

Standard Summary Project Fiche – IPA centralised programmes

Project number 25: Construction of Substation 400/110 Kv Vranje-4 & Leskovac-2

1 Basic information

- 1.1 CRIS Number: 2009/021-765**
- 1.2 Title:** Construction of Substation 400/110 Kv Vranje-4 & Leskovac-2
- 1.3 ELARG Statistical code:** 03.15
- 1.4 Location:** Republic of Serbia

Implementing arrangements:

- 1.5 Contracting Authority:** EU Delegation to the Republic of Serbia
- 1.6 Implementing Agency:** EU Delegation to the Republic of Serbia
- 1.7 Beneficiary (including details of project manager):**

"Elektromreža Srbije" (EMS) is the Public Enterprise for electric energy transmission and transmission system control - Transmission System and Market Operator in Serbia. Ownership structure: 100% owned by the Republic of Serbia. Ministry of Energy and Mining will be responsible for implementation of the project and responsible for chairing the Steering Committee meetings.

Financing:

- 1.8 Overall cost (VAT excluded): 28.000.000 EUR**
- 1.9 EU contribution: 15.500.000 EUR**
- 1.10 Final date for contracting:** 2 years after signature of the FA
- 1.11 Final date for execution of contracts:** 4 years after signature of the FA
- 1.12 Final date for disbursements:** 5 years after signature of the FA

2 Overall objective and project purpose

2.1 Overall Objective:

To assist in the creation of an electricity market in Serbia in conformity with the requirements of the Energy Community Treaty and the requirements of a Regional Energy Market.

2.2 Project purpose:

To contribute to energy security in South Serbia by building a new electricity substation at Vranje and extending the capability of the electricity substation at Leskovac

2.3 Link with AP/NPAA / EP/ SAA

The European partnership sets out the sectoral short-term priorities for the energy sector as:

- Fulfilling the obligations arising from the Energy Community Treaty as regards the full implementation of the Acquis on the internal gas and electricity market and on cross-border exchanges in electricity.

- Ensure unbundling with a view to restructuring and opening up the market and make further progress towards a regional energy market, in particular by improving interconnectivity with neighbouring countries.

The middle-term priorities from **European partnership** for the energy sector are as follows:

- Continue to implement regional and international commitments in this area with a view to establishing a competitive regional energy market.

The **Stabilization and Association Agreement** (Title VIII, cooperation policies, Article 109 – Energy) states that cooperation shall focus on priority areas related to the Community *Acquis* in the field of energy and be based on the Treaty establishing the Energy Community, with a view to the gradual integration of Serbia into Europe's energy markets. Cooperation may include the:

- Improvement and diversification of supply and improvement of access to the energy market, including facilitation of transit, transmission and distribution and improvement of energy interconnections of regional importance with neighbouring countries.

The **National Program for EU Integration – NPI**, (3.15. Energy Sector refers to p.443-463) highlights:

- Short-term priorities (2008-2009) legislative and institutional framework in the energy sector;
- Middle-term priorities (period 2010-2012) in legislation and institutional framework, Governmental institutions' recruitment needs financial needs and budgetary part.

2.4 Link with MIPD

In the MIPD 2009-2011 (Section 2.3.1.3 - Ability to assume obligations of membership, point 5) support may be provided for the development and implementation of strategies and policies in order to establish sectoral policies and a regulatory framework compatible with European standards.

Energy: Support for meeting the requirements of the Energy Community Treaty, relevant Community Directives and regional market obligations; compliance of legislation with the *acquis*. Attention should be also paid to energy efficiency, renewable energy, radiation protection and environmental issues in energy.

2.5 Link with National Development Plan

N/A

2.6 Link with national/sectoral investment plans

This project falls within the framework of national, regional, EC Trans European Networks (TEN's), Energy Community Treaty provisions and EMS's mid-term investment programmes. Once implemented the programme will complete the South-east Serbia backbone power supply and interconnection to the south (FYROM, Republic of Greece), which is due to be in service by 2012.

The strategic actions in the energy and electric power sector are defined in three documents: Energy Law, Strategy of Energy Sector Development and Strategy Implementation Programme. Article 4 of **the Energy Law** ("The Official Gazette RS", No. 84/2004) specifies that the "Energy Policy of Republic of Serbia comprise measures and activities to be

undertaken for implementation of long-run objectives and specifically includes energy infrastructure development and introduction of contemporary technologies ...”.

