



**Algerian PV market:** guidelines for successful work in the country and the latest information on upcoming government tenders

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A pair of hands, palms up, holding a bright sun against a clear blue sky. The sun is positioned in the center, creating a strong lens flare effect. The hands are light-skinned and have short, manicured nails. The overall image conveys a sense of holding or nurturing energy.

# **Context for renewable energy development in Algeria**

## Context

- Important solar potential
- Decreasing cost of renewables
- High oil and gas prices
- Uncertainty over oil and gas reserves
- Environmental issues and sustainable development

## Challenges

- Development of alternative energy sources
- Development of a renewable energy industry
- Diversification of the national economy
- Becoming an actor in the world market of renewable energy



# Overview of the Algerian electricity network



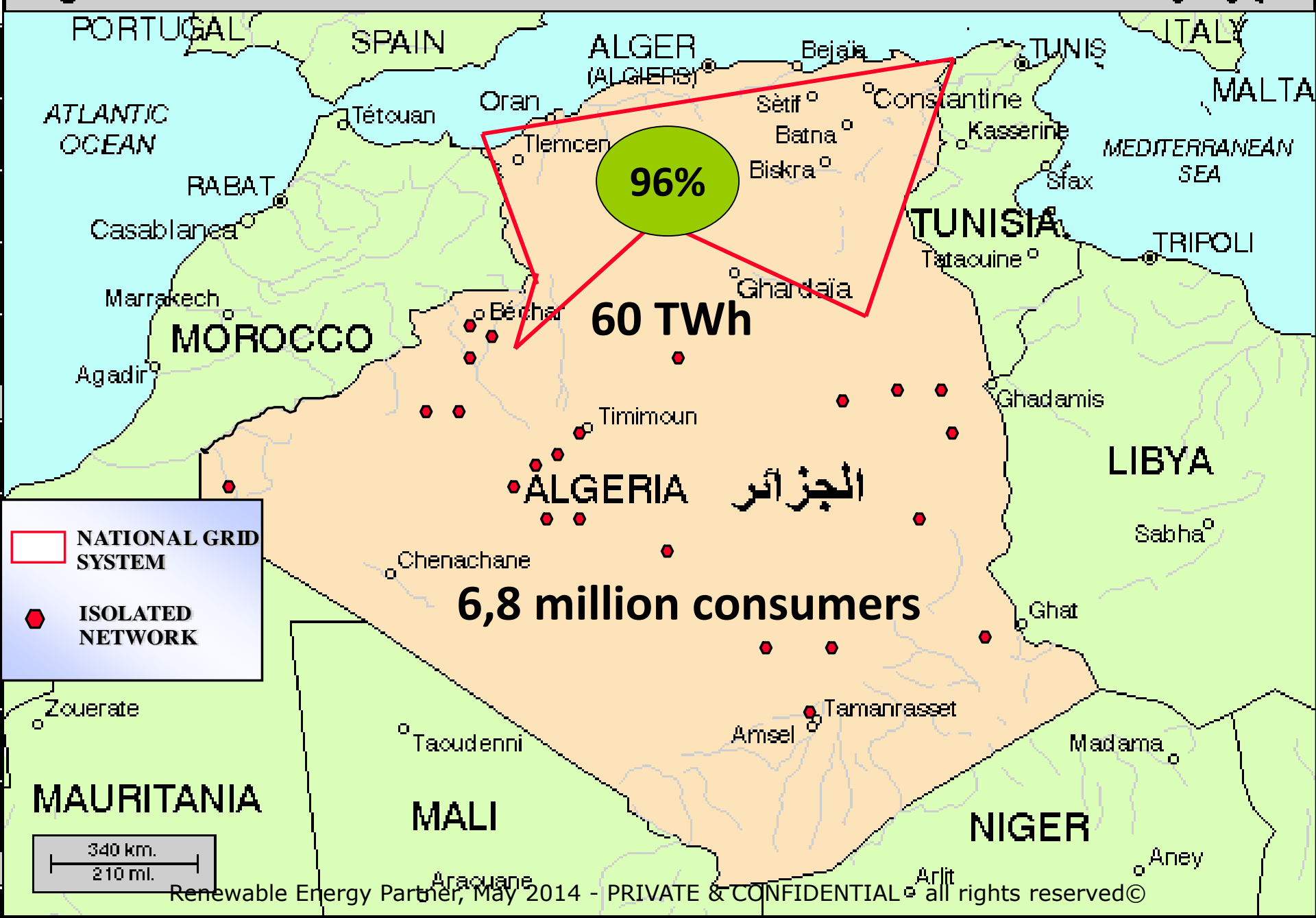
# Expansion of the grid

1970	Parameters	2010
650	Installed capacity (MW)	11 332
1670	Power generation (GWh)	45 172
3 600	Transmission network (Km)	21 616
23 000	Distribution network (Km)	256 283
720	Customers (Thousand)	6 803

