



Industrial Grid Connect PV Power Station Donghae, Korea

The electric power industry in Korea has gone through fast and profound changes. The industry has recently been converted from a 40-year government controlled monopolistic system to a competitive market-based system.

Korea East-West Power Co., LTD (KEWP) was spun off from Korea Electric Power Corporation (KEPCO) on 2 April, 2001 in accordance with the Korean government's restructuring of the electric power industry.

Korea East-West Power Co., LTD operates a 400MW anthracite thermal power (steam power) at the site in Donghae which is now supplemented by renewable technology.

The Donghae 1MW PV Plant is the first tendered megawatt solar photovoltaic (PV) plant project in the Republic of Korea. BP Solar secured the contract for supplying all of the solar PV modules and balance of system components, as well as design and commissioning services, with its Korean partner, S-energy. The plant features over 6,000 BP Solar 165W modules and is valued at around US\$6 million. The 1MW of solar PV capacity has the potential to generate one gigawatt-hour of electricity each year.

Industrial Grid Connect PV Power Station, Donghae – Republic of Korea

Location:

Donghae, Republic of Korea

Project Participants:

- Customer - Korean East West Power Co., Ltd. (EWP)
- Implementation - S-energy Co., Ltd
 - BP Solar
 - Hyun-Jin Construction Co. Ltd

Project Completion:

August 2006

Project Value:

Approximately US\$6m

Size:

8,000m²

Electricity Generated:

Estimated 1,000,000 kWh (1GWh) per annum

System Components:

- 6080 x BP3165S solar modules
- 4 x SMA SC250 inverter
- 1 x SMA Sunny Team
- SMA monitoring
- SMA string monitoring boxes
- Outdoor marshalling boxes

Special Challenges:

The original ideal land location for the PV array could not be used for the PV plant, which resulted in some significant structural and electrical design challenges to fit 1MW of PV into another less ideal area.

Construction, building, integration and HSSE considerations were key considerations in the choice of the final location, as well as maximising kWh output.

The end result with our partners S-energy was one of the most spectacular single large PV arrays Korea has seen. The solar array doubles to provide a large number of employees and their vehicles with shade.

Environmental solutions and modifications to standard equipment were engineered to meet local environmental and Korean grid requirements.



Solar array with thermal power station in background.



Solar array during construction.



Control room with inverters and Sunny Team