The continuity of technological modernization of existing energy facilities / system / sources in the electricity sector and construction of new energy and electricity infrastructure facilities especially in the framework of regional and Pan-European infrastructure systems fall into the first and fifth long-run development and regionally strategic priorities of **Republic of Serbia Energy Strategy** that need to be met by 2015.

In the Energy Strategy Action Programme 2007-2012 (section 8.5 - Dynamics of new electro-electrical facilities until 2012) “the construction of new and reconstruction and upgrading of existing distributive electro-electrical facilities” are priorities.

In section 9.2.1. (Overview of Capital investments) of the **Energy Strategy Action Programme 2007-2012** it is specified that the largest investments in the forthcoming 10 years will be dedicated to rehabilitation and upgrading of existing electricity transmission system

Government strategic documents such as the Poverty Reduction Strategy Paper for Serbia, the Strategy of Regional Development, and creation of the Energy Community in South Eastern Europe rely on the completion of the electricity distribution network in the region.

3. Description of project

3.1 Background and justification:

The Republic of Serbia is a signatory to the Athens Memorandum of Understanding (in 2002 and 2003), and Agreement of Establishing Energy Community in South-Eastern Europe (2005). Relevant institutions are involved in electric power regional initiatives and participate actively in the process of creation of South Eastern Europe regional electricity market. Electricity market liberalization in Serbia should facilitate economic development and is an important part in the EU harmonization process.

Initial electricity market liberalization began in 2001 with the adoption of Energy Law, adjusted to European Directives and adoption of new Strategy for the Energy Sector Development. The liberalization of the electricity market continued in 2005 with the establishment of Elektromreža Srbije (EMS) and Electric Power Industry of Serbia (EPS). These companies are responsible for electric power generation, distribution, trading and the approximation to the EU Acquis in the electricity power sector. Electricity transmission was fully separated (in legal, management and financial/ accounting terms) from the former vertically integrated monopoly (EPS) when Elektromreža Srbije (Serbian Electricity Grid Company) was established. Electricity transmission is now funded from separate tariffs, and progress has been achieved (towards creating a financially self-sustainable electricity transmission, system, and market operator. A new tariff system came into force in January 1, 2008 that sets out the rules for calculation of price, access, and use of the electricity transmission system.

To push forward the liberalization of the electricity market and encourage competition further investment in production, transmission and distribution capacities is required.

From an infrastructure perspective the transmission network needs development in three areas:

- Building new capacities;
- Reconstruction of existing interconnecting lines;
- Construction of new interconnecting lines with neighbouring transmission systems.

These priority areas are reflected in the Government's strategic documents, as well those of the leading international financial institutions such as World Bank (WB), European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), KfW, etc), with approximately 150 million EUR of investment loans in different stages of financing. These projects support not only the installation of the transmission network but also enable construction of a new system for dispatch operations, new meters at the boundaries of power transmission and a new system for remote collection of measurement and accounting data.

EMS' strategic priorities include:

- Increase of system security;
- Reduction of transmission losses;
- Better provision of customers (quality of electricity);
- Development of interconnection capabilities (with regards to position of Serbia and the number of adjacent electric power systems);
- Use of domestic industrial resources to greater extent for all new projects;
- Improvement of environmental aspects induced by the technology.

The South East is one of the poorest regions in Serbia. Promoting economic development along the route of Corridor X, and particularly in South East Serbia, is a key objective of the Serbian Government, and has been supported by the EU, USAID, and by individual Member States (Austria and Sweden). Developing a high voltage network in South east Serbia is a top priority in creating the foundation for the socio-economic development of the region.

However, as with all parts of the Serbian electricity sector, many years of under-investment have led to a huge backlog of investment demands in South East Serbia. The financial resources of EMS (ability to repay IFI or commercial bank loans) remains limited, and these resources have already been committed to urgent investments needed for modernisation and replacement of transformers, and existing transmission lines.

