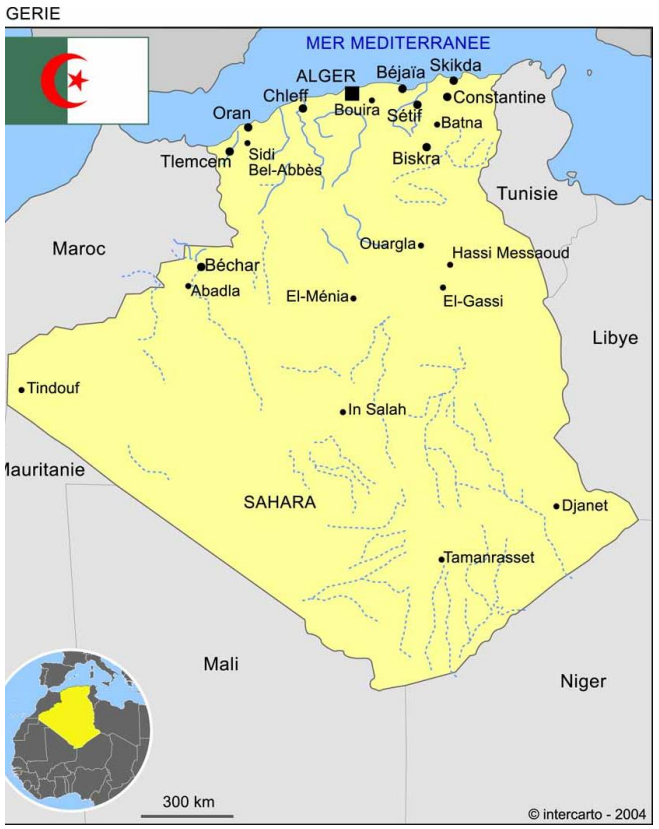
The Electric Power System

- ALGERIA -

Basic facts

- Area: 2 382 000 km²
- Population: 39 928.947.(2014)
- Number of electricity consumers: 7,5 millions
- Number of TSOs: 01
- Numbe of DSOs : 04
- Peak load: 11 188 MW
- Average interruption of electricity: 39 min (2014)



