

**BRINGING EUROPE AND THIRD COUNTRIES CLOSER
TOGETHER THROUGH RENEWABLE ENERGIES**



BETTER

North Africa Case Study

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DLR

**Deutsches Zentrum
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German Aerospace Center**



Expected Outcomes

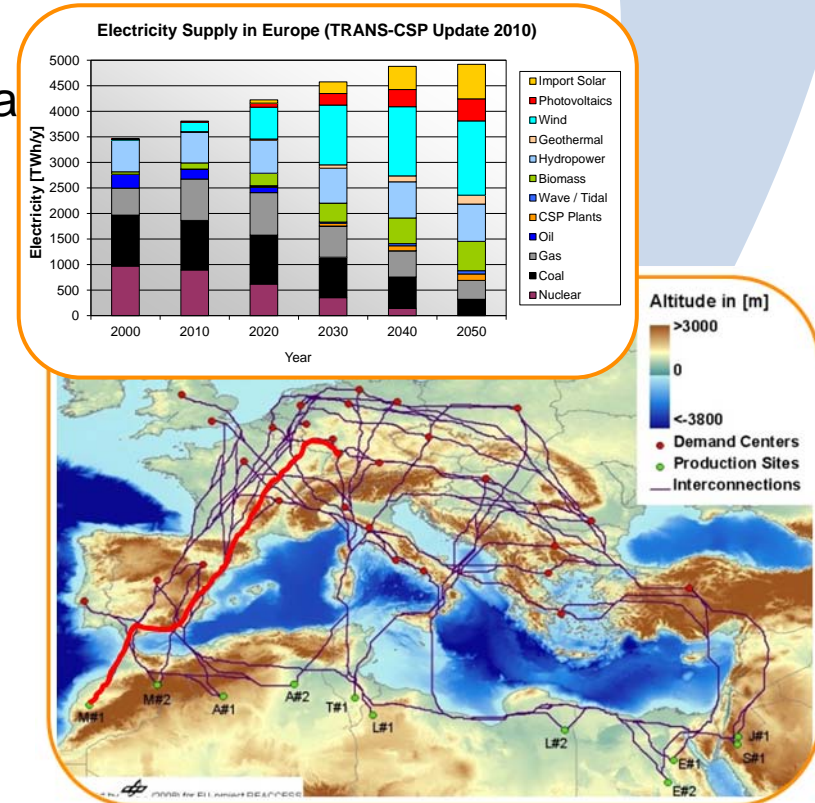


- 1) **Evaluation** through case studies for Turkey, Balkans and **North Africa** and integrated analysis of the **impacts associated to the implementation of the cooperation mechanisms** (i.e: costs, market opportunities, grid, environmental and socio-economic implications, etc).
- 2) **Action plan** to foster RES energy production, transfer and use in the EU and third countries through cooperation mechanisms.
- 3) **Policy recommendations**
- 4) Set of **practical guidelines** in order to foster and promote the active involvement of **private sector** in the deployment of mutually beneficial RES-E projects using the cooperation mechanism.
- 5) Establishment of a **solid and productive stakeholder network** between EU and 3rd countries as well as relevant existing initiatives to foster RES cooperation and knowledge transfer.
- 6) Generation of **knowledge and dissemination material** to advocate in favour of EU cooperation mechanisms as well as RES deployment.

Solar Electricity Imports from North Africa to Europe



- **Quantification of the demand** for solar electricity imports providing **flexible power and firm capacity** for 30 European countries (TRANS-CSP 2006)
- Identification of **300 potential corridors** connecting production sites in North Africa with centers of demand in Europe (REACCESS 2009)
- Selection of **33 potential corridors** to provide 700 TWh/yr to Europe by the year 2050 (JEPO 2012)
- Selection and detailed description of a **First HVDC corridor** connecting a large-scale CSP plant in Morocco with a German center of demand in 2022 (**BETTER 2012-2014**)



Dedicated High Voltage Line (HVDC)



MOR-E-F-D

HVDC 2600 km
1.7 GW / 1.5 GW_{net}
1.3 Mrd.€

CSP 2.26 GW
CSP 12.0 Mrd.€
150 km²

MOR-(E)-F-D

HVDC 2300 km
1.7 GW / 1.5 GW_{net}
3.5 Mrd.€

CSP 2.17 GW
CSP 11.5 Mrd.€
142 km²



Questions to Spanish Stakeholders



- Opportunities and Threats for the Spanish ...
 - Solar Industry ?
 - Utilities ?
 - Government ?
 - NGOs ?
 - People ?
- NIMBY or PIMBY ?
 - Not In My BackYard ?
 - Please In My BackYard ?



**Thank you
for your attention!**

- **CIEMAT** - *Centro de Invest. Energ. Mediamb. Tecn (Spain)*
- **DLR** – *Deutsches Zentrum Für Luft-und raumfahrt e.V (Germany)*
- **ECN** – *Energy Research Centre of the Netherlands (Netherlands)*
- **JOANNEUM** – *Forshungsgesellschaft Mbh (Austria)*
- **NTUA** – *National Technical University of Athens (Greece)*
- **OME** – *Observatoire Mediterranéen de l’Energie (France- Int.)*
- **PIK** – *Postdam Institute for Climate Impact Research (Germany)*
- **TUWIEN** – *Vienna University of Technology (Austria)*
- **UNDP** – *United Nations Development Programme (International)*

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