

26th Annual Conference
International association for Energy Economics
NEW CHALLENGES FOR ENERGY DECISION MAKERS



***Sustainable Development Problems of
Latvian Energy Sector***

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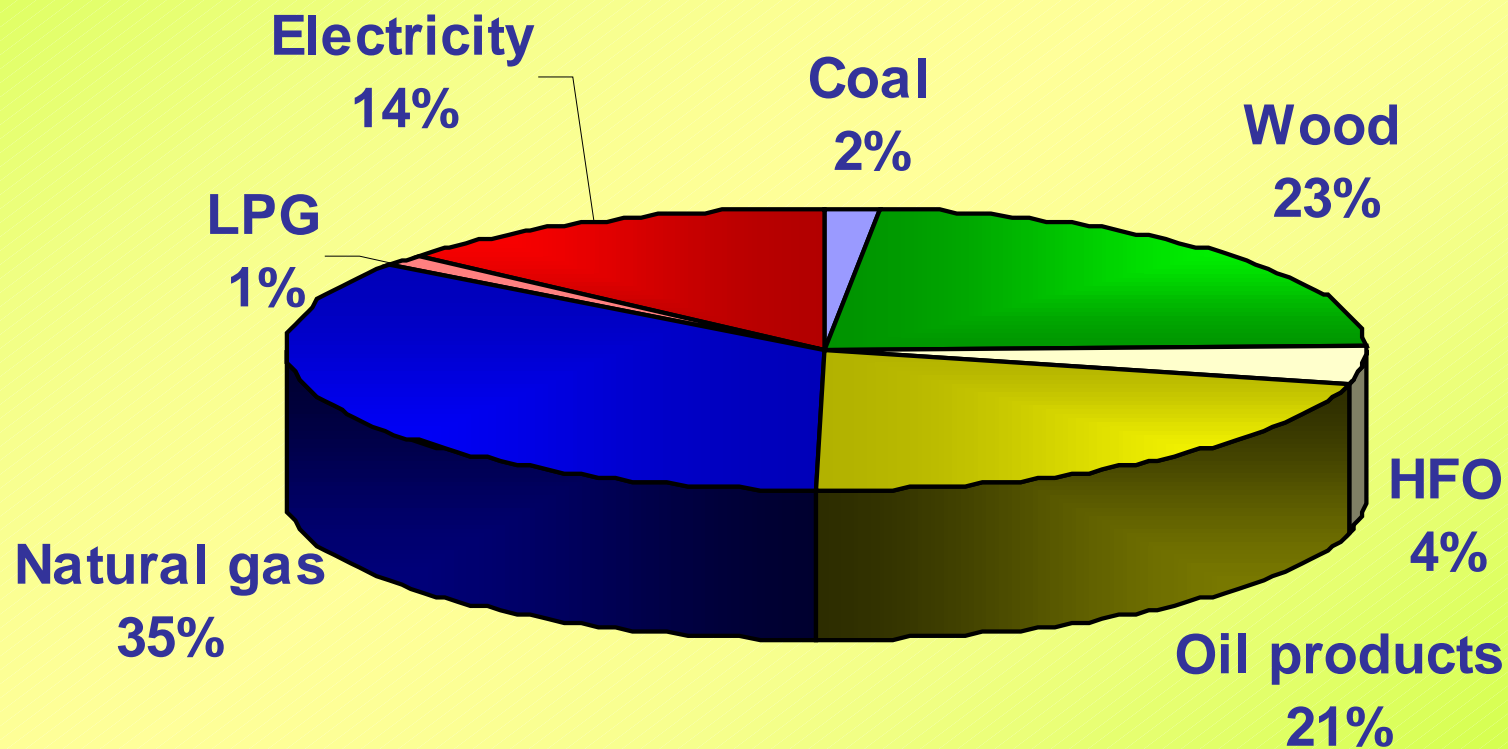
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Primary energy consumption by source in 2001 in Latvia



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Trends in electricity production and consumption in the Latvia

Year	Production	Consumption	Import	
	TWh	TWh	TWh	%m of Consumption
1995	4,0	6,2	2,2	36
1996	3,1	6,4	3,3	52
1997	4,5	6,3	1,8	29
1998	5,8	6,3	0,5	8
1999	4,1	6,1	2,0	33
2000	4,1	5,9	1,8	31
2001	4,3	6,2	1,9	31

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Largest thermal power plants of the Baltic IPS

