

IPA National Programme 2009 part 1

Bosnia and Herzegovina

Fiche 3 - "Energy"

1. Basic information

1.1 CRIS Number: 2009/021-333

1.2 Title: Construction of small hydro power plant Cijevna III

1.3 ELARG Statistical code: 02.15 Economic Criteria / Energy

1.4 Location: Doboj-Modrica, Doboj Municipality, Bosnia and Herzegovina

Implementing arrangements:

1.5 Contracting Authority: European Commission

1.6 Implementing Agency: Kreditanstalt für Wiederaufbau (KfW) through indirect centralised management.

1.7 Beneficiary:

Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina
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Financing:

1.8 Overall cost (VAT excluded)¹: EUR 50 million

1.9 EU contribution: EUR 5.5 million

1.10 Final date for contracting: Two years following the date of the conclusion of the Financing Agreement

1.11 Final date for execution of contracts: Two years following the end date of contracting

1.12 Final date for disbursements: One year following the end date for the execution of contracts

2. Overall Objective and Project Purpose

2.1 Overall Objective:

The project aims to contribute to the alleviation of the consequences of the current financial and economic crisis by supporting infrastructure investments in environmentally friendly and reliable energy supply in BiH, along with river regulation and flood prevention.

2.2 Project purpose:

Increased hydro-power availability in BiH, river regulation and reduction in flood events in the Doboj-Modriča area.

2.3 Link with AP / NPAA / EP / SAA

SAA – 107: Co-operation shall focus on priority areas related to the Community *acquis* in energy ... with a view to the gradual integration of BiH into Europe's energy markets.

The Government's action plan on implementing the priorities of the European Partnership – EP3.SP.163 – mentions support to entities' action plans for restructuring of the energy sector.

With the envisaged cascades of power plants along the Bosna river, BiH will support a stronger role of the private sector and will increase the share of renewable energy within the power generation of BiH. Power project Cijevna 3 is left for a public utility due to its significant impact for food protection of the Doboj area and the further development chances of the municipality.

¹ The total cost of the project should be net of VAT and/or other taxes. Should this not be the case, the amount of VAT and the reasons why it should be considered eligible should be clearly indicated.

2.4 Link with MIPD

2.3.1.2. Economic Criteria

Expected results and indicators

Softening the impact of the financial and economic crisis: Support for the financial sector, *investments in infrastructure* and strengthening of the roles of economic and financial regulators will maintain economic stability, growth and jobs.

“2.3.1.3. Ability to assume the obligations of membership, objectives and choices – Sectoral Policies - Energy: ...Support the energy and transport sectors...The reform of the energy sector continues and a comprehensive energy strategy is adopted and under implementation. Bosnia and Herzegovina is progressing towards meeting the commitments undertaken in the framework of the Energy Community Treaty.”

2.5 Link with National Development Plan

A national development strategy is being elaborated and expected to be finished before June of this year. The Nation Development Plan – turning the strategy into actions – will take longer to prepare.

2.6 Link with national/ sectoral investment plans

A contract to elaborate the energy strategy of Republika Srpska has been awarded. Current policy favours promotion of renewable energies, including hydro power.

3. Description of project

3.1 Background and justification:

This project will be based on a delegation agreement (indirect centralized management mode) for IPA 2009 funds with KFW. KFW is an accredited member state agency for indirect centralized management, which has been chosen following an objective, transparent and non-discriminatory manner. The idea for the hydro power plant originated from one of the beneficiaries, Elektro Doboj, was confirmed by a feasibility study and its results were followed by public consultation. KFW finds this study convincing, and despite the crisis context, showed willingness to provide a loan.

BiH electric energy production in 2007 amounted to 12,175 GWh. Of these, 4,024 GWh or 33% were based on hydro-power. Plans for the energy sector envisage an increase in hydro power production.

The idea for a comprehensive solution to generating capacity along with flow regulation in the Bosna river system is 50 years old – the first study dates from 1959, a further one was conducted in 1967 which developed the Cijevna system concept. It is the most environmentally threatened river basin in BiH – 40.2 percent of BiH's population live in the Bosna river system; it covers 20.4 percent of the area of BiH. The idea for the reservoir / hydro power plant Cijevna 3 as part of an integral solution on the river section Doboj – Modriča was harmonised with a hydrological and morphological analysis of the river Bosna in Doboj in 2002 along with a study on regulating the river Bosna in Doboj from 2004. Both studies were carried out by the Ministry for Agriculture, Forests and Water, Republican Directorate for Water, Bijeljina.

