

SECURITY OF SUPPLY

- SERBIA -

1. Electricity

Production vs. demand

Tables and diagram below show operational data of Serbian electricity production and demand for period of 2001-2006, subdivided into generation sources, as well as the available production capacity in Serbia.

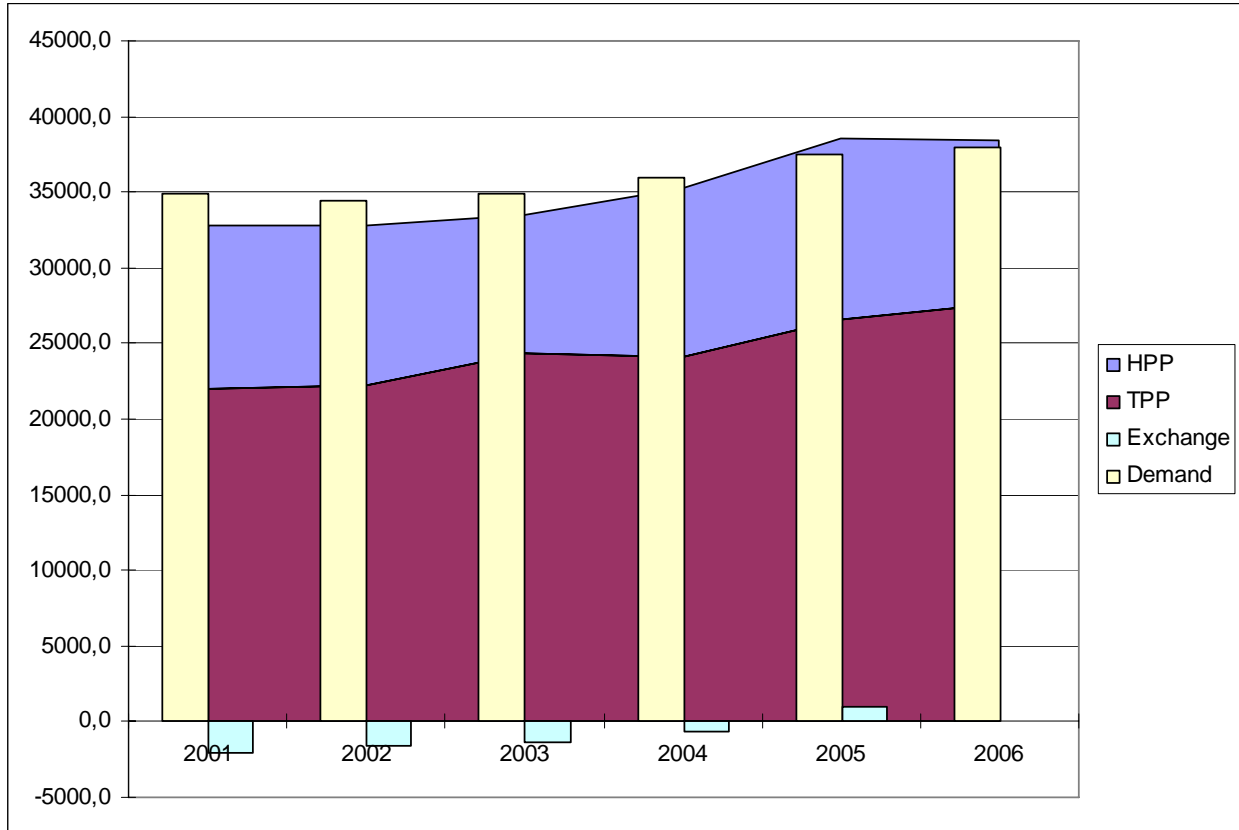
SERBIA (OPERATIONAL DATA)		2001	2002	2003	2004	2005	2006
Thermal conventional net production	GWh	22042,9	22223,2	24318,2	24081,0	26565,0	27602,0
Hydraulic net production	GWh	10693,2	10528,5	9213,9	11135,0	11924,0	10850,0
Total production	GWh	32736,1	32751,7	33532,1	35216,0	38489,0	38452,0
National electrical consumption	GWh	33805,2	33377,8	34378,0	35114,0	36573,0	37126,0
Consumption of pumps	GWh	1047,1	1027,9	531,2	792,0	962,0	851,0
Demand (consumption+pumps)	GWh	34852,3	34405,7	34909,2	35906,0	37535,0	37977,0
Exchange in parallel operation ¹	GWh	-824,9	347,9	-1023,4	-948,9		
Exchange in island operation	GWh	-1291,4	-2001,8	-354,0	258,0		
Total exchange	GWh	-2116,2	-1653,9	-1377,4	-690,9	954,0	4,0