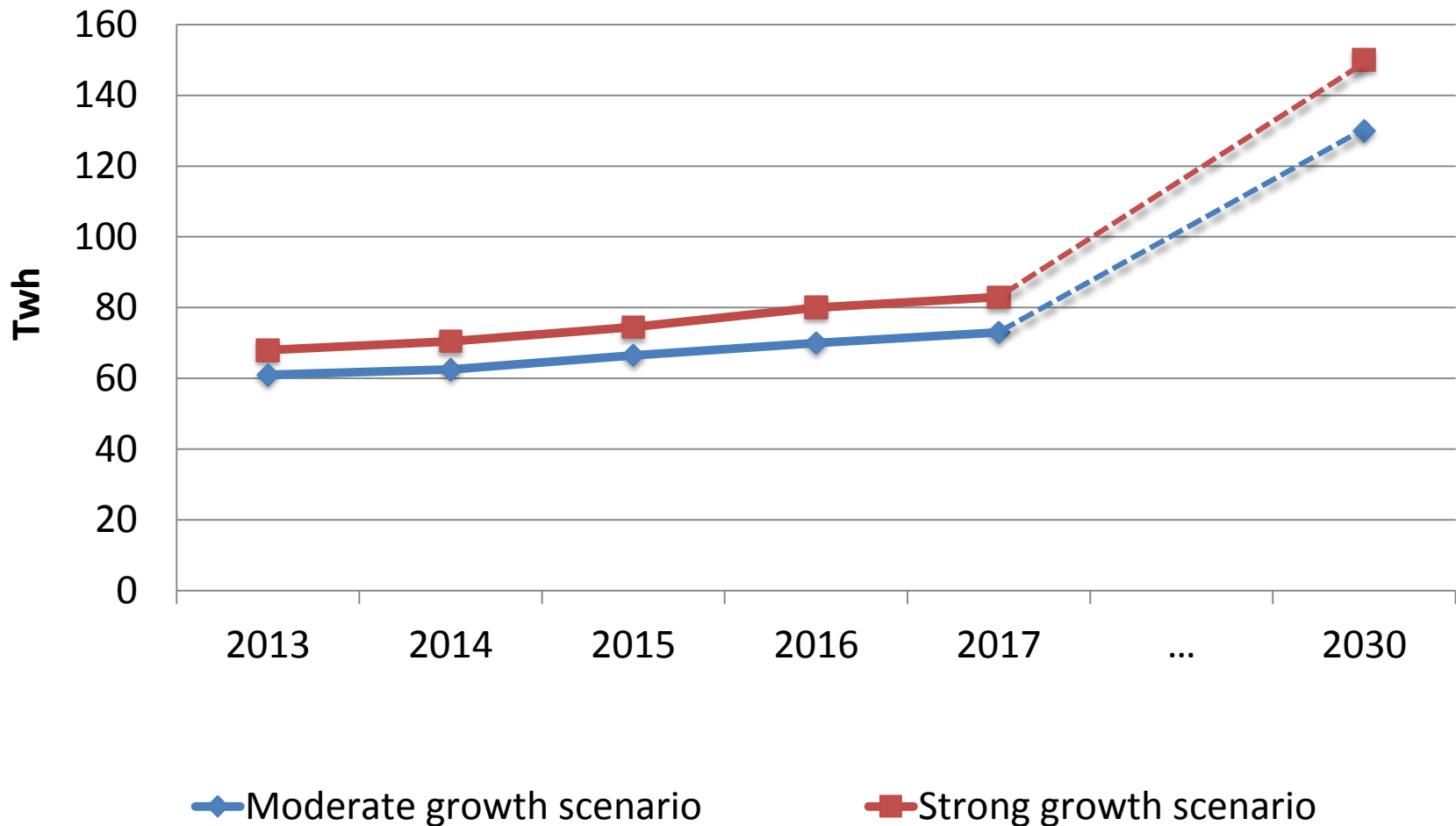


Algeria

الجزائر



# Growth of electricity consumption in Algeria

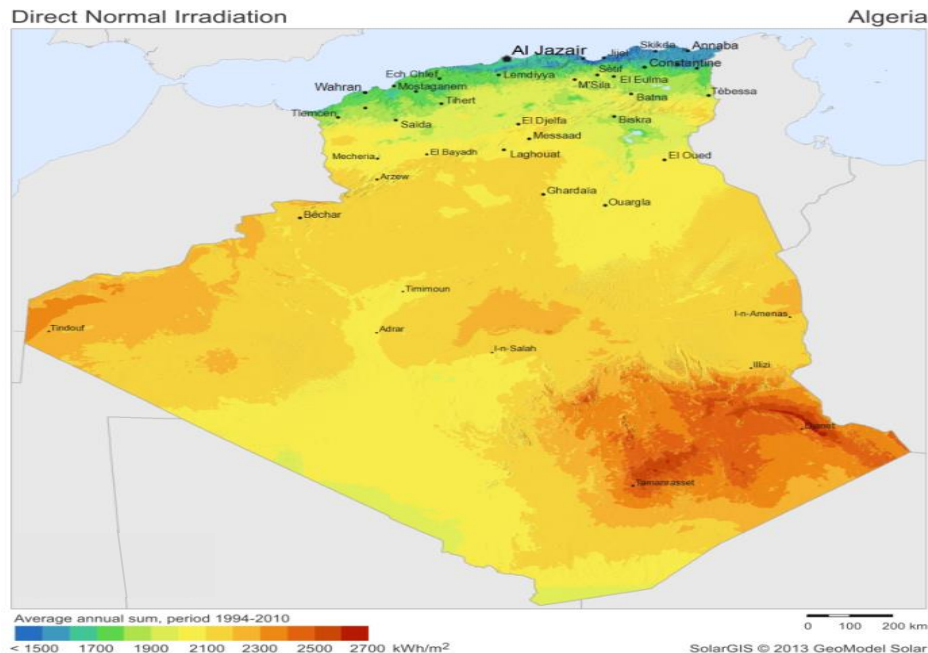




# Solar potential



# Solar map of Algeria



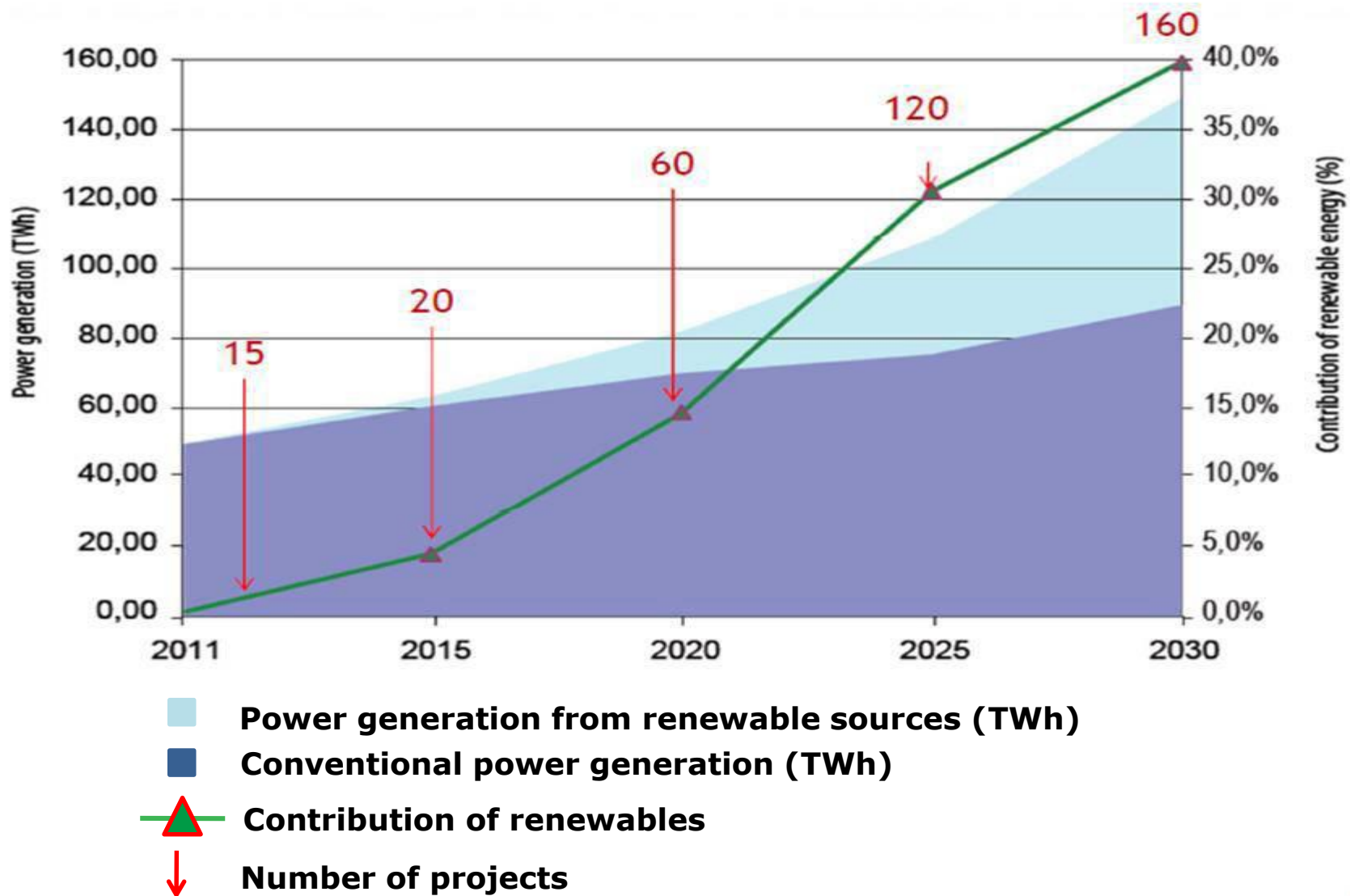