The Cijevna project is part of an overall programme of regulation of this part of the Bosna river, comprising a total of six hydro-power stations each yielding around 14MW. These will be managed as a single system. A number of additional hydro power plants are also planned in the area.

The beneficiary ZP “Elektro Doboj” a.d. (a 65% state-owned company) has concessions for constructing the following three hydro power plants:

- Cijevna 3, on the Bosna river (13.9 MW)
- Šajin kamen, on the Bosna river (5.0 MW)
- Paklenica, on the Paklenica river (0.2 MW)

The Norwegian utility Technorenergy AS holds concessions for building six hydro power plants:

- Doboj
- Cijevna 1
- Cijevna 2
- Cijevna 4
- Cijevna 5
- Cijevna 6

ZP “Elektro Doboj” a.d. and Technorenergy AS have jointly undertaken research on the river flow in the Doboj region. The relevant feasibility studies (including environmental assessment) were carried out in 2007. The original idea stems from ZP “Elektro Doboj” a.d. - to provide the single Cijevna system with side walls / dikes for flood protection and power generation capacity; this has been taken up by the Norwegian utility which has gained concessions for parts of the system. It has been agreed to develop the six reservoirs / hydro power stations under a single operating system so that, when complete, it will operate in a co-ordinated and coherent way despite two concession owners.

The final goal of the initiative of ZP “Elektro Doboj” a.d. is the construction of a system of hydro power plants on the entire flow of the Bosna river that will operate as an entire whole. This will involve both Entities. Contacts have been established with the respective Ministries of the Federation and the cantonal administrations, the management of Elektroprivreda BiH, NGOs and Technorenergy AS as potential investor. This should provide an overall solution to the flow of the Bosna river with regard to flood prevention, illicit control of digging in the riverbed along with degradation of the riverside, solid deposit formation and dumping of waste in the river.

In the section being addressed by this project, there has been exploitation of river gravel and sand, which has resulted in degradation and destabilisation of parts of the river sides along with some changes of flow. River regulation under Cijevna 3 will provide 850 ha of cultivatable soil in the 100-year flood plain. The project is ready to implement – feasibility and environmental studies are available. The project is in the process of obtaining a declaration of being of public interest, which helps speed up procedures. A public presentation of the project has been held, with two citizens' organisations being present – ToPeer and the regional representative group of the Bosna basin (ReeRGe). In the context of the environmental impact assessment, a public consultation has been held for all interested parties – individuals and associations. Input could be given orally or in writing. No negative comments were received. Any necessary expropriation procedures are expected to proceed smoothly; data on owners of

land affected by construction of Cijevna 3 are available and ZP “Elektro Doboj” a.d. has taken up contact. The Ministry for Agriculture, Forests and Water supports the project. ZP “Elektro Doboj” a.d. holds a 30-year lease on the power plant, thereafter it will fall back to the state.

As outlined, there is a single (technical) management solution for the whole system of 6 power plants so that they will work in concert. Three other plants of this system are currently being prepared for tendering by the Norwegian utility Technorenergy AS. Technorenergy AS is planning to work with all actors in the river basin to increase the hydro-power usage. The National Public Corporation Elektroprenos of BiH and the National Public Electrodistribution Company of RS are the power grid providers who will transport the energy to consumers.

The key relevant laws are:

- Law on Transmission, Regulation and Independent System Operation of BiH
- Electricity Law of Republika Srpska

3.2 Assessment of project impact, catalytic effect, sustainability and cross border impact

By providing a grant element to an investment loan, IPA funding improves the rates of return of the investment, and ensures a lower debt burden for Bosnia and Herzegovina. The grant contribution will help cover potential costs associated with environmental mitigation measures and therefore speed up project implementation. In terms of anti-crisis impact, this implies an earlier contracting of major parts of a Euro 50 million project and thus safeguarding jobs in the construction sector.

The project will increase the hydro-power and the overall power generation capacities of BiH. As the country is a net power exporter, it will contribute to earning foreign exchange. It is moreover likely to contribute to better co-operation between Entities, as contacts have been made with the Federation to expand the network of small hydro power plants to its side of the river system as well.

The environmental impact assessment has been submitted to the Ministry for Spatial Planning, Construction and Environment, the procedure of appreciation of the environmental impact has been confirmed and approval (ecology statement) is expected within weeks. The project will also contribute to protecting an area of 850ha from 100-year floods, land which can be ameliorated for agricultural production.

