

First Concentrated Solar Power (CSP) Dialogue

2 October 2013, Island of San Giorgio Maggiore, Venice
A meeting organized by Climate Policy Initiative (CPI)
in partnership with the Climate Investment Funds (CIF)
Administrative Unit



On the 2nd October, Climate Policy Initiative (CPI) hosted the First Concentrated Solar Power Dialogue on the island of San Giorgio Maggiore in Venice. This meeting was the first of a series of Concentrated Solar Power (CSP) Dialogues taking place over the next year that will bring together major actors from the world of solar energy finance to enable a global sharing of experiences and to explore emerging lessons in the quest to scale up effective CSP finance. These dialogues will assemble representatives from countries receiving support from the Climate Investment Funds (CIF) for CSP projects and host countries involved in other ('non-CIF') CSP projects, donor countries, project developers and financiers, multilateral development banks, representatives of the CIF Administrative Unit, and a few selected additional participants.

Summary

A low-carbon future requires a fundamental reorganization of the global energy system. In this context, CSP is an extremely interesting low-carbon technology due to its ability to store energy and dispatch power when it's optimal for the power grid, enabling it to potentially replace baseload supply from conventional power plants and complement fluctuating supply from other renewable energy sources. The key questions of this CSP Dialogue were whether public financing is essential CSP at this stage of CSP's development due to early development and demonstration costs, and if so how this public financing can be most effectively used.

The CSP Landscape: Setting the Scene

The Global Environment Facility and others' past

experience with CSP funding, the current state of the technology, and the prospects for the future suggest:

- CSP has struggled to attract finance in the past due to its high investment costs. The scale of its future deployment will largely depend on reduced costs, and improved profit margins for developers.
- Local manufacturing content is a crucial factor for CSP installation, as infrastructure is location-specific and needs to be customized each time. Local manufacturing content is interesting when exploring the potential for cost reduction.
- In the past, technology providers lacked clear incentives to drive down the costs for CSP due to the substantial profit margin of early projects e.g. Spain. Large established players might help to develop standard solutions driving down the cost and providing confidence to the market.

Financing CSP: The Respective Roles of the Public and Private Sector

Around the world, both public and private players are active in financing CSP. CPI, the Asian Development Bank, FMO Entrepreneurial Development Bank, the Indian Ministry of New and Renewable Energy, and the Solar Energy Corporation of India discussed early insights on a project that has attracted both public and private finance: the 100 MW Reliance Power CSP project, one of the CSP plants nearest to completion under the Indian National Solar Mission. The roundtable discussion on the different roles of public and private actors included the following main insights:

- Reverse auctioning, as used under the

National Solar Mission in India, is a cost-effective policy tool but has to be carefully designed – for instance, by providing data on the solar resource of proposed sites to potential bidders - in order to effectively mobilize private investments.

- In the case of a first-of-its-kind plant, successful deployment requires the involved private stakeholders to be experienced and financially strong and the technology provider to issue warranties.
- Development finance institutions can improve project viability even when providing finance at non-concessional terms but, if supplied in hard currency, related foreign currency risks cannot be fully hedged.

Financing CSP: Perspectives from Project Developers and Financiers

Eskom, the Moroccan Agency for Solar Energy, Archimede Solar Energy, and several development banks (including the World Bank, African Development Bank, European Bank for Reconstruction and Development, and Inter-American Development Bank) discussed their experiences in developing and financing CSP projects. Some of the key findings of the panel were:

- The development of CSP projects and the drivers for doing so vary according to the level of technology maturity, geographical location, national interests, and project developer expertise, so the policy support and financing also has to be context-specific.
- Public support is necessary before the private sector will invest, yet public actors have only a few project developers to lend to as only those with a strong balance sheet can take on the various investment risks involved in CSP.
- Today, only around 3 Gigawatts (GW) of CSP capacity is installed, so CSP cannot compete with photovoltaic power (100 GW) and wind power (300 GW). To make CSP bankable, more experience in different countries is needed.

Early Lessons

Taking stock of the rich discussions, four preliminary findings emerged:

- **The challenge of bringing down cost.** Cost of CSP power is the key issue for the technology's development and its reduction must be the main driver of policy support. Costs will come down with scale, and so far there's not been enough scale to drive the same fall in costs seen in PV.
- **The challenge of risk.** CSP investments are still perceived as high risk, making public support critical. Some of those risks are unique to CSP, such as technology; others are more mainstream, such as foreign exchange risks but still present high hurdles to investments.
- **The importance of looking at the whole energy system.** Context-specific issues, such as benefits of grid stability and the local energy market, cannot be overlooked when financing CSP. We need to look at the whole system, not only the single plant. Depending on the local energy system, the ability of CSP to store energy and dispatch power when it's optimal for the system may add significantly to its value.
- **The importance of opening up markets.** To enable efficient deployment of CSP and cost reductions over time, markets need to be opened up to more bidders, technology providers, and financiers.

CPI remains committed to improving the understanding of how to effectively finance CSP, distilling lessons from ongoing CSP case studies and continuing to convene this series of dialogues in partnership with the CIF Administrative Unit.