Global map of the grid and of its interconnections

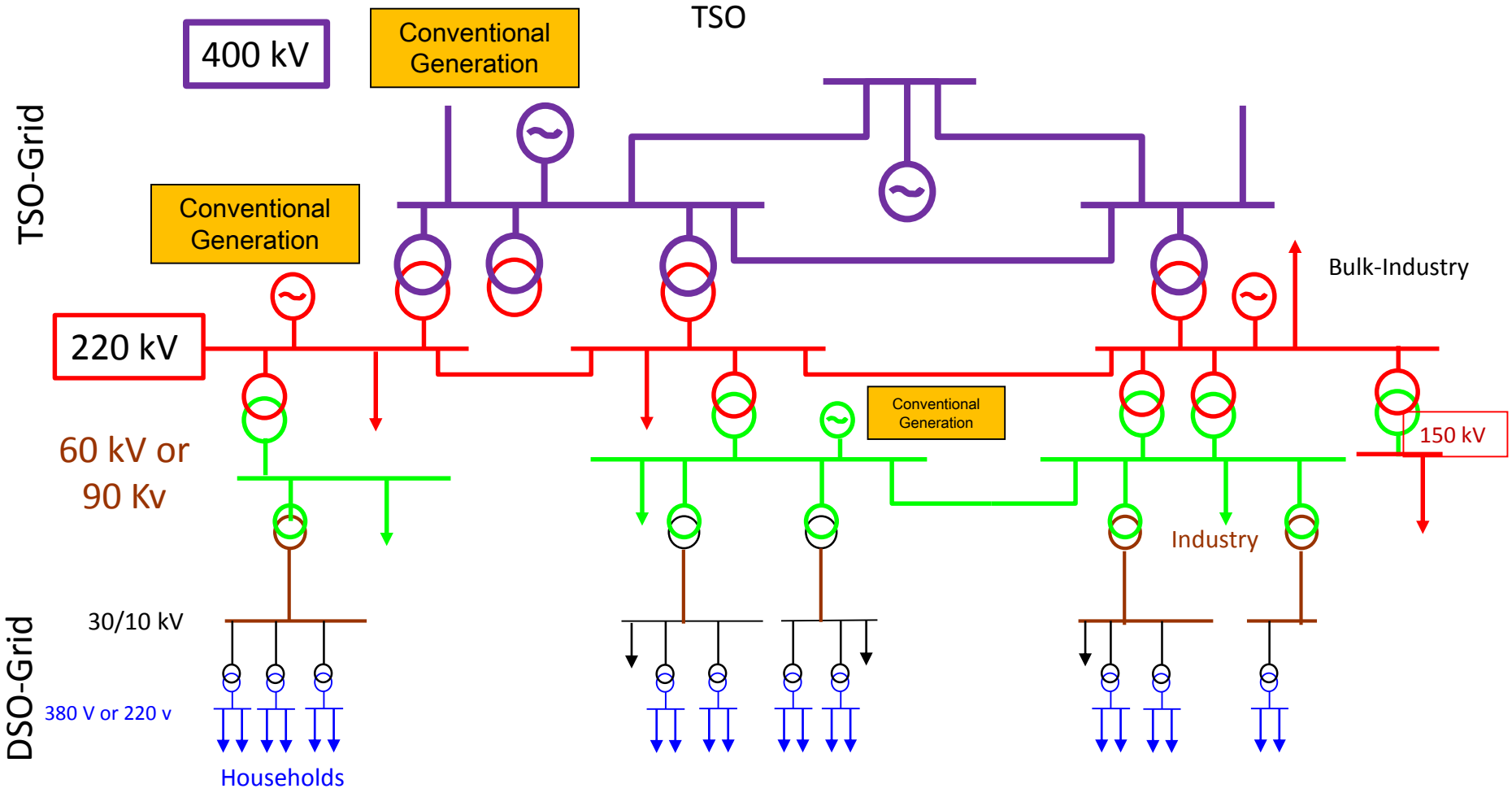
- Interconnectors with:
  - tunisia
  - Morroco

Grid facts and characteristics

