



Green Technologies – Chances for Baltic municipalities?

Mg.cs.ing Edgars Vīgants

Latvian Bioenergy Association

SIA Ludzas Bio-Enerģija

2011.gada 22., 23. februāris, Rīga

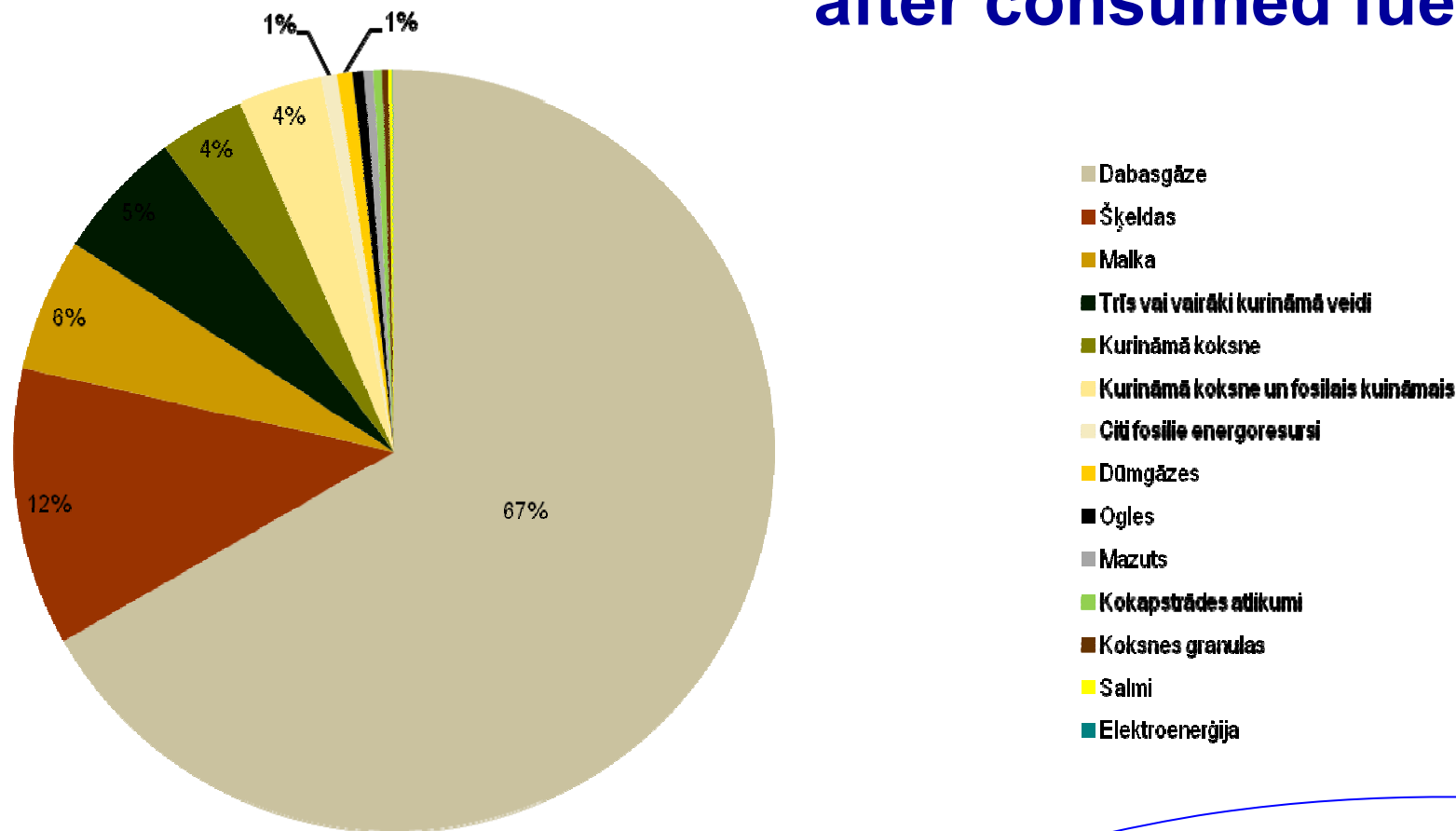
Enerģētikas politika un klimata aizsardzība – Kur atrodamies 20 gadus pēc Rio?