In the Vranje area, electricity supply is both insufficient and unreliable as it consists of two very long and old overhead lines (OHLs 110 kV). In this region of South-east Serbia, there has been an increase in population accompanied by an increase in local demand for electricity which is met by local distribution facilities (x/0,4 kV level). If the region's local industries are to expand and future economic investment promoted, adequate power supply is an absolute necessity. In addition, further increases in electricity demand is anticipated when Corridor X is finalised (Salzburg-Ljubljana-Zagreb-Beograd-Nis-Skopje-Thessaloniki, particularly when the "C" branch from Nis to Sofia is included).

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

This project is part of the southern Serbia electricity development network which will provide improved and reliable power supplies for the region as well as energy transfers to/from FYROM and Greece through the 400 kV OHL financed by EU with €28M, which is currently under construction. The project will facilitate economic development in southern Serbia by providing power access for investments and economic activities along Corridor 10.

Vranje sub-station 4 (400/110 kV) up-grading will significantly increase the reliability and availability of electricity supply in the region from approximately 100 MVA to a proposed 300 MVA. This will result in a proportionate reduction in power-cuts and transmission losses (estimated to be around 5 MW or 17500 MWh) and improvement in voltage quality. In particular, the reliability of supply to the municipalities of Vranje and Bujanovac will be improved and electrical supplies to southern Serbia secured with power coming from the

hydropower stations around Vrla. This project will provide improved electrical supplies to local municipalities and industry and the improved infrastructure should meet the demands over the midterm (5-10 years).

The project will provide a foundation for economic development to an undeveloped region which has particular national sensitivities by utilizing more efficiently and effectively the capacity of the “Vlasina” hydro storage power plant. The knock-on effects will be a better living environment, increased economic activities and the promotion of inter-ethnic stability in a volatile region. Concerning cross-border impacts, neighbouring countries have shown a great interest and a Memorandum of Understanding promoting cooperation has been signed with the FYROM Transmission System Operator (TSO).

In terms of operation management, the existing Serbian transmission tariff policy currently reflects the cost for network exploitation (working cost), partly asset fixed asset depreciation costs and very low network development costs. Further, EMS uses up-to-date technology and common European solutions, practice and equipment (mostly based on French and German standards or recommendations). Therefore, EMS is capable, and has the capacity, to implement and manage this type of project.

3.3 Results and measurable indicators:

Result 1: Improved stability of electricity supply in Vranje by completing the construction of substation Vranje 4 (400/110 kV).

Measurable indicators:

- Construction of Substation Vranje 4 completed
- Improved production capacity of electrical supply and voltage quality, at Substation Vranje (from about 100 MVA to a proposed 300 MVA)
- Increased reliability of electrical supply with reductions in power losses and blackouts.

Result 2: Extended capacity of the electricity infrastructure in Leskovac by extending the network of substations (introducing 400 kV level).

Measurable indicators:

- Substation Leskovac upgraded
- Improved production capacity of electrical supply

With these investments the hydro power plants at Vrla (1/2/3/4) will be at optimum capacity and efficiency. Their locations (geographical and electrical) are at a midpoint between Leskovac and Vranje, so both facilities have equally favourable impact on the production regime of Hydro Power Plant Vrla.

3.4 Activities:

Activity 1: Design and Works for Extension of SS Leskovac 2 to 400 kV and for Construction of SS Vranje 4 400/110 kV and accompanying lines; this will be conducted by use of FIDIC Yellow Book (Plant and Design-Build)

Activity 2: Supply of equipment and materials for Activity 1 (HV transformers for both locations and HV equipment for Vranje 4).

Activity 3: Preparation of Technical specifications and Tender Dossier for Supply Contract and for Works Contract

Activity 4: Project supervision

This project will be carried out through one service contract, one supply contract and one works contract

3.5 Conditionality and sequencing:

- The EMS will have all necessary national co-funding in place and ensure that co-funded actions are carried out in a timely fashion to ensure the smooth contracting of EU funds.
- The activities described in this Project Fiche are conditional upon the completion of the overhead line from Nis to the border with the FYROM. The first phase of this work is due to be completed in 2009 (Nis to Leskovac, approximately 45 Km) and the second phase is due to be completed by the end of 2010 (Leskovac to the border, approximately 100 Km).
- All necessary building permits are completed and approved prior to the contracting of any actions co-funded by the EU.

