “Recovery and Reconstruction in Conflict-Affected Areas”.²² This loan covers the first phase of reconstruction, and

is projected to exceed US\$1 billion. The initial US\$250 million covers urgent reconstruction needs, including infrastructure rehabilitation of the energy cables. The loan also covers the cost of reforming the operational capacity of EDL and expanding solar energy generation, which translates into developing solar farms, modernizing the grid, establishing the ERA, and improving billing systems.²³ So far, over US\$20 million has been spent on low-level fixes in certain areas, including the southern suburbs of Beirut. Although there is a need for these reforms and fixes, they only address short- and medium-term priorities; they fall short when looking for a long-term strategic vision on achieving energy efficiency through broader urban planning.

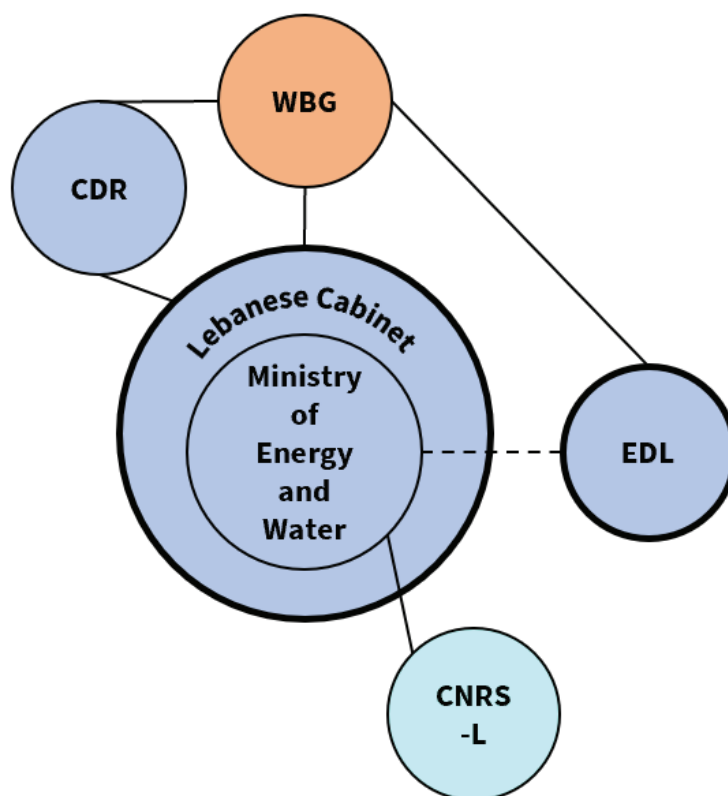
Additionally, the Dahiyeh UoM has expressed concerns about the slow pace of implementation and the political agendas of foreign actors. While the Dahiyeh UoM president acknowledged the importance of financial support, he insists that neither he nor the residents of Dahiyeh can wait for the cabinet and the WBG processes to unfold before

21 CNRS-L works also in collaboration with the UN Economic and Social Commission for Western Asia.

22 World Bank, “Lebanon: New US\$250 million project to kickstart the recovery and reconstruction in conflict-affected areas”, 25 June 2025.

23 “World Bank approves \$250 million loan to Lebanon for electricity sector”, LBC International, 25 June 2025, available at: <https://www.lbcgroup.tv/news/lebanon-news/863692/world-bank-approves-250-million-loan-to-lebanon-for-electricity-sector/en>

Figure 7: The Cabinet-WBG Group (by author).



acting on urgent reconstruction needs. Another political dilemma is Qatar's proposal to provide energy by building power plants and entering into a 25-year power purchase agreement with Lebanon.²⁴

In addition to the government's recent efforts to enforce laws on diesel generator providers, there remains a need to address corruption, particularly, though not exclusively, within EDL. After all, the energy crisis is not a new issue; it long predates the financial collapse, which has only compounded the problem.

MP Policy Subgroups

The MP subgroups currently involved in the energy sector are small and fragmented (see Figure 8). For the purpose of this analysis, the three main subgroups have been divided as follows: the first involves the MP who has worked directly with the municipality of Beirut (discussed in the Municipal Beirut section); the second is an MP who worked with INGOs and think tanks on the Decentralized Renewable Energy (DRE) law passed in 2022 (explained in the Legal Landscape of Energy Recovery section); and the

third is an MP who worked on a law to exempt all residents living along Lebanon's southern border from paying electricity bills.²⁵ When asked during an interview about the geographic focus of the exemption and the exclusion of other regions, this third MP explained that he prioritized the south because it is "the area he knows best". Despite these efforts, most laws remain unenforced and fail to address the needs of low-income groups.²⁶

In parallel to these scattered legislative efforts, the cabinet issued a law that exempts all Lebanese citizens affected by the war from governmental taxes and fees, including those related to energy.²⁷

The Private Sector and Donors Group

While several groups have been actively engaged in policymaking and financing efforts in the

