Latvijas Zaļā kustība
Latvian Green Movement

Latvia's vision for Sustainable energy 2050

Alda Ozola-Matule
Latvian Green Movement

Sustainable Energy Policy Seminar
October 1-5, 2007
Samsø, Denmark

http://www.inforse.org/ europe/seminar07_samso.htm

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- Current energy consumption and trends
- Latvian energy policy
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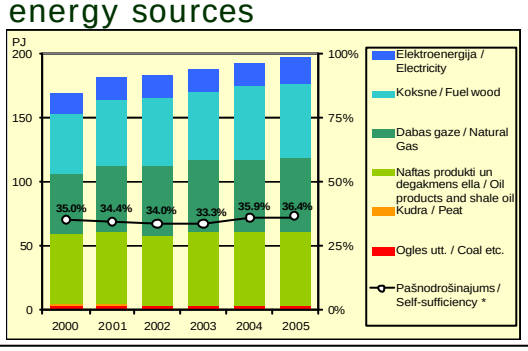
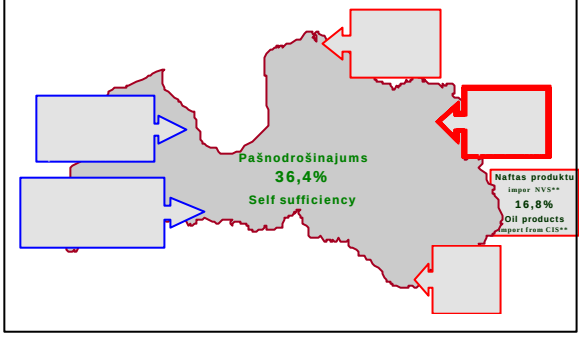
Consumption of primary energy sources



Energy imports in 2005



Characteristics and challenges for energy market

- Composition of resources:
  - Relatively large share of renewables in primary energy balance, especially biomass
  - High dependence from import of primary energy sources (29% - gas provided by Gasprom)
  - Increase in the use of fossil fuels both in absolute and relative terms
- Isolation of Baltic energy markets
- Low energy efficiency in whole cycle: production, transmission, distribution and final consumption

Energy policy in Latvia

- Key policy documents:
  - National energy strategy for 2007-2013
  - Renewable energy strategy 2007-2013
  - National energy efficiency plan?
- Committments towards EU:
  - **49,3%** from electricity produced using RES by 2010
  - 5,75% of bio-fuels from the fuel used in transport sector

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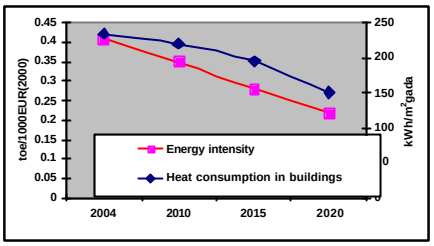
Energy policy priorities

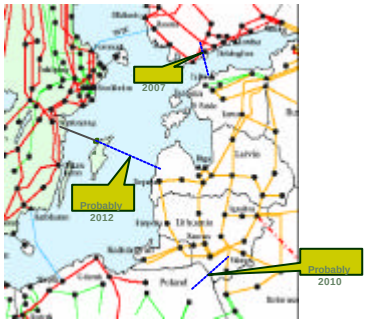
- Goals:
  - Security
  - Independence (self-sufficiency in electricity production by 2016)
- Tools and action points:
  - External links
  - Diversification of energy sources
  - Increase in energy efficiency

Energy efficiency target

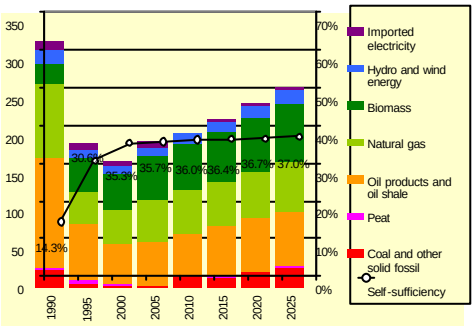
- Reduction of heat consumption in buildings from 235 kWh/m2 in 2004 to 150 kWh/m2 in 2020



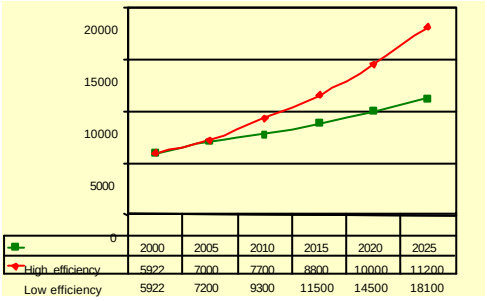
Electricity links in Baltic region



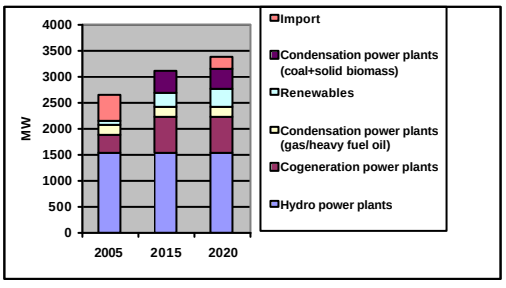
Prospects for primary energy demand



Electricity demand



Electricity production



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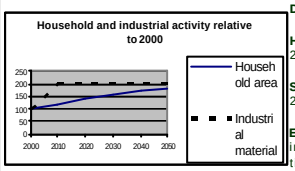
Sustainable energy vision for Latvia 2050

- Made within the project "Baltic-Nordic cooperation for sustainable energy"
- Partners: Inforse (Denmark), Green Liberty (Latvia), Latvian Green Movement
- Vision includes a transition of the energy supply and demand with phase-out of fossil energy and energy imports over a 50-year period.