Plant	Installed capacity (MW)	Available capacity (MW)	Number of units and capacity	Steam pressure (atm)	Fuel
<i>Estonia</i>					
Estonian CPP*	1610	1340	8x200	140	Oil shale
Baltic CPP	1390	1322	7x100	100	Oil shale
CHPP Iru	190	190	1x110 1x80	140	Gas, HFO

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Largest thermal power plants of the Baltic IPS (Continuation)

Plant	Installed capacity (MW)	Available capacity (MW)	Number of units and capacity	Steam pressure (atm)	Fuel
<i>Latvia</i>					
Riga CHPP-2	390	390	3x110 1x60	140	Gas, HFO

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Largest thermal power plants of the Baltic IPS (Continuation)

Plant	Installed capacity (MW)	Available capacity (MW)	Number of units and capacity	Steam pressure (atm)	Fuel
<i>Lithuania</i>					
Ignalina nuclear power plant	3000 (2 reactors, each 1500)	2600	4x750	70	Nuclear
Lithuanian CPP	1800	1800	4x150 4x300	140 255	Gas, HFO
Vilnius CHPP-3	360	348	2x180	140	Gas, HFO
Maziekai CHPP	194	116	2x80 2x34	140	Gas, HFO
Kaunas CHPP	170	170	1x110 1x60		Gas, HFO

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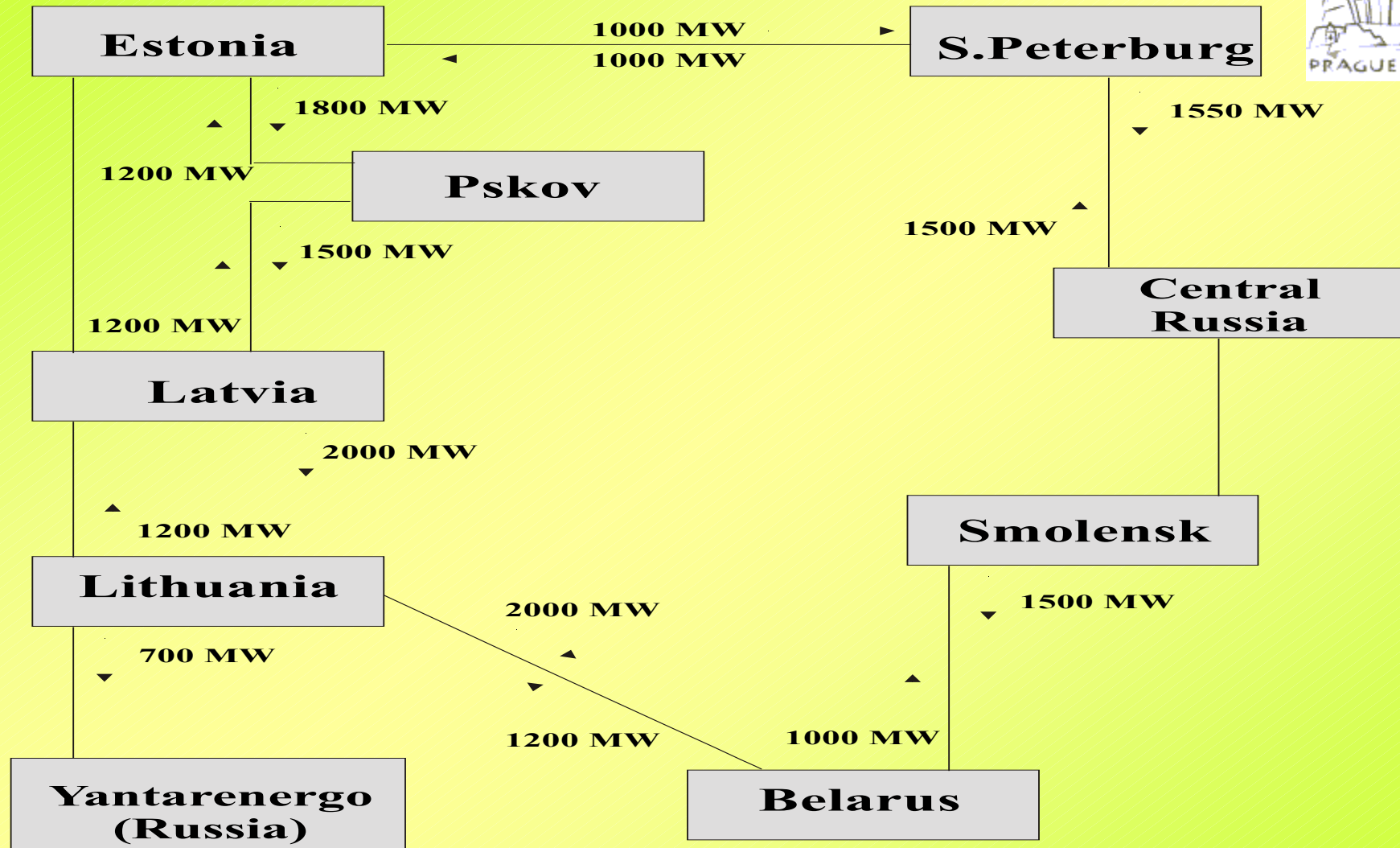
Hydro- and pumped storage power plants