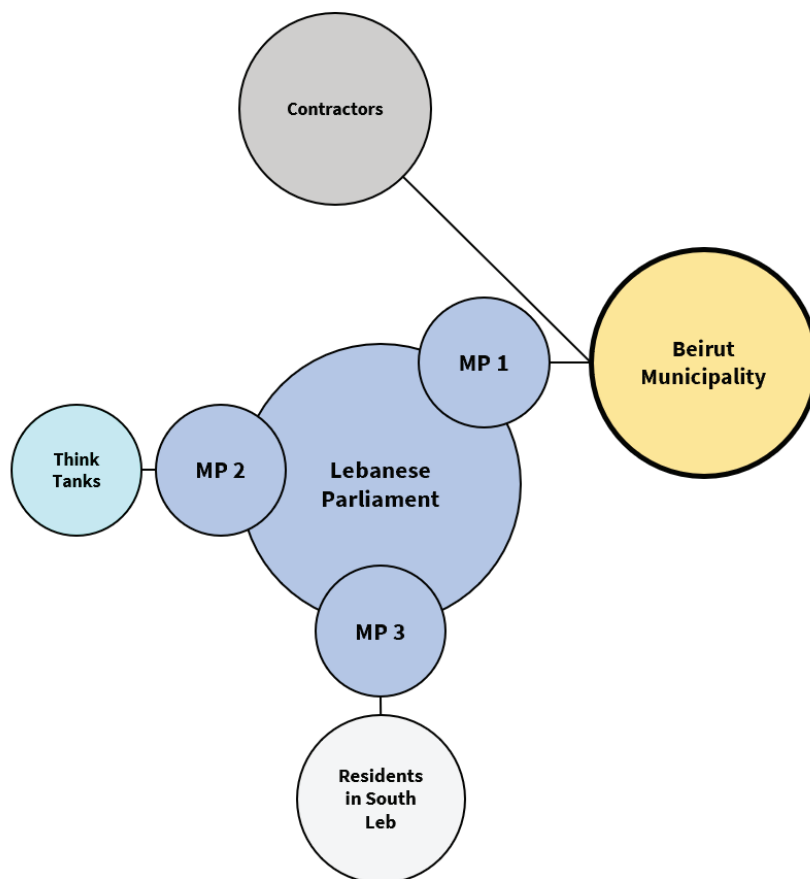
²⁴ Further research is conducted separately by ARI to address geopolitical dynamics of energy recovery.

²⁵ These three MPs were identified as working on energy-related policies, based on reviews of news articles and the conducted interviews; Sadawadi Altaym, "Firas Hamdan: Suspension of electricity and water fees in these districts" (Arabic), 4 June 2025, available at: <https://sadowadi-altaym.com/?p=241460>

²⁶ A study by Ebla shows that even within buildings, income disparities directly affect access to electricity.

²⁷ F. Gemayel, "Parliament approves series of exemptions for those affected by the war in Lebanon", L'Orient Le Jour, 30 June 2025.

Figure 8: The Policy Subgroups (by author).



energy sector, the situation on the ground remains disconnected from these institutional processes, mostly in terms of actual implementation.²⁸ The actors mentioned earlier have had almost no direct interaction with residents in the areas affected by the war (see Figure 9). Instead, the energy sector is still dominated by solar panel providers for household-level use and informal neighborhood diesel generator operators.²⁹ Practically, these actors have significant power. Besides being in direct contact with residents, they set informal electricity tariffs and continue to operate largely unmonitored. This reality may change, as the cabinet has recently established the ERA to provide strategic oversight, and there have been recent attempts to enforce the law on generator providers, but the outcomes

remain uncertain and only time will tell whether these efforts will succeed in the long term.

In parallel, political parties in these areas have already paid out around US\$1.1 billion to residents of destroyed homes for renovations and home rental costs. Residents have used part of these relief payments to install solar panels or to reconnect to local diesel generators. The Dahiye UoM estimates that approximately 700 neighborhood diesel generators operate in the southern suburbs of Beirut, and studies show that 191 operate in municipal Beirut.³⁰ When including generators installed by individuals for personal use or collectively in buildings, the total number in Beirut exceeds 9,000 generators.

Groups of Fading Influence

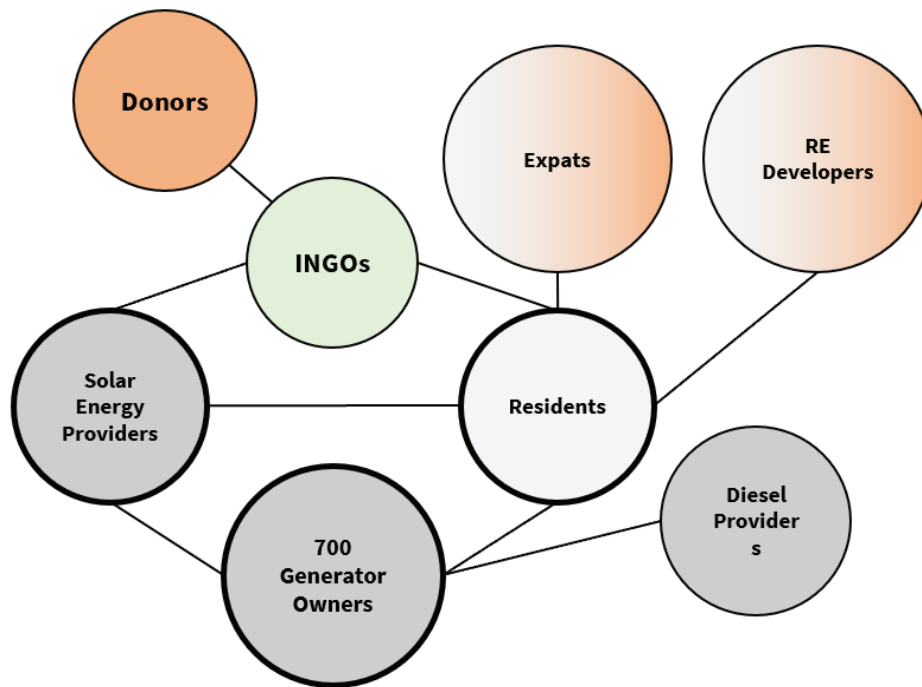
In addition to the active groups, the influence of

²⁸ The reality has not changed since the 2024 Ebla study cited above (Ebla Research Collective, “I am, as you can see”).

²⁹ The president of the Dahiye UoM estimates that some neighborhood generator operators supply electricity to hundreds of households, with some reaching up to 1,000 households.

³⁰ Beirut Urban Lab, “Beyond the Grid: Exploring Municipal Beirut’s Hybrid Energy Infrastructure”, 2025.