A sustainable energy vision for Latvia, proposals until 2020

- **Windpower** - 600 MW
- Better **biomass** use (clean and efficient)
- **Straw** use and **energy plantations** (180,000 ha for liquid + 220,000 ha for solid fuel)
- District **heating** and **CHP** plans, 1150 MWe CHP
- Strategies for:
  - Biofuels in **transport**
  - **biogas**, **solar**, **geothermal**, **hydro**
  - **Energy efficiency** for heating, electricity, service sector, transport

Some assumptions for Latvia



Developments from 2000

Housing: increase to 41 m²/person in 2050 (+80%)

Service sector: 3.3 times increase till 2050

Electric appliances: three times increase in housing and 5 times in service sector till '50

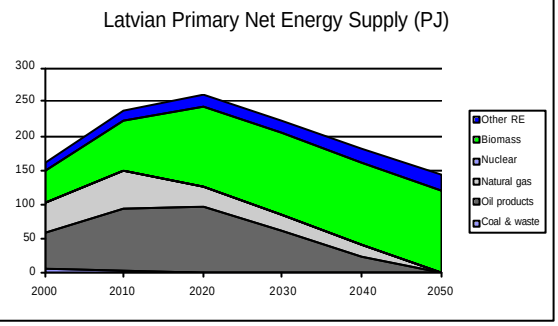
Car use: Western European level (EU-15)

Bus transport: 1.5 times increase till 2050

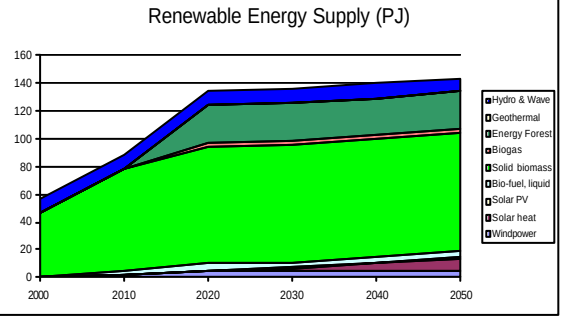
Road freight: 4 times increase till 2010, 6 times increase till 2050

Rail freight: 2.2 times increase till 2010, 3.3 times till 2050

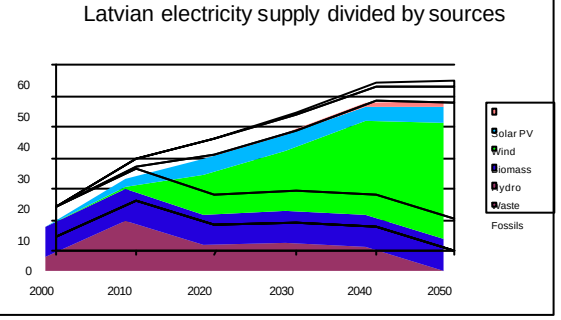
Primary Energy Supply



Renewable Energy Supply



Sources of Electricity



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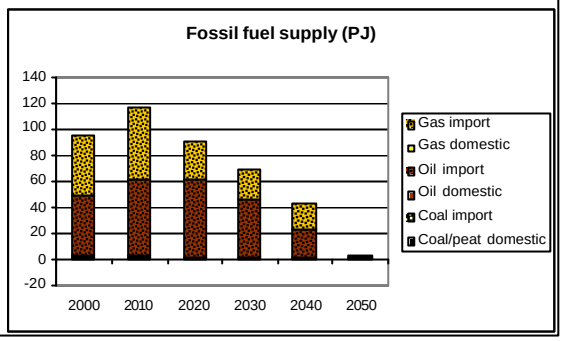
Fossil fuels



Power sector proposals

Possible expansion of CHP plants in Latvia, 2000 – 2020

Site	Heat load (GWh)	CHP nominal heat capacity (MW-heat)	Electric efficiency	Electricity / heat ratio	CHP nominal electric capacity (MW-electric)
Riga	4000	489	48%	1.50	733
Daugaupils	820	100	43%	1.16	123
Liepaja	655	80	42%	1.11	93
Ventspils	330	40	40%	1.00	42
Rezekne	245	30	40%	1.00	32
Smaller	1095	134	38%	0.90	127
Total					1150

Power costs

Possible Biomass Power plants		Riga	Daugavpils	Liepaja	Smaller plants
Specific invest. Costs	mill. € / MWe	1.3	2.12	2.18	2.5
Capacity installed	MWe	400	100	80	200
Total investment	mill. €	520	212.31	175	500
Lifetime	years	30	30	30	30
LFCC	€/Mwe	84567	138109	142112	162629
O&M-1	€/Mwe/year	25000	59615	61923	70000
O&M-2	€/MWh	2.7	12.1	12.7	15
Eq.full load	hours/year	5606	5606	5606	4292
O&M costs	mill €/year	35.9	12.7	10.6	26.9
Eff-el	%	48	40	40	38
Eff-total	%	80	78	78	78
Fuel costs	€/MWh	10	10	9	6
Energy costs	€/MWh - total energy	26	37	37	41
Electricity costs	€/MWh - electricity	33	49	48	56
Electricity costs	LV/kWh	0.022	0.033	0.033	0.038

Opportunities for Latvia

- Phase out electricity import by 2010
- Reduce gas use by 40% by 2020
- Phase out fossils by 2050
- Electricity costs 3-6 €cent/kWh (below nuclear)

Follow-up of the vision 2050

- Presentation to the energy experts
- Communication on vision with various stakeholders
- Updating of input data
- Elaboration of proposals for actvities that would lead towards vision

Thank you!

Alda Ozola-Matule
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alda@lanet.lv

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