- **Average solar energy of 5.70 kWh/m<sup>2</sup>/day – solar PV**
- **Solar potential of about 170 000 TWh / year, is about 3000 times the current electricity generation of Algeria**

Regions	Coastal	Highlands	Sahara
Area (%)	4	10	86
Average duration of sunshine (hours / year)	2650	3000	3500
Average energy received (kWh/m <sup>2</sup> /year)	1700	1900	2650



# **The renewable energy and energy efficiency program**

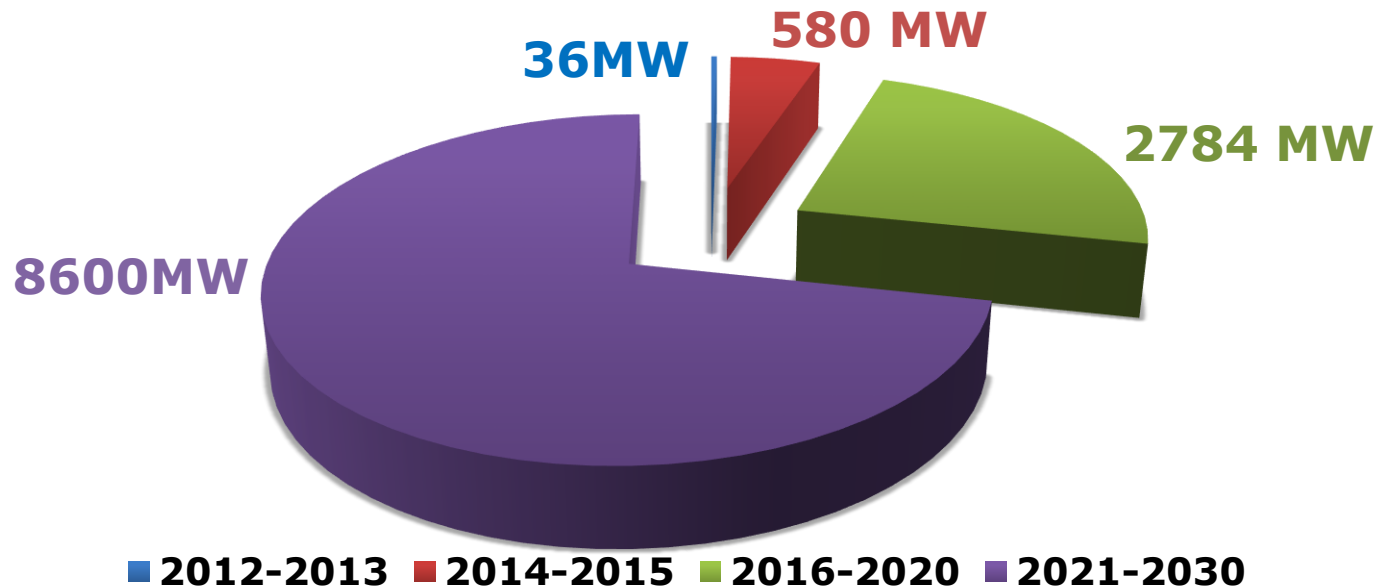
# Expected contribution of renewable energy in domestic power generation