Figure 9: The Private Sector-Donors Group (by author).



two previously active groups has been diminishing over the past five years (see Figure 3 above). The first group is the financial institutions group, which includes the Central Bank (BDL), private banks, the Housing Bank, and foreign donor countries. The second group includes think tanks, universities, research institutions, and standard-setting bodies. Among the groups whose influence has been fading is the Order of Engineers and Architects (OEA), which has emphasized the need for clear national leadership to guide energy recovery and “organize this chaos”.³¹

While the declining influence of financial institutions is not necessarily an issue, the marginalization of the second group is more problematic. Their disempowerment is reflected in the absence of long-term planning and the exhaustion of advocates within these institutions. In the past, many of the advocates’ efforts to pursue sustainable and forward-looking energy sector reforms were hindered by parliament, as they contravened the interests of those in power. Furthermore, experts disagree on whether the informal networks prevalent in the country should be integrated into the formal system or abolished altogether. Some

argue that it is a reality that must be accommodated, particularly since informal actors are able to collect revenue. Others contend that the very existence of diesel generator providers constitutes a problem in itself, given rentier practices and exploitation. This disagreement further underscores the need for clearer lines of communication and coordination among relevant stakeholders on these matters to arrive at shared understandings and solutions.

The Near Future of Energy Governance

Despite the fragmented nature of the existing governance model, the new cabinet recognizes some of these challenges and is working to address them in the short term (see Figure 10 below). One of the most recent interventions was the establishment of the ERA, which is expected to have full oversight over the actors involved. A professional audit firm will also review and verify all damage assessments conducted so far (see Figure 10), although local municipalities have concerns about the institutional setup and transparency of this entity. Two additional actors will also be reactivated in the reconstruction process, drawing from previous postwar recovery models in Lebanon. These are the Lebanese army and the Higher Relief Commission, both of which

31 As mentioned during the policy dialogue by the Head of the Department of Electrical Engineers at the OEA.

will be tasked with monitoring the flow of funds and managing the distribution of compensation. However, several roles and responsibilities remain undefined, as will be explored in the following sections.

In summary, while public sector institutions are repairing the infrastructure as was, informal political actors remain dominant in the reconstruction of the superstructure, and the informal private sector benefits the most from the current state of disorganization.

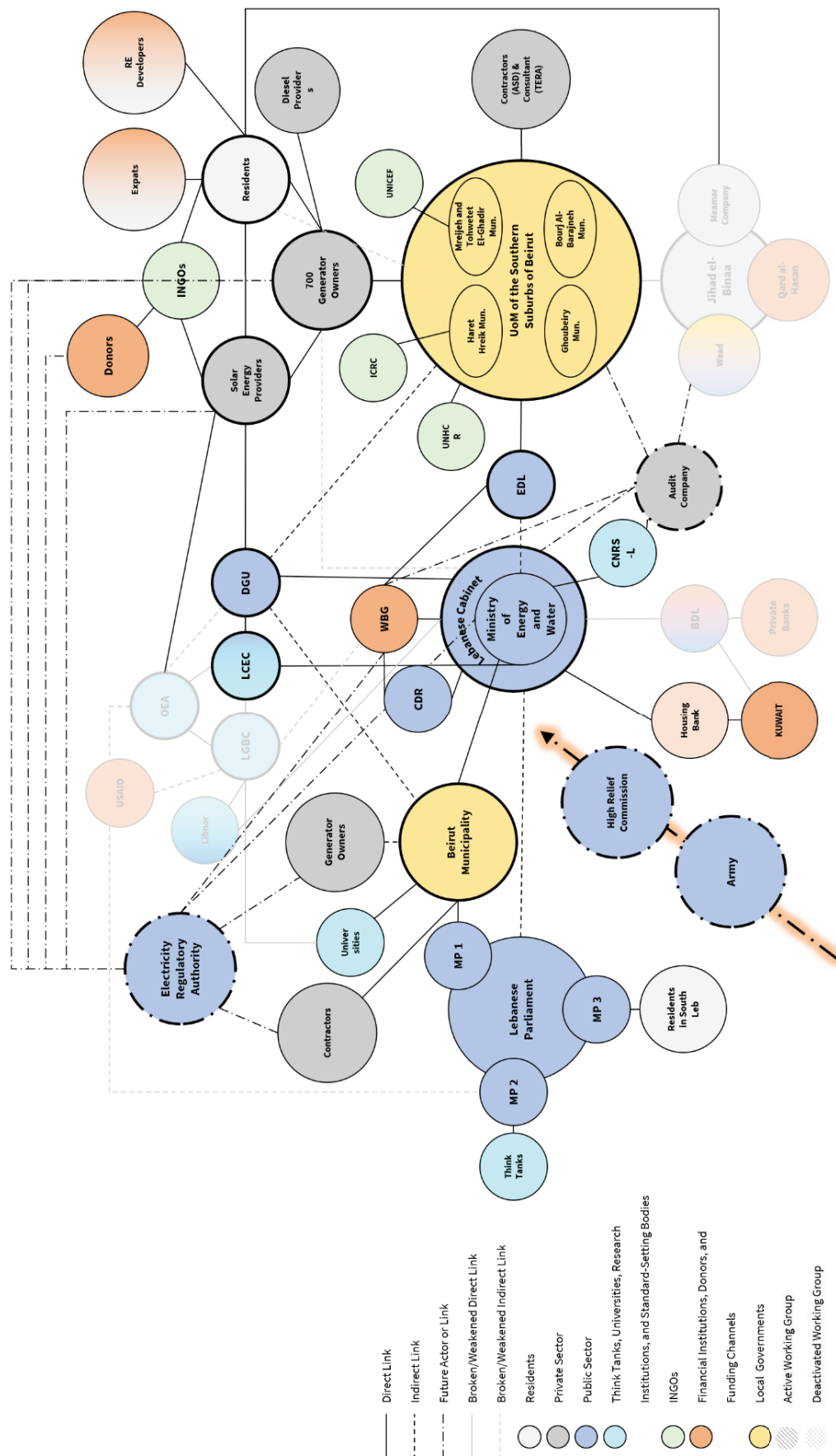
Governance Reform

Earlier findings on governance show the need for more coherent, inclusive, transparent, and standardized coordination mechanisms across institutions and entities operating at different scales and levels of governance. Building on this, there is a need to create clear lines of coordination between key stakeholders under the monitoring and guidance of the Ministry of Energy and Water (MoEW). The aim is to establish a clear vision for the energy sector – particularly, though not exclusively, regarding the primary sources of energy to be relied upon – and to guide postwar energy recovery in line with this vision while accounting for the diverse needs and requirements of interventions across different regions and the increasing demand in certain areas hosting displaced populations. These clear lines of coordination aim to further restore the practical role of experts, primarily standard-setting bodies, and initiate a process of long-term planning that goes beyond reconstruction to include broader recovery of the energy sector. In this context, the national vision will guide policies and direct

interventions by working backward to achieve long-term goals. Strengthening the role of the DGU within this structure is also key for energy-efficient reconstruction from a broader planning and urban design perspective.

