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POLICY BRIEF

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Unlocking Solar Energy Access in Lebanon through Innovative Finance and Blended Models

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1. Executive Summary

Lebanon's chronic electricity crisis has left citizens and businesses with only a few hours of daily power, forcing a reliance on costly private diesel generators. In the absence of public alternatives, solar adoption has grown rapidly since 2020. The rollout, however, has been fragmented and largely self-financed,¹ leaving low-income households, Micro, Small, and Medium Enterprises (MSMEs), and municipalities excluded from access. While solar offers a clean and viable alternative, the lack of enabling policies, regulations, and finance has meant that benefits remain concentrated among wealthier groups, undermining national recovery and energy justice.

To address these gaps, Lebanon should adopt targeted financing solutions that make solar accessible to all segments of society. Priority actions include supporting microfinance institutions (MFIs) that extend small-scale loans for households, expanding blended finance vehicles such as SoLR& that can provide lease-to-own and rental packages for MSMEs, and developing risk-mitigated Public Private Partnership (PPP) frameworks that enable municipalities to host solar farms. In parallel, the government must reinstate tax and customs exemptions on solar equipment, issue the implementing decrees of the Distributed Renewable Energy Law, and operationalize credit- and risk-mitigation tools.

2. Introduction and Overview

Lebanon's energy crisis is one of the most visible manifestations of its broader institutional and economic collapse. The national utility, Électricité du Liban (EDL), has seen its role diminish to near irrelevance in many parts of the country, providing on average less than two hours of power per day.² This shortage has emboldened private diesel generator networks to proliferate, extracting high, exploitative fees from households and businesses, often in violation of environmental standards and safety norms.³

In response to EDL's service provision collapse and diesel fuel shortages at the peak of the economic crisis, Lebanese citizens, MSMEs, and municipalities have scrambled to install solar photovoltaic (PV) systems. This decentralized shift, though necessary, has been uncoordinated, self-financed, and inequitable.¹ Wealthier households have adopted rooftop solar systems, often with storage, while lower-income families remain tethered to expensive diesel or limited access.

Similarly, some businesses have installed commercial-scale solar to maintain operations, while others remain priced out of the market.

The central gap is clear: lack of inclusive and accessible finance. Without adequate instruments to spread or reduce the cost of solar energy systems, this transition has reinforced rather than reduced energy inequality.

¹ Yusra Bitar, "Lebanon's Solar Rollout: In What Ways Has It Been an Unjust Energy Transition?", Arab Reform Initiative, August 2024, <https://tinyurl.com/48yh7ujw>

² World Bank, *Lebanon Power Sector Emergency Action Plan*, 2020, <https://tinyurl.com/mtntbsn7>

³ Human Rights Watch, "Cut Off from Life Itself": Lebanon's Failure on the Right to Electricity, March 2023, <https://tinyurl.com/bdf7j49u>

This brief argues that Lebanon must:

- Design and deploy innovative finance mechanisms tailored to each segment of society.
- Ensure that solar systems are appropriately sized to balance affordability and impact.
- Maintain short payback periods (1-5 years) to match household and MSME cash-flow realities. Solar systems only make sense if the monthly repayment is equal to or lower than what MSMEs already pay for diesel generators, and if this investment pays for itself within a few years.
- Reactivate fiscal incentives and implement the legal frameworks already in place, especially Law 662 on decentralized renewable energy.

These actions will allow Lebanon to address its immediate energy crisis as well as lay the foundation for a just, inclusive, and resilient energy system.

3. Analysis and Discussion

A. Household-Level Solar via Microfinance

Solar energy is a viable alternative to diesel generation for households, but its adoption remains limited due to prohibitively high upfront costs. A basic 1.5-2 kWp system with storage may cost between \$1,500 and \$3,000. For most Lebanese families, especially in vulnerable or marginalized areas, this is out of reach, especially since poverty in Lebanon has more than tripled over the past decade, reaching 44%.⁴

MFIs, such as Al-Majmoua and potentially Vitas, are well established and ideally positioned to bridge this affordability gap. They are embedded within communities, experienced in small-ticket lending, and capable of designing flexible repayment schedules that reflect clients' cash flows.

With the right support, MFIs can:

- Offer solar loans that match or undercut the household's monthly generator bill.
- Structure repayments over 1-3 years, reflecting the short payback period of solar in Lebanon due to high diesel costs.

- Partner with vetted solar suppliers to ensure equipment quality and guarantee post-sale servicing.
- Expand outreach to low-income and rural communities, including those not served by commercial banks.

However, for MFIs to scale these offerings, public and donor institutions must:

- Provide concessional credit lines or loan guarantees to reduce risk and capital costs.
- Simplify credit approval processes for solar-related products and permit requirements, if applicable.
- Support technical assistance to develop standard tools for system sizing, vendor selection, and performance estimation.

This model transforms solar energy from a luxury into a service that the majority can afford, while stimulating job creation in solar installation and servicing.

B. MSME Solar via Blended Finance

Lebanon's MSMEs, which represent over 90% of the private sector,⁵ are particularly vulnerable to energy disruption. Power outages and generator dependence inflate operational costs, reduce productivity, and, in some cases, threaten business continuity. Yet these same MSMEs lack access to affordable financing for solar energy systems, which can require significant investments.

Blended finance is a proven solution. This model combines concessional donor funding (e.g., grants, subordinated capital, guarantees) with private capital to offer affordable, risk-adjusted financing to enterprises.

