

# LEBANON S NEW ENERGY STORAGE POLICY



What does the IRENA report mean for Lebanese energy development? Prepared by IRENA in collaboration with Lebanon's Ministry of Energy and Water, and the Lebanese Center for Energy Conservation, the report aims to support the establishment of a clear and well-designed roadmap for the country's renewable energy development by 2030.



How can MENA countries take the lead in energy storage? With abundant land and low-cost solar and wind generation capacities, MENA countries have real competitive advantages that enable it to take the lead in energy storage and successfully navigate the energy transition.???



Which energy storage solutions will be the leading energy storage solution in MENA? Electrochemical storage(batteries) will be the leading energy storage solution in MENA in the short to medium terms, led by sodium-sulfur (NaS) and lithium-ion (Li-Ion) batteries.



Which energy storage technology has the most installed capacity in MENA? Pumped hydro storage(PHS) has the largest share of installed capacity in MENA at 55%, as compared to a global share of 90%. Pumped hydro storage is one of the oldest energy storage technologies, which explains its dominance in the global ESS market.



Are Li-ion batteries the future of solar energy in MENA? In MENA, Li-Ion batteries have a significant share of the battery grid-scale applications coupled with solar energy systems. The operational capacities range from 0.1 MW in Morocco's Demostene Green Energy Park to 23 MW in Al Badiya Solar-Plus-Storage at Al-Mafraq in Jordan.

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How do Mena utilities deal with the SBM inefficiency? To rectify the inefficiencies of the SBM, many MENA utilities have considered privatization or public-private participation through unbundling electricity utilities into distinct generation and distribution companies, while maintaining the transmission network as a separate utility managed by a Transmission System Operator (TSO).



**WORLD ENERGY COUNCIL COUNTRY COMMENTARIES NE LEBANON MEGS 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.



So, reducing energy consumption can inevitably help to reduce emissions. However, some energy consumption is essential to human wellbeing and rising living standards. Energy intensity can therefore be a useful metric to monitor. Energy intensity measures the amount of energy consumed per unit of gross domestic product.



As a leading battery manufacturer in Lebanon, we use top battery supplies which top brands like BMW, Mercedes, and Tesla trust in batteries. Furthermore our up-to-date team of engineers is constantly working to develop innovative solutions that meet the highest standards of performance and sustainability.

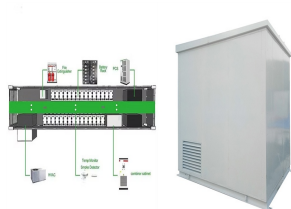


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Figure 1. Lebanon's legal framework for renewable energy Policy Plans  
2010 Electricity Policy Paper: Commitment to reach 12% RE of electric  
and thermal supply 2019 Updated Policy Paper for the Electricity Sector:  
Aims at increasing the production power and reducing the sector's

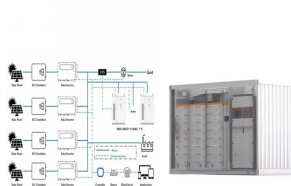
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The Philippines' first large-scale solar-plus-storage hybrid (pictured), was commissioned in early 2022. Image: ACEN. The Philippines Department of Energy (DOE) has outlined new draft market rules and policies for energy storage, a month after the country allowed 100% foreign ownership of renewable energy assets.



At Lebanon's energy hub, we focus on creative answers to Lebanon's energy challenges. Policy Maker. Visit our innovation module to get a closer look to the latest activities in the Energy. (FERC) ruling has prompted Vista Energy Storage, operated by REV Renewables, to cough up \$2.67 million for placing bad battery bids in the California



A key component of that is the development, deployment, and utilization of bi-directional electric energy storage. To that end, OE today announced several exciting developments including new funding opportunities for energy storage innovations and the upcoming dedication of a game-changing new energy storage research and testing facility.

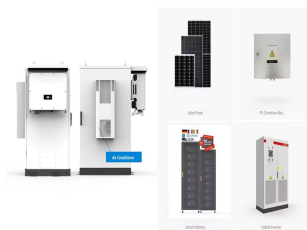


??? Lebanon FC Ratings - S& P ??? Leaving Lebanon: A Panacea After the Financial Collapse - Tamirace Fakhoury - LCPS ??? Regulating the Energy Transition: Lebanon's New Law on Distributed Renewable Energy -Ali Taha, Rasha Akel LCPS ??? Lebanon is in search of a Treasure that doesn't Exist - Albert Kostanian ??? Issam Fares Institute AUB



Adopt a comprehensive regulatory framework with specific energy storage targets in national energy policies by setting achievable targets and timelines to drive energy storage deployment. Lebanon 12% of generation mix by 2020, 30% by 2030 2020 & 2030 7% of installed capacity Egypt 20% of electricity generation by 2022,

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Energy Policies Three renewable energy action plans have been released since 2010 [1]. The latest National Energy Efficiency Action Plan updates the initial goal of having 12% of the nation's electricity delivered by renewables by 2020 to now aiming for 30% by 2030 [2]. Lebanon's primary renewable energy generation comes from hydropower, which contributed ???