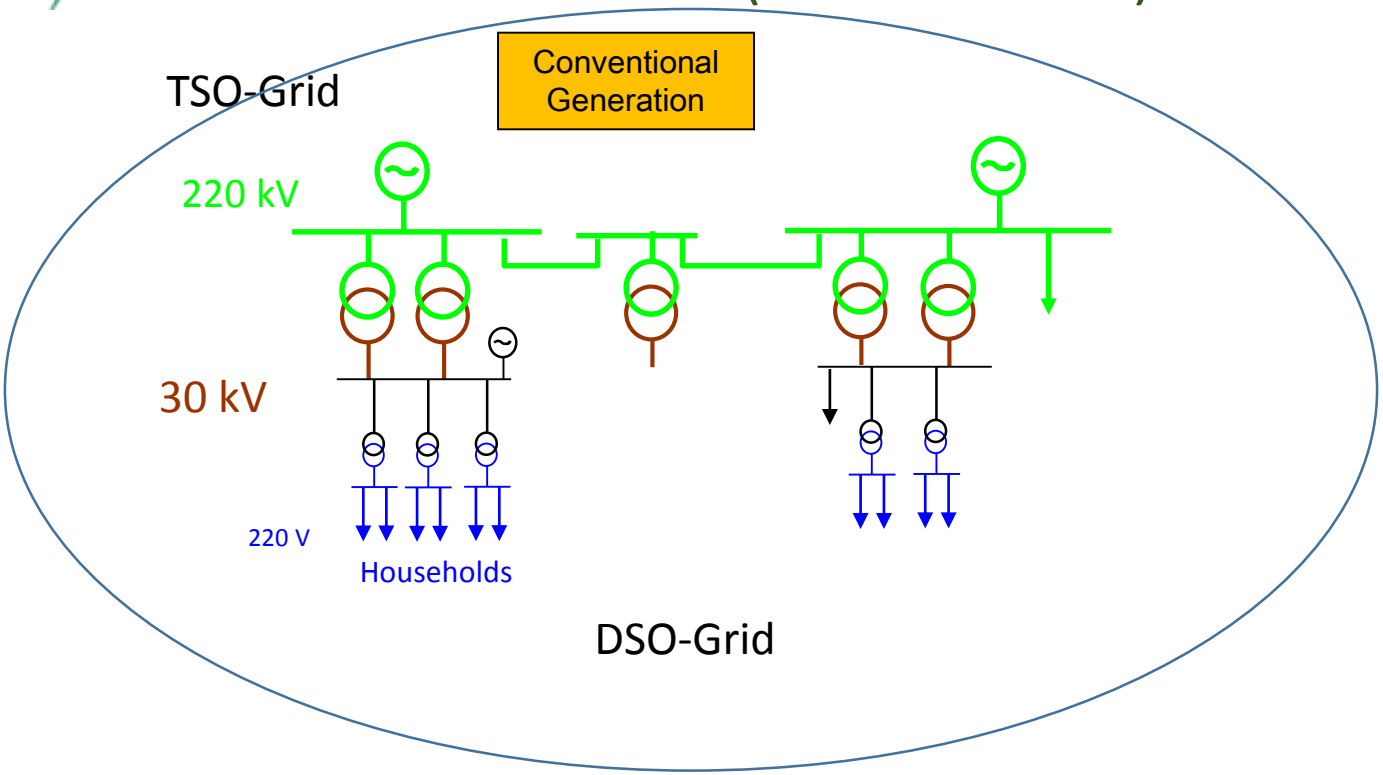
- The electricity grid in Algeria is sub-divided into transmission grids (High voltage) and distribution grids (Medium and low voltage)