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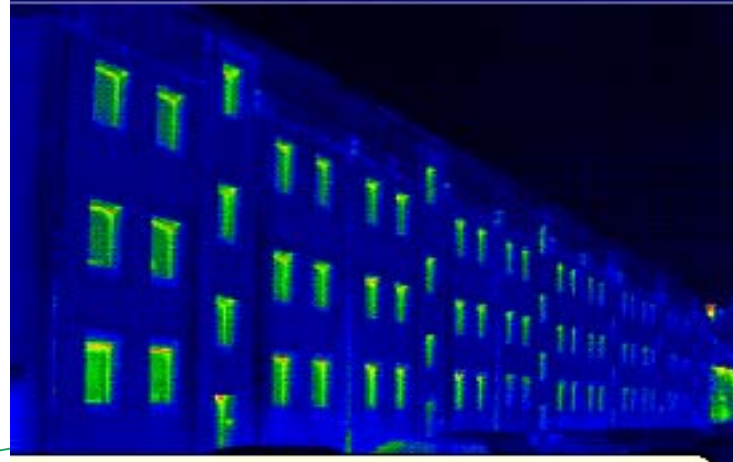
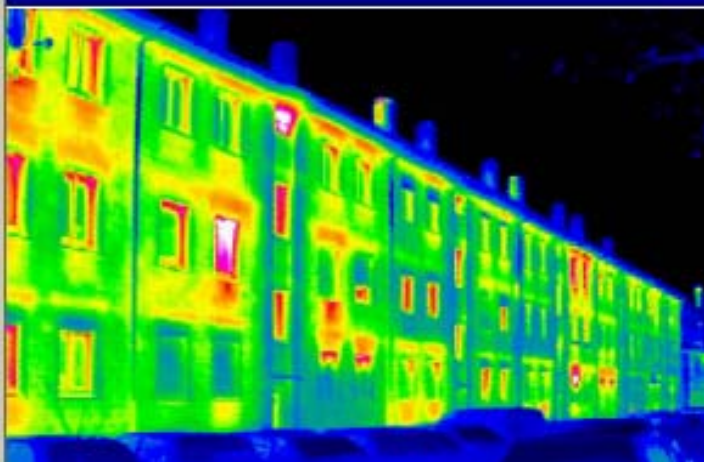
Boiler house grouping after consumed fuel type