At the local level, a dedicated coordination body should be created between all municipalities that fall under the greater Beirut area, with energy serving as a stepping stone toward scaling up this needed coordination for other sectors. Municipalities need to create clear coordination lines among each other, build channels for direct communication with residents, and conduct awareness sessions through local neighborhood-level committees with the potential assistance of mukhtars (local elected officials). Municipalities should also identify and prioritize geographic areas for infrastructure modernization beyond the two assassination sites, coordinate energy recovery efforts with the MoEW, and coordinate with the ERA to produce energy alternatives where needed. Municipalities should also play a stronger role in stopping and reporting violations. More broadly, there is a need to locally address the informal system in a way that does not affect the livelihoods of the residents: besides enforcing the tariff laws on diesel generator providers, these actors should also commit to shifting toward sustainable energy sources in the medium term, and the cabinet should address corruption in state institutions. INGOs and universities can also support local authorities by training their staff on energy-efficient planning.

Figure 10: The near future landscape of actors involved in energy recovery in the case of Beirut (by author).



The Legal Landscape of Energy Recovery: A Patchwork of Short-term Fixes

Fragmented Governance Breeds Fragmented Policies

The fragmentation in both governance and policies has far-reaching practical implications. Each group in Lebanon's energy governance structure appears to be working independently on different policy reforms, often disconnected from local governments and informal local actors. This disconnect hinders the practical implementation of policies, especially in cases where policymakers are unaware of on-the-ground realities.

This fragmentation manifests in the clear contradiction between two policy tracks that aim to address Lebanon's energy crisis. The first track focuses on policies that strengthen the role of the central government and the public sector, while also integrating public-private partnerships. The second track views diesel generator operators as very powerful and explores ways to include and formalize their practices, as well as introducing microgrids and considering local community practices such as building committees.

The first track ended EDL's monopoly by establishing the ERA under Law 462/2002 to monitor and regulate the energy market. It took 17 years of law amendments to draft the regulatory pathway to establish it and define its responsibilities: Law 462/2002 ended EDL's monopoly; Law 288/2014 then allowed the cabinet to grant electricity production licenses, while Law 54/2015 and Law 129/2019 extended the duration of the cabinet's license-granting powers.³² The new Minister of Energy and

Water has finally established the ERA and ended this vacuum, which gained governmental approval on 11 September 2025. However, the revival of the ERA clashes with the views of experts who believe that these laws, along with the more recent DRE Law 318/2023, will empower the role of local actors to the extent that they might replace the role of central government.³³ They argue that national-level authority should be maintained under Law 16878/1964 to prevent unmonitored chaos in terms of energy sources, pricing, and safety, especially since decentralized uneven energy production is scaling up, and EDL has not yet implemented net metering.³⁴ Increasing this tension is a claim by several experts who noted that proposed laws often fail, not only because of bureaucratic hurdles, but because those who propose these laws are often the same decision-makers obstructing their implementation. As one of Dahiyeh UoM's council members noted: "Legislation does not necessarily mean execution."³⁵ Despite these challenges, which reflect the absence of a coherent national vision for the energy sector, experts drafted the Energy Efficiency Law that approaches the sector more strategically and addresses gaps in the existing legislative framework. However, it has not yet been approved by parliament.³⁶

Meanwhile, the reality on the ground has moved ahead of policy: diesel generator and solar providers in Dahiyeh are recovering quickly from the recent war, without waiting for any official

tricity production instead of the not-yet-established ERA, bypassing key regulatory mechanisms; Law 54/2015 extended the application of Law 288/2014 for an additional two years, reinforcing the executive's authority over licensing without establishing the ERA; and Law 129/2019 further extended the provisions of Law 288/2014, continuing to sideline the ERA and consolidating licensing powers within the Lebanese cabinet.

33 Law 318/2023 outlines the governance structure of ERA and its responsibilities.

34 Law 16878/1964 reinforces central authority over electricity provision under EDL; The net metering framework was established through EDL Decision No. 318-32/2011. Net metering is a billing mechanism that allows people to offset their electricity consumption with renewable energy generated on-site

35 The Dahiyeh UoM president highlights this challenge specifically when speaking of the new World Bank loan. The loan must first be approved in parliament and will go through a lengthy process to secure approvals and clarify responsibilities. The Dahiyeh UoM believes this will not begin before next year, and stresses that they cannot wait that long.

36 "Energy Efficiency Law", Lebanese Center for Energy Conservation, available at: <https://www.lcec.org.lb/our-work/LCEC/EELaw>

32 Law 462/2002 liberalizes Lebanon's electricity sector by introducing private sector participation, unbundling services, and establishing the electricity regulatory authority; Law 288/2014 temporarily amended Law 462/2002 to allow the Lebanese cabinet to grant licenses for elec-

Figure 11: Map highlighting potential locations for community-based solar panel installation in one of Dahiye's neighborhoods (by author).



regulation. Additionally in Dahiye, both EDL and municipalities have been rebuilding energy lines without a forward-thinking vision or policy guidance, and even though the cabinet of ministers has recently initiated a series of raids to impose standard tariffs on diesel generator operators. In this context, experts continue to debate whether formalizing these informal networks would be beneficial or detrimental. This is one example of the huge gap between policymaking, expert views, and practical application.

