

People's Republic and Democratic of Algeria

Ministry of Energy

meetMED Workshop on

MAPPING EE AND RES MARKET POTENTIAL AREAS WITH HIGHER IMPACT ON LOCAL ECONOMY AND JOB CREATION

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Local economic development through RE projects in Algeria

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Renewable Energy National Program by 2030

Renewable Energy National Program by 2030

CONSISTENCY AND OBJECTIVES

- ❑ Adopted by the Government in February 2011;
- ❑ Revised and adopted in February 2015;
- ❑ Placed as a national priority in February 2016;
- ❑ Development of the sectors (PV, Wind, CSP, Biomass, Cogeneration and Geothermal);
- ❑ 22,000 MW of EnR by 2030;
- ❑ 37% in terms of installed capacity;
- ❑ 27% in terms of production;
 - 11.8% solar photovoltaic;
 - 05.6% wind energy;
 - 04.6% biomass;
 - 03.9% Solar Thermal (CSP);
 - 1.4% Cogeneration.
- ❑ About 300 billion cubic meters of NG savings;
- ❑ Development of a national industry in the field of renewable energies;
- ❑ Creation of several thousand of jobs.

Renewable Energy National Program by 2030

ADVANTAGES :

- Availability of land, Previously chosen sites available for investors;
- Identified grid connection points;
- Known RE potential for solar (GHI and DNI) and wind (speed and direction);
- Studied site access (Road and other networks);
- Guarantee of the conclusion of a purchase of electricity contract (20 years);
- Identified electricity buyer;
- Priority of grid injection for renewable electricity.

KEY DATA:

- 19,464 MW Global Installed Capacity (Classic + RE);
- 99% Electrification rate and 57% NG penetration rate;
- 350,000 km electricity grid (transmission and distribution);
- 10% demand coverage of the PIAT grid (mini grid in south of Algeria);
- 272,000 m³ of fuel economy since commissioning;
- 570,000 tons of CO₂gain ;
- **3400 + 411 jobs (Construction + O & M);**
- 5.7 kWh / m² / year in GHI and 2.2 kWh / m² / year Den DNI;
- 8 m / s average wind speed.

Renewable Energy National Program by 2030

ACHIEVEMENTS OF THE PILOT PHASE (2011-2015)

- ❑ The commissioning of a global capacity of 379 MW RE power plants (25 MW of CSP, 10 MW of wind energy and 344 MW of PV);
- ❑ Establishment of four (04) studies of potential, 02 for solar and 02 for wind energy.

PLANNED CAPACITY TO BE INSTALLED

- ❑ Global capacity of 150 MW (IPP) : solar photovoltaic power plants (10MW each), north interconnected grid, auctions framework ;
- ❑ Global capacity of 50 MW (SKTM, RE Utility Company): solar photovoltaic power plants, isolated mini-grids in south, diesel power plants hybridizing framework;
- ❑ Global capacity of 1000 MW (Sonatrach, National Petroleum Compagny) : solar photovoltaic power plants, north interconnected grid, RENP framework ;
- ❑ Global capacity of 1300 MW : solar photovoltaic power plants, Solarization of Sonatrach Industrial sites framework.

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BACKGROUND AND DATA

- ❑ Algeria-Germany energy partnership;
- ❑ The Institute Of Economic Structures Research (GWS);
- ❑ Based on local experience data (Solar PV and Wind) ;
- ❑ Concerns 354 MW of installed capacity (344 MW PV and 10 MW Wind);
- ❑ Renewable Energy National Program projections;
- ❑ Dominated technologies (PV and Wind);
- ❑ Large utility scale (1MW and above);

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DATA COLLECTION

Newly installed, MW	2014	2015	2016	2017
PV	1	48	170	125
Wind	10	0	0	0
Cumulated, MW	11	59	229	354
PV	1	49	219	344
Wind	10	10	10	10

FTE = full time equivalent	2014	2015	2016	2017	2018
PV	850	3000	1800	1200	950
Wind	50	50	50	50	50

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STUDY RESULTS

- 03 scenarios was identified by 2030:
- **1st scenario, basic scenario**, considering a constant structure of renewable energy equipment imports.
 - 55,000 by 2020 and 114,000 by 2030.
- **2nd scenario, optimistic**, considering a strong development of the local manufacturing, with a decrease of RE equipment imports and an increase in the creation of local value, based on the creation of SMEs / SMIs.
 - 62,000 by 2020 and 138,000 by 2030.
- **3rd scenario, alternative** considering wind energy development only from 2020, with the maintenance of the objectives of the photovoltaic sector as foreseen in the RENP.
 - 41,000 by 2020 and 113,000 by 2030.

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Conclusion

- ❑ RENP targets by 2030, can generate between 113000 and 138000 jobs;
- ❑ During installation phase, employment factors for PV and wind are, respectively, 14 and 3.45, close to international average, 13 and 3.20;
- ❑ During O&M phase, employment factors for PV and wind are, respectively, 0.44 and 5, close to international average 0.3 for PV and very high of international average 0.7 for wind ;
- ❑ Photovoltaic generates more jobs during installation and less during O&M phase;
- ❑ Photovoltaic generates more jobs than wind, about 4 times more;
- ❑ Installation phase generates temporary Jobs;
- ❑ O&M phase generates permanent jobs.

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Recommendations

In order to generate more permanent jobs, some actions was recommended:

- Engage the state for strategic planning for investors;
- Develop competitive regulations for local content;
- Facilitate access to land for the acquisition of land;
- Local industry development ;
- Support SMEs that offer renewable energy products or services to become more visible nationally and internationally;
- Offer tax exemptions and low-interest loans for these SMEs;
- Involve existing channels (fairs, exhibitions, seminars, etc.) and professional associations in order to exploit synergies and integrate newly created SMEs;
- Invest in a better qualification of manpower to adapt to the requirements of the modern solar and wind industry.

Green Greeting