SS Vranje 4

Preliminary activities are currently ongoing and include the following: preliminary design, urban planning, feasibility study, basic design, environmental impact assessment (EIA) study and soil investigation study. These activities are expected to be completed by the end of 2009. Following on from this, land acquisition should start (for SS and OHLs), along with the regulation of various land taxes and compensations in agriculture should be finished by the end of 2010. The remaining necessary works such as access road, water supply, auxiliary supply, public telephone network access, are parallel activities and should also be finished by the end of 2010. Consequently, the “Permit for construction” is expected to be issued by relevant authorities by the end of 2010. If all the preconditions from the International financial institutions are fulfilled (Tender, evaluation, clarification and contracting) in 2010, site activities may start in early 2011 and last less than 24 months.

EMS is responsible for meeting all the preconditions and preliminary works¹.

SS Leskovac 2

EMS has already started the reconstruction and upgrading (to 400 kV level) of SS Leskovac 2 (civil part), with the intention to finalize the works in 2010. Equipment (except the power transformer) is already procured. All preliminary documents design, permits etc. are obtained. EMS is appealing against the contribution to failed procurement of power transformer since tender for procurement of power transformer (EIB loan). As a temporary solution, EMS may temporarily install repaired unit (currently reserve unit). As soon as new power transformer is received, installation of new one should last up to 60 days. However, any delays in procuring the power transformer will delay the energizing of the whole facility.

¹ These works include: drafting and adoption of town-planning scheme for substation, drafting and adoption of Feasibility study together with Terms of Reference for substation, drafting and adoption of Environment Impact Study for substation, geo-mechanical soil inspection for substation, redemption of land for Substation, compensation for vegetation damages and civil common land, infrastructure fittings for Substation (roadway, water supply and canalization, cable lines 35kV and public telephone network, customs, taxes and forwarding of import VN equipment and materials (37% of stock value), drafting and adoption of Urbanistic plans for DV 110kV, drafting and adoption of Feasibility study together with Terms of Reference for Over Head Lines (OHL) 110kV, legal ownership procedures for OHL 400kV and OHL 110kV, customs, taxes and forwarding of import OHL 400kV and OHL 110kV equipment and materials (37% of stock value). The EU financing is customs duties exempted and tax exempted according to the Framework Agreement between FRY and EU Commission (Official Gazette No 2, 31/03/2003, Article 5 of the FWA).

EMS will meet all preconditions and preliminary works such as: electric-assembly works on transformer, oil treatment, Construction works connected to transformer (transformer basement, oil-pit, oil sewage, portals, device carrier), Customs, taxes and forwarding of import equipment and materials (37% of stock value).

3.6 Linked activities

First, the IPA 2007 Project “Support to the Implementation of the Energy Community Treaty” will strengthen the capacity and technical skills of the Serbian institutions and energy industries to meet the legal and technical requirements deriving from the Energy Community Treaty and the Regional Energy Market.

Second, the Project should assist in developing the investments necessary in cross-border electricity interconnections in order to realize the objective of creating a functioning regional energy market. The implementation of this project is expected to start during 2009.

The Project is fully complementary to the currently ongoing construction of the 400 kV OHL Nis – Leskovac – FYRoM border, fully financed by EU through Delegation of the European Commission to the Republic of Serbia with 28 million EUR. Realization of the Project will give full importance to the OHL in question once it has been finished (end 2010).

On 27 November 2008 the EC announced the European Economy Recovery Plan in the form of 120 million EUR which has leveraged an amount of 500 million EUR from IFIs. Within this Plan, 30 million EUR is allocated for promoting energy efficiency in partnership with EIB, EBRD and KfW. The EC allocated 20 million EUR from the Multi Beneficiary package to accelerate implementation of investments in energy efficiency, direct lending to end users, lending to ESCOs (Energy Saving Companies) and technical assistance for financial institutions and loan beneficiaries. This budget will be accompanied by 60 million EUR from IFIs funds.

In addition, the Energy Efficiency Facility will support implementation of investments in the field of energy efficiency, re-financing of local financial intermediaries, direct lending to end user and lending to ESCOs and technical assistance for loan beneficiaries. It is expected that the EC will make a decision on these programs in July 2009 and that funding will be available by end of 2009.

3.7 Lessons learned

The most important lessons learned from previous and current projects are:

1. Clear definition of project and contractors scope. Non-local contractors should have significant and authorized domestic support (licenses, language, documents, domestic legislative, rules, policies, standards and practice);
2. Foreign contractor should establish a local company or branch office or similar (it has to be locally licensed for construction works, as per local legislation, and for VAT handling);
3. All preliminary activities, permits and land acquisition (ownership rights) should be obtained before signing of the works contract; and
4. Delayed execution leads to significant price adjustments (beyond frame of original budget).