Main fuel(s)	Capacity (MW) in 2006
Lignite	3936
Hydroelectricity	2831
-run-of river HPP	1797
-storage HPP	420
-reversible HPP	614
Liquid fuel-fired combined heat and power plants	353
Total	7120
Total (including lignite TPPs on the territory of Kosovo)²	8335

	including Kosovo and Metohija	excluding Kosovo and Metohija
Lignite-fired PP	71.3%	68%
Liquid fuel –fired	0.5%	0.55%
Hydro power plants	28.2% (run-of-river: 23.5% and storage: 4.8%)	31.55%

¹ Reconnection to UCTE happened in October 2004

² Since June 1999, Serbia does not operate its facilities on the territory under UNMIK according to 1244 SC Resolution



The Serbian Energy Strategy 2005-2015 envisages the growth rate of electricity consumption from **2.2 % to 1.7 % annually**, depending on the economy development scenario, for mentioned period. Table below shows current levels of electricity peak demand (MW) and expectations for the next three years (i.e. 2007-10).

Year	Pmax with Kosovo and Metohija	Pmax without Kosovo and Metohija
2006 – current	6940	6256
2007 planned	7300	6500
2008 planned	7450	6600
2009 planned	7600	6700
2010 planned	7650	6750

Planned investments in the production facilities and authorisation criteria for new generation investments

For the purpose of constructing new production capacities in Serbia, an authorization procedure is applied. This procedure includes the issuing of energy permits relating to the production facilities. According to the Energy Law (Official Gazette of Republic of Serbia 84/04), the Ministry of Mining and Energy (MoME) is responsible body for energy permits issuing, as well as the

setting of the authorization criteria. There is no need to obtain an energy permit, should concession have been granted in accordance with the Concession Law. Should the construction of necessary production capacity be insufficient through authorization procedure, the Government can publish a call for public tender procedure (this procedure is conducted in line with the provisions of the Concession Law).

Elektroprivreda Srbije, EPS, has the obligation to supply the tariff consumers and to ensure sufficiency of electricity. In emerging market in Serbia, it has still dominant role. EPS, after having obtained consent from the Government, should launch very soon two tenders. One is completion of the 700 MW lignite-fired power plants Kolubara B. The construction of power plant is in compliance with Serbian Energy Strategy and regional GIS study by 2020. The second tender will be launched for another 700 MW unit. These units should be built through joint venture with strategic partner. To bridge possible gap in energy (expecting from next year), the substantial modernization of CHP in Novi Sad or new gas-fired CCGT (size of 250 MW) should be built in Novi Sad, also through joint venture with strategic partner.

According to the Foreign Investment Law, the investor may have benefits such as tax incentives, specified within this Law. No discrimination may exist between foreign and domestic investors.

Grid security

As far as grid investments are concerned, the grid companies are obliged to ensure transmission and distribution system development in line with five-year development plans. Investments are to be covered from the transmission or distribution system use charge, in accordance with the methodologies issued by the Regulator. These calculations are subject to the review of the Regulator (the Regulator gives an opinion), and are submitted after regulatory review to the Government for final approval.

Enhancing the security of supply is a permanent job for TSO. The examples of the improvement of the transmission system and connections with the neighbouring countries are prioritized below. The following projects has provided reduction of internal congestion management, reduction of transmission losses, has improved security of supply in many areas and enhanced the voltage conditions.