Plant	Installed capacity (MW)	Available capacity (MW)	Number of units
<i>Latvia</i>			
Plavinas	855	855	10
Riga	402	402	6
Kegums	260	236	7
<i>Lithuania</i>			
Kruonio	800	760	4
Kaunas	100,8	100	4

Figure 1: Basic power network of the Baltic IPS and its interconnection with other IPS's



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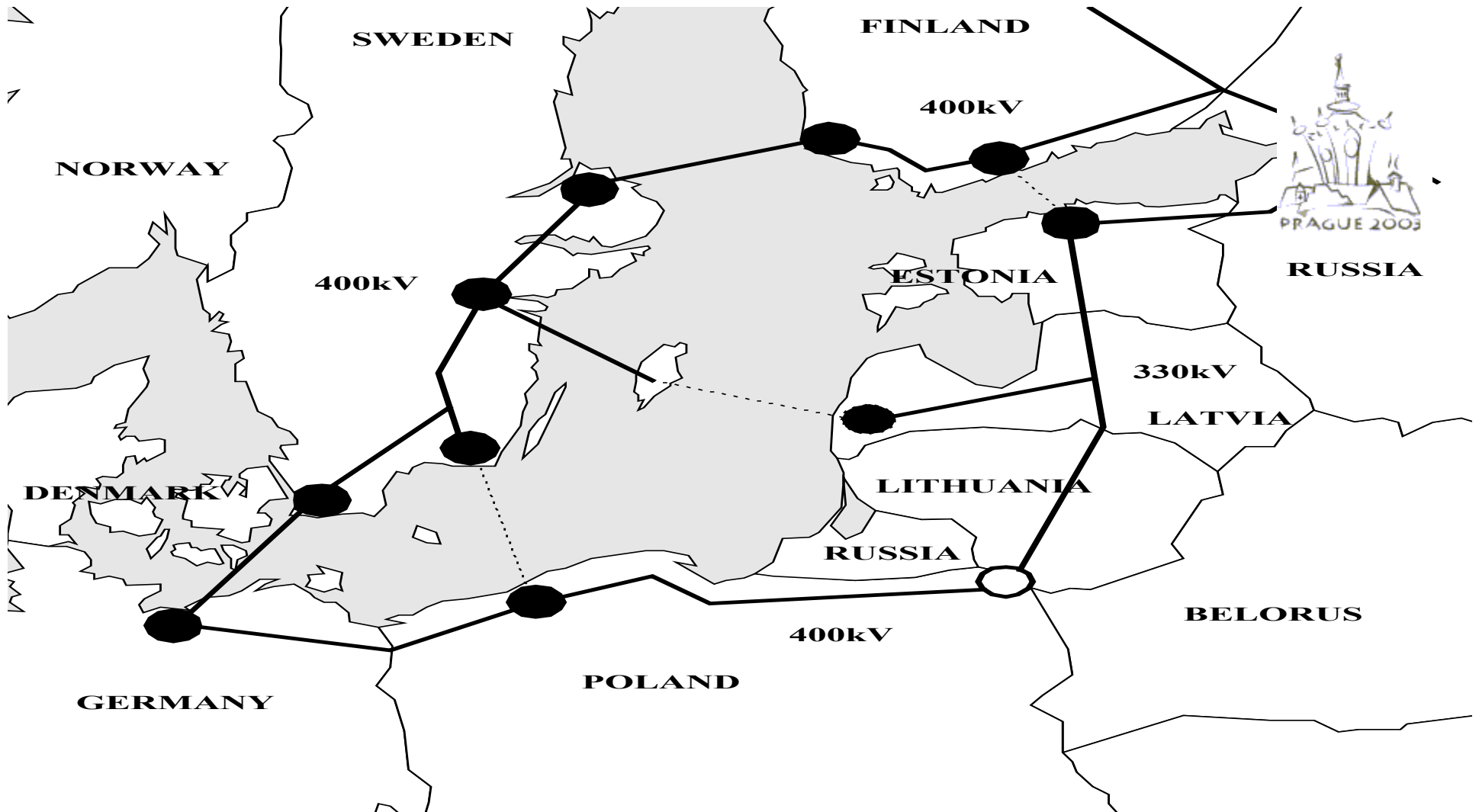
Existing electricity ring: Central Russia (Moscow) – St. Petersburg – Estonia – Latvia – Lithuania – Belarus – Smolensk – Central Russia

