Medgrid Objectives and approach

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Technical workshop – Amman November 28/2013

MEDGRID OBJECTIVES

- **To promote and impulse the development of the Mediterranean transmission and interconnection grid**

Demonstrate that:

- it is technically feasible and environmentally acceptable

- it is economically sound

- institutional, regulatory and funding issues can be managed

and create a climate conducive to investments

Medgrid objective

How ?

- **Showing**
  - **The interconnections are technically feasible,**
  - **Environmentally acceptable**
  - **They are economically viable**
  - **They contribute to sustainability..**

- **Identifying prerequisites, if any,**
  - **Technical,**
  - **Regulatory, Funding,**

- **Cooperating with SEMCs**

Medgrid objective

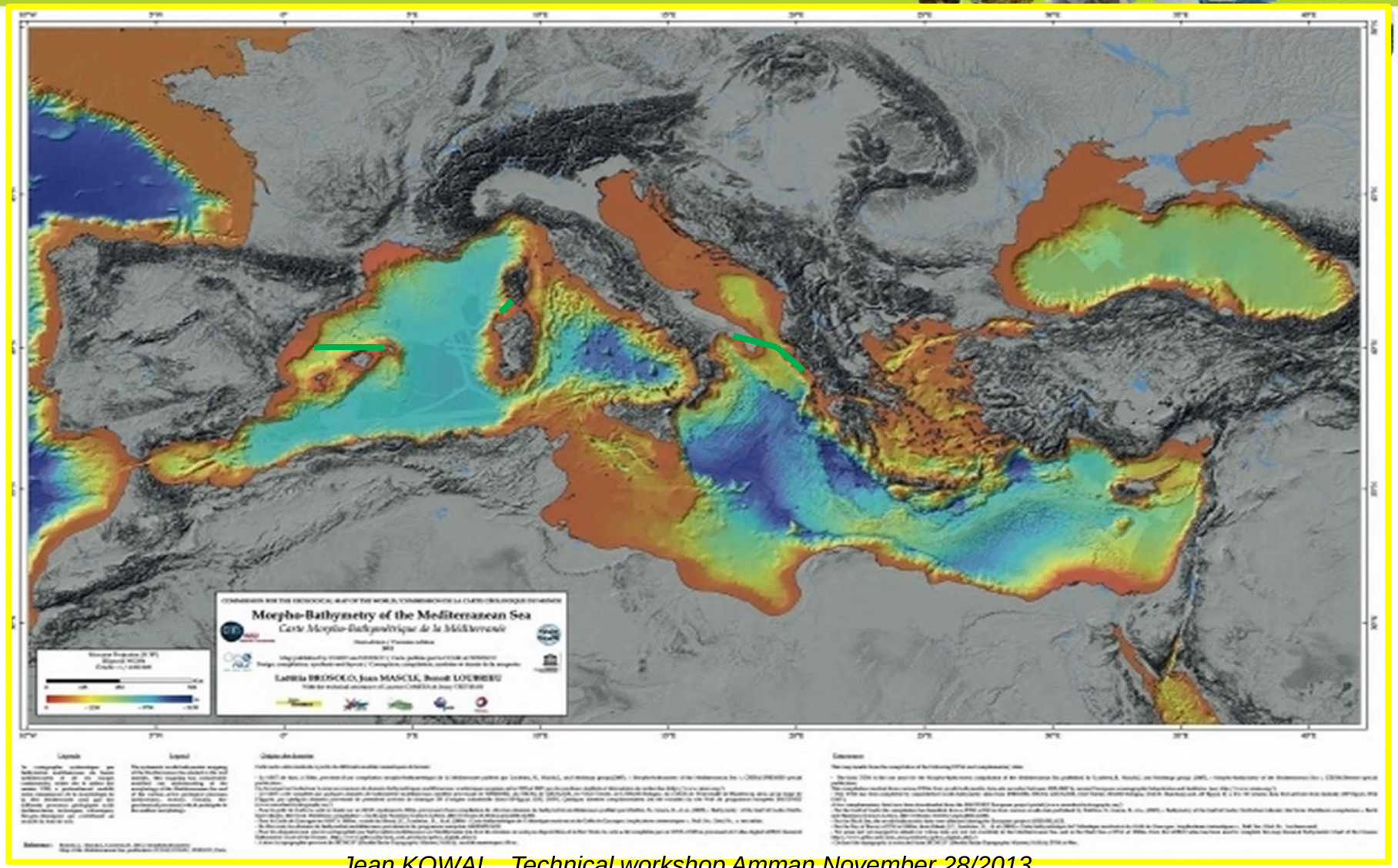
How ?

