

HEINRICH BÖLL FOUNDATION - NORTH AMERICA –

Renewable Energy in the Baltics and the Future of European Energy Security

RENEWABLE ENERGY IN LATVIA

Dr.Sc.Ing. Edgars Vigants

LATVIAN RENEWABLE ENERGY FEDERATION



ATJAUNOJAM

Washington, DC, December 15, 2014

TOPICS

- **About LREF;**
- **Energy balance (dependence / self-supply)**
- **RES achievements and potential:**
 - **Solar**
 - **Wind**
 - **Hydro**
 - **Biogas**
 - **Biomass**
- **Growth of RES compared to neighboring countries**
- **Climate goals and obligations**
- **Support instruments**
- **Summary**



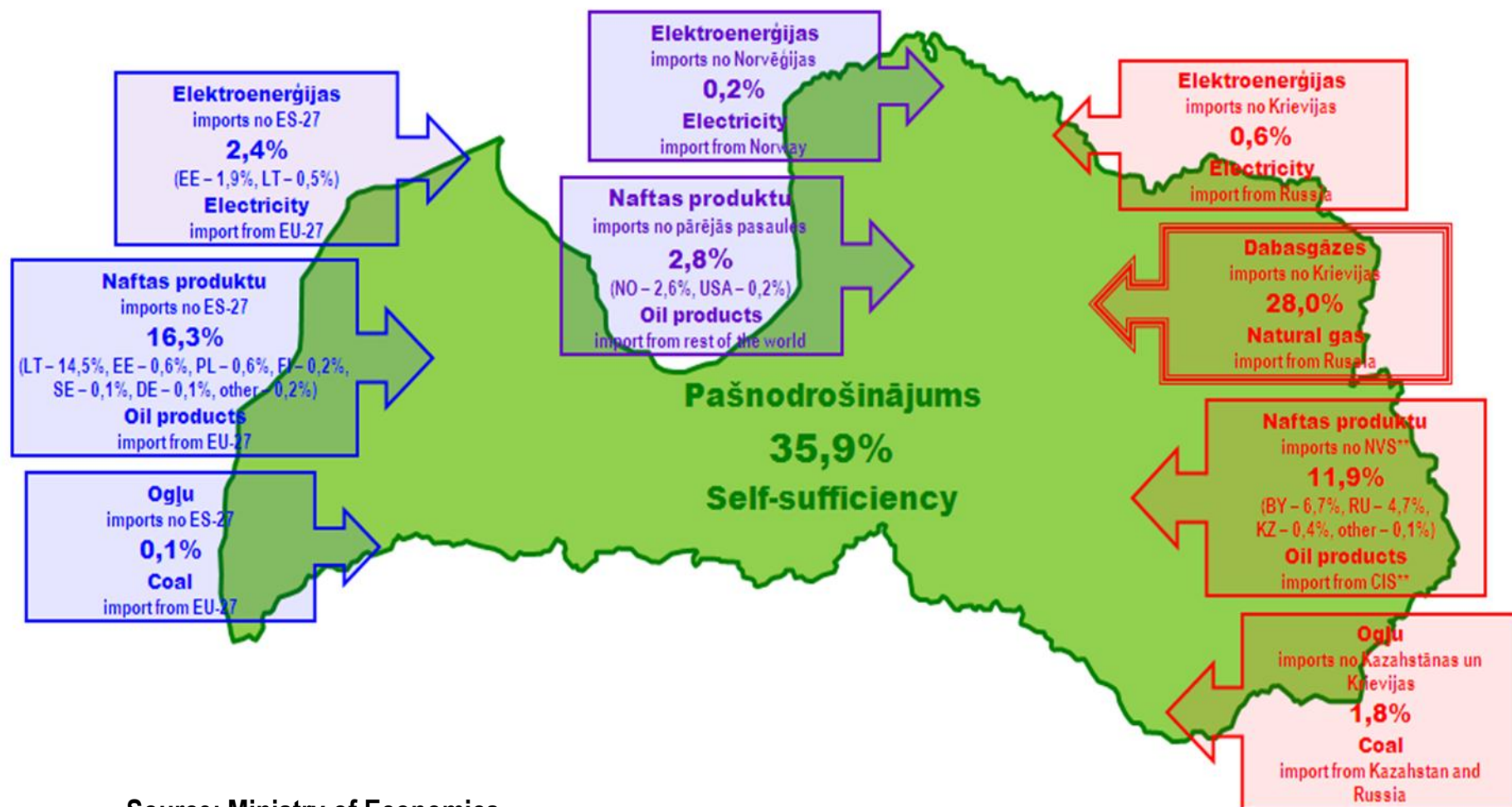
LATVIAN RENEWABLE ENERGY FEDERATION (LREF)