Despite claims from Beirut's municipal council and the Dahiye UoM that urban land scarcity makes solar gardens (small, block-level solar farms) infeasible, the informal sector has managed to install them, debunking the land scarcity argument.³⁷ Based on an interview with the Dahiye UoM president, neighborhood diesel generator operators in Dahiye have already begun transitioning to solar energy during daytime, again without awaiting formal policy direction or approval from the at-the-time-nonexistent ERA. Furthermore, according to a CNRS-L study, by 2023 solar energy covered around 12% of the country's demand. However, only 3.3% of the country's solar panels were installed in municipal

Beirut. This shows the difficulty of deploying household-level solar panels in urban areas and the need for collective solutions, especially in areas where multiple complexities (e.g., owner-tenant disputes, many apartments in one building with limited roof space for solar installation) limit their widespread installation. There is a need for creative urban planning solutions that allow municipalities to create solar gardens that serve local communities (see Figure 11).

The lack of monitoring has also hindered the implementation of the energy audit requirement under Law 9196/2022.³⁸ Although the law passed in parliament, audits have not started for buildings, which again reflects an issue of policy paralysis. Establishing the ERA in this case is not enough. The OEA and municipalities need to initiate monitoring in coordination with the ERA, especially since reconstruction work is already underway.

Furthermore, monitoring and oversight have become more complicated since the Lebanese Center for Energy Conservation (LCEC) stopped providing facilitation mechanisms to ease the permitting process for the MoEW as of April 2025.³⁹

37 Neighborhood generator providers have been illegally installing generators on public land, in parking lots, and on vacant plots, and often between buildings; these installations pose environmental, health, and safety risks.

38 Law 9196/2022 allows the Lebanese government to contract with private sector companies to construct, operate, and maintain electricity production plants to improve power generation capacity.

39 The new MoEW has decided that the advisory role of the LCEC should no longer include creating facilitation mechanisms for renewable

This move hinders sustainable reconstruction processes, since no alternative has been put in place for such facilitation mechanisms for building solar panel structures.⁴⁰ This research found that the DGU, the OEA, and municipalities were engaged in a blame game in the beginning, each offloading their responsibility onto others. However, the OEA has recently proposed that it handle approvals for facilitation mechanisms and permits, particularly since it recommends that, for safety reasons, only electrical engineers registered with the OEA be authorized to design and implement solar panel installations. The DGU also has not established any standards for solar panel installations since 2012 beyond those related to water heaters, which is alarming given the increase in demand. The delays in setting these responsibilities increases reconstruction challenges for residents who wish to rebuild their homes with integrated solar systems, and stalls energy recovery efforts.

Decentralization Without Policy

The new president and prime minister made speeches emphasizing decentralization as a national priority, which will have implications on energy recovery if implemented.⁴¹ However, no concrete steps have been taken at the policy level to implement geographic decentralization, even including an article that establishes a greater Beirut area. Officially establishing this zone solves long-standing governance, coordination, and urban planning issues, especially in the current context of energy recovery.⁴²

Despite the absence of actual decentralization policy, a de facto form of federalism already characterizes most Lebanese regions including Beirut. The capital's neighborhoods are territorialized and disconnected from their surrounding suburbs, which makes the governance of the energy sector more

complex than it should be for a single metropolitan area.⁴³ However, there are growing concerns among experts and citizens, even those who acknowledge the technical benefits of decentralization, about this de facto federalism. Areas with a strong Hezbollah presence are increasingly described as mini "state-lettes", and Hezbollah representatives in the public sector have clearly stated a tendency toward adopting "decentralization" from this perspective.⁴⁴

In contrast, areas like Zahlé have successfully established energy autonomy by establishing its own electricity utility, Électricité de Zahlé (EDZ). Zahlé benefits from Law 107/2018, which indirectly allowed it to produce its own electricity under the condition that it will hand over the energy infrastructure to EDL in the long term.⁴⁵ The law began as a temporary measure and later became a de facto arrangement. EDZ continues to produce Zahlé's energy, and its success has largely been attributed to its political alignment with the local sectarian settlement, an arrangement experts view as deeply problematic.⁴⁶ The proposed law that would have allowed the municipality of Beirut to produce its own energy was proposed as a replication of Zahlé's model.⁴⁷ It was rejected in parliament and its provisions were controversial: it proposed granting permits to private sector entities wishing to generate electricity while removing the MoEW's authority altogether, fully and formally privatizing the energy sector before the ERA could be established. The proposal was also criticized for serving personal political interests because a single MP introduced it, risking the creation of clientelist networks under the guise of public service. Incidentally, the MP framed the proposed law as a solution for the common good but claimed that political opponents blocked it for partisan reasons without acknowledging the technical and regulatory flaws in the proposal.⁴⁸ Such attempts

energy installations. Instead, he believes that issuing these permits and the facilitation mechanisms related to it should be the responsibility of the OEA.

40 The issue is in the permitting of the structure, not the solar panel itself.

41 L'Orient-Le Jour, "Lebanese parliament elects president after more than two years of vacancy", 9 January 2025; L'Orient-Le Jour, "Nawaf Salam accepts nomination as Lebanon's prime minister, commits to rebuilding and reforms", 24 January 2025.

42 This is according to an interview with one of the experts who has previously advocated for implementing the decentralization law.

43 D. Aouad, "Neighborhood planning for a divided city: The case of Beirut", *Urban Planning*, Vol. 7(1), 2022, pp. 129-141.

44 These tensions were evident during the policy dialogue.

45 Zahlé benefited from Law 107/2018 primarily through improved telecommunications infrastructure and services.

46 A. Ahmad, N. McCulloch, M. Al-Masri, and M. Ayoub, "From dysfunctional to functional corruption: The politics of decentralized electricity provision in Lebanon", *Energy Research & Social Science*, Vol. 86, Article 102399, 2022.