- **Supporting initiatives (shareholders, others)**
- **Working on pilot projects (Art 9)**
- **Communication**
  - **Publications, conferences, general public**
  - **Medgrid events**
- **Lobby**
  - **European Bodies**
  - **Together with MEDREG, ENTSOE, MedTSO, Dii, OME,..**

A interconnection MasterPlan

- **Simulation of the optimal operation a fully interconnected euro-Med power system?**
  - **Which exchanges?**
  - **Which global profit (social welfare)?**
- **Simulation tool / modelling renewable, storage, system constraints**
- **Need of appropriate data**
- **What is the optimal interconnection system – South-South North-South: costs balance the savings**
- **A feasible optimal system**

Mediterranean sea bed

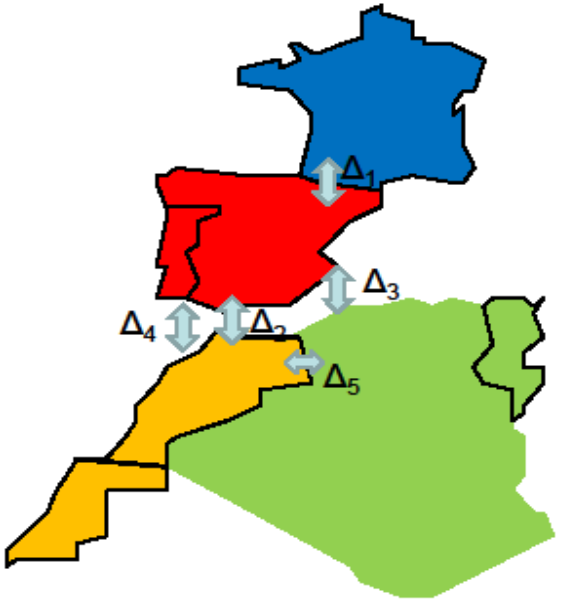


Possible routes

existing Under study farther

MEDGRID OBJECTIVES

RES capacity Scenarios (2022 – 20xx)		
"Reference"	MO: 4 GW	DZ: 2.6 GW
"RES export"	MO: 7 GW	DZ: 4.6 GW



Scenarios	Interconnection Capacity – NTC values		
	Alternative solutions		*ES-FR*
Ref.	1a: Δ_2 in AC	MA-ES=1,4 GW	*5 GW* $\Delta_1$in DC
	1b: Δ_2 AC existing Δ_4 in DC	MA-ES = 0,7 GW MA-PT = 0,7(to1) GW	
Ref. >>> RES	2a: Δ_2 in DC	MA-ES= 2 GW	*6 GW* $\Delta_1$in DC
	2b: Δ_2 in AC Δ_4 in DC	MA-ES= 1,4 GW MA-PT = 0,7(to1) GW	
RES exp	3.a: Δ_2 (Δ_5?)	MA-ES= 3 GW	*7 GW* $\Delta_1$in DC
	3.b: Δ_2&Δ_4 (Δ_5?)	MA-ES= 2 GW MA-PT: 1 GW	
	3.c: Δ_2&Δ_3	MA-ES= 2 GW DZ-ES: 1 GW	

Defining Optimal transfer capacity

Economic studies

Potential power exchanges (benefits)

Optimization costs vs benefits

Feasible optimal grid (2020 – 2025)

Feasibility studies

Creating new transfer capacities (costs)

Regulation issues

- **What is the present status –SEMCs vs EU**
- **Minimal amendments required**
- **How to apply existing rules i.e. Art 9..**
- **Helping investments (infrastructure package PCIs.)**
- **Tariffs (including transit))**