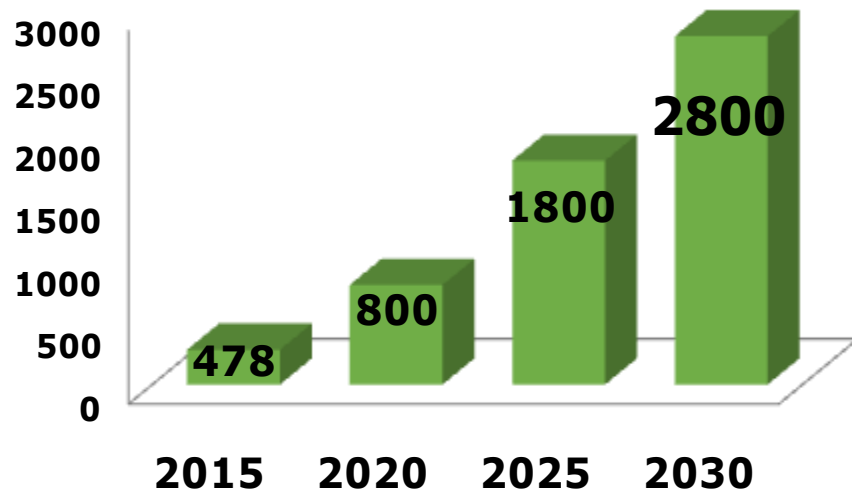
# The deployment of the 12,000 MW dedicated to the domestic market



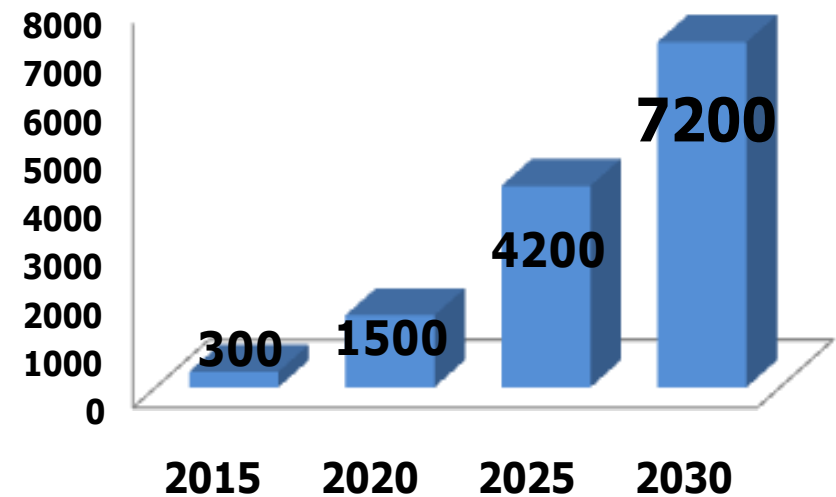
Power to be installed over the period 2012-2030



