

T@W Good Practice Form

Setting

Title: Construction and operation of a Small Hydro Power Plant
 "Treshtena"

Country: Bulgaria

Location: Dalgi Del village, Georgy Damjanovo Municipality, Montana Region

Start date: 01/06/2004

End date: 31/08/2004

Technology keyword(s): Hydroelectricity

Host sector: Company established by shareholders with the special purpose to construct and operate the SHPP

General description

Summary: The project consists of construction and operation of a SHPP on Treshtena, River Dalgi Del village, Georgy Damjanovo Municipality, Montana Region, Bulgaria. The project is financed through EBRD Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL) and as such received 20 % grant of the total capital costs after project completion. Project documentation was prepared and submitted by EnCon Services - the Consultant, approved by EBRD to operate and manage the facility in Bulgaria.

Aims: To produce electricity and sell it to the grid thus ensuring both economic and environmental benefits.

Summary of Results: The main result is a SHPP operating and gaining profit for the owners

Planning Time: Construction period from 01/06/2004 to 31/08/2004

Planning issues: The hydro power plant is operational

Operation Time: 25 years

Feasibility Study: done

Technical details

Technical details: SHPP "Treshtena" was constructed on Treshtena River Tamrashka in the section between 740 m and 590 m elevation at a length of 1320 m and inclination of 12 %, with reservoir. The project has:

- water intake with settling chamber and pressure basin;
- reservoir for daily leveling with effective volume 3000 m³;

- pressure pipeline with diameter 630 mm and length 1320 m;
- all necessary mechanical and electrical equipment for power production.

The generation equipment consists of two Francis water turbines. Smaller turbine is SF250 D140 coupled with one generator type M315 Mk-4, larger turbine is type SF 400 D140 coupled with two generators of the same type manufactured by Elprom ZEM JSC with nominal capacity 215 kW each. The efficiency of generator is 92,5 %.

Energy data

Energy data:

Energy generated:

The installed capacity of the HPP is 678 kW

1 876 MWh/year or 6 748,2 GJ/year in a mean-water year

Monitoring:

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Environmental data

Environmental data:

For the period of 8 years up to 2012 calculations show that the project will generate CO₂ emissions savings amounting to 11 488 tons. Calculations are made for this period because the emissions factors used are valid till 2012, after this year new calculations should be made.

Project GHG-emissions:

0

GHG-emission reductions:

1 436 tons/year CO₂ in average for the period from project start up to 2012.

“EAU, CER, ERU, AAU”:

In addition for the same period it will be saved 187 tons sulphur dioxide emissions and 15 tons NO_x emissions. As the project didn't apply for financing through Kyoto flexible mechanisms or EET scheme, no other calculations have been made.

Methodology:

The methodology for calculation of emissions reductions

is that given in Operational Guidelines for Project design documents of JI Projects of Dutch Ministry of Economics as of May 2004.

Baseline

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Monitoring:

Monitoring to be done by EnCon Services, validation to

be done by ESBI

Contribution to Sustainable Development: By substitution of electricity generated from fossil fuels the project contributes to emission saving targets and environmental protection goals.

Economic data:

Economic data:	The project is financed through EBRD Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL) and as such received 20 % grant of the total capital costs after project completion. Part of capital costs is provided as a loan from United Bulgarian Bank -UBB (one of the banks operating the credit line in Bulgaria) and part is project host equity.
Financing:	81,84 % UBB loan and 18,16 % own investors equity
Capital cost:	315 654 Euro (VAT excluded)
Operational Costs:	11 260 Euro/year for a mean-water year
Payback:	discounted pay-back -5,58 years
Energy Production costs:	n.a.
Other savings:	n.a.

Additional Information

Printed or electronic reports or other literature available:

Title: Construction of a SHPP "Treshtena"
 Cost: -

Address for download of electronic document: n.a.

Project Web site: n.a.

Photo Library

Pictures: Each one should have a caption. The provider must own the copyright (should be confirmed)

Contact information (to be duplicated for each contact for this project):

Type of Organisation: Consultancy Company, project management
(e.g. technology supplier, service provider, host company, financing body, project management)

Technology keyword(s) specific to this organisation:

Organisation / Agency: EnCon Services

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Description of the Organisation for inclusion in the database of Technology and Service Providers: Consultancy company approved by EBRD to manage and operate the BEERECL

Other contacts:

#please only give full contact details (name, address, email, telephone) if you have confirmed that they are willing to respond to enquiries and want to be included in the database of Technology and Service Providers. These could for example be: host organisation, equipment manufacturers, financial organisations, etc.#

Please email filled out form (including pictures) to: GP@setatwork.eu

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If possible please provide pictures at 300dpi so that they can be used in printed versions of the Good Practice.