هيئة تنظيم قطاع الطاقة والمعادن

Renewable Energy in Jordan

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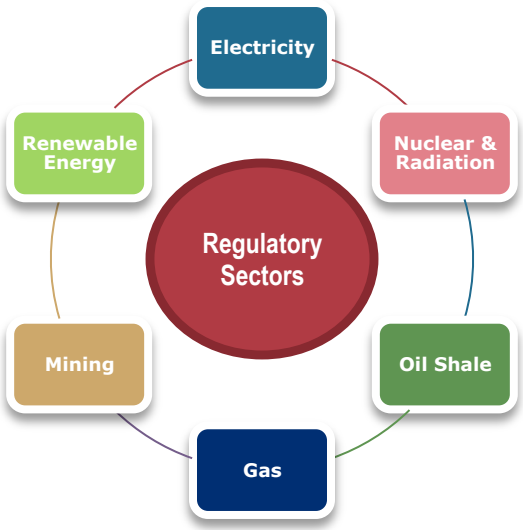
Energy and Minerals Regulatory Commission (EMRC)

- **Energy and Minerals Regulatory Commission (EMRC)**

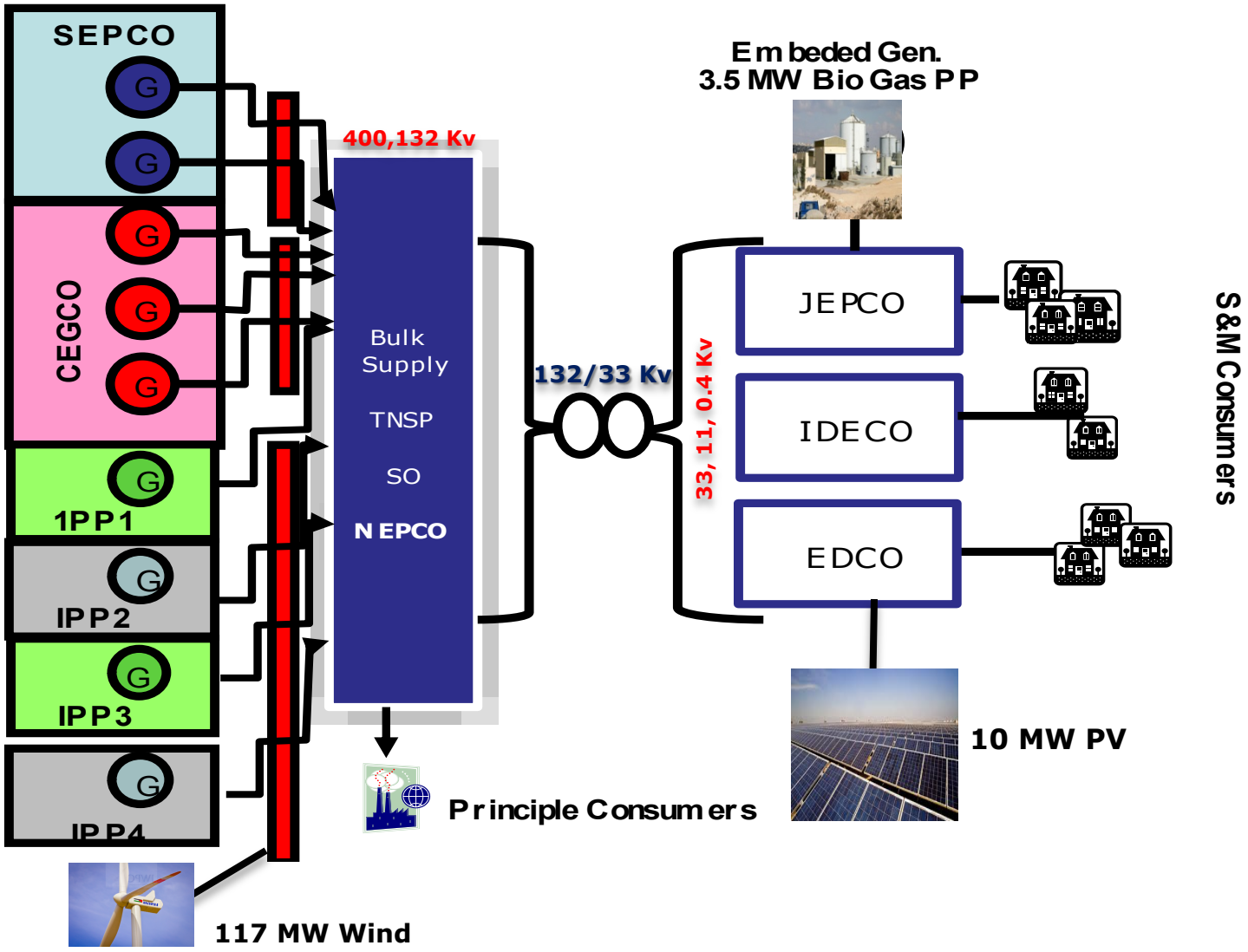
A governmental body that possess a legal personality with financial and administrative independence and is considered the legal successor of the Electricity Regulatory Commission (ERC) and the Jordan Nuclear Regulatory Commission (JNRC) and the Natural Resources Authority (NRA) in relation to its regulatory tasks according to law No. (17) for the year (2014) regarding the restructuring of institutions and governmental organizations.