Source: LR Ministry of Economics



The most effective technology for municipal enterprises - energy efficiency

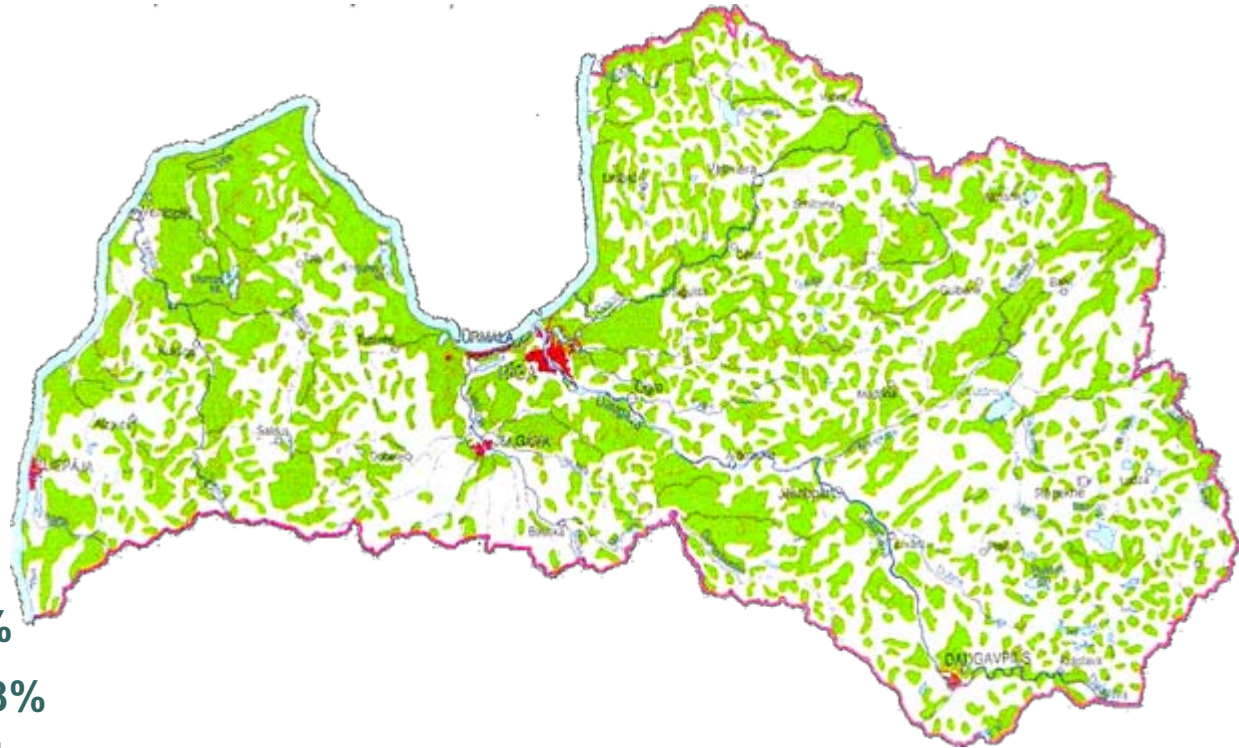
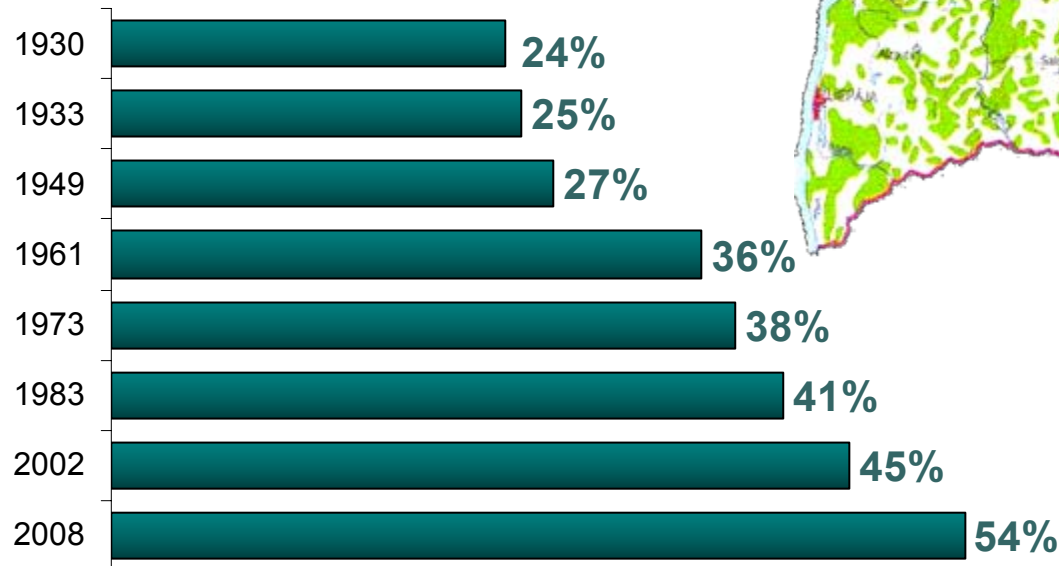


Potential of Latvian energy wood

12,6 mill. m³_c/year

30 TWh/year

Forest area:

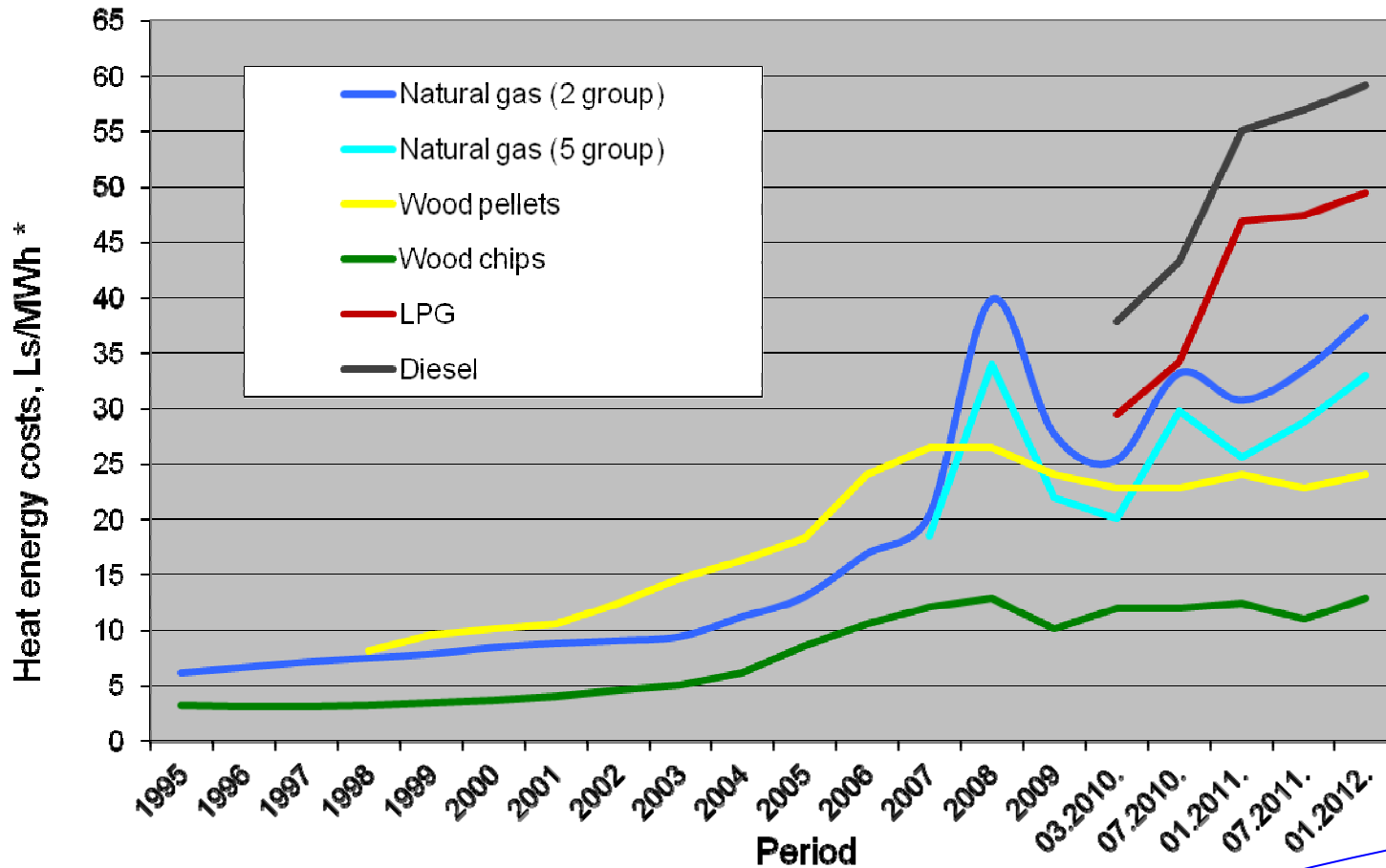


Future sources





Cost comparison of different fuels



Actual fuel price (excl. VAT):