47 Law proposal 1541/2024, proposing a law authorizing the municipality of Beirut to license energy production (اقتراح قانون يجيز لبلدية بيروت (الترخيص بإنتاج الطاقة).

48 Waddah Sadek (@WaddahSadek), making a video statement explain-

in public discourse reflect two main challenges: the entrenchment in geographic areas of sectarian and political influence and the risks posed to the sense of equality before the law on the level of the nation state.

In the absence of strong national leadership over the past decade, local governments have tried to assert more control. Beirut's municipality also considered establishing an electricity station in Karantina to achieve energy autonomy. Similarly, the Dahiyeh UoM has previously advocated for laws that would allow municipalities to generate their own electricity. Local authorities currently use legal gaps in municipal law, particularly Article 47, which states that municipal councils have the right to take any action within their jurisdiction if it is for the public good. These proposals, although they never pass, reflect growing local frustration with the central government's inactivity.

The municipal council of Beirut and the Dahiyeh UoM also point to the appeal of informality in bypassing the bureaucratic sluggishness of the national policymaking process. Many rationalize the entrepreneurial work of neighborhood generator operators, which they believe reflects the need to strengthen localized and decentralized work since formal national plans are continuously stalled.

In summary, decentralized energy exists in practice, even in the absence of a formal decentralization law, yet there is a need to enforce existing regulatory frameworks under a coherent national policy.

The Energy Cost of Building As Was

The recently passed Reconstruction Decree 410/2025 presents several challenges for energy recovery.⁴⁹ First, Article 12 encourages residents to rebuild their homes exactly as they were before the war. This build-as-was approach indirectly requires repeating outdated practices, including those related to energy infrastructure and services. Dahiyeh's post-2006 war reconstruction is an example of an

earlier build-as-was process that failed to improve living conditions.⁵⁰ Today, residents face similar challenges under Decree 410/2025, which repeats the same failures.

Building-as-was is problematic on several levels. First, it misses the opportunity to improve the planning and design of towns and urban areas, including Beirut, in terms of modernizing the electricity grid, constructing energy-efficient buildings, and upgrading energy-related services. Second, Article 12 also permits the rebuilding of buildings that were previously legalized despite existing violations. These violations have previously caused a strain on energy by placing additional pressure on an already fragile infrastructure. This has implications for urban areas like Dahiyeh, where most of the infrastructure was not damaged, and where the focus of energy-related reconstruction is at the superstructure level. While local authorities in Dahiyeh acknowledge the issue that arises from building violations, they are sympathetic toward the residents who were displaced during the Lebanese Civil War and who have had no option but to build illegally. They further stress that it is the cabinet's responsibility to address these violations because local governments lack the capacity and resources to do so.

Reconstructing-as-was not only perpetuates poor planning and weak infrastructure but also reproduces already existing inequalities. Reconstruction policy should aim to rebuild better, not just restore what was lost. Despite public demand for rapid return and preserving the old urban fabric, past experience shows that build-as-was recreates urban vulnerability.

Furthermore, the absence of strategic planning results in short-term fixes that overlook not only long-term objectives but also medium-term strategies. Addressing the energy crisis requires plans that account for the demands of populations displaced during the war in host areas. A medium-term plan should address this issue until the war ends, reconstruction is completed, and displaced populations can return to their homes.

Reconstruction could also become a missed national opportunity to construct energy-efficient buildings, as evidenced by the failed attempts after the 2006

ing why the law was rejected (Arabic), 30 July 2025, available at: <https://x.com/WaddahSadek/status/1950538930228543813>

49 Decree 410/2025 provides tax and fee exemptions to people and businesses affected by the Israeli war on Lebanon. Additionally, it suspends certain deadlines related to tax obligations, offering temporary relief to those affected by the war.

50 Human Rights Watch, "Lebanon: Postwar reconstruction and the human rights challenge", 2007.

war for long-term policy reform in construction laws. This is an agenda that organizations like the Lebanese Green Building Council (LGBC) have championed for decades through proposed policies and legal frameworks for standardized green construction.⁵¹ However, reviews of the building law carried out since 2008 by the LGBC, in collaboration with the OEA and the DGU, were never approved in parliament, reflecting the lack of political will. As a result, advocacy in this space has diminished, leaving a vacuum in sustainable construction leadership.

Even where green building policies exist – such as incentives for developers to build green buildings – their application remains limited, especially in low- to middle-income neighborhoods like Dahiyeh where developers building in financially constrained environments associate these standards with higher construction costs.⁵² This reflects a lack of awareness of green building standards, since developers can choose from several different Leadership in Energy and Environmental Design (LEED) certification levels depending on their budget.

In addition, and consistent with governance issues, the absence of monitoring and enforcement poses a major risk: it opens the door for unregulated real estate markets and private developers to build structures that are even less efficient than before. Evidence from past practice shows that many real estate developers have prioritized profit over compliance, by bypassing construction laws to maximize financial profit.⁵³ Without accountability, reconstruction will result in buildings that consume more, not less, energy.

Legal Reform

Reflecting on the findings of this section, there is an urgent need to reform Lebanon's outdated energy recovery frameworks and align them with current energy realities. Parliament should pass the proposed Energy Efficiency Law and review the current outdated building law for long-term energy-efficient planning and reconstruction. It should also develop a clear accountability framework with defined roles and responsibilities to fill existing gaps (e.g., permitting solar panel structures) and promote the DRE law among local governments. Furthermore, a medium-term plan is needed to address the rising energy demand in areas hosting displaced populations due to the war.

An agreement should be reached on whether municipalities producing their own energy is beneficial or harmful, and the current raids conducted on informal diesel generator operators should indicate whether informal networks can indeed be dismantled or, failing that, formalized. This should guide future actions under the oversight of the MoEW, the ERA, and EDL. In parallel, municipalities should be formally mandated to identify sites for block-level solar gardens rather than outsourcing energy production to private companies.