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Available capacity of the power plants of BIPS (MW)

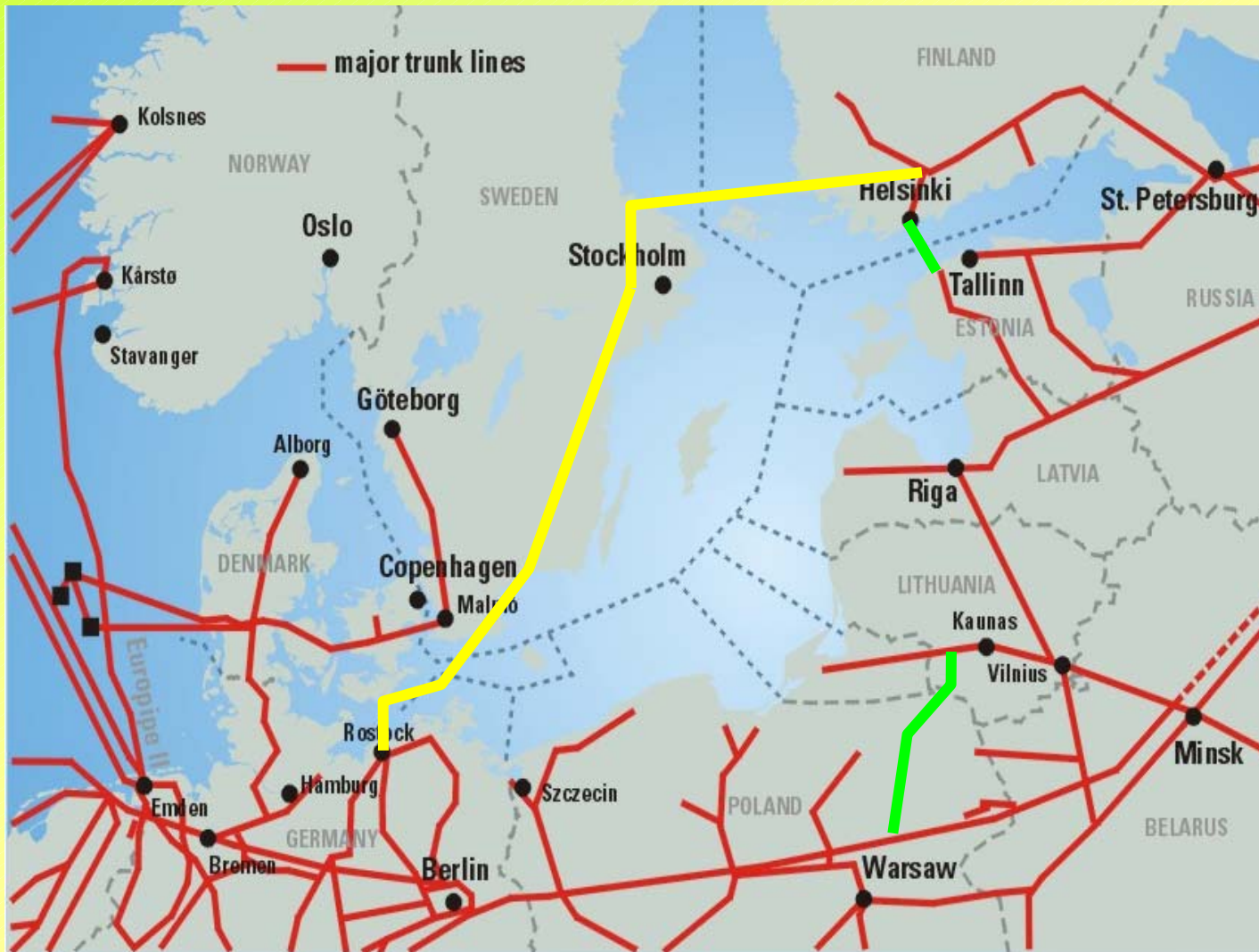
<i>Country</i>	<i>Thermal and nuclear power plants</i>	<i>Hydro and hydro pumped storage power plants</i>
Estonia	1,852	-
Latvia	390	1,493
Lithuania	2,034	860



