ESI 2006

Ed 12

Electrical Supply Industries & Utilities of the World

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A Report of a Changing Industry

ESI 2006 is a report surveying the global Electrical Supply Industry (ESI). It provides a survey of the ESI in every country and lists the companies in the industry.

Countries and ESIs surveyed	192
ESI companies listed	7,340
Generating companies	1,600
Transmission companies	840
Distribution companies	6,130

In compiling **ESI 2006 Ed 12,** ABS has built up a database of information about the electricity supply industry in every country over the last 15 years. In the early years this database reflected a traditionally integrated industry, much of it state-owned. ABS classified the utilities as generators, transmission companies or distributors. In many countries there were vertically integrated utilities performing all three functions, often with only one company serving an entire nation.

In 2006 the electricity supply industry is structured as a business rather than a public service supplier, with four separate functions; generation, transmission, distribution, supply, the last consisting of the marketing and sales of energy. In many countries competition has been introduced to generation and supply, while transmission and distribution are natural monopolies, since the electricity has to be delivered physically via the same wires. Privatisation continues and this edition charts further unbundling in the industry. The result is a mix of systems throughout the world, ranging from traditional single vertically integrated utilities serving an entire country, to Electricity Supply Industries with all functions operating as separate businesses and in competition.

ESI 2006 is a report designed to outline the ESI clearly and concisely in every country. One table summarises the characteristics of the industry, as in the example below for Spain. Similar information is provided for all major countries and advanced economies and in more abbreviated form for the smaller developing counties.

ESI 2006 is available as a PDF report or in hard copy. Two additional reports are available: **ESI Companies 2006 Ed 3**, an Excel database of the 7,340 ESI companies documented in the report, and **Electrostats 2006**, an Excel database of annual electricity statistics for every country, from 1991 to 2005.

Price
ESI 2006 Ed 12 (PDF Report): £1,120
ESI Companies 2006 Ed 3 (Excel Database): £1,450
Electrostats 2006: Electricity Supply and Consumption Statistics (Excel Database): £400

The reports can be purchased individually or in the following packages.

ESI 2006 Ed 12 and Electrostats 2006: £1,300
ESI 2006 Ed 12 and ESI Companies 2006 Ed 3: £2,300
ESI 2006 Ed 12 and Electrostats 2006 and ESI Companies 2006 Ed 3: £2,500

For US Dollar or Euro prices please refer to our website www.absenergyresearch.com

The following pages are a sample entry for one country.

Bosnia Herzegovina

Table: Economic Statistics

Population mn mid-2005	4 mn
Labour force mn 2001	1.0 mn
Unemployment % 2004	45.5%
Capital	Sarajevo
GDP per capita $ PPP 2005	$6,800
Reserves of foreign exchange and gold $ bn 2005	$3 bn
Inflation % 2005	14%
GDP $ bn 2005	$28.3 bn
GDP $ bn 2005 Official exchange rate	$8.9 bn
GDP growth % 2005	5.2%
Composition of GDP %	
Agriculture	14.2%
Industry	30.8%
Services	55%
Exports $ bn 2005	$2.7 bn
Imports $ bn 2005	$6.8 bn

Bosnia and Herzegovina is ranked next to Macedonia as the poorest republic in the old Yugoslav federation. Although agriculture is almost all in private hands, farms are small and inefficient, and the republic is traditionally a net importer of food. Industry has been greatly overstaffed, a reflection of the socialist economic structure of Yugoslavia. Tito had pushed the development of military industries in the republic with the result that Bosnia was saddled with a host of industrial firms with little commercial potential. The interethnic warfare in Bosnia caused production to plummet by 80% from 1992 to 1995 and unemployment to soar. With an uneasy peace in place, output recovered in 1996-99 at high percentage rates from a low base; but output growth slowed in 2000-02. Part of the lag in output was made up in 2003-05.

National-level statistics are limited and do not capture the large share of black market activity. The konvertibilna marka (convertible mark or BAM), the national currency introduced in 1998, is pegged to the euro, and confidence in the currency and the banking sector has increased. Implementation of privatisation, however, has been slow, and local entities only reluctantly support national-level institutions. Banking reform accelerated in 2001 as all the Communist-era payments bureaus were shut down; foreign banks, primarily from Western Europe, now control most of the banking sector. A sizeable current account deficit and high unemployment rate remain the two most serious economic problems. The country receives substantial amounts of reconstruction assistance and humanitarian aid from the international community but will have to prepare for an era of declining assistance.

Structure of the ESI

Before the war, Bosnia and Herzegovina had a single, vertically integrated state-owned power company.

War damage to the Bosnia and Herzegovina power system started in 1992 with destruction of transmission facilities and interconnection lines to neighbouring countries and thereafter spread to large parts of the generation, transmission, and distribution system. By 1996, more than 56% of total generating capacity in Bosnia and Herzegovina was damaged. Part of the remaining capacity was out of operation due to destroyed transmission lines or lack of fuel. In addition, most plants suffered from a lack of maintenance during the war. About 60% of the transmission network and control system was seriously damaged. The distribution network and many transformer stations, civil works, telecoms and maintenance equipment were also damaged or destroyed. Overall, damages were estimated at $1.34 billion.