Based on a defined 27-year economic lifespan (including a three-year activating period), the financial IRR is calculated with 8.8% in the feasibility study. A sensitivity analysis has been conducted as part of the feasibility study with regard to changes in investments, the price of electricity, the level of electricity production and operating costs showed that investments would have the largest impact – a 20% reduction resulting in an IRR of 12.2%, a 20% increase would reduce it to 6.9%. A 20% reduction in electricity output would result in an IRR of only 6.7% whereas a reduction in the achievable electricity price would reduce the IRR to 6.6%.

Financing of the project by KfW Entwicklungsbank has been envisaged and funds shall be allocated this year. KfW funds are expected to be committed upon signing of Government Agreement 2009 (usually takes up to two years). Project assessment is well prepared; funds are allocated in the framework planning of the Ministry for Economic Co-operation and to be confirmed during governmental negotiations in the summer.

EU funding substantially improves the financing concept. Costs for flood prevention and potential environmental protection measures burden the return on investment of the project, so the grant component represents a welcome compensation. Therefore, EU funds will help cover

possible environmental conditionalities (extra costs) and thus really ensure this project can be realised.

Further, by co-financing of this project with IPA funds the start of the project realisation can be enhanced significantly. Local contribution and IPA contribution can be used for financing the civil works and starting those activities already in 2010, after the loan and financing agreement with KfW has been signed. The project realisation can be fastened and can contribute with the early civil works overcoming the impact of economic crisis on BiH. The funds shall especially be used for realizing civil works which will especially generate local employment.

3.3 Results and measurable indicators:

Plant Cijevina III providing reliable electricity supply and ensuring flood prevention.

(indicators: average production 69 GWh/a, no flooding of the 100-year floodplain)

3.4 Activities:

On the basis of the feasibility study done and of the anticipated cost increases the following costs can be expected:

- EUR 24 million for civil works (EU, KfW, local contribution)
- EUR 21 million for supply and installation of equipment and connection to grid (KfW), and
- EUR 5 million for supervisory consultant services (EU, KfW) and initial investments (Local Contribution).

TOTAL = €50 million.

Because KfW is a public member state organization, cooperation with KfW would be done through indirect centralised management and the KfW procurement procedures will be used.

² The contractual relationship established with KfW will be a Delegation Agreement³.

In order to enable an early start of the project, EU's IPA funds shall be utilized for parts of the consultancy services and for those parts of the civil works that can be realized very early (preparatory works, cleaning of site, cofferdam, other). The IPA contribution managed by KfW will cover services and works for:

- civil works
- construction of dam,
- side walls / dikes
- installation of turbines/generators and
- ancillary electrical and hydro equipment.

Local funds shall be used especially for initial investments (purchase of land) and civil works.

² A compliance assessment of KfW with Art 56(1) of the FR has been completed (see http://www.cc.cec/dgintranet/europeaid/contracts_finances/fin_and_cont_rules/co-financing_with_nb/index_en.htm and note KR 2008/8865) and the KfW procurement procedures will be applied.

³ For Delegation Agreements see EC Practical Guide to Contract Procedures for EC external actions, 2009 edition, pp. 107-121

Financial cooperation funds will be especially utilized for supply and installation of equipment and connection to grid, parts of consultancy services and remaining parts of the civil works.

3.5 Conditionality and sequencing:

A Feasibility study has been successfully completed.

A successful resolution of expropriation procedure is a precondition for the project. Elektro Dobož is in contact with owners and expects no problems. The initial capital for the ground repurchasing is provided.

KfW requires a positive appraisal report and subsequently a mandate by the German Government to negotiate a Loan and Financing Agreement. The appraisal mission will produce a final analysis of the environmental impact of the project and might provide for additional mitigation activities that would be included in the Loan and Financing Agreement, but it is expected in any event that these funds will be committed.

KfW and Elektro-Dobož will agree during the appraisal mission on the sequencing of all activities. They are striving for an arrangement that would enable a supervisory consultant to be procured already in 2009. This would allow availability of technical design and tender documents for the first lots in the first half of 2010.

Transfer of funds between the Commission and the Delegatee body shall be made in several payments. The Commission will provide a 95% advance payment and will spread the remainder in yearly intervals up to the end of the project (assuming that the Delegatee's forecast budget for the first 12 months of the project equals or surpasses this advance payment amount). Payments will be made within 45 days of approval of progress reports that will measure the commitment and the advance of the project.

3.6 Linked activities

Cijevna 3 is part of a system of six reservoirs and power plants on the Bosna river between Dobož and Modriča – Cijevna 1 – Cijevna 6. Each will have an average performance of approximately 14MW; the total cost of the system is estimated at €250m. ZP “Elektro Dobož” a.d. has entered into good co-operation with the Norwegian utility Technorenergy AS, which has started implementing the system – it is currently preparing tender documentation for three of these reservoirs / plants, tendering should start in the summer of 2009. Contacts with the Federation have been made with regard to two additional hydro power plants, and further potential ones.

