

United Nations Development Account Project on Promoting Renewable Energy Investments for Climate Change Mitigation

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Overview of the Jordanian Framework for Stimulating Private Investments in RE Projects



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Renewable Energy Development in Jordan

Key Challenges Facing the Energy Sector

Jordan is facing a real challenges in securing its energy supply due to:

- ***Lack of conventional energy resources***
- ***High dependency on imported energy***
- ***A significant increase of both primary energy and electricity demand***
- ***Frequent exogenous shocks due to regional conflicts***



The Energy Strategy was formulated for facing the energy sector challenges through ***increasing local energy portion in total energy mix***

A target of 10% renewable energy input into the energy mix by 2020 is set in the National Energy Strategy & 11% in the updated NES 2015-2025.

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To achieve the NES target:-

- The Renewable Energy and Energy Efficiency Law was passed as a permanent Law in 2012 and amended in 2014.
- This law allows investors to identify and develop grid-connected electricity production projects through the so called unsolicited or direct proposal submission.
- The Bylaw of Direct Proposals of Renewable Energy Projects has been issued in Mid 2015.
- A well-founded reference price list (ceiling prices) for different Renewable technologies was set by the EMRC.
- Net- Metering for small RE Systems (Roof Tops) with Fixed Purchase Prices for Excess Power.
- Tax Incentive regime, a By-Law was issued on Tax exemptions for RE and EE systems and Equipment.
- Grid Expansion and Reinforcement Plans are ongoing (Green Corridor Project).
- The Jordan Renewable Energy and Energy Efficiency Fund has been established, which aims to channel financial resources to that end.



Template Contractual Documents (Transparent Process – Minimum Risk- Less cost)

- Instructions for developing RE projects (IRPP)
- Prequalification requirements
- Power Purchase Agreement (PPA)
- Land Lease Agreement (LLA)
- Government Guarantee Agreement (GGA)

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Renewable Energy Development Schemes

- ❑ About 2400 MW of Wind and Solar PV projects are expected to be developed in Jordan until 2020, 544 MW of them are already operational (sharing with 5.6% of generated electricity).

Jordan follows a policy of 5 tracks approach to develop renewables:

- Direct Proposal scheme
- Competitive Bidding System (CBS)
- EPC Turn-Key projects
- Small Scale RE Schemes (Net Metering)
- Power Energy Wheeling

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- ❑ After three rounds of direct proposals which consist of: 200MW PV Round 1, 420MW wind round 1, 200MW PV round 2, 100MW wind round 2, 200MW PV round 3 and 100MW wind round 3 (which contributes in total to 600MW from PV and 620MW from wind), Jordan now has an organized commercial and domestic photovoltaic (PV) program.
- ❑ The private sector has the technical experience and know-how as well as ability to develop and finance such projects;
- ❑ RE projects could substantially reduce Jordan's energy dependency and create significant fiscal benefits:
 - Expected to generate about 2,000GWh annually;
 - Create between 2,000 and 3,000 jobs, and
 - Avoiding 0.9-1.0 tons of GHG emissions depending on the fuel mix used in power generation.
- ❑ Conversion of solid waste into energy and the expected installed capacity is estimated at around 60MW.
- ❑ On-grid roof tops PV systems based on net-metering directive witnessed high growth rate during 2013-2016. The estimated installed capacity exceeded 70MW and about 10MW through the wheeling mechanism, as of December 2016. Such small systems are expected to increase more rapidly due to the fact that the government increased electricity prices by an average of 15% per year for almost all tariff categories except low income households and agriculture sectors.



Renewable Energy Potential for Power Generation

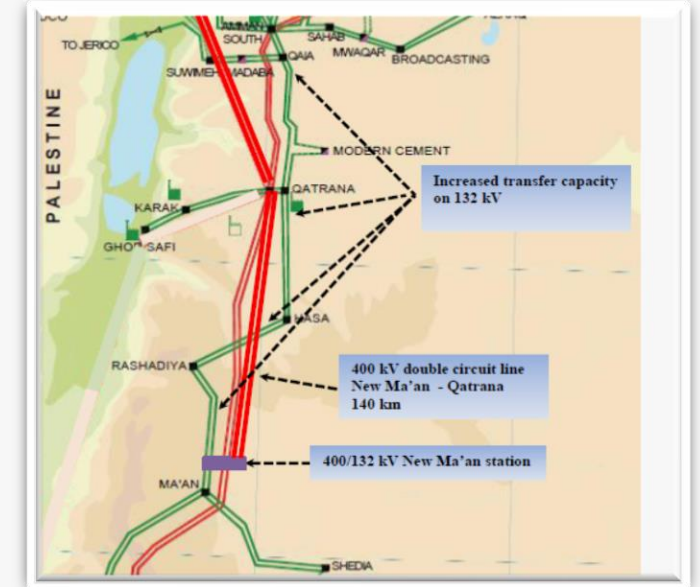
Incentive & Procurement schemes for Grid-Scale RE Projects

- ❑ Jordan was the first country in the Middle East region to successfully launch and finalize a public-procurement program for solar energy (REN21, 2015).
- ❑ The REEEL of 2012 proposes two processes to procure grid-scale RE projects over 5 MW, through awarding PPAs: DPS scheme and competitive tendering.
- ❑ Under the REEEL, Jordan enacted in 2012 a FiT, set by the reference price list under the DP scheme – the first FiT to be implemented in the Middle East.
- ❑ Jordan is the only country in the MENA region that authorizes unsolicited or “direct proposal submission” for utility supply by IPPs (RCREEE, 2015).
- ❑ EPC turn-key contracts through competitive tendering.
- ❑ Net metering scheme for small-scale, distributed RE on rooftops.
- ❑ Wheeling arrangements under the provision of the directive regulating the wheeling of electric power generated from RE sources for self-consumption, issued in 2013 and amended by the EMRC in 2015.
- ❑ Jordan is the only country in the MENA region that has implemented structural separation of generation, Transmission, and distribution in the electricity sector.
- ❑ Jordan is the only country in the MENA region that has established grid codes for distributed and utility-scale and wind-energy systems. There are, however, serious grid capacity issues that constrain the deployment of PV and wind power in Jordan.

Renewable Energy Development in Jordan

Conclusion

- Renewable energy will be provided more and more of Jordan's electricity in the future (between 18-20% by 2020).
- Jordan has a good legal and financial framework to support RE projects.
- Template contractual documents (PPAs) and Instructions for developing RE projects do exist.
- Grid reinforcement (Green Corridor) is undergoing by NEPCO in order to install more RE Capacities.
- Promote technology innovation through pilot projects, competition, research and development and community based projects.



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Conclusion

- Improvements in operational technologies and practices should be made at each stage in power system operation, namely in RE generation forecasting, scheduling, dispatch and control.
- Policy support is needed to help scale up investment in RE projects. Jordan will continue to lead the way on clean energy, energy efficiency and the adoption of innovative technologies.
- The involvement of the private sector is crucial to the development of the RE sector, and to reach the NES targets.



Renewable Energy Development in Jordan

Why Investment Security is High in Jordan (Incentives)

- Clear Development Path of the Government of Jordan
- Stable Political and Regulatory Frameworks
- Adequate and Transparent Public Policies
- Clear Financial and other Support Schemes (tax regime)
- Well defined Infrastructure Provisions (land, grid connections, etc.)

Jordan will continue its endeavor towards a renewable energy and energy efficiency transition and the adoption of innovative technologies, and also create social benefits from such transition.

THANK YOU FOR YOUR ATTENTION

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