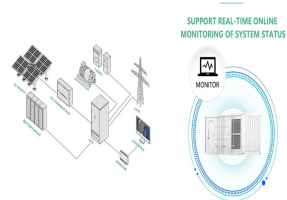
Fill the energy gap and reduce Lebanon's current energy dependency on the external markets. Develop an indigenous & diversified energy that will support economic growth. Ensure that non-renewable energy resources benefit current and future generations. Establish financial instruments (eg. Sovereign Wealth Fund) that preserve wealth



Alliance (CESA), identifies and summarizes these existing trends in state energy storage policy in support of decarbonization, as reported in a survey the authors distributed to key state energy agencies and regulatory commissions in the spring of 2022. It also contrasts state energy storage policy trends with the preferences of energy storage



Surge in energy storage projects in MENA is being driven by ambitious renewable energy targets and mounting peak electricity demand MENA region has 30 planned energy storage projects in 2021 ??? 2025, with batteries expected to make up 45% of MENA's total energy storage landscape by 2025 APICORP recommends ten key policy actions to support [???



Key words: new energy storage, policies, business models. CLC Number: TK 02 Cite this article. Yuefeng LU, Zuogang GUO, Yu GU, Min XU, Tong LIU. Analysis of new energy storage policies and business models in China and abroad[J]. Energy Storage Science and Technology, 2023, 12(9): 3019-3032.

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On Dec. 14, the Lebanese parliament passed the Decentralized Renewable Energy Law (DRE), which deals with two types of regulations: net-metering and peer-to-peer contracts between private sector



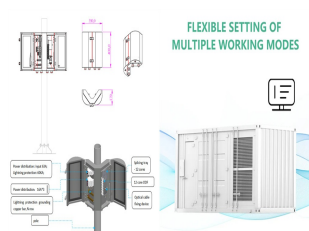
The heightened focus on energy storage is driven by the need for a reliable energy supply amidst frequent power outages and grid failures. As Lebanon faces a chronic electricity shortage, the integration of energy storage systems has become paramount. These systems ensure a ???



Clean Energy Group provides support to and collaborates with state and federal agencies, policymakers, nonprofit advocates, utilities, regulatory agencies, energy industry experts, and community-based organizations to advance the development and implementation of accessible and inclusive energy storage policies and regulations.



6 ? Sungrow Power Supply Co Ltd (SHE:300274) has signed deals to supply utility-scale micro-grid battery energy storage systems (BESS) with a total capacity of 14 MW/24.9 MWh in Lebanon. The batteries will be delivered for eight micro-grid projects and will be combined with solar photovoltaic systems, the Chinese solar inverter producer said on



The Energy Storage Obligation (ESO) specifies that the percentage of total energy consumed from solar and/or wind, with or through energy storage should be set at 1% in the 2023-2024 timeframe and gradually rise to 4% by 2029-2030, as in the table below.



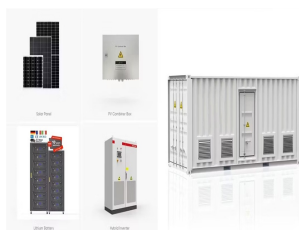
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New York's 6 GW Energy Storage Roadmap: Policy Options for Continued Growth in Energy Storage, New York State Energy Research and Development Authority (Dec. 28, 2022). SB 573 (2019). A Review of State-Level Policies On Electrical Energy Storage, Jeremy Twitchell, Current Sustainable/Renewable Energy Reports, at 37 (April 2019). Id.



Moreover, a net metering mechanism was introduced by EDL in 2011 through circular 32-318. Although this law adds to the growing set of public policy instruments related to Lebanon's energy policy, there remain some gaps in the regulatory framework governing the country's booming RE sector.



**RENEWABLE ENERGY STATUS, TARGETS AND POLICIES.** Overview Renewable energy sources have largely been limited to biomass heating in rural areas and hydroelectric power plants installed before the 1970s that represented more than 75% of the electricity produced in Lebanon at that time. Renewable energy targets and policy framework

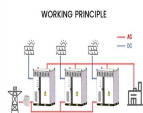


increasing the energy security in Lebanon, as the most pressing concern in Lebanon's electricity sector is the need to secure a constant electricity supply. Sibel Raquel Ersoy, Julia Terrapon-Pfaff, Marc Ayoub, Rawan Akkouch October 2021 Development of a Phase Model **SUSTAINABLE TRANSFORMATION OF LEBANON'S ENERGY SYSTEM STUDY**



Storage Regasification Units-FSRUs- are being Lebanon's energy transition can target 35% of the country's electricity by 2024-25 and 50% by 2030. By 2040-50, as storing energy New policies and incentives must also be encouraged to address a diverse set of market barriers.

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Broummana, Lebanon ??? Blackouts have gripped Lebanon in recent weeks as an entire nation is forced to adjust to life without electricity.. Because of the government's failure to secure heavy