The Region of Crete and the EU’s 2030 Energy and Climate Goals

42nd General Assembly of CPMR
24-26 September 2014, Umeå, Sweden
Umea – Crete : 3.300 Km away
The largest of the Greek islands

- **Area**: 8,335.88 km²
- **Coastline**: 1,046 km

**Population (2011):**
- 682,928 (+13.6%)
- **Density**: 75 inhabitants / km²

**Tourism:**
- 3,000,000 tourists annually
- More than 214,500 tourist beds
- More than 42% increase of the beds in hotels between 2000-2013

**Energy Characteristics**
- **Electricity demand**: 2,837.8 GWh
- **Oil dependence**: 86%
Power stations of the Public Power Corporation in Crete

- **Xilokamara**
  - 348 MW
  - 6 steam turbines
  - 1 combined cycle unit

- **Linoperamata**
  - 265 MW
  - 6 steam turbines
  - 4 diesel engines
  - 5 wind turbines

- **Atherinolakkos**
  - 190 MW
  - 2 steam turbines
  - 2 combined cycle unit

To minimize the environmental impact of the coastal front, it is scheduled to migrate the power station from Linoperamata to Korakia.

Regional Energy Agency of Crete
Renewable Energy Sources Installations in Crete (2014)

30 Wind Parks: Total installed power of 185,9 MW / Electricity 18,3 % / 2 more parks under construction

Biomass: 6 % of the total final energy consumption Biogas: (combined heat / electricity installations)

Soral thermal collectors – Central Solar Systems of Heating
Water: 455,000 m² (thermal energy producing 1,9 % of the total energy demand).
25 Big pilot central solar heating systems of hotels an SMEs.

2 Solar Air Conditioning Systems

Photovoltaic Systems: (lighthouses, small hotels of ecological tourism, hotels and dwellings)
50 installations of total 1 MW
New installations 78,3 MW (PV80) + PV roofs 16,5 MW = 94,8 ME => 154,590,5 MWh
Renewable Energy Sources Installations in Crete (2014)

- **Passive Solar Systems – Bioclimatic Architecture:** 50 operating installations (public buildings, houses, schools, Research Institutes, etc.)

- **Small Hydro:** 2 installations of 0.6 MW / Total potential: 6 MW

- **Pump Storage Systems:** Big pilot projects under study and implementation (100 MW).

- **Shallow Geothermy:** 10 installations

- **Pilot Projects:** Electricity production by solar thermal plants (38 MW)
Renewable Energy Sources Installations in Crete (2014)

Crete supplies the 19,5% of the annual electricity consumption from renewable sources, while the 23% of the installed power is produced from wind farms and photovoltaic installations. The energy investments in RES in Crete exceed the 750 million euros.
The Actions of the Region of Crete for the Energy Policy

Regional Energy Agency (established in 1993)

- **Energy policy planning**, combining conventional energy sources, renewable energy, sustainable transport, energy and innovation, to combat climate change.

- **Specialized information campaigns** (professionals, general speeches, seminars, workshops, conferences)

- **Cooperation with all relevant stakeholders** and in accordance with national and European policy on energy and climate,

- **Coordination of energy programs and activities** of local and regional institutions and their combination with activities or innovation programs, the environment, tourism, agriculture.
The Actions of the Region of Crete for the Energy

Participation in European and National energy programs and networks by promotion of European and international cooperation, (ENERMED, MEDEEA, SMILIES, IEE EURONET 50/50 max & EURONET 50/50 - Winner at the Sustainable Energy Europe Award 2013, INTEREGG III C: WIND TECH KNOW, INTEREGG IV GREECE-CYPRUS 2007-2013)

Mobilizing energy savings, by increasing energy awareness of the building users. Contributing towards the implementation of local SEAP's by building capacity of important actors on energy efficiency, stimulating behavioral change, and influencing local, regional and national relevant action plans.

Special Studies for the location of installations RES of large photovoltaic, solar power units and wind parks in the Region of Crete., with multi-criteria analysis by using GIS.

At national level...

Recently: reduced electricity cost, by law, for the cities and villages which are close to RES installations.
The official state strategy for the future development of the electrical system of the country includes the **interconnection between Crete and mainland’s electricity production system**, through an underwater electric cable.

This project is expected to:

- Ensure the electricity’s sufficiency on the island of Crete and
- Facilitate the establishment of long-range RES investments.

**Energy production cost**

Greece : 50 €/KW **vs** CRETE : 200 €/KW ..... 300 b € extra / year

**Estimated cost:**

1.000.000 – 1.500.000 euros
Future major projects...

Euro – Asia Interconnector

Regional Energy Agency of Crete
New Hybrid Pump Storage System:

These have several advantages:

- Possibility of making greater use of RES in networks with limited absorption of energy from RES (e.g. non-interconnected islands).
- Configuration and stabilization of the load curve.
Thank You for your attention!

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