These lessons were learnt during participating in the following recent contracts:

1. EBRD / Emergency Power Sector Reconstruction No.39051 and No. 987 dated 25.10. 2001 between EBRD and J.P. “Elektroprivreda Srbije”;
2. EIB/Loan For Power Sector Reconstruction Project In Serbia, dated November 2002; and

3. DEC/Construction of the 400kV Overhead Transmission line Nis - Leskovac – FYRoM Border, Republic of Serbia, Contracts No CARDS 06SER01/07/003, CARDS 06SER01/07/004 and CARDS 06SER01/07/005

4. Indicative budget (Amounts in EUR)

Construction Of Substation 400/110 Kv Vranje-4 & Leskovac-2			TOTAL EXP.RE	SOURCES OF FUNDING								
				IPA COMMUNITY CONTRIBUTION		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	IFIs EUR (z)	EUR (d)	% (2)
Component 1 & 2												
contract 1. (TA)	X		2,230,000	2.000.000	90%	230,000	10%	230.000				
contract 2 (supplies)		X	17.000.000	10.000.000	59%	7.000.000	41%	4.000.000		3.000.000		
contract 3 (Works)		X	8.770.000	3.500.000	40%	5.270.000	60%	5.270.000				
TOTAL IB			2.230.000	2.000.000	90%	230.000	10%	230.000				
TOTAL INV			25.770.000	13.500.000	52%	12.270.000	48%	9.270.000		3.000.000		
TOTAL PROJECT			28.000.000	15.500.000	55%	12.500.000	45%	9.500.000		3.000.000		

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	Start of Tendering	Signature of contract	Project Completion
Contract 1 (TA – Preparation of Technical specifications and Tender Dossier for Supply Contract and for Works Contract, plus supervision.	N+1Q	N+4Q	N+16Q
Contract 2 (supplies)	N+6Q	N+8Q	N+15Q
Contract 3 (works)	N+6Q	N+8Q	N+15Q

6. Cross cutting issues

6.1 Equal Opportunity

This project does not target gender issue specifically, but as its impact delivers a safe and reliable electricity supply and project will be beneficial to all citizens including women and minorities.

6.2 Environment

This project does not directly relate to the environment impact (water, air, soil), but it makes the generation of electricity supplies more efficient. In addition, detailed environmental impact assessments must be prepared, which are a prerequisite for favourable permits both for the site of substation and over the route of the overhead lines and their pylons.

6.3 Minorities

The link between energy supply and minorities and vulnerable groups is reflected primarily in the impact on the health and quality of living of south Serbia's population. It is one of the poorest segments of the population and they are disproportionately affected by poor energy security. The general tendency is to work simultaneously on minimizing the consequences of energy poverty and promoting activities aimed at its prevention with an ultimate goal of ensuring energy sustainability in the long run.

ANNEX I: Logical framework matrix

Logical Framework Matrix for Project Fiche		Programme name and number:	
Construction of SubStation 400/110 KV Vranje-4 and Leskovac-2	Contracting period expires 2 years after signature of the Financing Agreement	Disbursement period expires 5 years after signature of the Financing Agreement	
	Total budget 28 M€	IPA budget: 15.5 M€	
Overall objective	Objectively verifiable indicators	Sources of Verification	
To assist in the creation of electricity market in Serbia in conformity with the requirements of the Energy Community Treaty and the requirements of a Regional Energy Market.	Electricity supply to region stabilized and reliable Transmission losses reduced (target: 3 MW or 10500 MWh)	MME annual reports EIB annual reports	
Project purpose	Objectively verifiable indicators	Sources of Verification	Assumptions
To contribute to energy security in South Serbia by building a new electricity substation at Vranje and extending the capability of the electricity substation at Leskovac	Number of power cuts in the South Serbia decreased Energy losses in OHL reduced	EMS MME annual reports	Co-financing available Management team in place

