

# Status & Strategic Next Steps of Global Market Initiative for CSP

## „The Global Market Initiative (GMI) for Concentrating Solar Power (CSP)

- a UNEP/GEF/BMU and Renewables' 2004 - supported Public- Private Partnership to launch 5,000 MW of new solar thermal power capacity”

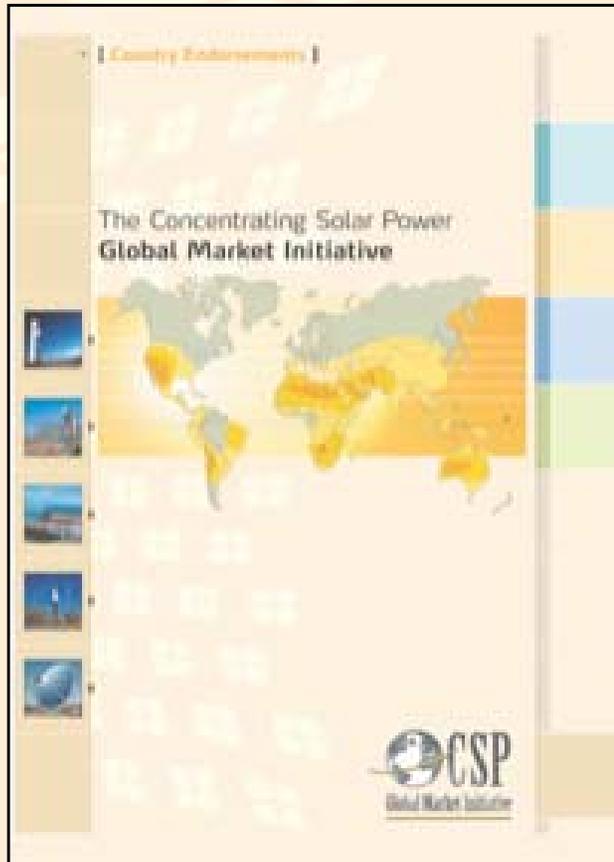
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# Goals of CSP Global Market Initiative



- **The objective** of this Initiative is to **facilitate and expedite the building of 5,000 MWe of CSP worldwide over the next ten years.**
- **CSP industry committed itself that investment costs of CSP are then cut by 50%**, thus being fully competitive with fossil based peak & mid-load power
- This represents an **investment volume of €10 bn.** - mainly privately financed
- This initiative will represent the **world's largest single program in history for solar electricity.**

# Required Policy Framework (I)

**A visible, reliable and growing market for solar thermal power with normal risk levels must be established to make the needed long-term investments to achieve lower costs.**

**Three policy areas have greatest impact on the use of CSP:**

## **I. Targets and tariffs**

- **adequate feed-in tariffs or public benefit charges** specifically earmarked for CSP.
- **Establish Renewable Portfolio Standards** that encourage electricity generation from renewables that include CSP.
- **Make green tariff schemes applicable to electricity imports from high solar radiation areas in neighboring states and/or countries.**

# Required Policy Framework (II)

## II. Regulation

- Avoid limitations on CSP plant capacity or operating strategies
- Remove restrictive laws to interconnection of CSP plants.

## III. Financing mechanisms

- Ensure that the Kyoto instruments such as **CDM and JI** are applicable to CSP and **mechanisms are bankable.**
- Institute or maintain **Production Tax Credits (PTC)**
- **Improve Investment Tax Credits (ITC)**
- **Establish loan guarantee programs** via Energy Bills, GEF and / or EIB, KfW and others.

# Different Strategies for Different Regions (I)

## Region I

- Region I includes countries and states **where most of the required elements of the GMI already exist**. Region I countries include Spain, Italy, Greece, and Israel in **southern Europe** (+ Germany with long-year technical interest) **and the South-western United States**.

## Region II

- **Region II includes developing countries that are or will soon be connected to Region I countries** by a power grid. Region II includes **Algeria, Mexico and Morocco**.
- **Power from CSP plants in these countries may be sold to Region I countries** and could receive a premium price.
- **A fair scheme for both, improved tariffs for clean energy generated in the Region II countries and for allowing a benefit from enhanced feed-in tariffs that is imported into Region I is needed.**
- To **avoid large tariff differences** between cheap bulk fossil-based energy and solar power generation, access to **favorable Region I tariffs should only be offered when subsidies are no longer available on fossil power production in Region II**.
- Tariff difference can be further **reduced through a blend of CDM** (i.e., carbon tax credits), and **preferential financing**, such as the **EU's energy sector infrastructural support MEDA Program for Region II**.