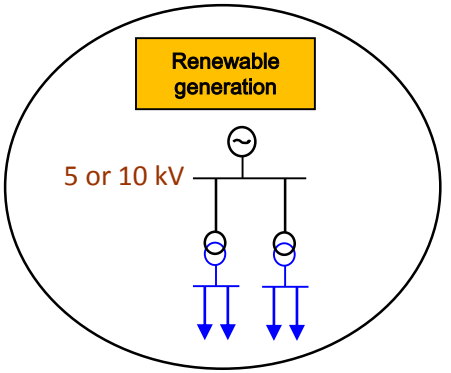
	Voltage Level	Total length	Responsibility
Transmission Grid	400kV	2872 Km	TSO
Transmission Grid	150 to 220 kV	13390 Km	TSO
Transmission Grid	60 kV to 90kV	10398 Km	TSO
Medium Voltage	10 kV to 30 kV	131 213 km	DSO
Low Voltage	220V to 380 V	159 721 km	DSO

Structure of electrical power system (interconnected Grid)

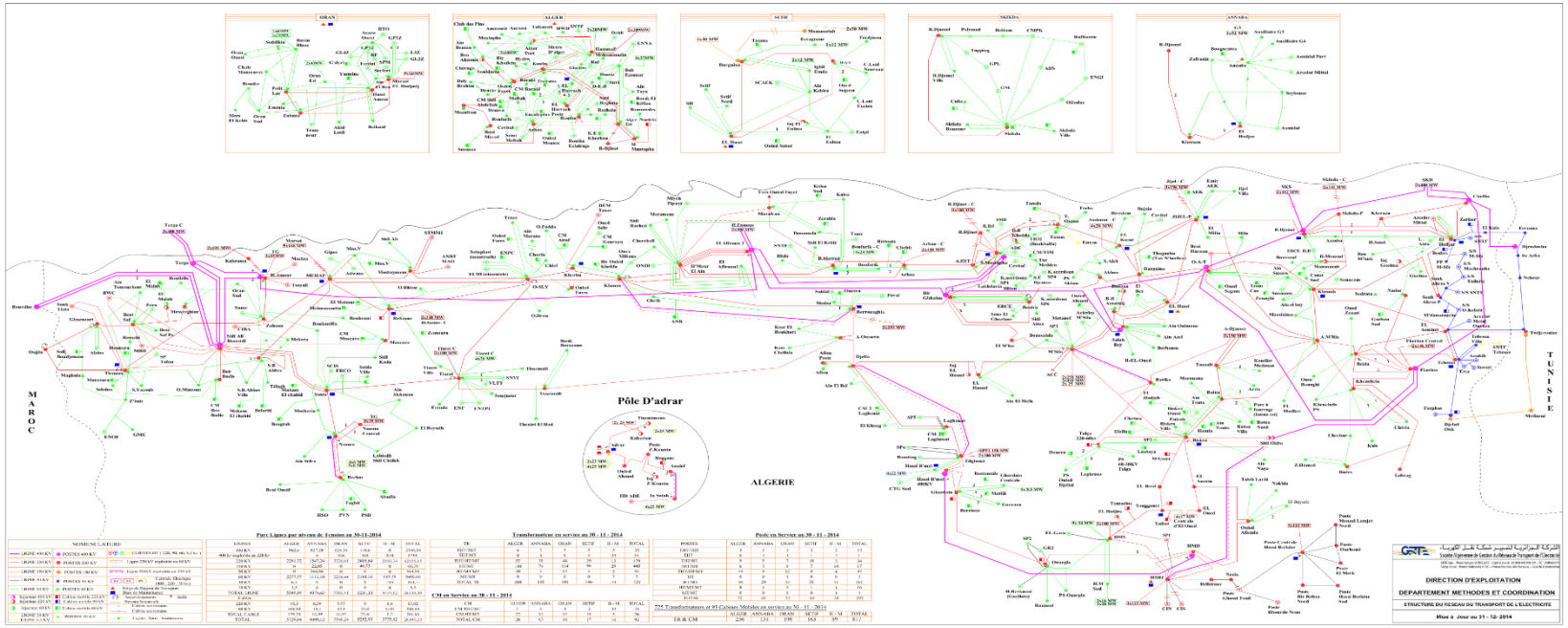


Structure of electrical power system (Isolated Grids)





Map of the high voltage grid



Information on TSO(s)

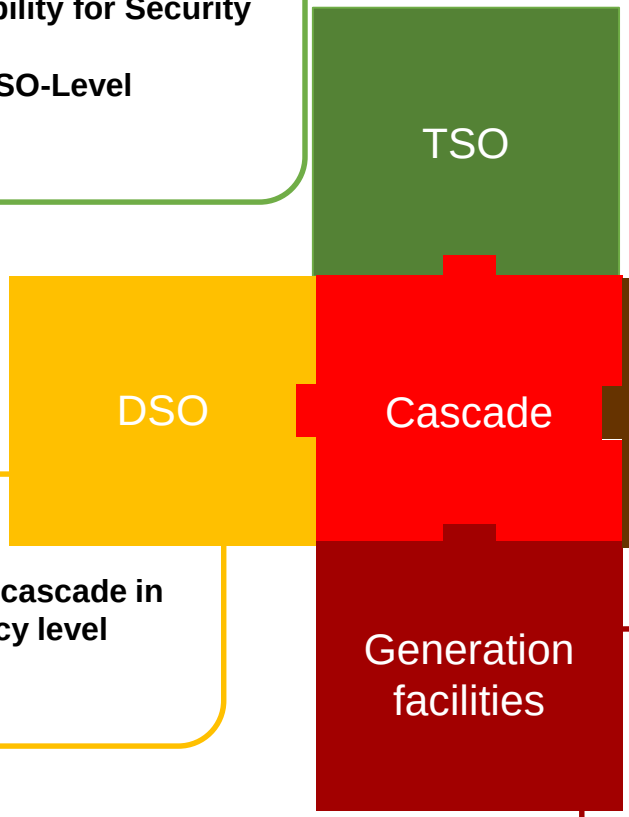
- Name: GRTE
- Network length (km) : 26659 km
- Annual transmitted energy (TWh) : 57 TWh
- website: http://www.grte.dz

Cooperation of TSO and DSOs

- In case of (n-1)- security violations in the EHV-grid due to a trip of sevral lines or the outage of a power plant TSO and DSO collaborate to manage the incident. TSO and DSOs operate measures according to internal procedures.