3.7 Lessons learned

There are no similar projects carried out in Bosnia and Herzegovina from which lessons can be drawn. However, it has been ensured by KfW that recent advances in the field – specifically as regards environmental impact - will be taken into account.

4. Indicative Budget (amounts in EUR)

			SOURCES OF FUNDING									
			TOTAL EXP.RE	IPA CONTRIBUTION	COMMUNITY %(2)	NATIONAL CONTRIBUTION					PRIVATE CONTRIBUTION	
ACTIVITIES	IB (1)	INV (1)	EUR (a)=(b)+(c)+(d)	EUR (b)	%(2)	Total EUR (c)=(x)+(y)+(z)	% (2)	Central EUR (x)	Regional/ Local EUR (y)	IFIs EUR (z)	EUR (d)	% (2)
Activity 1												
Contract 1 (Delegation agreement with KfW)	–	X	50 000 000	5 500 000	11	44 500 000	89		5 000 000	39 500 000		
TOTAL IB												
TOTAL INV			50 000 000	5 500 000	11	44 500 000	89		5 000 000	39 500 000		
TOTAL PROJECT			50 000 000	5 500 000	11	44 500 000	89		5 000 000	39 500 000		

Amounts net of VAT

(1) In the Activity row use "X" to identify whether IB or INV

(2) Expressed in % of the **Total** Expenditure (column (a))

5. Indicative Implementation Schedule (periods broken down per quarter)

Contracts	Delegation agreement with KFW –signature			Project Completion
Contract 1	IV Q/2009			II/2012

All projects should in principle be ready for tendering in the 1ST Quarter following the signature of the Financing Agreement

6. Cross cutting issues

6.1 Equal Opportunity

Equal opportunity for participation of men and women and the minority representation will be assured in all aspects of the programme implementation.

6.2 Environment

The project represents an intervention into the natural flow of the Bosna river and its floodplain. An environmental impact analysis has been carried out to ensure that this happens in an environmentally sustainable manner.

6.3 Minorities

Participation in the project activities will be guaranteed on the basis of equal access regardless of racial or ethnic origin, religion or belief, disability, sex or sexual orientation.

ANNEXES

- 1- Log frame in Standard Format (see below)
- 2- Amounts contracted and disbursed per Quarter over the full duration of Program (see below)
- 3- Description of Institutional Framework:
- 4 - Reference to laws, regulations and strategic documents:
 - Reference list of relevant laws and regulations
 - Law on Transmission, Regulation and Independent System Operation of BiH
 - Electricity Law of Republika Srpska
 - Reference to AP /NPAA / EP / SAA
 - SAA Art 107
 - Reference to MIPD
 - 2.3.1.2 Economic Criteria
 - 2.3.1.3 Ability to assume the obligations of membership
 - Reference to National Development Plan (NA)
 - Reference to national / sectoral investment plans (NA)
- 5- Details per EU funded contract (where applicable).

ANNEX 1: Logical framework matrix in standard format

LOGFRAME PLANNING MATRIX FOR Project Fiche	Programme name and number IPA National Programme 2009 part 1 – Bosnia and Herzegovina, "Energy" IPA 2009/021-333	
Construction of small hydro power plant Cijevna III	Contracting period expires: Two years following the date of the conclusion of the Financing Agreement	Disbursement period expires: One year following the end date for the execution of contracts
	Total budget :€50m	IPA budget: €5.5m

Overall objective	Objectively verifiable indicators	Sources of Verification	
Environmentally friendly and reliable energy supply in BiH, along with river regulation and flood prevention	Increase in percentage of environmentally-friendly energy sources (1.7%)	Power supply statistics Elektro Dobož reports	
Project purpose	Objectively verifiable indicators	Sources of Verification	Assumptions
Increased hydro-power availability in BiH, river regulation and reduction in flood events in the Dobož-Modriča area	69 Gwh/a 100 year floods prevented	Elektro Dobož reports Ministry of Agriculture, Forests and Water reports	Timely resolution of expropriation procedure
Results	Objectively verifiable indicators	Sources of Verification	Assumptions
Plant Cijevina III providing reliable supply and ensuring flood prevention	Plant output 13.9MW on a regular basis / 69 Gwh/a 100 year floods prevented	Technical Compliance Certificate Elektro Dobož reports	Technical design appropriate
Activities	Means	Costs	Assumptions
			Feasibility study (done) Positive appraisal report and subsequent mandate by the German government Loan and Financing Agreement