# Different Strategies for Different Regions (II)

## Region III

- Region III includes developing countries not interconnected to the grid of Region I countries, i.e. Jordan, Egypt, Yemen, South Africa, Brazil, Chile, India, etc.

Preferential financing in the form of grants, soft loans, carbon credits, CDM or green premiums provided by Region I sources will be required

- An example is the €0.5 billion grants for renewable energy, announced by German Chancellor, Mr. Gerhard Schroeder during the Renewables'2004 Conference in Bonn, now implemented by KfW to be blended with commercial loans, thus enabling about €400 mn./yr over the next 5 years which triggers investments of about €2 bn.
- In the medium term, the Region III countries will profit from closing the price gap as a result of growing installed CSP capacity in Regions I and II.

# Mandate for GMI at the Renewables'04 Conference in Bonn



- **The near-term target was to receive a solid mandate for implementing the CSP GMI at the Renewables 2004 Conference in Bonn.**
  1. June 04: Ministers responsible for Energy (specifically including renewable electricity) from Algeria, Egypt, Germany, Jordan, Morocco and Israel, plus Deputy Ministers from Italy and Spain signed GMI endorsement bilaterally.
  2. Aug 04: CSP GMI was included in the official publication of the Concrete Action Plan of the Bonn Renewables 2004 Conference.
  3. Aug 04: Management Team has been established.
  4. April 05: Energy Minister of Yemen signed
  5. June 05: Gov. Richardson of NM personally handed-over GMI supporting document to German Federal Minister of the Environment, Juergen Trittin
  6. June 05: Thus, also Gov. Guinn's (NV) support letter to GMI, back from May 04, became applicable

## GMI Progress since Renewables'2004 Conf. (I)

- **Sept 04: Algeria** created first feed-in law of Region II or III countries (since March 04); CSP **GMI** Management Team supported Algerian Government in site selection, optimal plant configuration + preparation of first RFP for 150 MWe Solar-Combined Cycle plant. **RfP was issued in July 04.**
- **Oct 04:** The CSP **GMI** officially **presented** a proposal to work within the **IEA SolarPACES** structure in **Oaxaca**, Mexico. The proposal was welcomed and the CSP GMI should function as own Task under the SolarPACES Implementing Agreement.
- **Nov 04:** The CSP **GMI** was **presented to Australian** Federal Government and Energy Ministers of the States of Victoria, NSW and Queensland.
- **Jan – May 05:** Support to be built for possible endorsement of the CSP GMI by the US Western Governors' Association. **Presentation to CA, AZ, NW + NV Government + Regulators**
- **March 05:** CSP GMI presented to South African Government

## GMI Progress since Renewables'2004 Conf. (II)

- **April 05:** Project facilitation talks with Moroccan Government officials. **Morocco** was anxiously awaiting the World Bank to release it's tender for a 250 MWe ISCC plant – RfP finally issued in Aug 05. Industrial Consortia from Canada, France and Spain (with German participants) currently prepare bids.
- **April 05:** Minister of Energy of Yemen signed the CSP GMI endorsement during the MENAREC-2 Conference in Amman, Jordan – **thank you Mr. Hinrichs-Rahlwes and BMU staff!**
- **May 05:** As part of a delegation of German Federal Deputy Minister for Economic Affairs, R. Schlauch, the CSP GMI was presented to the Energy Minister of Chile. Chile now considers to join GMI.
- **Aug – Oct. 05:** Several RfP's, including CSP, were issued by PG&E (400-800 MWe), Palo Alto, SDG&E, SCE, etc. in CA plus tenders from APS (05/04) and NMP (05/10) in the 100 MWe range

# GMI Work Plan 2005/06 as of Aug 05 (I)

1. **June – Aug 2005:** Invite GMI Member Countries' / States' representatives to join the CSP GMI Advisory Committee (AC) - invitation through GMI Management Team and IEA SolarPACES with accompanying support letter by Federal Minister, Juergen Trittin.
2. **June – Oct 05:** Finalize proposed work plan and budget for the CSP GMI for 2006.
3. **June-Oct. 05:** Propose and organize an International CSP Project Development Session at the Green Power Mediterranean Conference in Rome, with focus on Mediterranean Region I GMI countries (Italy, Greece and Spain).
4. **June-Oct. 05:** Plan the first meeting of the CSP GMI Advisory Committee in conjunction with the Green Power Mediterranean Conference in Rome on 14-16 November 2005.
5. **July 05:** Publish new joint Greenpeace, ESTIA, IEA SolarPACES, CSP GMI brochure.
6. **July-Aug 05:** Organize joint Greenpeace/GMI Mediterranean CSP Campaign.