OVER-ARCHING ORGANIZATION UNITING ALL SECTORAL RENEWABLE ENERGY ASSOCIATIONS :

- ✓ Latvian Biomass Association LATBIO
- ✓ Latvian Biogas Association
- ✓ Wind Energy Association
- ✓ Small Hydropower Association
- ✓ Solar Energy Association
- ✓ Latvian Bioenergy Association
- ✓ Wind Energy Producer Association
- ✓ Latvian Renewable Energy Confederation
- ✓ Latvian Institute for Sustainable Development



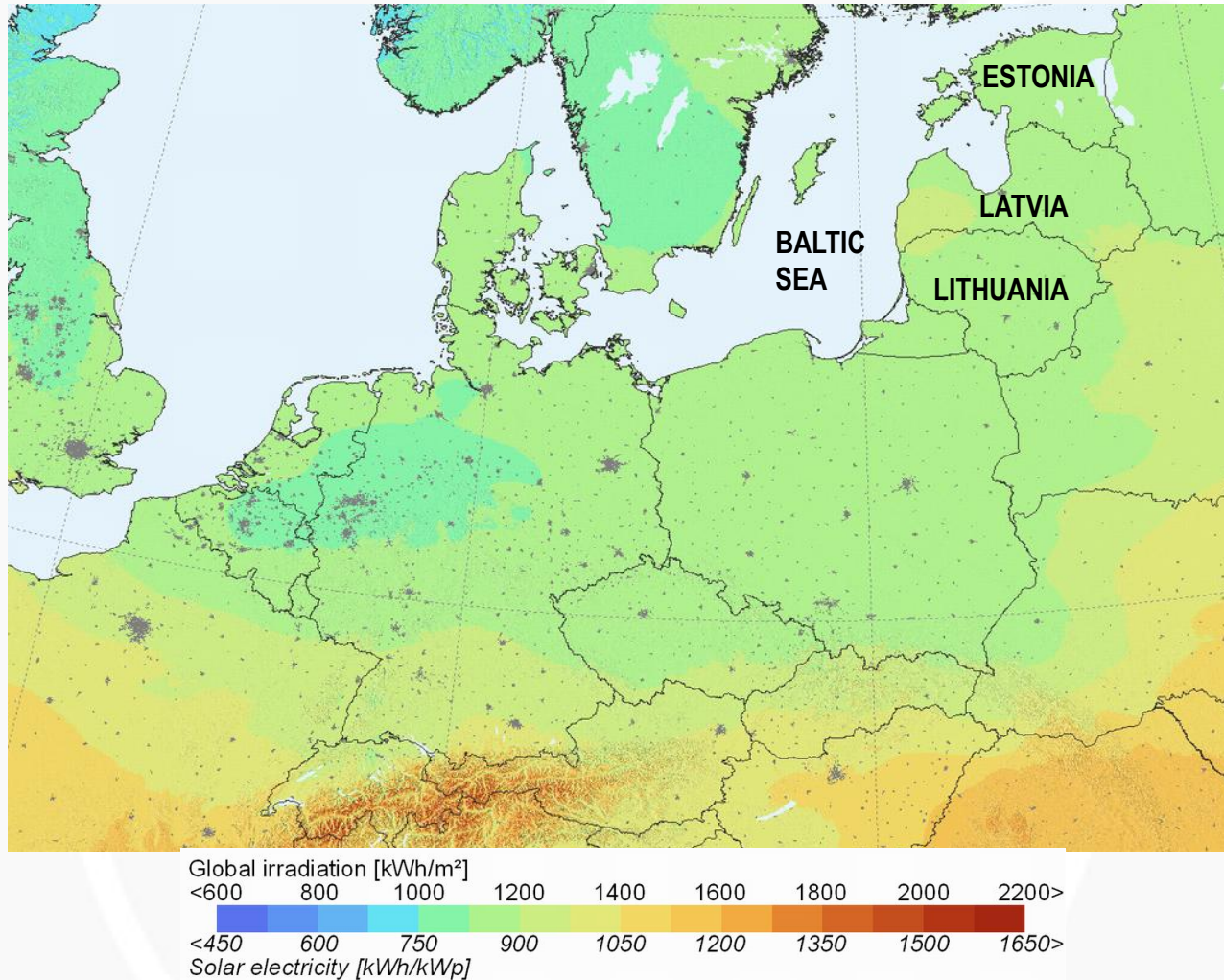
PRIMARY ENERGY FLOWS



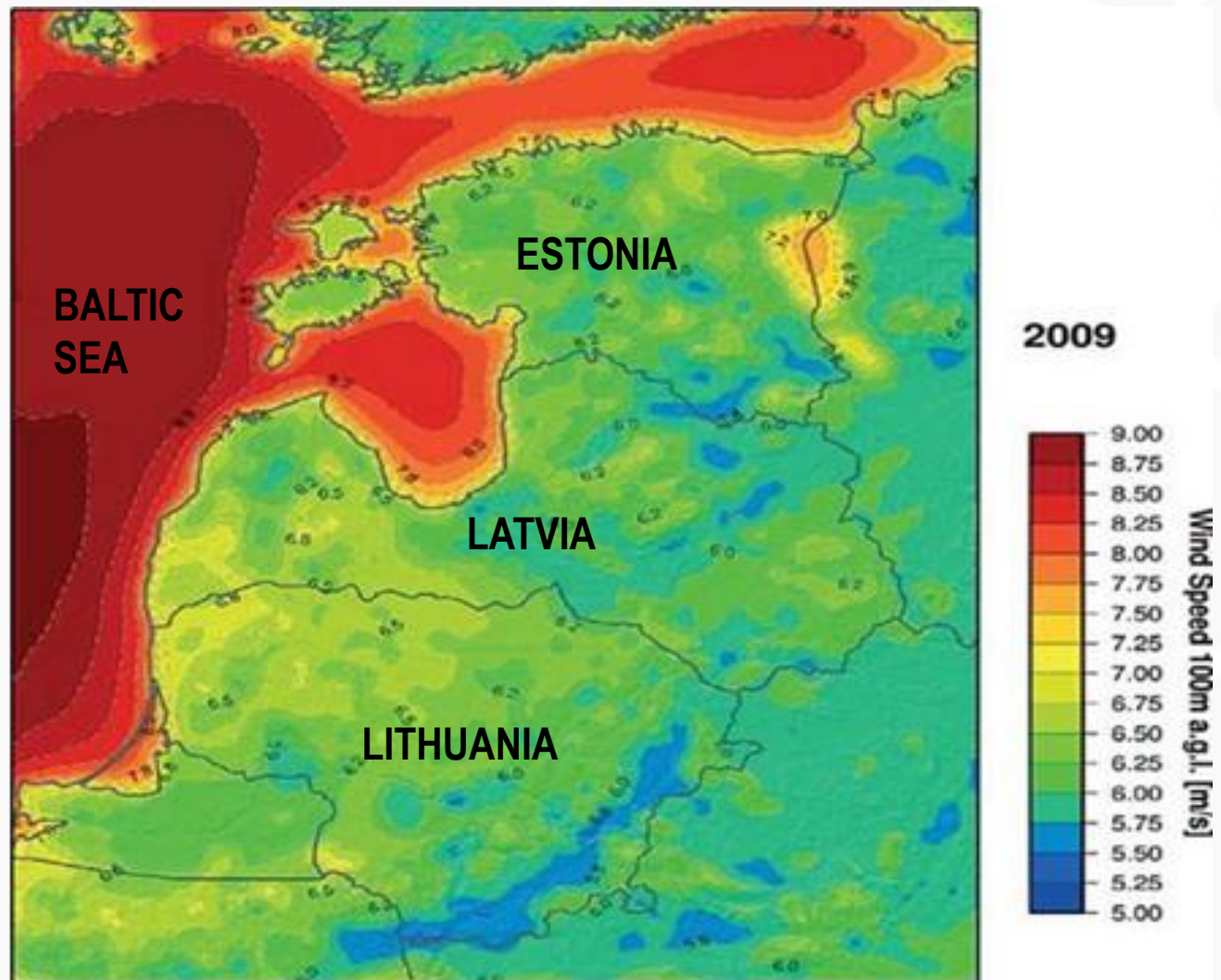