EMRC Plays the main role in the regulatory framework related to **Jordan Electricity Sector** through many duties & responsibilities:

- Issue Licenses: Generation, Transmission, Distribution, System operation and Bulk Supply.
- Issue Sector Regulation (Codes, instructions, directives).
- Determine Electricity Tariffs and connection charges.
- Participate in Setting the technical and environmental standards.
- Recommendations to advance for competitive electricity market.

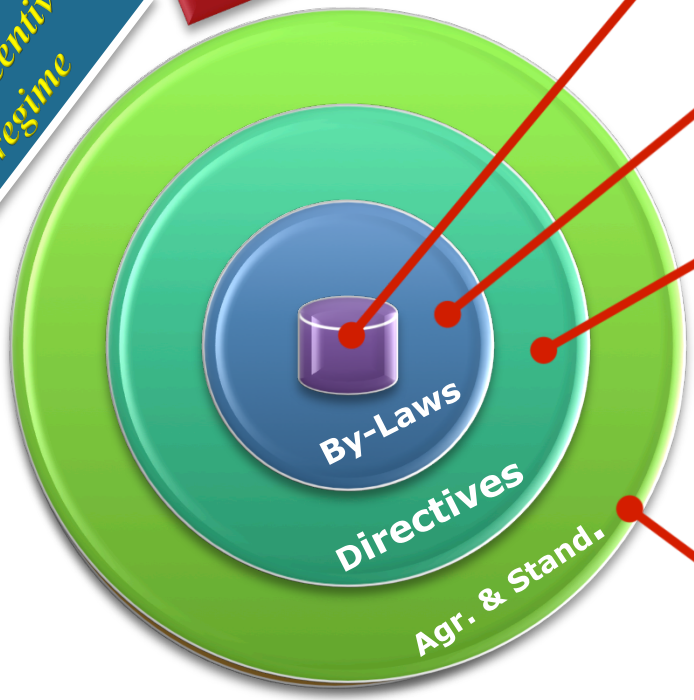
CURRENT STRUCTURE OF ELECTRICITY SECTOR



Renewable Energy Regulatory Framework

Jordan REEE Law is the first in the region, allows investors to identify and develop grid-connected electricity production projects through the so called Direct Proposal Submission (DPS).

Tax Incentive regime



RE & EE Law N°13, 2012

The Law was issued in April 2012 and has been amended 2014

Cabinet

- **(1)- Tax Exemptions By-law**
- **(2)- Direct Proposal By-law**
- **(3)- RE & EE Fund By-law**

EMRC

(1)- Reference Price List

That includes the indicative prices for each type of Renewable Source Tech.