Three electric utilities with specific service territories have emerged in Bosnia and Herzegovina. Two utilities operate in the Federation of Bosnia and Herzegovina, and one operates in Republika Srpska (RS). The two utilities in the Federation are Elektroprivreda Bosnia and Herzegovina (EPBiH) and Elektroprivreda Mostar (EPM). The RS utility is Elektroprivreda Republika Srpska (EPRS).

Elektroprivreda Bosne i Hercegovina (EPBiH), based in Sarajevo, is a fully vertically integrated state-owned public enterprise established in 1993. EPBiH services approximately 500,000 customers.

It currently operates approximately 50 high voltage substations (110 kV and higher) and 6,000 low voltage (less than 35 kV) substations. Distribution is subdivided into seven regions: five within central Bosnia and Herzegovina and two covering the Northwest corner of the country, where EPBiH has a service territory pocket.

Tariffs are proposed by the company's management board and approved by the Federation's Council of Ministers. There is no independent, apolitical regulation at this time, and there is no regulatory coordination with the other two utilities.

Elektroprivreda Mostar (EPM) is headquartered in the city of Mostar. It is a vertically integrated utility serving the western portion of the Federation. It operates five hydroelectric generating plants with a total rated generating capacity of 750 MW. EPM would like to build a thermal power plant near Tomislav Grad.

The company is not monitored by a regulatory agency and during the war, the regional government set its retail prices; today, the utility suggests prices to the cantons. It is then up to the cantons and municipalities to decide how to collect that revenue from their electric customers. If the cantons and municipalities feel that the rate is too high to be passed through, they have to make up the difference.

Elektroprivreda Republika Srpska (EPRS) was established by the Assembly of Republika Srpska (RS) in June 1992 as a state-owned public enterprise. It is the generating, transmission, and distribution company for the Republika Srpska. EPRS is a fully vertically integrated utility, possessing its own brown coal and lignite mines. These mines supply its two major thermal power plants, Ugljevik and Gacko. EPRS also owns five hydroelectric generating plants rated at 825 MW. Presently it is a net exporter of electric energy to Croatia, Slovenia, and Italy.

In addition, there are a few small hydro and industrial co-generation facilities.

Table: Electricity Statistics

	2003	2004	2005
Installed capacity MW			
Thermal	1,957	1,957	1,957
Hydro	1,993	2,034	2,065
Nuclear	0	0	0
Wind	0	0	0
All biomass	0	0	0
Geothermal	0	0	0
Solar PV	0	0	0
Other	0	0	0
Total	3,950	3,991	4,022
Production GWh			
Thermal	5,200	6,600	6,600
Hydro	5,300	6,100	6,200
Nuclear	0	0	0
Other	0	0	0
Total production	10,500	12,700	12,800
Imports	2,271	0	1,000
Exports	3,200	0	2,600
Consumption GWh			
Total national	8,850	10,800	11,100

Table: ESI Characteristics

Total Generators - 3 Generators with 5% or more - 3 FBiH Elektroprivreda Bosne i Hercegovine EPHZHB Elektroprivreda Hrvatske Zajenice Herceg-Bosne EPRS Elektroprivreda of Republika Srpska
Large companies present Largest – As above
TSO – 1 Elektroprenos Bosne i Hercegovine State-owned Unbundling - None
TSO independence Ownership – Under implementation Legal form – Planned Organisation – Planned
TSO owner of the grid assets – Consolidation of Assets under single TransCo is underway
Network access - TPA legislation passed but no market participant exercising this right
Market model – Not yet agreed. Regulated market planned for initial opening
Bilateral contract - No
Monitoring of wholesale/balancing market –
Import capacity as % of installed capacity – 45%
DNOs – 4 Unbundling – None Separate from DNO – Distribution restructuring planned for 2005. Current status unknown
Suppliers > 5%
Regulator SERC, State Electricity Regulatory Commission 2 Commisioners from Federation of Bosnia and Herzegovina FERC Regulatorna komisija za električnu energiju u Federaciji Bosne i Hercegovine Regulatorna Komisija za Elektriknu Enerjiju Republike Srpska
Implementation of market opening Market opening 2006 - 0% Full market opening – Not yet documented
How charges are set - ni
Dominant single generator within balancing area – 4
Number of active licensed suppliers – 0
Number of suppliers independent of DNO - 3
Number of suppliers with share > 5% -
Top 3 suppliers share – ni
Switching since market opening Large eligible industrial users – 0% Small commercial / domestic – 0%
Eligible customers 2006 – Not yet defined
Exchange – None
Transmission line length (110 kV) – 3,488 km Distribution line length – 75,322 km

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