Expropriation, taxes, fees	Local legal arrangements	€5 million local funds	between KFW and the beneficiaries Delegation Agreement between EC and KFW Successful expropriation and/or purchase of land
Technical design Early civil works: - preparatory works - cleaning of site - cofferdam - etc.	Delegation agreement with KFW covering	€5.5 million EU contribution	Smooth tendering, contractor provides quality work
Turnkey Implementation: - remaining civil works - Construction of dam - Side walls / dikes - Installation of turbines / generators - Installation of ancillary electrical hydro equipment	Service (supervision) contracts and civil works KFW loan agreement covering Contracting and Procurement for all remaining works	€39.5 million (KFW contribution)	Smooth tendering, contractor provides quality work

Pre-conditions: none

ANNEX II: amounts (in €) Contracted and disbursed by quarter for the project

Contracted	Q4/2009	Q1/2010	Q2/2010	Q3/2010	Q4/2010	Q1/2011	Q2/2011	Q3/2011	Q4/2011	Q1/2012	Q2/2012
Contract 1 (Delegation agreement KfW)	5 500 000										
Cumulated	5 500 000		5 500 000	5 500 000	5 500 000	5 500 000	5 500 000	5 500 000	5 500 000	5 500 000	5 500 000
Disbursed	5 200 000		150 000				150 000				
Cumulated		5 200 000	5 200 000	5 200 000	5 200 000	5 350 000	5 350 000	5 350 000	5 350 000	5 500 000	5 500 000

ANNEX III:- Description of Institutional Framework:

The beneficiary ZS Elektro Doboj a.d. is the beneficiary of the KfW loan including the IPA 2009 grant component. It will be responsible for realising project activities in a timely and qualitative manner, and run the plant on the basis of a 27 year lease provided through the Ministry of Industry, Energy and Development of RS. Loan guarantees will be provided by Republika Srpska.

ANNEX IV - Reference to laws, regulations and strategic documents:

- Reference list of relevant laws and regulations
 - Law on Transmission of Electric Power, Regulator and System Operator of BiH (promulgated on the Official Gazette of BiH on April 10, 2002). This Law mandated the establishment of state-level transmission and operation companies as well as regulatory authorities.
 - Law on Energy from Republika Srpska and Law on Changes and Additions to the Law on Electric Energy from RS (December 2008).
- Reference to AP /NPAA / EP / SAA
 - SAA Art 107:

SAA – 107: Co-operation shall focus on priority areas related to the Community *acquis* in energy ... with a view to the gradual integration of BiH into Europe's energy markets.

- Reference to MIPD
 - 2.3.1.2 Economic Criteria

"Expected results and indicators.

Softening the impact of the financial and economic crisis: Support for the financial sector, *investments in infrastructure* and strengthening of the roles of economic and financial regulators will maintain economic stability, growth and jobs."

- 2.3.1.3 Ability to assume the obligations of membership

"Ability to assume the obligations of membership, objectives and choices – Sectoral Policies - Energy: ...Support the energy and transport sectors...The reform of the energy sector continues and a comprehensive energy strategy is adopted and under implementation. Bosnia and Herzegovina is progressing towards meeting the commitments undertaken in the framework of the Energy Community Treaty."

- Reference to National Development Plan (NA)

A national development strategy is being elaborated but is taking longer than expected. The Nation Development Plan – turning the strategy into actions – will also take longer to prepare.

- Reference to national / sectoral investment plans (NA)

A contract to elaborate the energy strategy of Republika Srpska has been awarded. Current policy favours promotion of renewable energies, including hydro power.

ANNEX V - Details per EU funded contract (where applicable).

The implementer of this project is KfW, who finances most of the investment. The EC contribution will be done through indirect centralized management. The Legal Instrument is a Delegation Agreement, and the procedures of implementation chosen are those of the delegated body (KfW). See PRAG 2008 Guide, Chapter 7, page 109.

The idea for the hydro power plant originated from beneficiaries, Elektro Doboj, was appraised by a feasibility study. A second appraisal mission will take place in the third quarter of 2009 to update the economic figures. KfW considers the first appraisal studies convincing, the IRR has been estimated to approximately 9 %.

The project is compliant with state aids provisions.

Elektro Doboj a.d. is public utility provider owned by the Government of the RS and the beneficiary of the KfW loan including the IPA 2009 grant component. It will be responsible for realising project activities in a timely and qualitative manner, and is full owner of all assets. . Loan guarantees will be provided by the government of Bosnia and Herzegovina.