(2)- Sale of Electrical Energy generated from Small RE Systems (Net Metering – Roof Tops)

(3)- Cost of Connecting RE Facility to Distribution Grid

(4)- Electric Power Wheeling Directives

- **(1)- Generation License Procedures**
- **(2)- Standard Generation License (Dis. / Trans.)**
- **(3)- Standard Grid Connection Agreement**
- **(4)- Grid /Distribution Codes**

Renewable Energy Development

Jordan is currently engaged with a Five-track approach to develop RE Projects:

schemes

1. *Direct Proposals*
2. *Competitive Bidding*
3. *EPC Turn-Key*
4. *Energy Net-Metering*
5. *Electrical Power Wheeling*

Target

A target of 10% renewable energy input into the energy mix by 2020 is set in the National Energy Strategy, mainly aiming for about 1000MW of Wind and 600MW Solar.

RE licences progress

Technology	MW	No. of Licenses
Wind	117	1
PV	210	13
Total	327	14

A well-founded reference price list (ceiling prices) for different Renewable technologies Set by EMRC

RE source	Tariff JOD FILS/ kWh	Tariff US $ C / kWh
Wind Energy	80	11
Thermal Solar Energy (CSP)	135	19
PV	100	14
Bio mass	90	12.7
Bio gas	60	8.5

Direct Proposals Approach

Round 1:

- **(12) Solar PV** proposals were received in March 2013 with **total capacity of (200) MW.** PPAs signed in March 2014, financial close finished by the end of May 2015.

- **Tafila wind project of (117) MW capacity** is currently operational (Sep. 2015) – Connected with NEPCO

- **Solar PV project of (10) MW capacity** in Mafraq area is currently operational (Oct. 2015) – Connected with IDECO.

- Wind Proposals of this round with total capacity of about (230) MW, in addition to a proposal from the first ranked bidder for the (90) MW IPP Wind Project at Fujei, have been received by the end of September 2014. **1 PPA (80 MW) have been signed** others to be signed very soon.

Tafila Wind Project (JWPC)

Mafraq PV Project (ALBADIA)

Round 2:

- Launched in August 2013, (83) Applications received on14 November 2013 for PV projects (50 MW capacity each), out of them (45) MOUs have been signed.
- (34) Solar PV proposals were received in February 2015, (24) of them technically qualified in May 2015.
- **PPAs have been signed with the top 4 ranked bidders where (200) MW is allocated for this round**.

Round 3:

- A third round has been launched beginning of February 2014, but unfortunately cancelled later on due to grid limitation.
- About (400) MW total capacity is expected for this round after executing the expansion of the electricity grid (**the Green Corridor - 2018**).

Competitive Bidding Approach

Several projects are under investigation by MEMR to be tendered on public lands on due time, pending on grid capacity availability.

EPC Turn-Key approach

- **(66) MW Wind project at Maan**, expanded to (80) MW, funded through a Grant from the Kuwaiti Fund (USD 150 million), and awarded to a Spanish contractor (Elecnor), **is currently under construction to be operational by Mid-2016**.

- **(65-100MW) Solar PV Project at Quweira/Aqaba**, funded through a Grant from Abu Dhabi Fund (USD 150 million) **is currently under re-bidding process**.

- **Two Solar PV Projects with total capacity of (5.2) MW** have finished construction at Azraq, in cooperation with the Spanish Government, and are currently operational.

