

## JIANGXIA PILOT TIDAL POWER PLANT

Name of person filing the form (can opt to omit from on-line form)

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Project name: Jiangxia Pilot Tidal Power Plan

Project description:

*Project Developer:* Acquired by China Guodian Corporation and managed by China Longyuan Power Group Corporation Limited.

*Technology type:* tidal barrage

*Resource (wave, tidal, wind):* tidal

*Project scale (test site, prototype, array, commercial):*

*Installed capacity:* 3.9 MW

*Additional Description:* Jiangxia power plant is the third largest tidal station in the world after La Rance in France and Annapolis in Canada. It has 6 bulb turbine generator units, operating in both ebb and flood tides, producing an annual power output of 7 MWh. The power station has 79 employees. The power station feeds the energy demand of small villages at a 20 km (12 mi) distance, through a 35 kV transmission line. The maximum tidal range in the estuary is 8.39 m (27.5 ft).

*Project Website:* Not available

Location:

*Ocean/Water body:* at the north end of Yueqing bay, East China Sea

*Closest city:* Wenling

*Country:* China

*Coordinates:* 28°20'34"N, 121°14'25"E

*Depth:*

Process status: it has started the construction from 1974. The first generator sets of 500 kW its generation in 1980. The first project was completed in 1985, which installed one set generator of 500 kW, one set of 600 kW and three sets of 700 kW with the total capacity of 3.2 MW. In June 2007, the 6<sup>th</sup> set generator was successfully developed and connected to the grid and the total installed capacity reached 3.9 MW. In June 2007, the 6<sup>th</sup> set generator was successfully developed and combined into the grid, and the total installed capacity reached 3.9MW. For years the engineering staff of Jiangxia plant devoted to industrialization research works of tidal generating and had made remarkable achievements in reliability of the generator sets, sediments reducing in reservoir, erosion protecting, floating method, operating automation and optimal scheduling. Since June 2009, automation and safety of the plant have been great improved after technological upgrading for the 3<sup>rd</sup> and 4<sup>th</sup> generator sets. According to the latest figures, total power output of Jiangxia pilot tidal power plant is  $1.62 \times 10^8$  kWh since it combined to grid of East China on Jan 26, 1986 (Wang et al., 2011).

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Licensing information (brief description):

Key Environmental issues: Jiangxia power station is doing well in comprehensive utilization of reservoir. It makes great profit in planting in reservoir reclamation land, aquaculture and shellfish farming and accumulates abundant experience for optimization of eco-environment (Wang et al., 2011). Jiangxia Tidal Power Station operates well with only several major technology modifications and never caused any significant environmental problem. It has been proven that reasonable choice of the power station site can reduce the environmental impact to an acceptable level.

Environmental webpage: Not available

Literature:

- Wang S., Yuan P., Li D., Jiao Y., 2011. An overview of ocean renewable energy in China. *Renewable and Sustainable Energy Reviews*, 15, 91-111.