



KEY CHANGES

Despite the severe economic and energy crises since 2019, Lebanon's resilient spirit shines through. In the energy sector, there has been a notable shift towards sustainable solutions, with significant investments in solar photovoltaic (PV) systems. Many households, businesses, and communities are increasingly turning to solar energy to mitigate the impact of frequent power cuts and fuel shortages. This transition not only provides a reliable and clean energy source but also fosters energy independence and environmental sustainability.

With the government having removed **fuel subsidies** and increased electricity tariffs, the financial strain on the state is easing, and there is a growing emphasis on efficient energy consumption. These reforms, although challenging, are pushing consumers and businesses to adopt more sustainable energy practices. The removal of subsidies has created a more competitive market for renewable energy, prompting increased **investment** in solar PV and other green technologies.

Small businesses and entrepreneurs are finding new opportunities in the green energy market, contributing to economic resilience and job creation. International aid and **partnerships** offer a glimmer of hope for recovery and rebuilding, with many advocating for sustainable and inclusive development.

The recent introduction of a decentralized renewable energy law (318/2023) marks a significant step forward. This law facilitates the development and integration of renewable energy projects by simplifying regulatory processes and ensuring grid access for decentralized systems. It encourages private sector participation and empowers local communities to generate and manage their own energy, reducing reliance on the unstable national grid.

Reasons for Changes

Political instability and economic crises have worsened uncertainties around capital investments. The financial crisis, characterized by a severe devaluation of the local currency and banking sector collapse, has further deterred investment and disrupted economic planning.

The heightened focus on **energy storage** is driven by the need for a reliable energy supply amidst frequent power outages and grid failures. As Lebanon faces a chronic electricity shortage, the integration of energy storage systems has become paramount. These systems ensure a steady supply of electricity, which is critical for both residential and commercial sectors. The increasing adoption of renewable energy sources in Lebanon needs energy storage solutions to ensure a continuous and reliable power supply.

COUNTRY TRENDS OVER THE LAST FIVE YEARS

Economic Struggles

The Lebanese economy has been in decline due to multiple factors, including political instability, a financial crisis, and the COVID-19 pandemic. Over the past five years, Lebanon has faced one of the worst economic crises, with rising unemployment rates. The banking sector has been particularly hard hit, leading to a severe liquidity crunch and deteriorating public confidence in financial institutions. There has been a notable slowdown in **infrastructure** development. Critical infrastructure projects are delayed due to funding shortages.

Energy Sector Developments

There is a growing interest in renewable energy sources. Renewable energy projects, particularly in solar and wind, have gained traction as part of the national strategy to diversify the energy mix and reduce carbon emissions.

With the government's elimination of fuel subsidies and the increase in electricity tariffs have motivated consumers and businesses to adopt more sustainable energy practices.

Decentralized renewable energy solutions, such as rooftop solar panels and community solar projects, are becoming increasingly prevalent, lessening dependence on the unreliable national grid and empowering local communities. The estimated installed Solar PV capacity is 1,500 MWp by end of 2023.

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EVOLVING LEADERSHIP IN ENERGY TRANSITION

The government has initiated several renewable energy projects. These projects are aimed at increasing energy access, particularly in underserved areas, and promoting sustainable energy practices. Lebanon's government has signed power purchase agreements (PPAs) for 11 projects with 165 MW of PV capacity.

Distributed renewable energy has important political, economic, environmental, and social benefits to the Lebanese economy. Lebanon's Distributed Renewable Energy Law sets a basis for stimulating distributed renewable energy production by setting the main principles for the realization of projects using net metering in all its forms, and peer-to-peer (distributed) renewable energy (only) trading through direct power purchase agreements and/or renewable energy equipment leasing. The law was ratified by the Lebanese Parliament on 14 December 2023 under law No. 318/2023.

Private sector companies are increasingly investing in solar energy solutions to mitigate the impact of unreliable electricity supply. Businesses are turning to solar power as a viable alternative to cope with frequent power cuts and rising electricity costs.

There is a noticeable effort to involve local communities in energy projects, particularly in rural areas where energy access is limited. These projects not only improve energy access but also create local employment opportunities and foster community development. International donors and development agencies have played a crucial role in funding and providing technical assistance for these initiatives.

INSIGHTS

Progressing Energy Transitions

Current efforts are on small-scale renewable projects that can be quickly deployed, providing immediate relief and long-term benefits. Distributed solar PV systems are being explored as practical solutions to address the energy access gap and enhance energy resilience.

