TECHNOLOGY ROADMAP
Concentrating Solar Power Energy
within the Strategic Energy Technology Plan

Outcome of the SET Plan Conference Stockholm
Parallel Session on 21 October 2009

Technology Objectives CSP Roadmap

1. Reduction of generation, operation and maintenance costs

– To improve the conversion efficiency at system level as well as the reliability and efficiency of individual components.

– To develop advanced plant monitoring and control technologies.

2. Improvement of operational flexibility and energy dispatchability

– To develop and improve thermal energy storage, as well as hybridisation of the power plant with natural gas and potentially with bio-mass renewable energy.

3. Improvement in the environmental and water-use footprint

– To reduce the cooling water consumption through innovative cycles, by developing dry cooling systems and optimising land use through new and innovative designs.

– To demonstrate CSP specific sustainable water desalination processes.

4. Advanced concepts & designs

– To address advanced components, concepts and systems.

CSP Roadmap

Strength

- Large scale plan that can support other initiatives
- Drive a common view of economic and social development opportunities
- Clarity on development pathway reduces risk profile
- CSP as part of a stable of renewable technologies

Weaknesses

- Technology delivery requires favourable EU policy
- Guidance on geographical split of funds – uneven capacity building and skills between countries
- EU support post 2020? Investment time horizons
- Exploiting scale and supply chain capacity

Opportunities

- EU energy security through diversification of supply
- Improve knowledge transfer on renewables to consumers/investors?
- R&D will drive down Capex and Opex costs
- Global knowledge repository

Threats

- Lack of domestic leadership and will
- Geopolitical relationships and trade
- Lack of a developed market structure
- Adequate Grid capacity?

Key Messages of Discussion

- **Support of the Set Plan Roadmap**
- **SETIS should become a real knowledge repository**
- **Stakeholders support the Launch of the European CSP Industrial Initiative**
- **Partnership with MENA countries is crucial**
- **More detailed Milestones and Priorities should be defined**
- **Funding mechanism to cover the whole cycle from concept to commercialization are needed**

Key Messages of Discussion

- **In CSP Technology Europe is Technology Leader**
- **Due to thermal storage and hybridization CSP technology can deliver electricity when it is needed**
- **Cross-cutting material research for energy technologies is needed**
- **We need a integrated approach for accelerated large scale deployment of all renewable energy technologies**
- **Need for coordination between the various Industrial Initiatives**


Photo by Steve Locke
Thank you for your attention!