Responsibilities of TSO & DSOs in the interconnected grid

- **SO monitoring the overall system**
- **GRTE Responsibility for Security of supply**
- **Generators on TSO-Level**

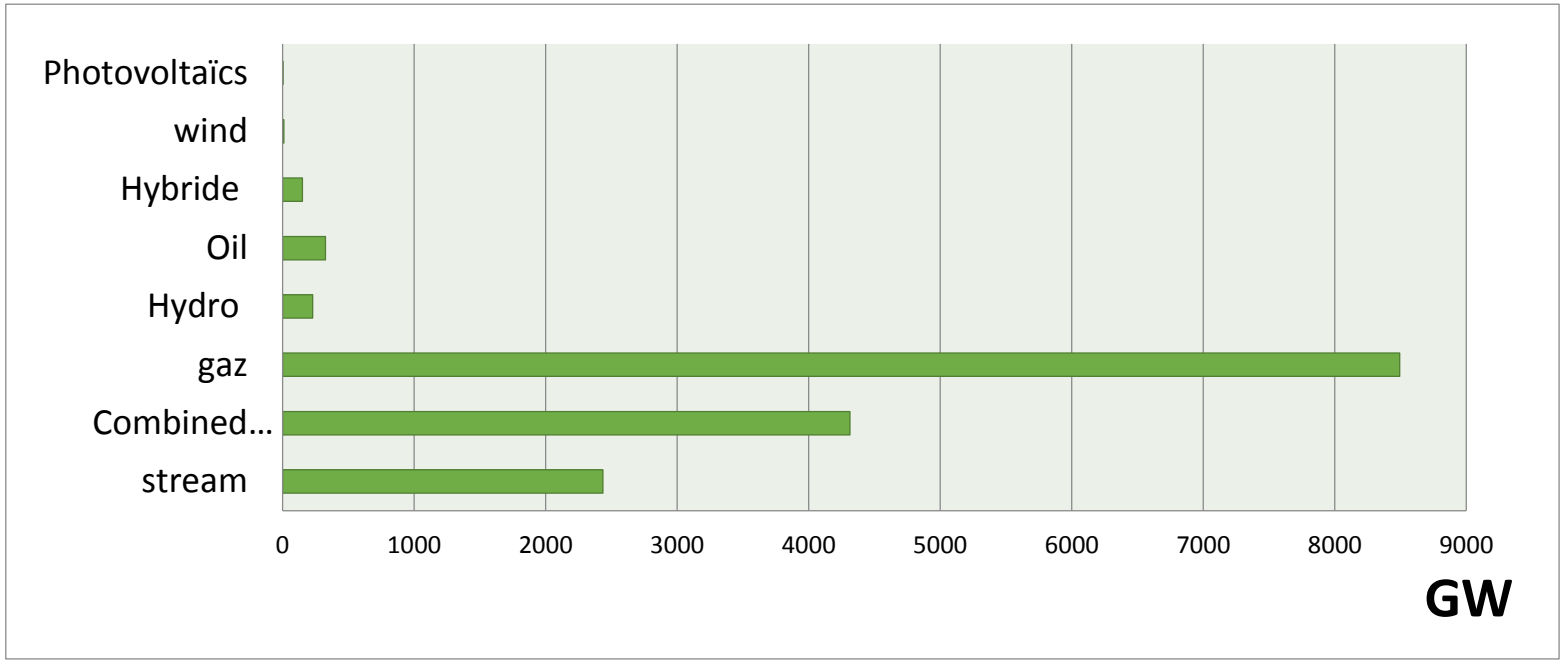


- **Support of industrial customers through decreasing / increasing load**
- **End user can be disconnected (load shedding)**

- **Monitoring own system**
- **DSO operate the cascade in case of emergency level**