# Amount of solar power to be installed over the period 2014 - 2030



**Solar PV (MW)**



**Solar CSP (MW)**



# Regulatory framework





- **The law n°99-09 of 28 July 1999 relative to the energy control lead to the creation of the National Fund for Energy Efficiency (NFEE)**
- **The law n°02-01 of 5 February 2002 regarding the electricity and the public distribution of gas**
- **The law n°04-09 of 14 August 2004 with regard to the promotion of renewable energy**
- **The Finance Act 2010 lead to the creation of National Fund for Renewable Energy (NFRE)**
- **Executive Decree no. 13-218 of 18 June 2013 relating to feed-in tariffs**
- **Ministerial order of 2 February 2014 fixing the tariffs for PV**





# Solar PV feed-in-tariff

Adjustment limit	Number of hours in operation kWh/kW/Y	1 to 5 MW		> 5 MW	
		Phase I US\$/kWh	Phase II US\$/kWh	Phase I US\$/kWh	Phase II US\$/kWh
-15%	1275-1349	0.20	0.25	0.16	0.20
-10%	1350-1424	0.20	0.23	0.16	0.19
-5%	1425-1499	0.20	0.22	0.16	0.17
<b>Reference output</b>	<b>1500-1574</b>	<b>0.20</b>	<b>0.20</b>	<b>0.16</b>	<b>0.16</b>
+5%	1575-1649	0.20	0.18	0.16	0.14
+10%	1650-1724	0.20	0.16	0.16	0.13
+15%	≥1725	0.20	0.15	0.16	0.12



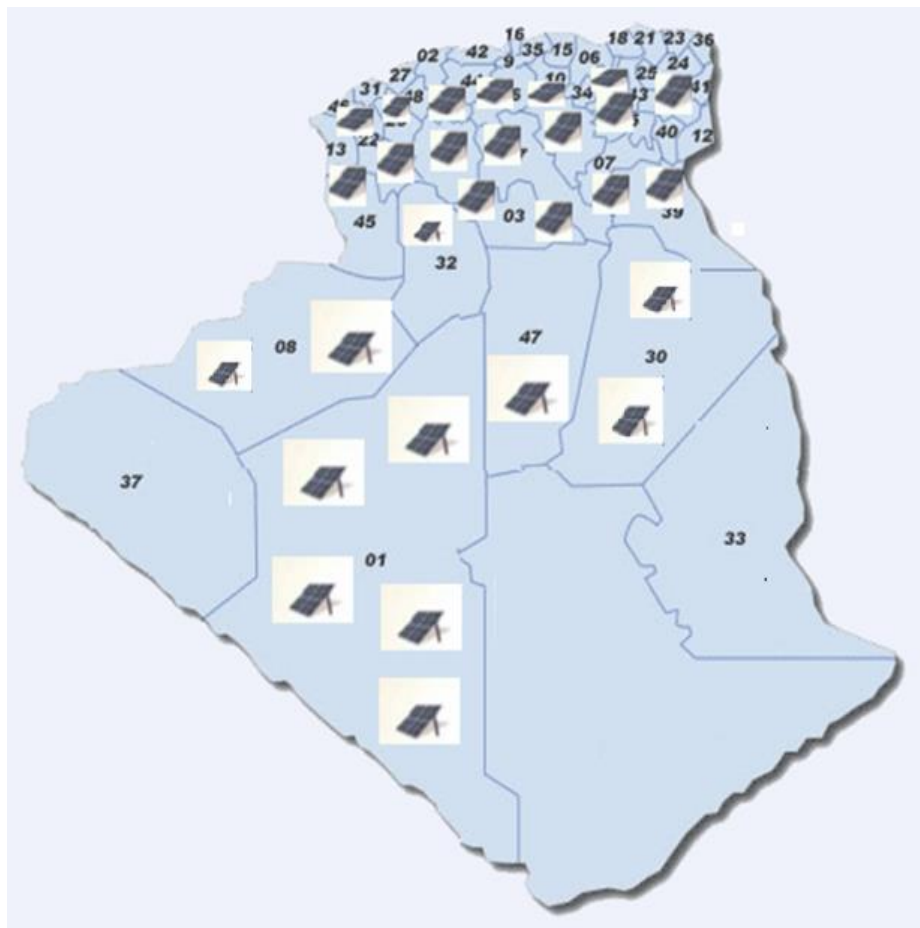
# Projects in progress



- **A 1.1 MW solar PV plant in Ghardaïa testing four different technologies (monocrystallin, polycrystallin, amorpheus and thin film)**
- **233 MW solar PV plants awarded to YINGLI SOLAR**
- **85 MW solar PV plants allotted to BELECTRIC**