Version of the “Baltic Ring” (electricity)

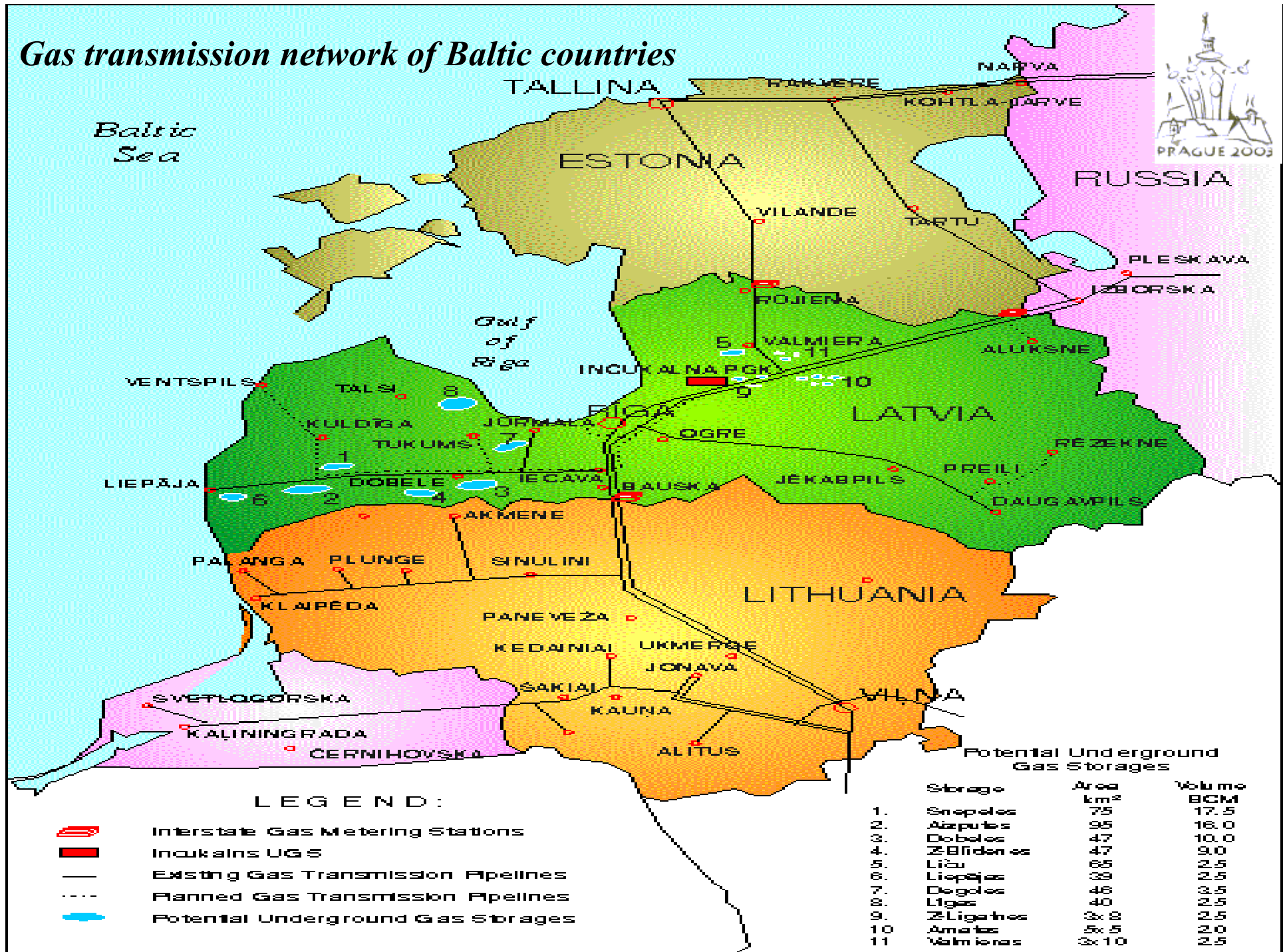
- Existing / Under Construction
- Possible
- Substation
- AC/DC/AC

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Natural gas grid and UGS in Europe: existing pipes and new pipeline projects.