## GMI Work Plan 2005/06 as of Aug 05 (II)

1. **Sept 05 - May 06:** Execute joint Greenpeace/GMI Campaign (Spain, Italy, Israel, Egypt, and Morocco).
2. **Nov. 05:** Approve budget and organizational structure of the GMI at the AC Meeting in Rome.
3. **Nov 05 – May 06:** Perform individual country assessment of current legislative/regulatory/market barriers of CSP in a few promising countries accompanied by a series of working meetings in those countries. The focus will be on the southwestern US, Mexico, southern Europe and Maghreb.
4. **May – June 06:** Organize (or participate in) an Executive Conference in a Northern African country in cooperation (potentially during MENAREC-3) with EU, EIB, KfW on CSP GMI status and policies for Mediterranean Region I and II countries.
5. Ongoing activities throughout entire 05 / 06 period: Support the WGA's SolarTask Force on CSP, integrate CEC, DG External Affairs, contact MEDA Program & collaborate with EMPower.

## GMI Strategy after Nov 05 Rome's AC Invitation (I)

- Probably, it has not been fully recognized that GMI gathered 3 key - European and 6 MENA Countries plus 2 US Southwest States on its top ministerial level to further CSP in their concrete electricity expansion plans – a non-preceding success so far!
- GMI Management communicated already since the Bonn Renewables'2004 Conference in June 2004 that focus should be on the commitment of Region I – countries with an additional effort – preferably through the CEC – to integrate Region II countries from North Africa, where electrical interconnection to the EU is already in place.
- The result is stunning: Spain created a market-pull of about 800 MWe responding to its feed-in law, the Real Decreto
- Morocco, with support of GEF, offers a 200 - 250 MWe ISSC plant, where about 4 international consortia are responding
- Algeria tendered a 150 MWe ISCC plant whose returns are based on an Algerian-set feed-in tariff with similar international response
- Egypt, with support of GEF, offers a 140 MW ISCC, currently in Pre-Qualification status, results are expected similar to those of MA and AL
- 5 utility companies of the US Southwest currently offer PPA's for about 1,000 MWe with a strong focus on dispatchable RE peaking power

## Strategy after Nov 05 Rome's AC Invitation (II)

With current, elevated gas prices of about US \$ 10 - 14 /mmbtu for peaking power (for about 1,500 – to 2,000 full-load hours) single - cycle gas turbines in CA, PPA's will work with about \$ 16-18 US cts/kWhe – this brings current CSP configurations to the edge of peaking power competitiveness, even w/o any subsidies or tax incentives!

The last ( Nov 05) CPUC - recommendation for California – based utilities includes to consider 10,000 MWe of CSP plant capacity by 2020!

Thus, the goals of GMI are several times overridden by current California expansion plans!

This development includes consideration of current CSP market introduction plans:



## Strategy after Nov 05 Rome's AC Invitation (III)

- Why shouldn't we focus on the prime markets today, i.e. Spain & the US Southwest – almost covering entirely the GMI objectives?
- Why shouldn't we invite MENA & Mexico to learn from experiences made in that region?
- Why shouldn't we organize a Workshop in the US Southwest, in spring 2006, where interested MENA countries can learn from the current experience?
- To avoid misunderstandings: GMI cannot replace intentioned governmental development aid programs in the field of renewable power!

# GMI Strategic Partnerships

- **IEA SolarPACES** (Organizational Host & Dissemination Partner)
- **EMPower** (Link to Utility Partners – financial prodecures turned out to be long-lasting)
- **Greenpeace** (Broader Public Mediterranean Campaign)
- **TREC** (R&D Link to ME - NA Countries) – after recent communications and proposals for not jointly agreed-upon initiatives, this collaboration has to be questioned !

## GMI MANAGEMENT STRUCTURE