Renewable Energy – Energy Net-Metering Applications

Acc. Net-Metering Operated Systems at the end of Nov 2015

33 MW

1285 Meters

Net-Metering

Expected at end of 2015

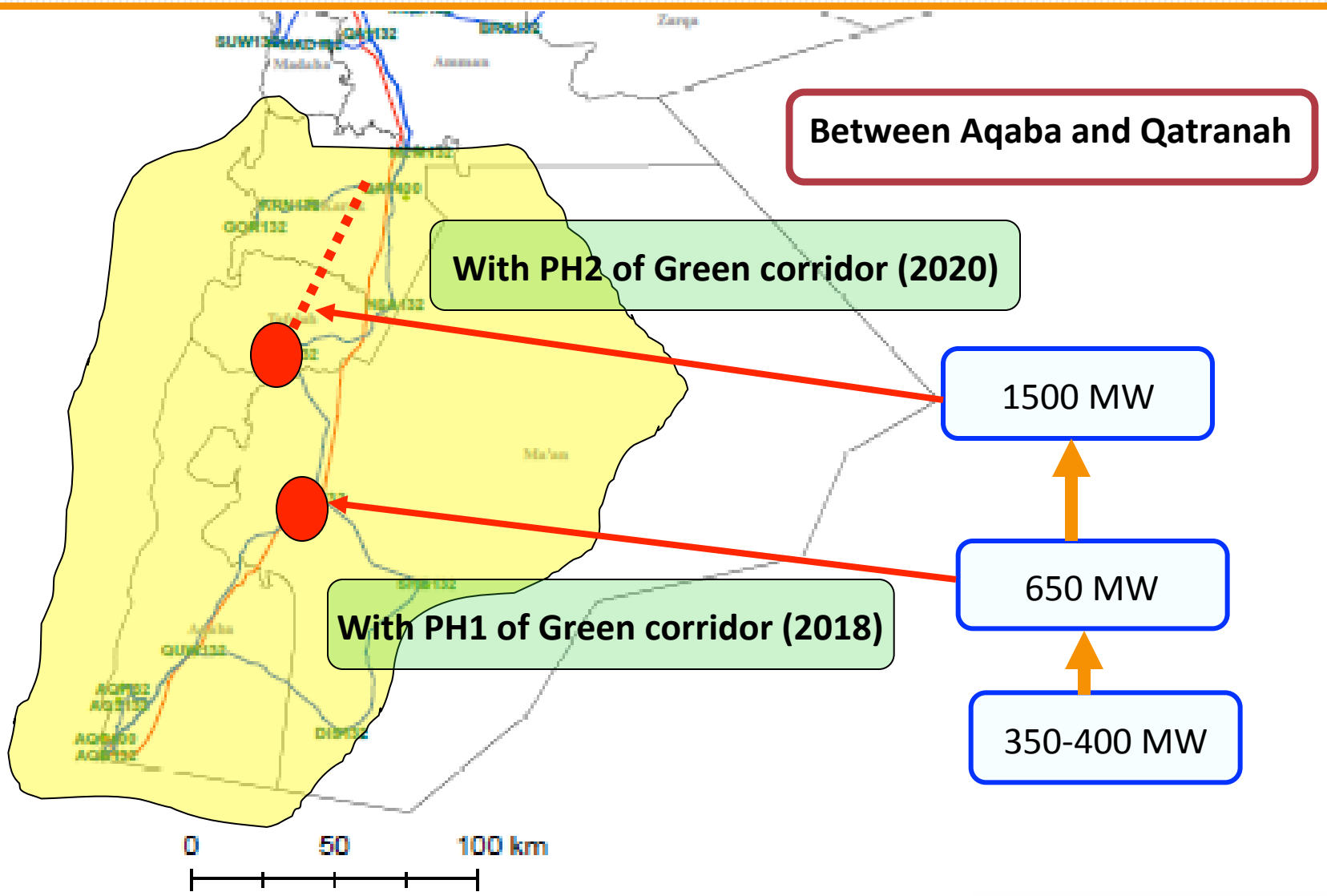
≈ 50 MW

Wheeling Scheme

Expected at Mid of 2016

≈ 50 MW

Ongoing Grid Reinforcement Plans by NEPCO
"Green Corridor-south region"



Jordan Renewable Energy – Conclusion

- Jordan has design and set necessary Policy and Regulatory frameworks for Renewable Energy, and is ready to attract and receive commercial investments; and

- Template contractual documents (mainly PPAs) and Instructions for developing RE projects do exist; and

- By end of next year 2016, It is expected to have about (500) MW of Wind and solar projects operational; and

- These will produce and inject clean electricity to the grid by an amount of (1500-2000) Giga watt hour; and

- Employ about (2000-3000) jobs at remote and less developed areas, beside saving about 2000 Million Tons of CO2 emissions.

Thank you