Gas transmission network of Baltic countries



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The UGS capacities in Eastern Europe ($10^9 m^3$)

	Existing	Perspective
Latvia	2,12	50 (8UGS)
Poland	0,56	5,23
Slovakia	1,60	4,39
Hungary	1,92	2,52
Czech Republic	2,01	2,20
Romania	0,57	1,45
Slovenia	0,07	0,07
Bulgaria	0,60	0,60

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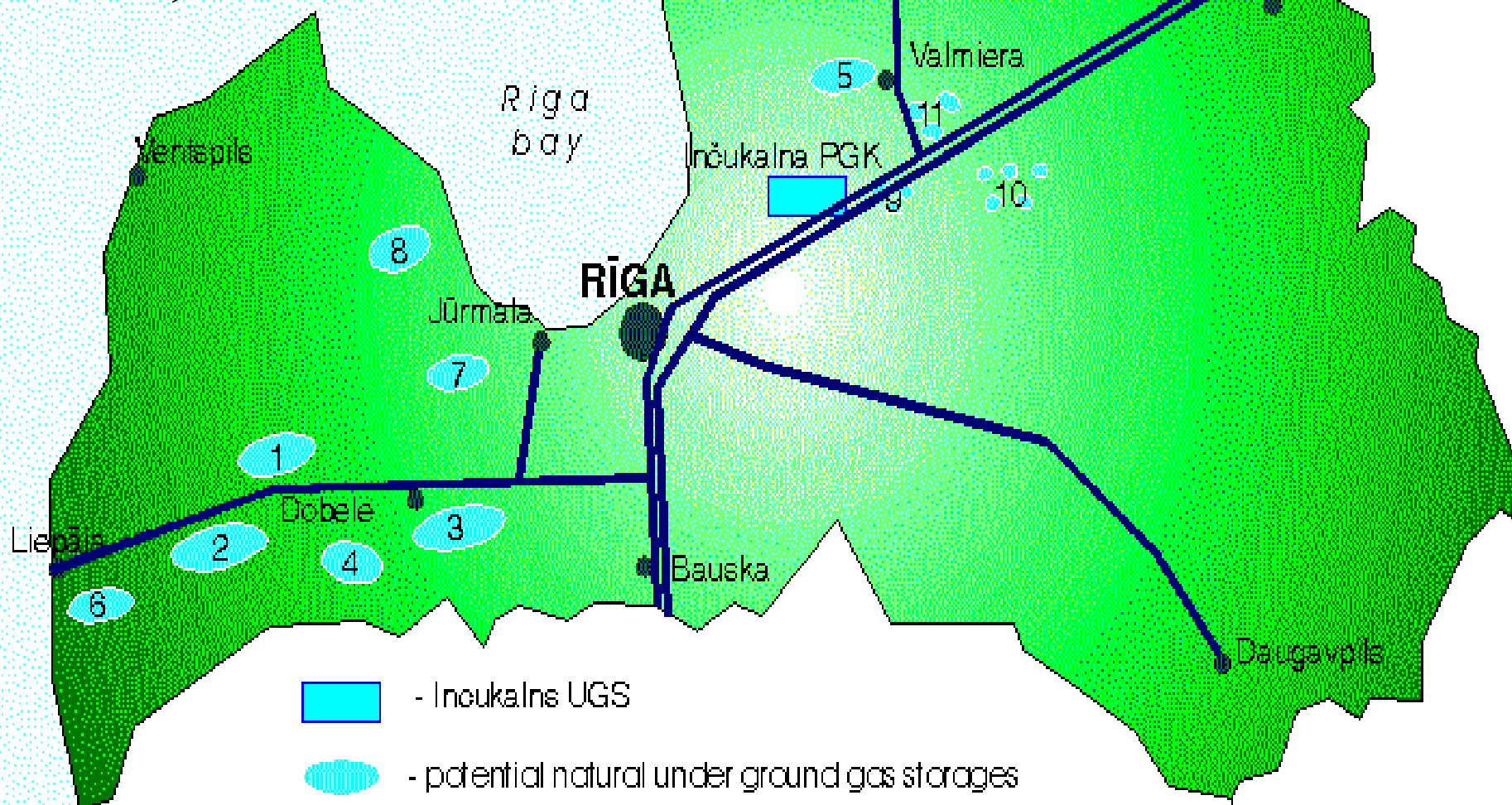


