

Medium Head Plants

## Hacınnoğlu Weir and Hydroelectric Power Plant TURKEY



Hacınnoğlu Weir and Hydroelectric Power Plant is a hydropower scheme part of the Kandil Cascade Projects located on Ceyhan River in Kahramanmaraş province, south of Turkey. It is a BOT project licensed by the Ministry of Energy and Natural Resources (MENR). Still undergoing construction, the project is planned to be operational at the beginning of year 2011.

The Hacınnoğlu Weir has a height of 31.50m from foundation and a crest length of 160m. The diversion weir is located at left bank with a length of 300 m and a diameter of 8 m. The power intake structure is located at right bank. The power tunnel which its diameter is 6.0m and length of 5600 m, is followed by valve chamber. 5.0m diameter penstock continues from valve chamber to bifurcation point. At bifurcation point, the penstock, which divided into branches with a diameter of 2.80 m, reaches to powerhouse structure. Spillway has three bays controlled by radial gates.

The powerhouse is a reinforced concrete structure with two vertical axis Francis type turbines, and installed capacity of each unit is 72.20 MW.

### Client:

EnerjiSA Enerji Üretim A. Ş. (Verbund)

### Main Data:

- |                                   |         |
|-----------------------------------|---------|
| • maximum height above foundation | 31.50 m |
| • crest length                    | 160 m   |

### Spillway:

- |                           |                    |
|---------------------------|--------------------|
| • no.s/type/size of gates | 3/radial/7.0x8.5 m |
|---------------------------|--------------------|

### Main Powerhouse :

- |                                  |                                  |
|----------------------------------|----------------------------------|
| • no.s/type of turbines          | 2/francis, vertical axis         |
| • rated capacity/rated discharge | 144.40MW/120.26m <sup>3</sup> /s |
| • rated head                     | 131 m                            |
| • rotation/frequency             | 300 rpm/50 Hz                    |
| • firm energy production         | 140.65 GWh/a                     |
| • secondary energy production    | 226.78 GWh/a                     |

### Execution:

2008-2011

### Services:

- Review, appraisal and recommendations for feasibility study
- Preparation of final design reports and drawings
- Preparation of technical specifications
- Programming site investigations and evaluation of the works
- Preparation of detailed construction drawings for project structures
- Consultancy services to the owner during site construction works
- Building inspection authority during the construction period.