Results	Objectively verifiable indicators	Sources of Verification	Assumptions
Improved stability of electricity supply in Vranje by completing the construction of substation Vranje 4 (400/110 kV). Extended capacity of the electricity infrastructure in Leskovac by extending the network of substations (introducing 400 kV level)	Construction of Substation Vranje 4 completed Improved production capacity of electrical supply and voltage quality, at Substation Vranje (from about 100 MVA to a proposed 300 MVA). Increased reliability of electrical supply with reductions in power losses and blackouts Substation Leskovac upgraded Improved production capacity of electrical supply	EMS MME annual reports	Co-financing available Management team in place
Activities	Means	Total Costs	Assumptions
Design and Works for Extension of SS Leskovac 2 to 400 kV and for Construction of SS Vranje 4 400/110 kV and accompanying lines; Supply of equipment and materials for Activity 1. Preparation of Technical specifications and Tender Dossier for Supply Contract and for Works Contract Project supervision	Works Contract Supply Contract One Service Contract	IPA funding: 3.5 Million EUR 10 Million EUR 2.0 Million EUR	Co-financing available Management team in place

Pre-conditions: The overhead line (OHL) completed.

ANNEX II: AMOUNTS IN million EUR CONTRACTED AND DISBURSED BY QUARTER FOR THE PROJECT

Contracted	N+4Q	N+5Q	N+6Q	N+7Q	N+8Q	N+9Q	N+10Q	N+11Q	N+12Q	N+13Q	N+14Q	N+15Q	N+16Q	Total
Contract 1.1 (TA)	2.00													2.00
Contract 1.2 (supplies)					10.00									10.00
Contract 1.3 (Works)					3.50									3.50
Cumulated	2.00	2.00	2.00	2.00	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50
Disbursed														
Contract 1.1 (TA)	0.40		0.28		0.28		0.28		0.28		0.28		0.20	2.00
Contract 1.2 (supplies)					6.00							4.00		10.00
Contract 1.3 (Works)					0.35	0.47	0.47	0.47	0.47	0.46	0.46	0.35		3.50
Cumulated	0.40	0.40	0.68	0.68	7.31	7.78	8.53	9.00	9.75	10.21	10.95	15.30	15.50	15.50

ANNEX III DESCRIPTION OF INSTITUTIONAL FRAMEWORK

The Public Utility “Elektromreža Srbije” (PU EMS) is an independent entity designated for electricity transmission, transmission system control and electricity market organization in the Republic of Serbia. The Company’s principal activity is the transmission of the entire available electricity to the distribution areas, transmission system operation and organizing the electricity market. The Company is in possession of the license necessary to perform the electricity-related activities:

- The trade in electricity for the purpose of supply market;
- Trade in electricity for the purpose of managing electricity market;
- Trade in electricity for the purpose of organization of electricity market.

Ownership Structure

The company’s assets are state-owned reflecting capital value of the company, which is adjusted for the amounts of the realized net profit and loss (the principle of preservation of financial capital).

The company’s Managing Board (9 members), the Supervisory Board (5 members) and General Manager appointed by the Government of Serbia. The Managing Board ensures the realization of all targets defined in the Company’s Statutes; together, they are responsible for the achievement of technical, technological and economic unity of the electricity system. The Supervisory Board exercises supervision over the Company’s operations and work, reviews annual reports, calculations and proposals for profit distribution. The General Manager represents and acts in the name of the Company, organizes and manages the work process, coordinates the business activities and is responsible for the regulatory compliance, proposes the basis for the business policies, operation programs and development plans to the Managing Board and executes the decisions enacted by the Managing Board. The Company’s headquarters are located in Belgrade and it has 3 Divisions and 5 Sectors.

- Number of Employees: 1379 (on 31 December 2006)
- Regional transmission units: 5
- Transmission Control Centres: 6 plus National control Centre
- Total number of substations (400+220+110 kV) = 96
- Total installed capacity in transformation (400+220+110 kV) = approximately 17,300 MVA
- Total installed line length (400+220+110 kV) = 9,900 k
- Electricity Delivered and Transmission Losses = 45.834 GWh / 2,75 %

EMS’ financial statements for 2007 were approved by the management and submitted to the National Bank of Serbia. It was audited by Deloitte & Touche in 2007; the accounts are summarized below (amounts in EUR):

Total Income	82, 4 million
Total Cost	78, 9 million
Profit before taxes	3, 5 million
Net profit	3, 3 million

Balance sheet Data 31. December 2007

Non current assets	536 million
Current assets	49 million
Equity	390 million
Liabilities	195 million

The main stakeholder is the Electricity Market Operator (EMS) with other key stakeholders being Ministry of Mining and Energy, and the IFIs (EAR, EBB, World Bank/for distribution facilities). The latter are closely involved both in the reform of the energy sector and in financing the modernization of the power sector infrastructure. The existing programme management capacity will be used to manage these projects.