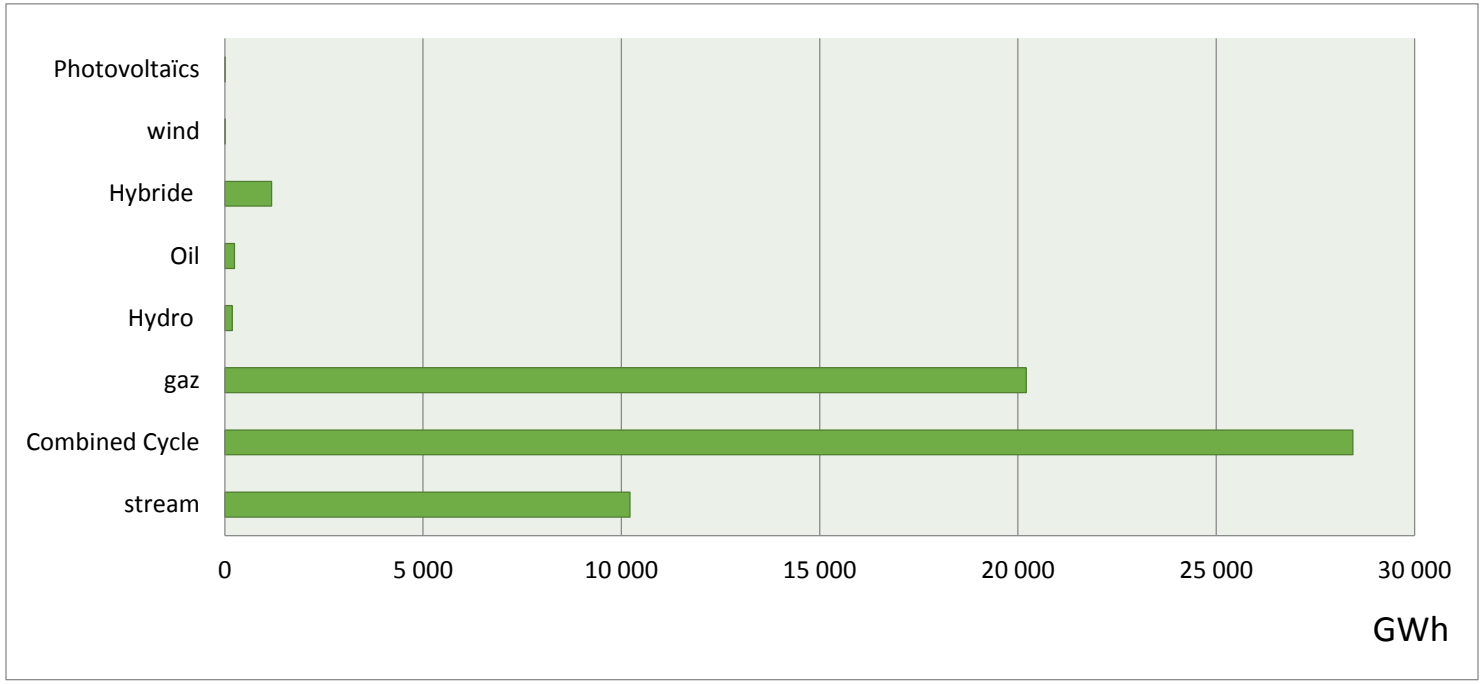
- **Support of TSO to Security of Supply through decreasing / increasing the power of generation units**

Power structure of the country



stream	15,3%
Combined Cycle	27,0%
gaz	53,2%
Hydro	1,4%
Oil	2,0%
Hybride	0,9%
wind	0,064%
Photovoltaïcs	0,006%