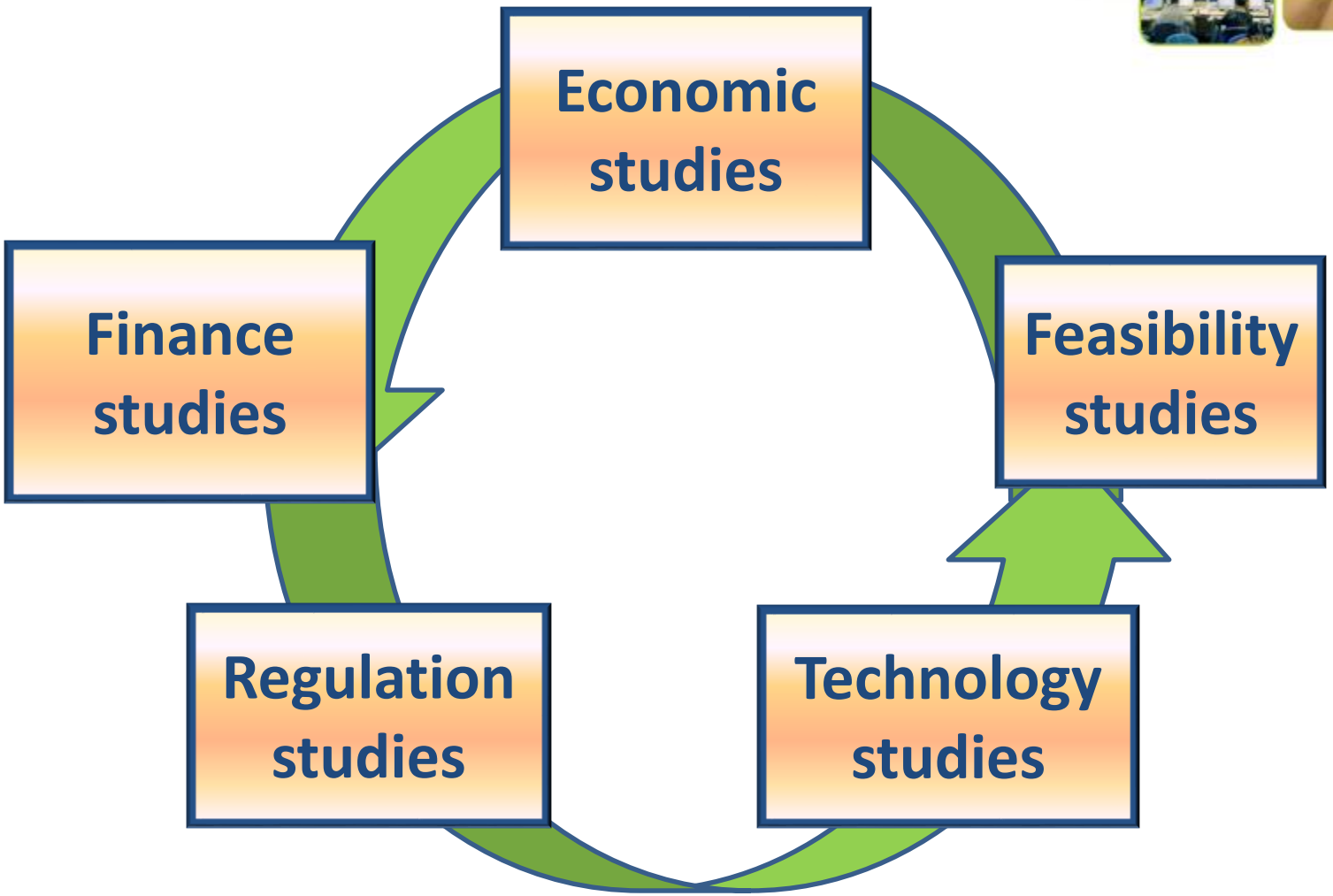
Funding issues

- **Funding the projects**
- **Models of international projects**
  - **Financial structure**
  - **Legal conditions**
- **Funding conditions and profitability:**
  - **Power market impact on profitability**
  - **Merchant lines vs TSO lines**

Technology issues

- **High voltage alternative current technologies (HVAC)**
- **High voltage direct current technologies (HVDC)**
- **Submarine power cable systems for depths up to 2500 meters**

- specific problem for Medgrid


Economic studies
Feasibility studies
Technology studies
Regulation studies
Finance studies

Status of the Studies

- **Feasibility of interconnections**
  - **Results by Spring 2014**
- **Analysis of optimal exchanges**
  - **Will be completed for Western part only**
- **Financial aspects: completed end 2013**

Status of the Studies

- **Regulation**
  - **Results published (with OME)**
- **Technology**
  - **Results available**

A report on the activities of Medgrid issued by end of 2014, in conjunction with the 2d « Medgrid Conference. »

Thanks for your attention

www.medgrid-psm.com