Development of Distributed Generation in Latvia

Vice-director
Institute of Physical Energetics
Dr.phys. Gunta Šlihta

Vilnius, 22 April 2008

Electricity Supply in Latvia[1] (billion kWh)

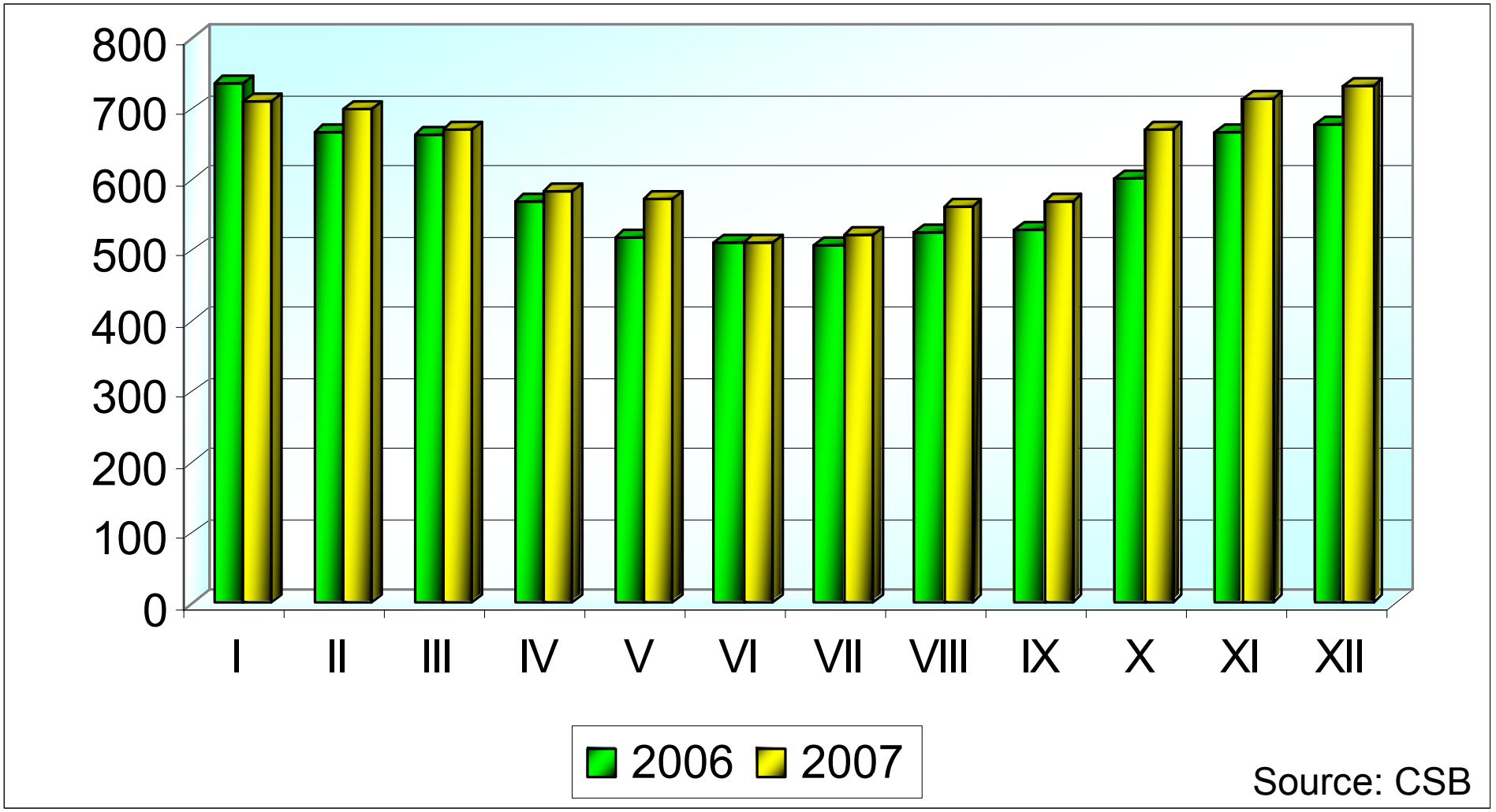
Components of electricity supply	2001	2002	2003	2004	2005	2006
Total electricity supply	6.163	6.323	6.608	6.786	7.053	7.339
Electricity generation – total	4.280	3.975	3.975	4.689	4.905	4.891
of which:						
HPP[2]	2.801	2.433	2.216	3.044	3.267	2.661
CHP[3]	1.246	1.238	1.363	1.225	1.278	1.740
other CHP	0.198	0.263	0.298	0.306	0.255	0.407
small HPS	0.032	0.030	0.050	0.065	0.058	0.037
wind generators	0.0034	0.011	0.048	0.049	0.047	0.046
Imports of electricity	1.883	2.348	2.633	2.097	2.148	2.508

[1] Source: state JSC Latvenergo, Ministry of Economics, CSB

[2] Daugava cascade and Aiviekste HPP (HPP of state JSC Latvenergo)