Energy audits should start immediately, and the OEA should be legally mandated to ensure that any renewable energy installation is carried out by licensed electrical engineers who secure a permit in collaboration with the DGU and the Lebanese Standards Institution to guarantee compliance with new standards. In addition, EDL should begin implementing net metering, with municipalities and the OEA assisting by raising awareness and, where possible, requiring all renewable energy systems to connect to the national grid. Finally, local authorities and the OEA should raise awareness among engineers and developers about the different levels of LEED green building standards that can be adopted in reconstruction.

51 The Greening-Building Law is a draft framework developed by the LGBC to embed sustainable planning, design, and construction standards into national legislation as auxiliary building codes; The Lebanese National Green Building Certification System is a local certification system (distinct from LEED or the Building Research Establishment Environmental Assessment Method) proposed by the LGBC to incentivize compliance with sustainable design and climate-responsive construction practices.

52 Under the National Energy Efficiency and Renewable Energy Action (NEEREA), by 2020 over 42% of loans disbursed were specifically for green building investments, indicating substantial uptake by developers in high-end construction.

53 S. Mneimneh, "A segment of Beirut's real-estate machine: Housing production and exchange in Tariq el-Jdide (1996-2018)", master's thesis, American University of Beirut, 2019.

The Political Economy of Energy Recovery: Financial Gaps and Missed Opportunities

Underfunded Public Institutions

Postwar losses in the energy sector today are significantly less than the losses recorded in 2006.⁵⁴ The type of weapons used in the recent war caused comparatively limited damage to infrastructure. This time, no stations or primary urban hubs were destroyed in Beirut – unlike the destruction of the airport in 2006 – and most infrastructure has remained intact apart from the two heavily damaged assassination sites in Dahiyeh. So far, over US\$20 million has been spent on low-level fixes in certain areas, including the southern suburbs of Beirut.

Even if infrastructural losses are limited, reconstruction still presents an opportunity to modernize the electricity grid and promote energy-efficient urban planning. Financing strategies should prioritize the amendment of construction laws, consider supporting formal decentralized energy systems, and support microfinance for sustainable collectives. For example, the International Finance Corporation (IFC) and the WBG previously funded research and advocacy of the LGBC to revise and propose an alternative to the national building rating system.⁵⁵ Although the proposed laws for energy-efficient buildings did not pass, there is nevertheless a renewed need to allocate funds to

support these legal reforms.

Legislation should also consider financial implications since the country is still suffering from a financial crisis. Municipalities and ministries are underfunded, and they lack the financial resources to hire qualified experts to work on long-term sustainable energy solutions and support the municipal police in monitoring their implementation. The current municipal law also does not allow them to collect municipal taxes efficiently, and parliament has refused to increase municipal taxes following the depreciation of the Lebanese pound. Instead, the previous cabinet allowed private sector entities such as OMT, the accredited agent of Western Union in Lebanon, to collect government taxes, which some view as a form of privatization. Furthermore, the parliament introduced tax exemptions for people affected by the war, which increases the financial burden on local public institutions due to the lack of alternative financing mechanisms.⁵⁶ Today, some NGOs provide technical expertise and raw material to fill institutional gaps, but this is unsustainable and leads to the NGO-ization of the public sector. Additionally, NGOs often have priorities that are not necessarily aligned with local or national goals. For instance, the UNHCR is rebuilding schools and universities. Complicating this reality is the sanctions imposed on several components of state institutions and the redirection of funds to other countries in crisis or war.⁵⁷ Furthermore, the new municipality of Beirut has failed to partner with available donors over the past three months due to the lack of a clear strategy or vision for the energy sector. Short-term fixes by NGOs cover some financial needs, but they leave large segments of the population unsupported, which creates new forms of inequality. In addition to the above, one sentiment that remains clear from the discussions and interviews conducted is that the ongoing corruption within certain public institutions further exacerbates inequalities. They point to the corruption in EDL and call for enforcing the anticorruption law that was introduced in 2018.

54 In 2006, the energy sector incurred nearly US\$1 billion in government subsidies and significant infrastructure destruction. By contrast, recent estimates of losses from the 2023-2024 war indicate approximately US\$320 million in energy sector losses, alongside broader damage in other public services.

55 The LGBC developed the ARZ Building Rating System with IFC and World Bank support to encourage voluntary compliance and incentivize green technologies across commercial buildings.

56 The OMT offers governmental services by collecting taxes and fees. See "Taxes & Fees", OMT website, available at: <https://omt.com.lb/en/services/governmental/taxes-fees>

57 Sanctions by the US, the UK, and Canada targeting former Central Bank governor Riad Salameh, his associates, and Hezbollah-linked people and entities have affected Lebanon's financial governance and its informal funding networks; Themis, "Lebanon's economic woes: Unravelling the crisis and FATF's response", July 2023.

Financial Recovery of the Informal Sector

Since the public sector has thus far been unable to offer financial support, informal political organizations such as Qard al-Hassan and Jihad al-Binaa have stepped in to disburse direct compensation to affected households. In Dahiyeh, the president of the Dahiyeh UoM reported that around US\$1.1 billion has been disbursed by these entities in the form of cash for rent and home repairs. Many households have used these compensations to fix energy-related damages on their own, then reconnected to local neighborhood generators or purchased new household-level solar panels.

Private generator operators in Dahiyeh have also recovered quickly. Having already benefited from Lebanon's electricity crisis, they have the required money and possess the entrepreneurial drive to recover without access to financial compensation. Although this challenge has existed for years – in some areas for decades – it is expected to become less of an issue if these providers comply with the new electricity tariffs. However, law enforcement alone is insufficient in the absence of tangible alternatives.