Collaborative efforts between the public sector, private investors, and development agencies are crucial to overcoming financial and technical barriers.

These partnerships can facilitate the sharing of risks, pooling of resources, and deployment of innovative solutions to accelerate the energy transition.

Policy and Ecosystems

Lebanon has set strategies and action plans for renewables and energy efficiency since 2010. The preparation of the market since then has led to have a high and prompt response to the increasing demand following the economic and energy crisis. Lebanon is currently preparing its second National Renewable Energy Plan (NREAP 2024-2030) which shows scenarios that could go up to 40% of renewables in the electricity consumption of 2030.

In addition, the third National Energy Efficiency Action plan (NEEAP 2024-2030) is being prepared. Regulatory reforms are still needed including the establishment of the National Electricity Regulatory Authority (NERA) in accordance with law No. 462/2002.

Infrastructure modernization efforts should prioritize the integration of smart grid technologies and enhance the capacity for renewable energy integration.

Climate Risk and Resilience

Energy policies and projects incorporates climate risk considerations to ensure long-term sustainability and resilience. This includes designing **adaptive infrastructure** and promoting climate-smart practices.

Resource Allocation, Active Management, and Money Flows:

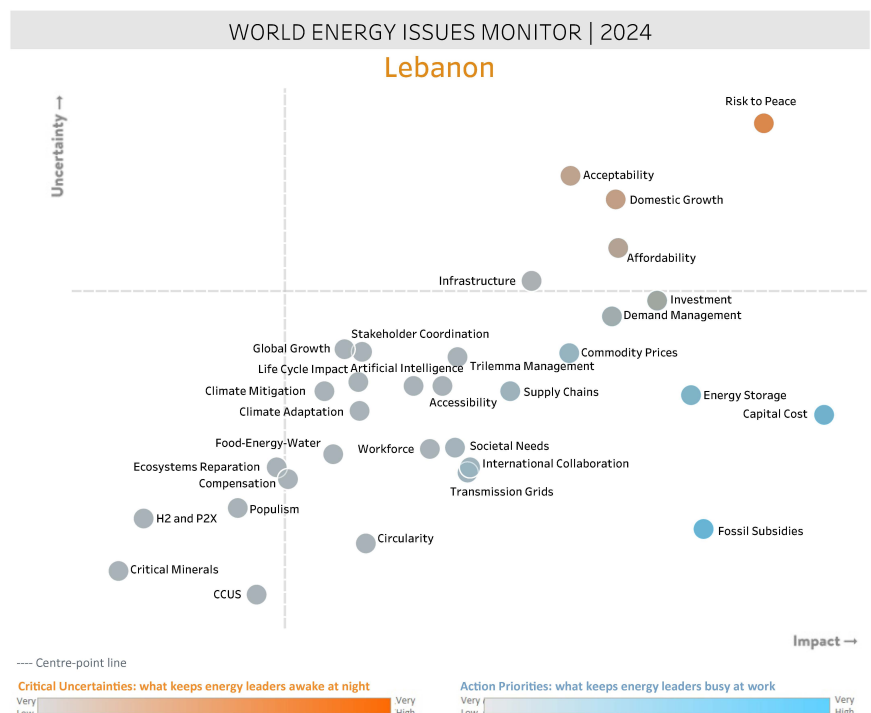
Effective allocation of limited financial resources towards projects with high impact potential is essential. Prioritizing investments in renewable energy, energy efficiency, and climate resilience can maximize social, economic, and environmental benefits. Financial resources should be directed towards projects that offer the greatest return on investment and align with national development goals.

Encouraging foreign direct investment and international aid to support energy transition projects is vital. Lebanon is actively seeking partnerships with international donors, financial institutions, and private investors to mobilize funding and technical expertise. This will help bridge the financing gap and accelerate the implementation of energy transition initiatives.

CONCLUSION

By prioritizing renewable energy development, energy efficiency, and improving regulatory frameworks, Lebanon has created a more resilient and sustainable energy system.

Lebanon's energy sector faces significant challenges but presents opportunities for change. The focus must be on addressing critical uncertainties, fostering strong leadership, and promoting policies that drive faster, fairer, and more far-reaching energy transitions. Leveraging international support and engaging local communities will be essential for achieving sustainable energy goals.



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