- natural gas (2 group) 0,31668 Ls/m³

- natural gas (5 group) 0,27310 Ls/m³

- pellets 100 Ls/ton

- wood chips 7,00 Ls/m³

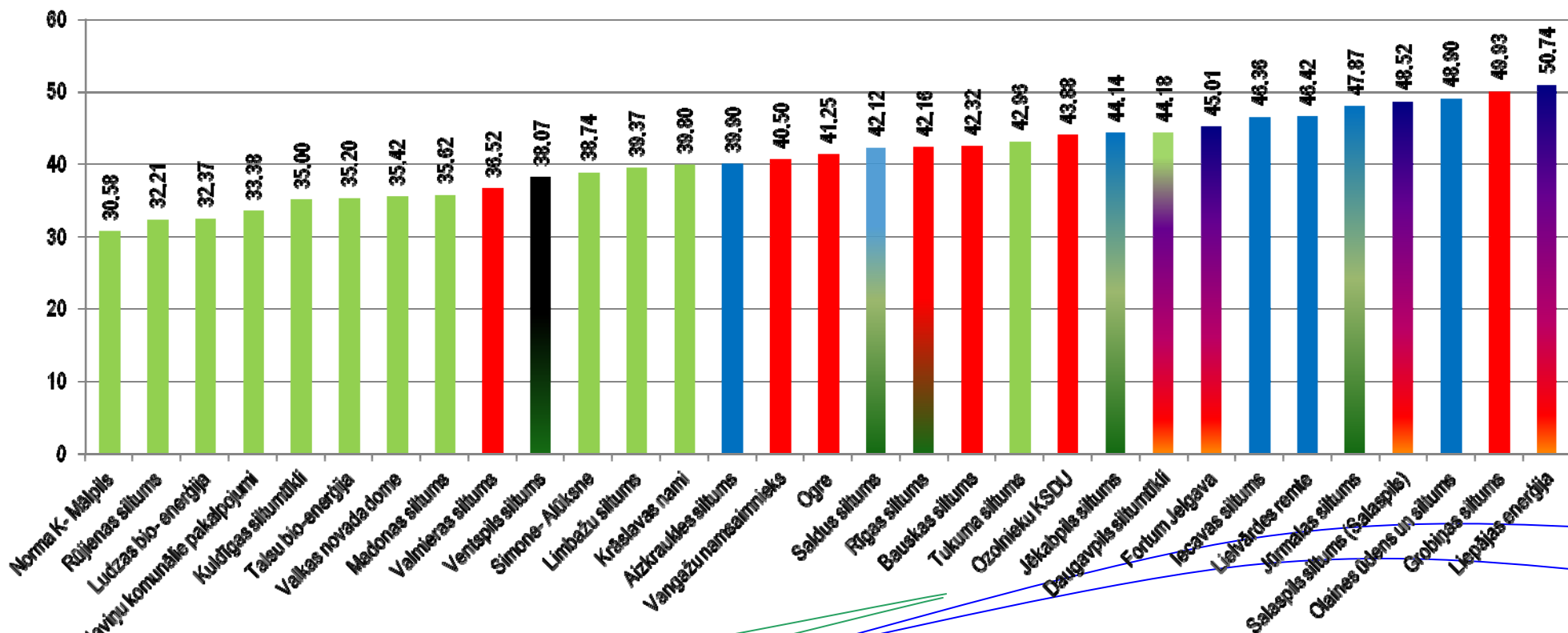
- LPG 570 Ls/ton

- Diesel 635 Ls/ton

* Incl. efficiency of the modern boiler

Heating tariffs depending on fuel type

Heating tariffs in January, 2012, Ls/MWh
(tariff of natural gas set at the sales price till 210 Ls/thousand.nm³)
Green - biomass, red - with cogeneration, blue - natural gas





Biomass cogeneration technologies

Steam cycle:

- turbine
- piston engine
- screw engine

Organic Rankine Cycle (ORC)

Stirling engine

Gasification and internal combustion engine



Patent for an invention



LATVIJAS REPUBLIKA

Latvijas Republikas Patentu valde apliecina, ka

PATENTS

Nr. 14116

ir piešķirts saskaņā ar Latvijas Republikas Patentu likumu, pamatojoties uz ierakstu Valsts patentu reģistrā un ar šajā dokumentā uzrādītajiem izgudrojuma nosaukumu, autoru, īpašnieku, izgudrojuma aprakstu, zīmējumiem, pretenzijām un kopsavilkumu. Patents ir spēkā Latvijā Republikā 20 gadus no 06.01.2010., ja šis termiņš likumā paredzētā gadījumā nebeidzas agrāk.