Microfinance for Energy Transitions

Subsidized loans and incentives for real estate developers are no longer available, and the uncertainty surrounding the recovery of Lebanon's banking sector makes traditional finance unreliable. However, there is a clear need for microfinance programs that go beyond supporting real estate developers and individual households to instead target broader community-based energy-efficient reconstruction.⁵⁸

To date, there have been no incentives directed at sustainable housing cooperatives; instead, financing has focused narrowly on private developers and individual households.⁵⁹ These models have largely

relied on the currently collapsed financial system and only subsidized developers and individuals; reconstruction presents an opportunity to introduce support targeted at marginalized communities through inclusive community-based microfinance schemes, especially considering the inaccessibility of loans to single households.⁶⁰ The payment schemes should be fair, with special consideration for vulnerable groups, and take into account income disparities within neighborhoods and buildings.

Although UN Development Programme (UNDP) representatives have mentioned funding community-based energy solutions, there is little clarity on selection criteria or potential beneficiaries of the new schemes.⁶¹ The UNDP is coordinating with the cabinet to identify needs and work accordingly. Yet, the lack of a national vision might deepen inequalities if only a small number of INGOs implement such projects. Without a vision and a clear strategy, these efforts will have limited impact.

The Cost of Inaction

Financial inflows from Lebanon's diaspora are not flowing toward an efficient reconstruction. Traditionally, expats have funded projects to develop their hometowns and cities.⁶² However, remittances sent in support of relatives are decreasing; the municipalities of Dahiyeh attribute this change to a loss of trust in public institutions and the country's political system.

sector entities to get subsidized loans for any type of energy efficiency and renewable energy projects. It was active through all Lebanese commercial banks under the leadership and management of the BDL: "By June 2020, more than 1,000 projects were approved by the NEEREA financing mechanism with a total of more than US\$600 million. Results show that around 76% of the projects were for solar photovoltaic, while 42% of loan amounts were for green buildings." See LCEC, "NEEREA", available at: <https://www.lcec.org.lb/our-work/partners/NEEREA>

60 Some residents in Beirut currently can only afford 1-2 amperes of electricity from diesel generators.

61 The UNDP-funded Country Entrepreneurship for Distributed Renewables Opportunities project developed the Village 24 initiative to pilot community-led solar net-metering in villages like Kabrikha, signaling interest in community-based renewable energy solutions. Though framed as a draft guideline, it still lacks formal definition of beneficiaries or scale; Before the recent war, the UNDP addressed the needs of refugees in host villages and through the national poverty program.

62 J. Skulte-Ouais and P. Tabar, "Strong in their weakness or weak in their strength? The case of Lebanese diaspora engagement with Lebanon", *Immigrants & Minorities*, Vol. 33(2), 2015, pp. 141-164.

58 Bintjbeil.org. (2022). (In Arabic), "To help Lebanese people with "limited income"... A package of loans from the Housing Bank: to buy a house, to install solar energy..." 16 June 2022, <https://bintjbeil.org/post/54671/>

59 The most common sustainable energy financing mechanism was the NEEREA, active between 2010 and 2019. The NEEREA allowed private

Another lost opportunity lies in reducing energy consumption through strategic urban planning. Planned and well-designed reconstruction could lower consumption if buildings were to have better access to natural ventilation and sunlight.⁶³ Yet without updated building codes, mandatory energy audits, and enforced energy efficiency standards, energy-efficient planning will not materialize.

Economic and Financial Reform

The financial reform of energy recovery requires targeted interventions to channel resources effectively and inclusively. The Cabinet-WBG group should allocate part of the energy reconstruction funds to: municipalities, so they can hire and retain qualified experts; and standard-setting and monitoring institutions, to strengthen their roles. In parallel, it is recommended that local public sector institutions collect taxes instead of the private sector.

At the national level, the cabinet must implement the 2018 anticorruption law. It is also recommended that governmental institutions provide incentives to cooperatives and community-based initiatives to encourage collective energy-efficient rebuilding. These financial reforms should prioritize inclusivity by setting clear and transparent beneficiary selection criteria, primarily based on income.

At the local level, municipalities should encourage expats to invest in neighborhood-level renewable projects such as solar gardens.

Toward Energy-Efficient Reconstruction: Beyond Build-As-Was

This paper has unpacked the challenges and opportunities shaping the current energy recovery context of municipal Beirut and its southern suburbs. It aimed to challenge the conventional build-as-was approach to reconstruction, which relies on short-term fixes, by advocating for a more forward-looking and sustainable vision. Through an analysis of governance, policy, economic, and financial frameworks, the paper showed how reforms at these three levels can move energy recovery beyond restoring Beirut's urban fabric to its former state. Although the studied area has a different extent of damage compared to other areas affected by the war, Beirut could still become a pilot program where its reconstruction demonstrates how rebuilding in an energy-efficient and inclusive manner could inspire other Lebanese cities and towns.

The foundation of this research report is based on in-depth interviews and a policy dialogue with public sector actors and other stakeholders. As such, the recommendations are grounded in practical realities. Prioritizing these actions can make Lebanon's energy-efficient recovery possible despite the current political fragmentation that dominates its postwar reconstruction.

63 S. Cammarano, "Daylighting design for energy saving in a building", *Energy Procedia*, Vol. 78, 2015, pp. 3,047-3,052.

Annex

The stakeholders interviewed for this paper were:

Public Sector

- Two members of the Lebanese parliament
- The president of the Dahiyeh UoM
- The general manager of the Dahiyeh UoM
- The president of the Beirut municipal council
- A member of the Beirut municipal council

Syndicates

- A higher council member at the OEA of Beirut
- The head of the electric engineers' branch of the OEA of Beirut

Think Tanks, NGOs, and Standard-Setting Bodies

- The former vice president of the LCEC
- The cofounder of the LGBC
- A member of an anonymized INGO
- The MENA director of the Natural Resource and Governance Institute
- A member of Public Works Studio

About the Arab Reform Initiative

The Arab Reform Initiative is an independent Arab think tank working with expert partners in the Middle East and North Africa and beyond to articulate a home-grown agenda for democratic change and social justice. It conducts research and policy analysis and provides a platform for inspirational voices based on the principles of diversity, impartiality, and gender equality.



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