# Location of the solar PV projects



**A total capacity of 318 MW**

**Divided into four separate lots:**

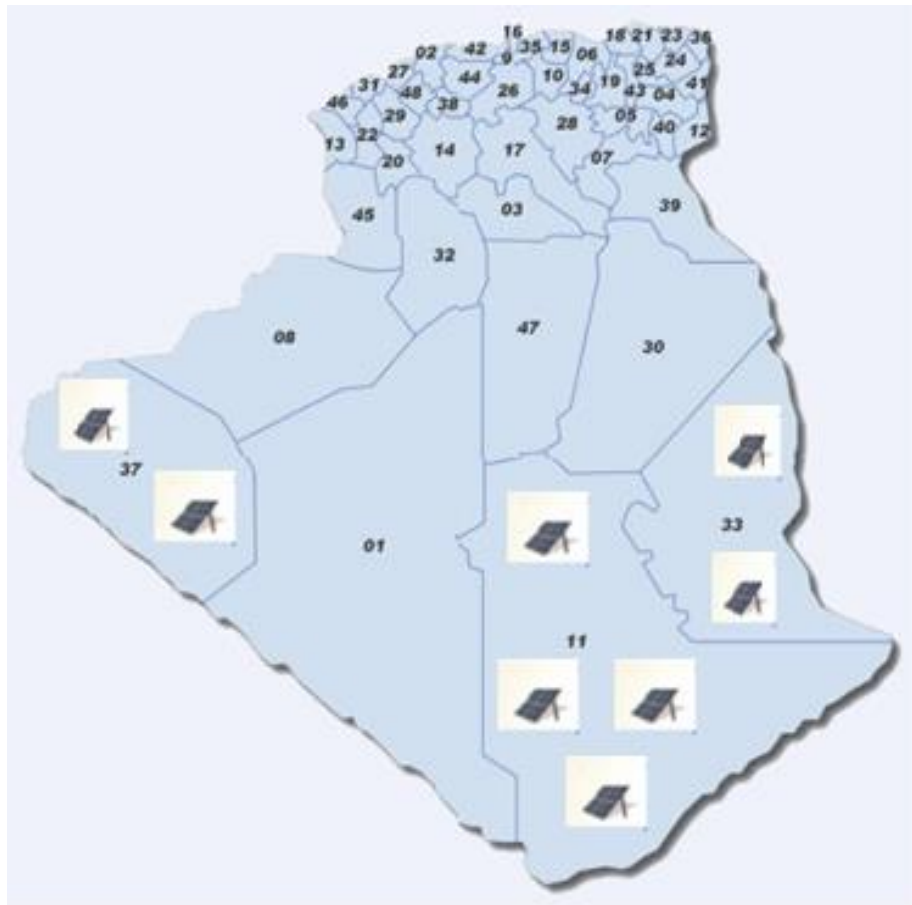
**Lot n°1: Highlands East  
(90 MW)**

**Lot n° 2: Highlands Center  
(90 MW)**

**Lot n° 3: Highlands West  
(85 MW)**

**Lot n° 4 : PIAT (53MW)**

# Upcoming projects



**A total capacity of 25 MW**

**Divided into 3 lots:**

**Lot n°1: Tindouf (09MW)**

**Lot n° 2: Djanet (03MW)**

**Lot n° 3: Tamanraset (13MW)**



# Solar PV panels



# Conclusion

- Over the next six years, construction of **60** solar projects (**54** projects in PV and **6** projects in CSP), with a total capacity of **2000** MW
- The global cost of the renewable electricity program is expected to reach between **60-100 billion US dollars**
- Expected volume of natural gas saved, over the period of 2011 and 2030, from the renewable power plants in operation is **280 billion m<sup>3</sup>**





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