Demonstrating sustainable energy solutions

EU support to islands as test beds

Mechthild Wörsdörfer
European Commission
DG Energy
Head of Unit
Energy policy & Monitoring of electricity, gas, coal and oil markets

Innovation towards sustainable energy solutions

- Innovation for sustainable energy systems: synergy between demand- and supply-side measures to support the breakthrough and uptake of low-carbon technological solutions

- E.g. renewable electricity
  - Assuring demand for renewable electricity technology through the EU Renewables Directive
  - Promoting the development and deployment of cost-efficient renewable electricity technology through the EU Strategic Energy Technology plan

Demonstration is a crucial step in development and deployment of innovative solutions
Innovation towards sustainable energy solutions: the need for support to large scale demonstration

- New technologies perceived as risky and expensive
- Technological solutions still need to be improved through real life demonstration
- Addressing non-technical obstacles (regulatory constraints, public resistance, economic viability)
- Crucial step for market uptake

EU support to demonstration projects in the field of energy (FP7 and European Energy Programme for Recovery)

- Large impact envisaged in sector ('lighthouse' projects)
- Priority areas identified through linkages between EU, member states, private sector and research community
- Important budget per project (15 – 30 million EUR)
- Industry in the lead role
- New technologies implemented and validated on identified 'real life' scale demonstration sites
- Including strategies for replication and exploitation

*Islands can be particularly suitable as demonstration sites!*
Pact of Islands

A political engagement
Commitment to exceed the 20-20-20 targets of the EU climate change package recognising specificities of islands
- Fragile ecosystems
- Structural handicaps – loss of population
- High tourism – fluctuation in energy demand – scarcity of water
Open for signatures at the end of June 2010
62 Island authorities have signed the PoI to date
49 Island Sustainable Energy Action Plans (ISEAPs) already finalised and submitted to the Commission.

The ISLE-PACT Project

A 4 million € project co-financed by DG ENER

Signatories of the Pact of Islands
The regions of Western Isles, Gotland, Crete, Öland, Hiiumaa and Saaremaa
The autonomous governments of Sardinia, Sicily, Azores and Madeira
18 Greek island municipalities in the Aegean
13 Cyprus communities + 5 Malta local councils
All 7 cabildos of the Canary Islands
Samsø from Denmark

Support of the European Parliament
On 19 January 2012 a Written Declaration has been adopted by 388 votes at the European Parliament recognising the Pact of Islands as an EU official EU initiative and asking the European Commission for continued support.
Islands as demonstration test beds: an example

EU support (FP7) to a large scale smart grid demonstration project on the island of Bornholm (~28,000 electricity consumers), Denmark

EcoGrid EU
A Prototype for European Smart Grids

- Will develop and demonstrate in large-scale a generally applicable real-time market concept for smart electricity distribution networks with high penetration of renewable energy sources and active user participation
- Based on small and medium-size distributed energy resources (DER) and flexible demand response to real-time price signals

EcoGrid EU: large scale demonstration on an island

- EU funded FP7-Energy project (total budget: 21 million €)
- A large scale demonstration of a real-time marketplace for distributed energy resources (DER)
- A demonstration of a real power system with more than 50% renewable energy (wind, solar, ...)
- ICT systems and innovative market solutions enable small consumers to offer TSOs additional and more efficient balancing services
- Preparation for a fast-track towards European real-time market operation of renewable energy sources and demand response
The Bornholm island as a test site

EU support (FP7) to a large scale smart grid demonstration project on the island of Bornholm

Demonstration in a “real” system with 50 % RES

High variety of low carbon energy sources

Several active demand & stationary storage options

Strong political commitment & public support

Operated by the local municipal owned DSO, Øskraft

Eligible RD&D infrastructure & full scale test laboratory

Interconnected with the Nordic power Market

EcoGrid EU: islands as test beds, EU wide impact

Large scale impact envisaged, beyond the island demonstration site of Bornholm

Small customers get access to balancing market

Open Standardization process

Contribute to the overall goal of large scale and efficient integration of DER in the European power market

Minimise balancing costs

Improve production forecasts

Reduce/Postpone grid investments

Targeted roll-out of Smart Grid solutions
EcoGrid EU: islands as test beds, EU wide impact

Large scale impact envisaged, beyond the island demonstration site

- Small customers get access to balancing market
- Open Standardisation process
- Targeted roll-out of Smart Grids solutions
- Contribute to the overall goal of large scale and efficient integration of DER in the European power market
- Minimise balancing costs
- Improve production forecasts
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www.eu-ecogrid.net

More info on http://ec.europa.eu/energy/index_en.htm

Thank you.