S/S Sremska Mitrovica 400 kV upgrade – finished in 2005
S/S Jagodina 4 400/x kV erection –finished in 2006
S/S Sombor 3 400/x kV erection – finished in 2006
S/S Beograd 20 construction (defined)
400kV OHL Nis –Vranje – Skopje with erection of Vranje S/S 400/x kV – detailed project documentation – to start in 2008
400 kV OHL Sombor 3- Subotica - finished in 2006
400 kV OHL Sremska Mitrovica – Ugljevik - finished in 2006
400 kV OHL Serbia – Romania (preliminary analysis finished)
S/S 220/110 kV Smederevo doubled capacity of S/S - finished in 2006

The Procedures and input/output data related with network development planning are defined within national Grid Code. Development planning is carried out on the following principles:

- Technical criteria (voltage, frequency, transmission capacity, security, stability, short-circuit calculations) in compliance with UCTE interconnection rules
- Only probable generation pattern is taken into account (no additional requirements toward generation in order to avoid congestions)
- Regional cooperation (influence of wholesale markets)
- Cooperation with transmission network users (especially with distributions in the sense of distribution network development plans – load pattern)

2. Natural gas

Supply-Demand situation

	2006	2007	2008	2009
Natural gas consumption	2.36	2.50	2.58	2.66
Production capacities	0.26	0.26	0.25	0.25
Import capacities	3.65	3.65	3.65	3.65

At the moment the only gas sources for Serbia are from its own gas fields in Vojvodina, and mainly import from Russia via Hungary and Ukraine.

The whole supply of gas is sourced from the north which makes the whole system relatively unreliable. Serbia's consumption is characterized by a very high peak demand in winter.

This leads to the situation that the main problem in managing and expanding infrastructure is to provide for peak capacity requirements.

Since the increased natural gas consumption is one of the most important strategic goals defined in Serbian Energy Sector Development Strategy, significant financial resources should be provided. Diversification of gas sources and supply routes is the basic idea in natural gas sector development.

One of the most important investments in natural gas sector is construction of main gas pipeline Niš- Dimitrovgrad. This project would ensure another direction of supply, connecting Serbian gas pipeline system with the Bulgarian system. Although at the beginning the source of supply would still be Russia, this project would increase the security and quality of gas supply significantly, transit costs could be expected lower and systematic gasification of Central Serbia would be feasible.

Having in mind that future gas pipelines from Caspian region would enable gas supply from Iran, across the territory of Turkey towards Austria and Western Europe, realization of this project would enable Serbia to have another source of supply in the future, which would be beneficial to both security of supply and price level.

Having in mind central position in the region, Serbia could be very important natural gas transit country not only for the region but also on the wider European level. To that end, a few possible gas interconnections are under consideration.

Another also very important investment in gas infrastructure is the construction of underground gas storage. The realization of this project would enable flat import profile during the year, and therefore decrease import and transit costs. Potential location for underground gas storage is already defined in Banatski Dvor where significant financial resources were already invested.

Imported gas has a dominant role, whose significance will be even higher taking into account planned increase in consumption. Total import is realized by JP Srbijagas through one entry point at the Hungarian-Serbian border. In 2006, import of gas amounted to 88% of the total consumption, out of which 99,74% of gas originated from Russia, while 0,26% was imported from Hungary in order to meet the peak consumption.

Besides the fact that annual import capacities exceed the needs, supply security is imperiled in winter period, because it happens that the needs are higher than the available transit capacities.

Namely, a significant part of consumption is used for heating so that gas consumption in winter months is approximately 4 times higher than in summer period. The differences at daily level are even higher, and gas shortages also occur at daily level.

Seasonal and daily harmonization between gas consumption and available sources would be solved with completion of natural gas underground storage facility Banatski Dvor. The start up time of storage facility is uncertain due to the lack of funds for purchase of cushion gas.

The validity period of gas import contract is one year and it expires on 31 December 2007. The contract allows flexibility, which occurs due to the various needs for natural gas during a year.

The contract on transit through Hungary is a long term contract, which expires in 2018. Allowed flexibility is $\pm 10\%$. Necessary capacities in winter period are additionally charged.

The most important gas pipelines for transmission are older than 25 years and it is necessary to determine their integrity by using modern devices.