Source: Ministry of Economics



SOLAR RADIATION



WIND SPEED MAP



POTENTIAL FOR ON SHORE WIND POWER

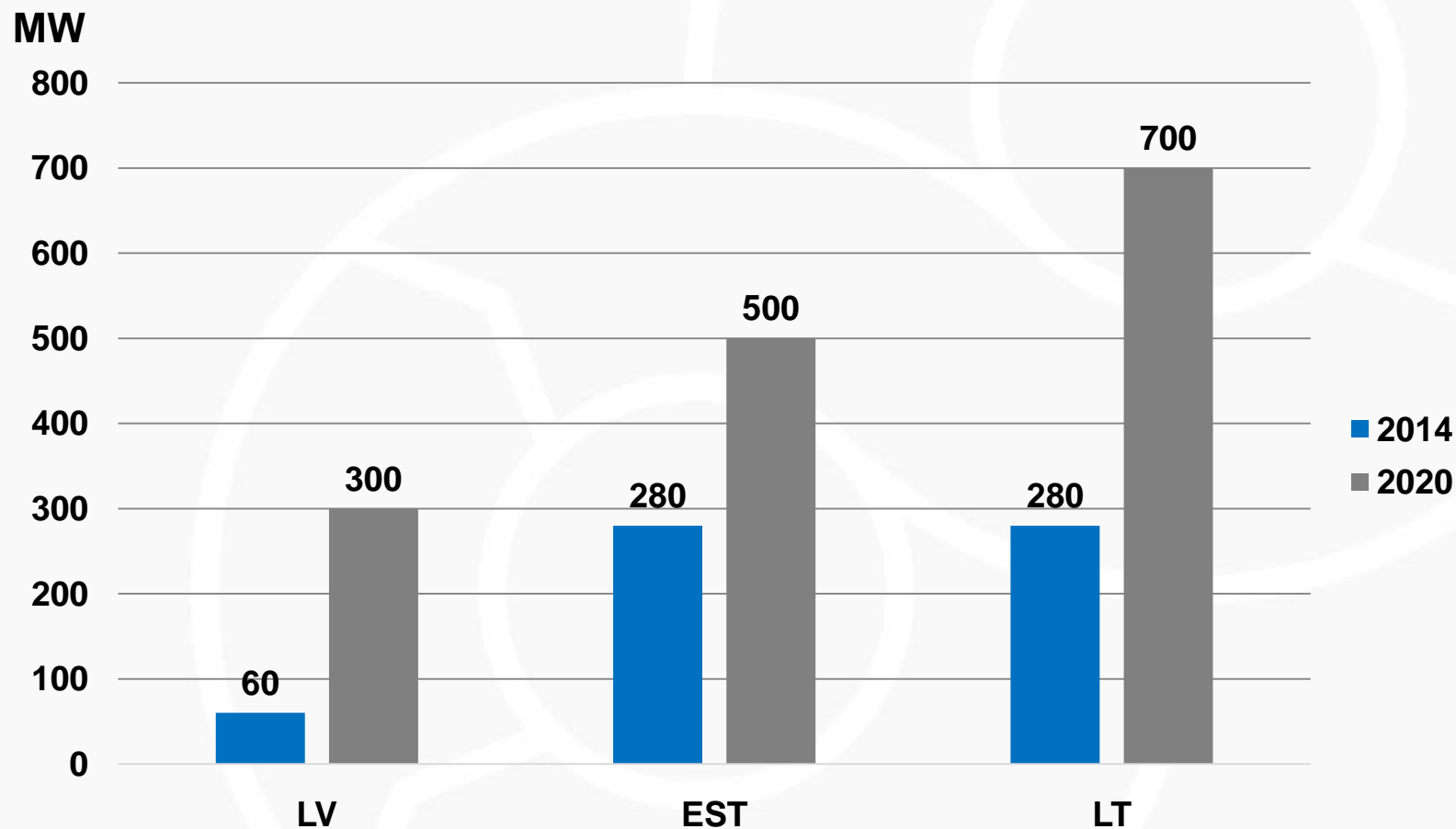
Wind power	Annual production (GWh) 2013	Potential for production (GWh)	Potential increase (GWh)
	126	1000-1200	1074