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Rīga

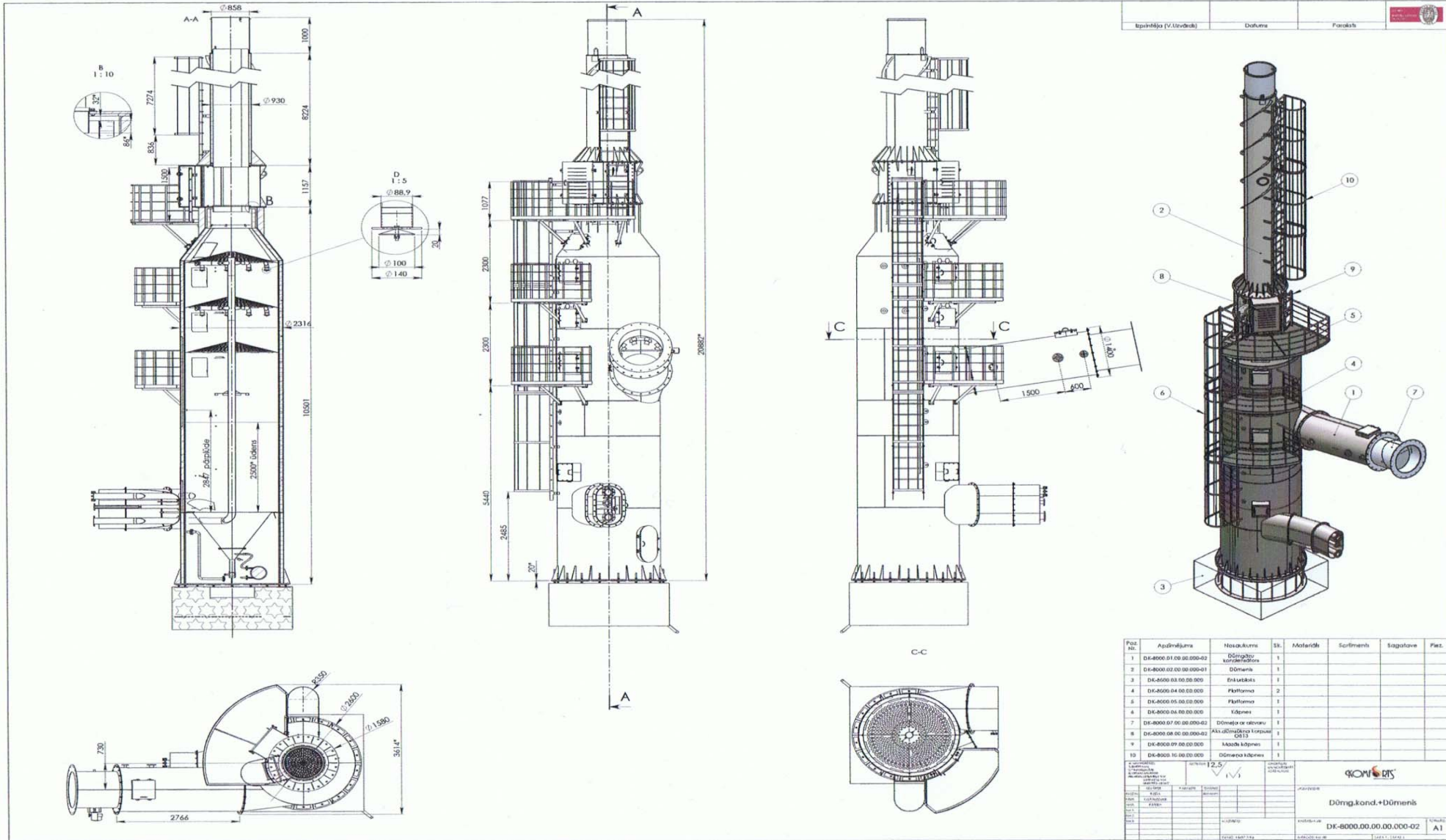
20.06.2010.

Patentu valdes
direktors

Z. Aumeisters



Flue gas condenser



Assembling of condenser



- Consumes for 10-20% less fuel
- More power from boiler
- Fossil fuel consumption reduces by 150 tons / year
- GHG emission reductions of 500 tons / year
- Reduction of hard particle emissions
- Strengthening of the competitiveness
- Option of installing similar condensers in other boiler houses



The next prototypes in Tukums





Conclusions

- **Latvia has enough biomass resources for municipal consumption**
- **Annual volumes of Latvian logging correspond with sustainable management principles**
- **Heating energy gained from local biomass is competitive without special support**
- **Latvian municipal enterprises are able to use more biomass and new technologies**



Thank you for attention

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