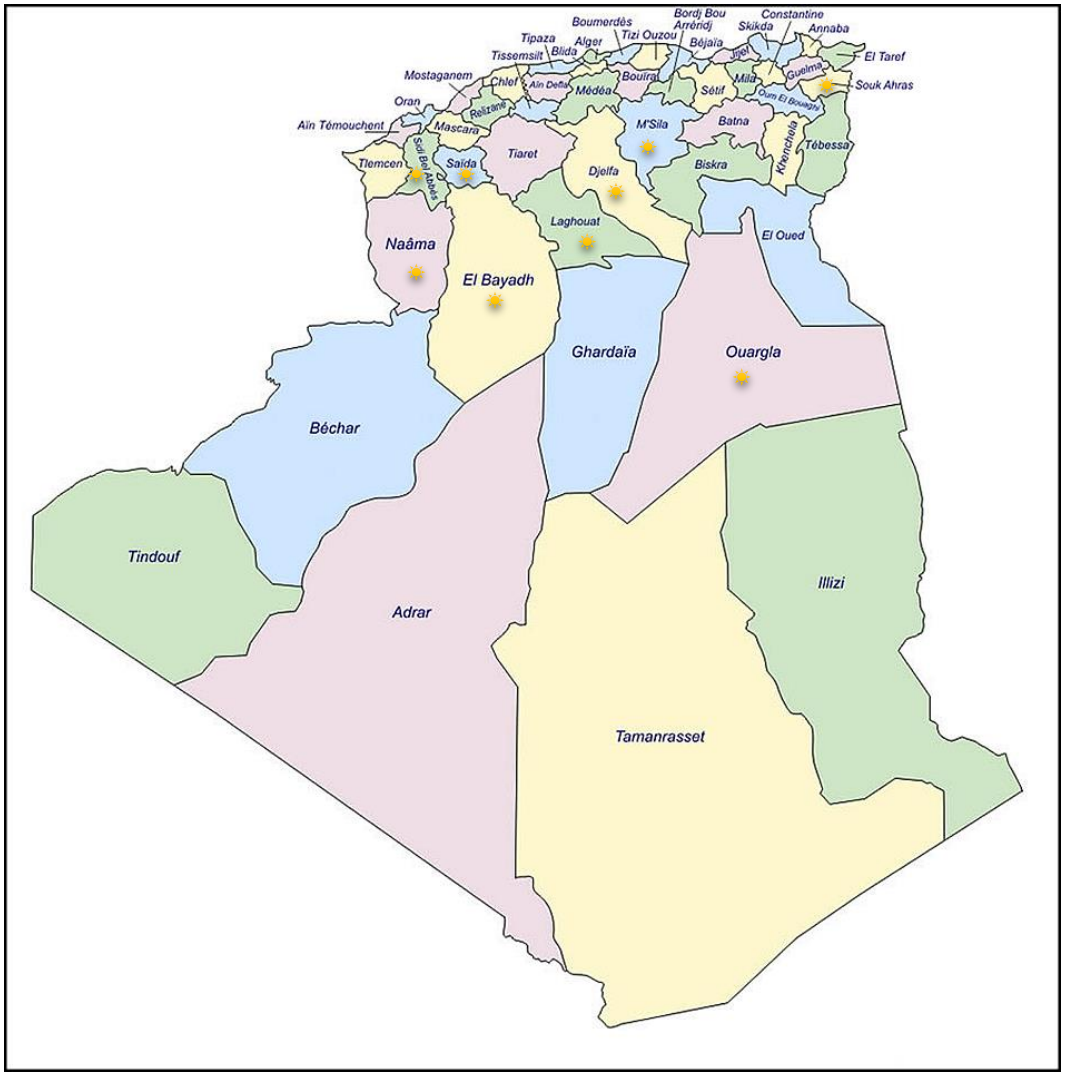
Energy production with reference to primary ressources



Stream	16,90 %
Combined Cycle	47,00 %
gaz	33,40 %
Hydro	0,30 %
Oil	0,40 %
Hybride	2,00 %
wind	0,002 %
Photovoltaïcs	0,002%

Development of generation capacity since 2010 (MW)

Location of renewable energy sources under construction



Development of photovoltaic power

	2015-2020	2021-2030	TOTAL
Photovoltaïque	3 000	10 575	13 575
Eolien	1 010	4 000	5 010
CSP	-	2 000	2 000
Cogénération	150	250	400
Biomasse	360	640	1 000
Géothermie	05	10	15
TOTAL	4 525	17 475	22000

Source: www.sonelgaz.z