Sites for underground gas storage

Name of UGS	Area (km ²)	Volume (billion m ³)
Snēpele	75	17,5
Aizpute	95	16,0
Dobele	47	10,0
Z-Blīdene	47	9,0
Līči	65	2,5
Liepāja	39	2,5
Degole	46	3,5
Līga	40	2,5
Z-Līgatne	24	2,5
Amata	25	2,0
Valmiera	30	2,5

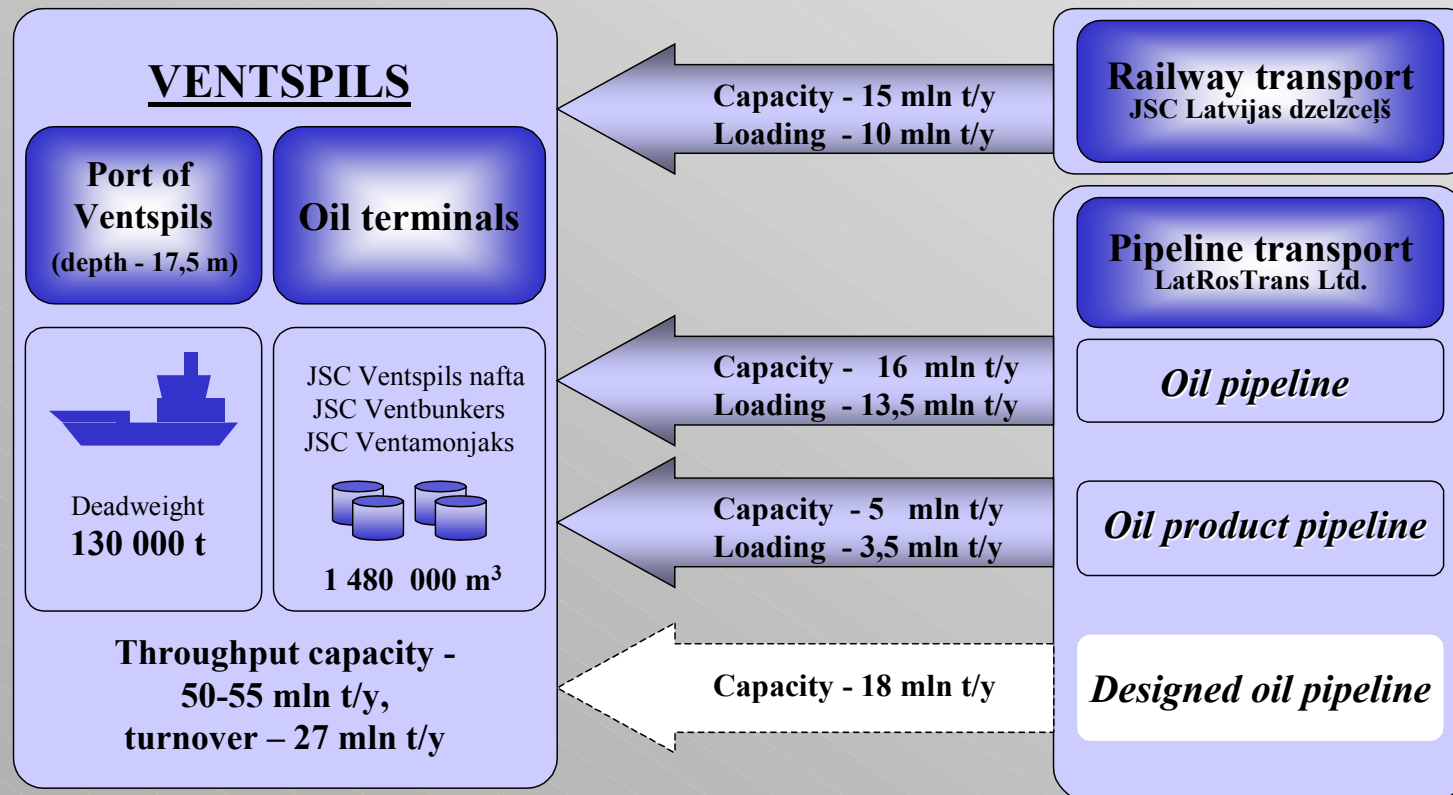


Existing and potential underground gas storages:
1 – Snepele, 2 – Aizpute, 3 – Dobele, 4 – Z-Blīdene, 5 – Līči,
6 – Liepāja, 7 – Degole, 8 – Līga, 9 – Z-Līgatne, 10 –
Amata, 11 – Valmiera