The SoLR& Renewable Energy Fund, for example, offers solar systems to MSMEs through rental or lease-to-own agreements, where:

- The business pays no upfront cost.
- Monthly payments are lower than current energy bills (i.e., cash-flow positive).
- Ownership is transferred over a fixed period (typically 5-7 years).

Such models make solar energy a service rather than a capital expense. They are particularly effective in

⁴ World Bank, "Lebanon: Poverty more than Triples over the Last Decade Reaching 44% under a Protracted Crisis", 23 May 2024, <https://tinyurl.com/4y25v8hb>

⁵ United Nations, *The Socioeconomic Impacts of the 2024 War on Lebanon*, July 2025, <https://tinyurl.com/4dcn44td>

contexts like Lebanon, where high energy costs and weak banking intermediation hinder CapEx-heavy investments.

Expanding these finance vehicles requires:

- Regulatory support for PPP structures and third-party energy service companies (ESCOs): establish clear rules that allow private developers and ESCOs to finance, install, and operate solar systems in partnership with MSMEs under transparent PPP arrangements.
- Guarantee mechanisms to crowd-in private lenders: provide partial risk guarantees or credit enhancements that reduce lenders' exposure, making it more attractive for banks and investors to finance MSME solar projects.
- Clear selection criteria, e.g., businesses that demonstrate more than 30% cost savings and less than a 5-year payback.
- Linkages with industry associations and chambers of commerce for outreach and deal sourcing.

Blended finance models for MSMEs can rapidly scale solar deployment while boosting local competitiveness and employment.

C. Municipal Solar PPPs via Project Finance Facility

Municipalities are critical actors in delivering services, such as water, lighting, and sanitation – all of which depend on energy. With limited budget transfers and high diesel costs, many municipalities are unable to maintain basic services.

A PPP model enables capable municipalities to host small-scale solar farms (1-10 MW) by partnering with private developers who build, finance, and operate these systems. In return, the municipality either:

- Purchases the electricity under a power purchase agreement (PPA),
- Facilitates access to end-users through microgrids or peer-to-peer supply, and/or
- Facilitates access to lands.

However, such models are hard to implement in Lebanon due to:

- Municipalities' limited creditworthiness.
- Absence of risk-mitigation instruments for private investors.
- Regulatory ambiguity, despite the recent adoption of Law 662.

To overcome these barriers, Lebanon should establish a dedicated project finance facility with:

- Partial credit guarantees: these protect lenders and investors by covering municipal payment risks, helping projects attract financing.
- Viability gap funding: targeted subsidies, blended finance, and diaspora capital lower tariffs to levels that municipalities and end-users can afford, ensuring financial viability.
- Revolving buffers: reserve accounts provide temporary liquidity to cover payment delays, keeping projects on track.
- Legal and technical assistance: standardized contracts, transparent tenders, and advisory support reduce costs, delays, and negotiation imbalances.

These PPPs not only unlock affordable energy at the local level, but also:

- Reduce pressure on the national grid.
- Empower municipalities in the national recovery effort.
- Generate green jobs and demonstrate scalable community energy models.

4. Policy Recommendations

A. For Households

- Enable MFIs to offer solar loans through low-interest credit lines, capacity-building, and simplified licensing from the Central Bank and Ministry of Energy.
- Design right-sized solar loan products linked to average generator bills and backed by expected monthly savings.
- Implement vendor accreditation systems to ensure quality control and minimize loan default due to system failure.
- Bundle microfinance with social support by integrating subsidies for solar adoption into national safety-net programs, especially for extreme poverty and National Poverty Targeting Program beneficiaries.

B. For MSMEs

- Scale blended finance vehicles like SoLR& by injecting concessional capital and encouraging co-investment from banks, Development Finance Initiatives, and diaspora funds.
- De-risk MSME lending through loan guarantees, junior equity, and currency risk protection to attract private lenders.
- Align regulations with leasing models, allowing MSMEs to access solar without balance sheet exposure or upfront CapEx.
- Establish industry-facing platforms for MSMEs to apply for energy audits, financing, and supplier vetting under one window.

C. For Municipalities

- Operationalize the Distributed Renewable Energy Law (Law 318) by immediately publishing the implementing decrees and regulations on grid interconnection, tariffs, and licensing.
- Launch a project finance guarantee facility to provide risk cover for municipal solar PPPs and enable blended project structures.
- Select and support pilot projects across diverse regions to demonstrate the technical and financial viability of PPP solar farms.
- Develop local capacity by assigning energy advisers to municipal unions, facilitating community engagement, and standardizing procurement templates.

D. Cross-Cutting Policies

- Reinstate VAT and customs exemptions on all solar-related equipment and technologies for at least five years to reduce upfront costs and stimulate market demand.
- Simplify net metering and wheeling regulations to allow for power sharing among users and across local grids, especially for cooperatives and municipalities.
- Adopt national quality standards for installations, ensure technical training and certification, and begin drafting solar-battery waste regulations.
- Encourage inclusive planning by embedding energy justice, gender, and social equity metrics into all renewable energy policies and funding programs.

Conclusion

Lebanon stands at a critical juncture. While citizens and businesses have taken the first steps in transitioning toward solar energy, the lack of structured financing, enabling policy, and equity-oriented regulation risks reinforcing inequality and inefficiency. By adopting tailored financing solutions, microfinance, blended finance, and de-risked PPPs, Lebanon can unlock its renewable potential while empowering households, revitalizing MSMEs, and strengthening local governance.

With the right interventions today, solar energy can become not only a survival solution but a cornerstone of national recovery: equitable, scalable, and sustainable.

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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