MED-EMIP
Euro-Mediterranean Energy Market Integration Project

Debating the Way to a Mediterranean Solar Plan

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Support for the enhanced integration and the improved security of the Euro-Mediterranean Energy Market
MED-EMIP Mandate in One Sentence

MED-EMIP is expected to be the catalyst of the reinforcement of EU-MPC energy cooperation, with particular emphasis on energy security and sustainability, through enhanced dialogue and information exchange.
“Paving” the way may start after we have “Debated” the way to a MSP and have identified the “Potholes of disagreement”
.... Debating the Way to the MSP is the subject of this presentation

Many potholes of disagreement
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.... Paving the way to the MSP is the next step and requires intensive consultations

....A few parties are already applying modern “equipment” to “push” the old MSP

....Avoiding ineffective paving delivery mechanism!
Can or should “we” seriously negotiate the export of solar power from this region “into” the European Union?

In the real world the following 6 major steps are necessary:

1. Find a power plant location
2. Find an export transmission path
3. Find a buyer for the electricity
4. Agree on financing the power plant and transmission
5. Built the power plant and transmission line
6. Commence generation and selling of “green” electricity
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Present situation with transmission paths

• Synchronously interconnected system spanning in North-South direction from Jutland to the borders between Egypt and Sudan and in West-East direction from Morocco to the borders between Turkey and Iran - meaning a “full AC” solution - is highly unlikely!

• We need dedicated power transmission corridors.

• However dedicated transmission corridors will only be an option if large power plant capacities above 2000 MW are negotiated from the very beginning.

In the power industry it is common that power plants and transmission lines are built together and neither one is built without a market for the electricity.
… Finding a buyer in the European Union

• In principle possible under the RES- Directive

• Bilateral contracts are allowed

• Solar power from the South will be always today, tomorrow and in the far future less expensive than average generation costs in Central Europe. \((The\ sun\ is\ twice\ as\ “strong”)\)

• Call it the T-shirt manufacturing cost phenomena
Solar Electricity Prices TODAY

- Threat to local generation of solar electricity, since imports are cheaper
- Solar power for local consumption too expensive
- Some exports needed to finance the power plant

Solar Electricity Prices

- Todays prices:
  - 400 € / MWh
  - 300
  - 250 € / MWh

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2007 System Average Tariffs in Euro Cent / kWh for selected countries in the Mediterranean basin

PV may outrun CSP

PV and CSP

WIND
... Finding electricity buyers at home

Over twenty years of developing a solar power industry around the world in over 20 countries have shown the way.

There are only three options and a few derivatives to kick start and maintain a solar power industry.

1. Cross subsidize incremental tariff costs by all electricity consumers.

2. Subsidize it through a public budget at the expense of other public services such as health, education etc.

3. Kick start it by fiscal incentives for “rich investors” and make sure it can be sustained
We only have to scale up of what we already know and do well!
Finding a market at home

- The tariff gap is very large
- Utilities are small in terms of GWh
- Utilities sales $ revenues are small

Electricity Tariff Average €ct / kWh = 5.3

Solar power Average Tariff €ct / kWh = 15

Large cross subsidies in % needed to finance a modest solar plant capacity
3. Finding buyers at home: Conclusion

- The “finding electricity buyers at home” strategy is insufficient and will not generate the necessary additional revenues from cross subsidies to develop the solar power market.
- It may also increase “energy poverty”
The Way Forward

• Identify and seriously negotiate one single pilot case under Article 9 of the RES directive of the EU.

• Identify and seriously support one country willing to introduce cross subsidies large enough to finance a 1000 MW plant, which is built in 50 MW modules anyway.
The Way Backward

• Subsidize the first 100 MW through a variety of concessional loans and grants without negotiating improved market transformation conditions.

• Remain silent or speechless if someone is asking

“How do you finance the next 1000 MW?”
One topic worthwhile to discuss

When it comes to solar electricity from PV, two programme design options exist that differ completely

(I) Let each consumer, mostly buildings, generate their own electricity on their own building structure and feed this electricity into the grid.

VERSUS

(II) Built very large PV solar fields of size 50 MW to 500 MW.
MSP will have little effect on mitigating technology cost
The “Principle of Hope” Strategy

Assume that conventional gas, oil and coal power plans become uncompetitive within 15 years in the region.

This means incremental costs for solar power will be zero and “grid parity” has been achieved.

Lobbyist assumption for tariffs in the EU
Energy modesty as inconvenient truth

Best case future scenario

India and China 2060
This scenario may require two resource worlds

HUMAN DEVELOPMENT INDEX, a measure of human well-being, reaches its maximum plateau at about 4000 kWh of annual electricity use per capita.

Poverty alleviation is therefore strongly linked to increased electricity consumption up to a certain level.
Convergence and Contraction by ALL

The one scenario of convergence and contraction of the energy consumption among industrialized and industrializing Countries

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“Obstacles are those frightful things you see when you take your eyes off your goal”

Henry Ford