ANNEX IV - REFERENCE TO LAWS, REGULATIONS AND STRATEGIC DOCUMENTS:

The main legislation acts and strategic documents in energy and electric power sector are:

- Energy Law,
- Strategy of Energy Sector Development
- Strategy Implementation Program until 2015 for the period of 2007-2012.

The sectoral short-term priorities for the energy sector from The European partnership include:

- fulfilling the obligations arising from the Energy Community Treaty as regards the full implementation of the *Acquis* on the internal electricity market and on cross border exchanges in electricity.
- Ensuring unbundling with a view to restructuring and opening up the market and make further progress towards a regional energy market, in particular by improving interconnectivity with neighbouring countries.

The middle-term priorities from **European partnership** for the energy sector are as follows:

- Continue to implement regional and international commitments in this area with a view to establishing a competitive regional energy market.

Concerning Stabilization and Association Agreement, cooperation shall focus on priority areas related to the Community *acquis* in the field of energy. It shall be based on the Treaty establishing the Energy Community, and it shall be developed with a view to the gradual integration of Serbia into Europe's energy markets. Cooperation may include in particular the formulation and planning of energy policy, including modernization of infrastructure, improvement and diversification of supply and improvement of access to the energy market, including facilitation of transit, transmission and distribution and improvement of energy interconnections of regional importance with neighbouring countries, the formulation of framework conditions for restructuring of energy companies and cooperation between undertakings in this sector

The **National Program for EU Integration–NPI**, (3.15. Energy Sector refer to p.443-463) underlines legislative and institutional framework in the energy sector, short-term priorities (2008-2009), and Middle-term priorities (period 2010-2012) in legislation and institutional framework, Governmental institutions' recruitment needs, financial needs and budgetary part.

The Multi Annual Indicative Planning document (2009-2011) is the basic starting point for project financing within IPA funds; it gives as one of EU priorities in co-operation with Republic of Serbia states as follows: Support to meet the requirements of the Energy Community Treaty, relevant Community Directives and regional market obligations; compliance of legislation with the '*Acquis*'. Attention should be also paid to energy efficiency, renewable energy, radiation protection and environmental issues in energy.

The relevant *Acquis* concerning this projects include European Community Directive 2005/89/EC concerning measures to safeguard security of electricity supply and infrastructure investment, Directive 2003/54/EC concerning common rules for the internal market in electricity and Regulation 1228/2003/EC on conditions for access to the network for cross-border exchanges in electricity. Besides these specific Electricity European legislation there is *Acquis* on Gas (3 Directives), on Environment (6 Directives), on Competition and on Renewables (2 Directives).

ANNEX V- DETAILS PER EU FUNDED CONTRACT

SS Leskovac

Supply of one Power transformer 300/300/x MVA, 400/110/x kV, with "On Line Tap Changer" (OLTC), one unit, autotransformer type for solidly earthed network. Remaining technical details will form part of the tender specification.

SS Vranje 440/110 kV

Facility is air insulated type for solidly earthed network, consisting of: Two Over Head Lines (OHL) bays 400 kV, one bus coupler bay 400 kV, one power transformer bay 400 kV, Bus bars 400 kV (main1 and main 2) tubular type, Power transformer 300/300/x MVA, 400/110/x kV, with "On Line Tap Changer" (OLTC) one unit, autotransformer type for solidly earthed network, six OHL bays 110 kV, one bus coupler bay 110 kV, one power transformer bay 110 kV, Bus bars 110 kV (main1 and main 2) tubular type, control building including: control system, aux. supply (AC/DC, UPS), communications, Diesel generator set (small 0,15 MVA generator for emergency cases) , commodity for personnel.

For the facility itself: fences, grounding, lighting and lightning system, access roads for switchyard/ equipment, etc.