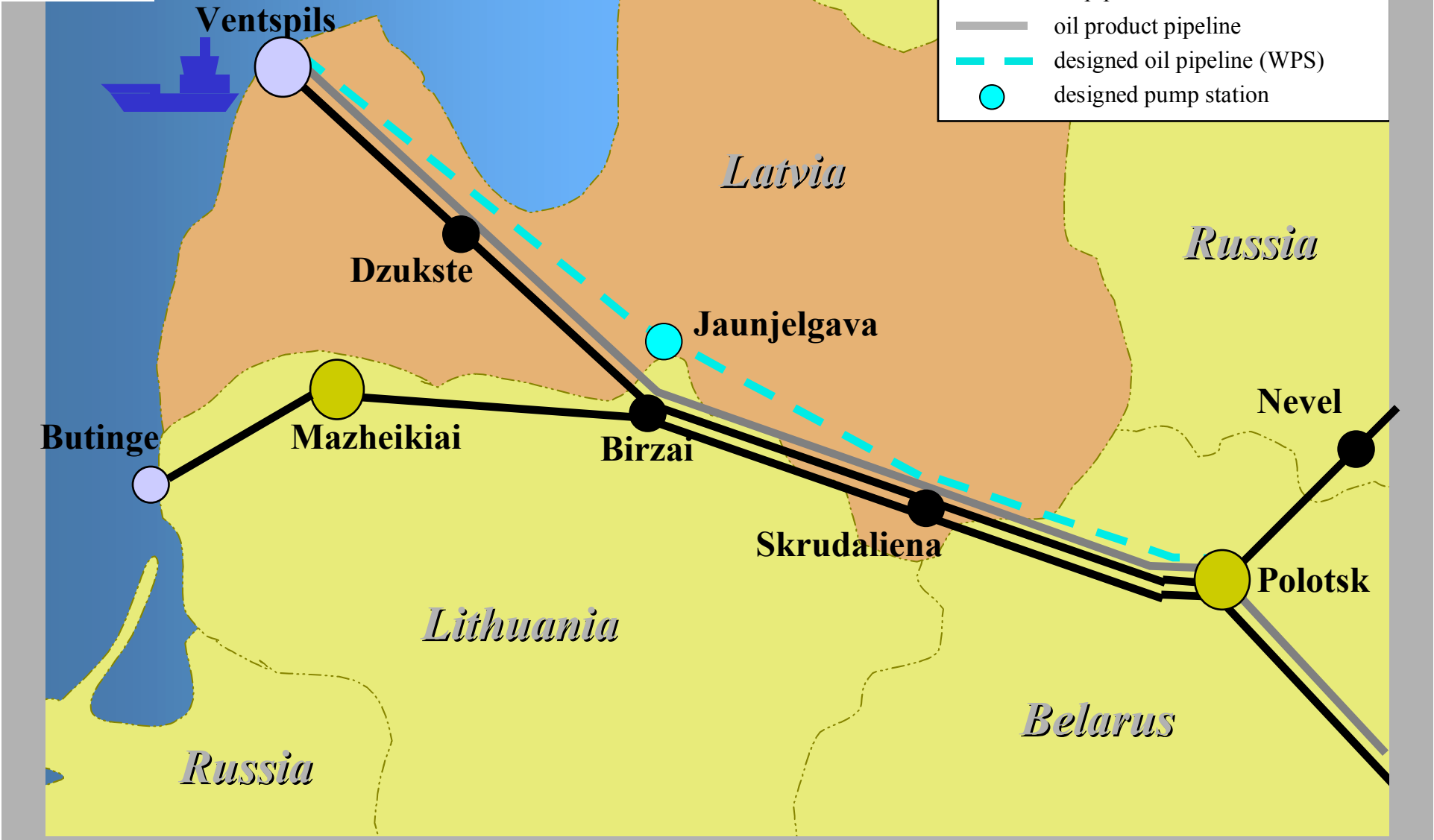
Latvian Oil Transit Corridor





Oil and Oil products pipelines in Latvia

- oil transshipment terminal
- oil refinery
- existing pump station
- oil pipeline
- oil product pipeline
- - - designed oil pipeline (WPS)
- designed pump station



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Tankers in Ventspils oil terminal



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Tankers in open Baltic see



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Conclusions



Photo: Pia Sundh