

CONCENTRATING SOLAR POWER: MAIN PROJECTS SUPPORTED BY THE COMMISSION

Three major projects in the concentrating solar power sector benefit from an overall European Commission contribution up to €15 million, equally divided among the three projects. It is useful to remind that the EC contribution, very meaningful for the financial viability of the project, represents an important share of the total eligible costs. At the same time the EC contribution is a modest fraction of the total costs of the projects. As known, only the costs for the unconventional, innovative parts of the project are eligible under the Framework Programme. Civil works, turbine-electricity generation assembly, for instance, are not considered eligible costs. This means that these projects need to receive relevant loans to be launched.

The three projects are located in Spain where, besides the very favourable solar radiation, they can take advantage of the available feed-in tariff scheme. As known, the Spanish Government provides 0,18 €/kWh, in addition to the pool price, and allows a limited use of gas, to support the electricity produced by the solar thermal power plant.

1. Contract NNE5-1999-0356 (Acronym PS10)

Title: 10 MW Solar Thermal Power Plant in Southern Spain

Start date: 01.07.01

Contract duration: 54 months

Final date: 31.12.05

Total cost (€): 29.437.787

Eligible costs (€): 16.649.508

EC contribution (€):4.999.963

PS-10 is the first concentrating solar power plant completed in Europe. It demonstrates the commercial viability of the chosen solar tower approach, under the given geographical, technical and legal framework, to feed solar electricity into the electricity grid at a yearly amount higher than 21 GWh. The connection to the electricity grid is foreseen for Sept 06. The installation is located in Casaquemada, 20 km from Seville.

This project suffered some delays in the starting phase. When it was launched, the feed-in tariff regulation in Spain appeared to cover the electricity produced by both solar thermal and photovoltaic installations, granting 0,22 €/kWh. Subsequently, the benefit of the feed-in tariff was assured to photovoltaics only. For this reason the project was put on hold. Finally, the coverage for solar thermal power electricity was formally restored and the project re-gained momentum. A technical modification to the initial design of the receiver (saturated-steam instead than air receiver) was also needed in the project implementation phase.

It is notable that the experience learned by the consortium during the implementation of this project will allow the launching of other, even more ambitious, projects which will use similar technology

Currently the Commission services are analyzing the reports related to the 4th reporting period (01/07/04-30/06/05). Once the related payments are completed, the final reports will be delivered and analysed.



2. Contract NNE5-2001-369 (Acronym: Solar Tres)

Title: Molten Salt Solar Thermal Power 15 MW_e Demonstration Plant

Start date: 01.01.03

Final date: 30.06.07

Eligible costs (€): 15.343.220

Contract duration: 54 months

Total cost (€):53.080.095

EC contribution (€):5.000.000

The second project, *Solar Tres* (contract NNE5-2001-369), consists of a 15 MW plant using the same central receiver approach as PS-10, while using an innovative solutions for the energy storage system. The project total costs are about €3 million, the total eligible costs more than €15 million and the EC contribution is €5 million. This project started more recently and suffers problems related to the fact that Boeing, the solar receiver provider, because internal reorganization, was not able to assure anymore the delivery of the part as foreseen in the contract. Furthermore a change in the contract coordinator has also been required.

3. Contract NNE5-2001-560 (Acronym: Andasol)

Title: 50 MWe EUROTrough Plant with 9hour Thermal Storage

Start date: 01.02.03

Contract duration: 60 months

Final date: 31.01.08

Total cost (€):

Eligible costs (€): 14.284.461

EC contribution (€):4.999.624

The third project, *Andasol* (contract NNE5-2001-560) consists of a 50 MW electric generation plant (more than 180 GWh of electricity produced annually) adopting the solar trough approach coupled with a molten salt based storage system. The project total costs are about €157 million, the total eligible costs more than €4 million and the EC contribution is about € million.



ACS/Cobra Group (a large Spanish construction company) on December 2004, purchased 70% of the shares of the *andasol-1* project company, triggering a modification of the whole management of the contract. The project has suffered a significant delay due to permit process affecting all project licensing.

From the project financing point of view, evidence of the progress is given by the consultation process launched by EIB (Ref: 21-79-2005), which is going to provide a loan covering up to 50% of the total cost of the project.

The coordinator has recently informed the Commission services that on May 31st, 2006 the consortium has signed the Financing Contracts with the bank consortium of BNP Parisbas, Banco Sabadell, Banco Dexia-Sabadell and WestLB as well as the EPC Contract with the Andasol-1 EPC Consortium of ACS Cobra and SENER.

The EPC Consortium has now 24 months to build the plant.