Connection lines: Two connection section 400 kV (2x 1Km) for connection to OHL 400 (Nis – Leskovac – Vranje – border FYROM - Stip) and four connection lines to existing network 110 kV (total line length is cca 12Km).

Project supervision is needed to:

- Assist the Contracting Authority in the evaluation process for the selection of the contractor for the supply contract and for the works contract.
- Supervise both the supply contract and the works contract with all of the responsibilities as set out in the relevant FIDIC General Conditions (FIDIC Construction ('Yellow Book')).
- Assist with the supervision and monitoring of site activities, e.g. construction, commissioning and testing of performance.
- Advise EMS on project and site management issues.
- Advise EMS in progress assessment and verification issues.
- Establish and assist in QA/QC procedures through witnessing and certification of acceptance testing at site and in workshops.
- Achieve a sustainable knowledge transfer to EMS.

Preparation of Technical specifications and Tender Dossier for Supply Contract and for Works Contract will comprise the work on:

- Technical Specifications for the Supply Contract
- Tender Preparation for the Supply Contract
- Technical Specifications Works Contract
- The construction works will be procured through PRAG procedure and implemented through a FIDIC Design and Build works contracts approach.
- Tender Preparation Main Contracts

INDICATIVE BREAKDOWN OF CO-FINANCING COSTS

Substation Leskovac 2 – Installing of Transformer 400/110kV - Costs covered by “EMS” (Serbian Transmission System and Market Operator)

Position	Description	Value (EUR)
1	Electric-assembly works on transformer, oil treatment..	150,000.00
2	Construction works connected to transformer (transformer basement, oil-pit, oil sewage, portals, device carriers etc.)	500,000.00
3	Customs, taxes and forwarding of import equipment and materials (37% of stock value)	1,184.000.00
	Substation Leskovac 2 –Installing of transformer 400/110kV Total (EUR)	1,834.000.00

Substation 400/110kV Vranje 4 and access power level line - Costs covered by “EMS” (Serbian Transmission System and Market Operator)

Position	Description	Value (EUR)
1	Drafting and adoption of town-planning scheme for substation	20,000.00
2	Drafting and adoption of Feasibility study together with Terms of Reference for substation	150,000.00
3	Drafting and adoption of Environment Impact Study for substation	50,000.00
4	Geo-mechanical soil inspection for substation	40,000.00
5	Redemption of land for Substation, compensation for vegetation damages and civil common land	300,000.00
6	Infrastructure fittings for Substation (roadway, water supply and canalization, cable lines 35kV and public telephone network	400,000.00
7	Customs, taxes and forwarding of import VN equipment and materials (37% of stock value)	2,200.000.00
8	Drafting and adoption of Urbanistic plans for DV 110kV	30,000.00
9	Drafting and adoption of Feasibility study together with Terms of Reference for Over Head Lines (OHL) 110kV	50,000.00
10	Legal ownership procedures for OHL 400kV and OHL 110kV	50,000.00
11	Customs, taxes and forwarding of import OHL 400kV and OHL 110kV equipment and materials (37% of stock value)	250,000.00
	Substation 400/110kV Vranje 4	3,540.000.00
	TOTAL (BOTH PROJECTS)	5,374.000.00

Annex VI - Indicative GANTT chart

Vranje 4 & Leskovac Transmission & Sub-stations

Legend:		
Scheduled	Actual	Version: 1.1 Revision date: 02/02/09

ID	Task Name	Start	Finish	Duration	2008			2009				2010				2011				2012			
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Preliminaries, land acquisition & groundworks etc for IPA 2009 EMS	02/09/2010	31/08/2012	104.4w																			
2	OHL 400 kV (SE Serbia) CAPDS 2008	02/02/2009	01/02/2011	104.4w																			
3	Nis 2 (HV equipment for SS) EIB	01/05/2008	01/12/2009	82.8w																			
4	Vranje 2 distribution OHL (110/10 kV) VRS	03/08/2009	01/12/2011	121.8w																			
5	Vranje 4 (SS 400/110 kV) IPA 2009	01/09/2010	31/08/2012	104.8w																			
6	Leskovac 2 (HV equipment for SS) EIB & IPA 2009	01/06/2005	31/08/2012	378.6w																			
7	EIB component	01/06/2005	01/10/2010	278.8w																			
8	IPA 2009 (transformer)	03/05/2010	31/08/2012	122w																			