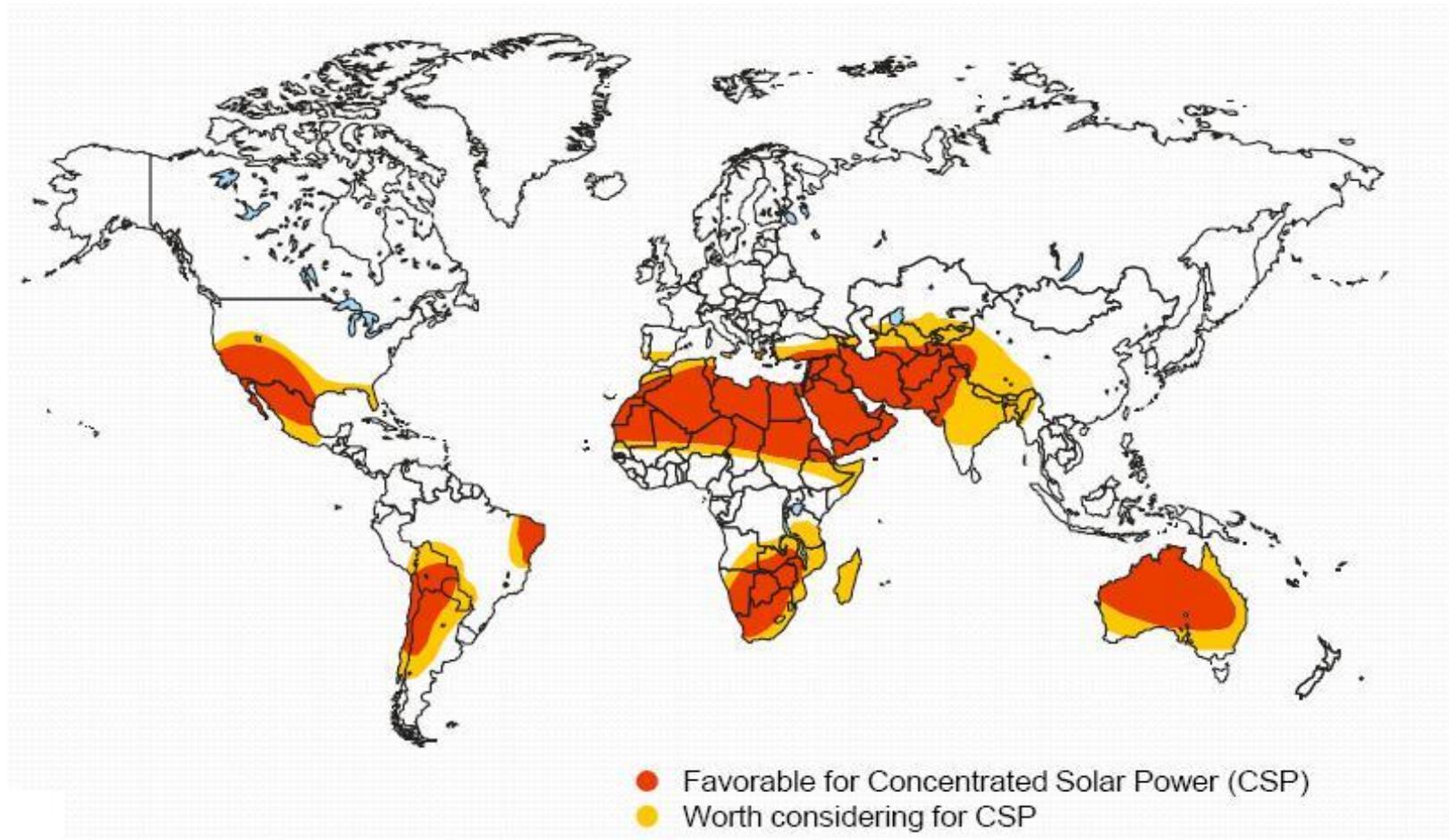


Mediterranean Grid Connections and MENA's Solar Export Potential

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Jonathan Walters, World Bank

MENA'S COMPARATIVE ADVANTAGE: SIGNIFICANT SOLAR RESOURCE IN PROXIMITY TO A LARGE MARKET FOR SOLAR ENERGY



GAINS FROM TRADE: SUNSHINE IN MOROCCO



GAINS FROM TRADE: SUNSHINE IN GERMANY



EU-MENA CONNECTIONS



Source: Medgrid

Markets are the principal constraint, not (yet) grids

- Europe has a large, subsidized renewable energy market (e.g. Germany has spent 100 billion euros on renewable energy subsidies in the last 20 years – none has gone for imports).
- Protectionism is most of the problem; so politics is most of the solution – how to persuade Europe to open its markets on a level playing field by providing subsidies to imports.

What about technology and cost ?

- Should Europe subsidize imported solar from MENA? Is it worth it?
- Photovoltaic (PV) has been subsidized so much (in Germany, China, etc.) that it is almost competitive, and is therefore relatively cheap to subsidize.
- But PV is available only in daytime (electricity storage is very expensive), which limits its value as an import.
- In contrast, concentrated solar power (CSP) is available at night (at least part of the night) through heat storage (which is a lot cheaper than electricity storage), so has more export potential.
- But CSP has not been as subsidized as PV, and is therefore still more expensive.

What about technology and cost ?

- However, CSP costs are now falling by 10% a year, as capacity expands and technology advances (five years ago it was about \$5 million/MW, and now about \$3 million/MW, still needs to get to about \$1 million/MW to compete).
- The essential point: CSP costs will come down much further if, and only if, the global scale of CSP capacity increases – that requires the stimulus of subsidies (just as happened with PV and wind power).
- MENA is the cheapest place in the world to do that, and can therefore be used to make a global contribution to climate change mitigation.
- The ultimate goal is for CSP to be a 24/7/365 clean (non-CO2 and non-nuclear) alternative to fossil fuels. That's the grand prize – think of the climate change impacts (and of energy security).
- European subsidies can help pay for that if Europe drops its protectionism against imports from MENA (and can help MENA economies at the same time).

How can it happen?

- A big policy shift in Europe to diversify to MENA solar energy, and build a supergrid across the Mediterranean?
- Or start by showing it can be real, with a demonstration export project (Morocco-Spain-France-Germany? Tunisia-Italy?). Then scale up after getting started.
- If the demand scale-up is proven real, grid scale-up will be needed too.

What can MENA Parliaments do to help open European markets?

- Advocate for demonstration export agreements. Morocco and Tunisia to coordinate?
- Ensure new trade agreements include renewable energy market access (e.g. Deep and Comprehensive Free Trade Agreements with the EU).
- Stimulate public debate in favor of solar energy and climate change mitigation.
- Advocate positions in global climate change negotiations (particularly for CoP21 in Paris, 2015).
- Outreach to European parliamentarians to support market access.
- Ensure legislation is favorable to solar energy investment (not only renewable energy legislation, but also on government budgets/subsidies, electricity sector reform, grid access, private investment etc.).

Shukran/Merci/Thank you

jwalters@worldbank.org

jonathanwalters22@gmail.com