[3] CHP of state JSC Latvenergo

Consumption of electricity in Latvia 2006/2007 (billion kWh)



Power plants in Latvia with capacity of more than 1 MW, 2007 (part 1)

Name of company	MW	
Pļaviņu HPP	870	
Riga HPP	402	
Riga TEC-2	330	
Ķeguma HPP	264	
Riga TEC-1	144	
Imanta CHP	46,7	
Rhodia-Industrial Yarns, Ltd.	24	Not operating in 2007
Jelgavas cukurfabrika, JSC	12	Not operating in 2007
Latelektro - Gulbene, Ltd.	10	Not operating in 2007
Liepājas enerģija, Ltd.	8,2	Not operating in 2007
Daugavpils siltumtīkli, JSC	6	
Getliņi Eko, Ltd.	5,3	
Valmieras Enerģija, JSC	4	
WINDAU Ltd.	3,8	
Pārventas siltums, JSC	3	
Elektro bizness, Ltd.	2,88	
Stružānu kūdras fabrika, JSC	2,5	Not operating in 2007
Vangažu Sildspēks, Ltd.	2,22	
Rīgas ūdens, Daugavgrīva, JSC	2,1	
Mārupe, Ltd.	2,04	

Power plants in Latvia with capacity of more than 1 MW, 2007 (part 2)

Name of company	MW	
Baltnorvent, Ltd.	2	WPP
Vēja parks 10, Ltd.	1,8	WPP
Vēja parks 11, Ltd.	1,8	WPP
Vēja parks 12, Ltd.	1,8	WPP
Vēja parks 13, Ltd.	1,8	WPP
Vēja parks 14, Ltd.	1,8	WPP
Vēja parks 15, Ltd.	1,8	WPP
Vēja parks 16, Ltd.	1,8	WPP
Vēja parks 17, Ltd.	1,8	WPP
Vēja parks 18, Ltd.	1,8	WPP
Vēja parks 19, Ltd.	1,8	WPP
Vēja parks 20, Ltd.	1,8	WPP
Līvbērzes enerģija, Ltd.	1,6	
Dobeles enerģija, Ltd.	1,5	
BK Enerģija	1,5	WPP
Ligija Teks, JSC	1,4	Not operating in 2007
Cēsu būvnieks, Ltd.	1,3	
Saldus siltums, Ltd.	1,3	
Krāslavas nami, Ltd.	1,25	
WPP in Ainaži	1,2	WPP
Spridzānu HES, Ltd.	1,2	
Impakt Ltd.	1	WPP

Estimation of minimal costs and building time of new power plants in Latvia

Type of power plant	Building place	Fuel	Building time	Minimal estimated costs[1]
Gas power plant, 400MW	Riga	Natural gas 100%	2-3 years (2010 or later)	320 million EUR[2]
Solid fuel power plant, 2x200MW	Liepaja[3]	Coal ~90%, biomass or waste ~10%	5-7 years (~2014[4])	400-500 million EUR

[1] Any given costs are subject to change due to the economical, political etc. reasons.
[2] According to the joint-stock company *Latvenergo* – 300 million EUR.
[3] According to the Minister of Economics K.Gerhards, interview on 10. April 2008.
[4] The final decision of building place – on 1st of September 2008; 6 months to attract investor; 1 year for assessment on environment and about 5 years to complete the building; according to Dins Meirāns, public official from the Ministry of Economics.

Risk assessment of gas power plant

Advantages:

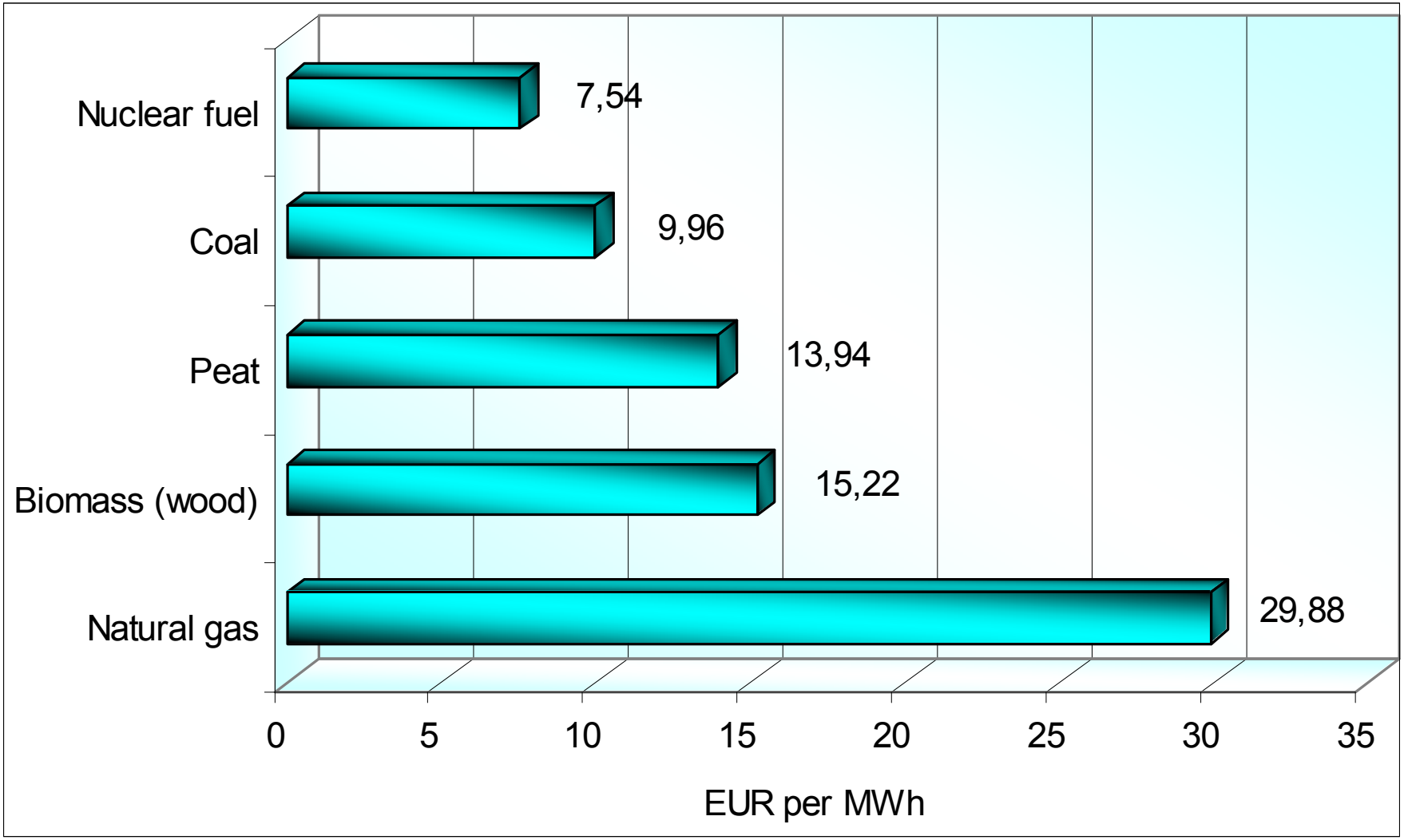
- Speed and costs of building – lower than alternatives.
- Infrastructure necessary for gas supply is built – joint-stock company *Latvijas Gāze* has made investments of more than 7 million EUR.
- Both biggest Latvian energy companies *Latvenergo* and *Latvijas Gāze* has agreed on majority of issues concerning the new gas power plant, except for the price of natural gas and some other issues.
- Natural gas has lower CO_2 emission rate than other fossil fuels
- Safety of power supply – natural gas from storage facility in Inčukalns could be used in case of emergency shortages of gas supply.
- Import of natural gas from Russia – better alternative than to import electricity from Russia, taking into account that the shortages of electricity in Russia are not excluded.

Risk assessment of gas power plant

Disadvantages and risks:

- Increased dependence on Russian import of natural gas.
- Lack of alternative suppliers of natural gas (monopoly of Russian supply).
- Growing price of natural gas in the future.
- Gas prices and electricity prices of the gas power plant are lacking predictability in long-term.
- Price of electricity produced from natural gas will be heavier influenced by the price of resource (close to 70%) compared with coal or peat (35%).
- Natural gas is a fossil fuel.

Costs of fuels in Latvia[1]



[1] Data is taken from the report of the Ministry of Economics, costs are estimated values for the year 2008 based on prices of 2007

Current trends in Latvian legislation (part 1)

- 11.03.2008 – the government accepts the report of Latvian Transmission system operator on situation of Latvian energy supply and delegate the Ministry of Economics to promote the project of new solid fuel power plant.
- 18.03.2008 – the government accepts the protocol resolution with the initiative of the minister of finances Atis Slakteris (*Tautas partija*) to exclude possible electrical cable link between Latvia and Sweden from research tasks of the project of new solid fuel power plant.
- 10.04.2008 – Parliament accepts amendments on *Law on Energy Market*: If the annual report of Latvian Transmission system operator indicates the need of new capacity, the Cabinet of Ministers will announce a call for installation of new capacity or a call for reconstruction of existing power capacities.

Current trends in Latvian legislation (part 2)

- After the amendments on *Law on Energy Market* will come into force (15.05.2008) the Ministry of Economics will prepare new project in order to make a new call on installation of new capacity. Tender will be announced and organized by Public Utilities Commission. The costs of new power plants will be included in price for energy to all consumers.
- 13.03.2008 – Law on Energy Efficiency of Buildings was adopted by the Parliament. Law concerns state and municipal responsibility to promote energy efficient buildings by energy audit and other energy efficiency measures. This Law corrresponds with Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings.

Thank you for your attention!

INSTITUTE OF PHYSICAL ENERGETICS
Aizkraukles Str. 21,
LV-1006, Riga, Latvia
Tel.: +371 67552011
Tel.: +371 67558680
Fax: +371 67550839
E-mail: fei@edi.lv
http://www.innovation.lv/fei