Wind power	Installed capacity (MW)	Potential capacity (MW)	Potential increase (MW)
	75 (60)	400	325

Source: LREF



INSTALLED CAPACITY OF WIND POWER



Source: LREF



POTENTIAL FOR SMALL HYDRO POWER

Hydro Power plants	Annual production (GWh) 2013	Potential for production (GWh)	Potential increase (GWh)
< 1 MW	77	280	205
1 – 10 MW	3 445	3 865	420

Hydro Power plants	Installed capacity (MW) 2013	Potential capacity (MW)	Potential increase (MW)
< 1 MW	26	96	70
1 – 10 MW	1 550	1 710	160

Number of existing HPP (01.01.2013) **146**

Number of potential HPP (01.01.2021) **210**

Source: MHEA



BIOGAS

> 54 biogas plants:

- landfill – 7,
- sewage – 1,
- agriculture – 44,
- food production residues, waste water – 2.

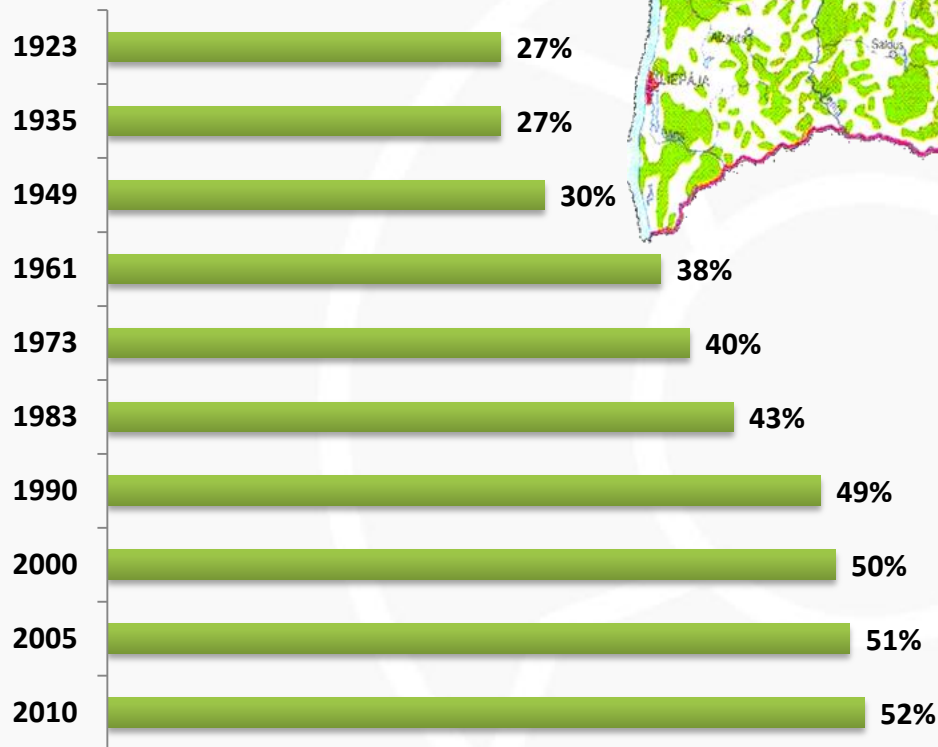
Total installed capacity – 54.92 MW

> In 2013 produced more than 275.22 GWh of electric power (forecast for 2014: 328-340 GWh, *average load 75%*)

> *“Development program for biogas production and consumption 2007-2011” planned that there would be 537 GWh in 2010*



FOREST AREA (% of total land area)



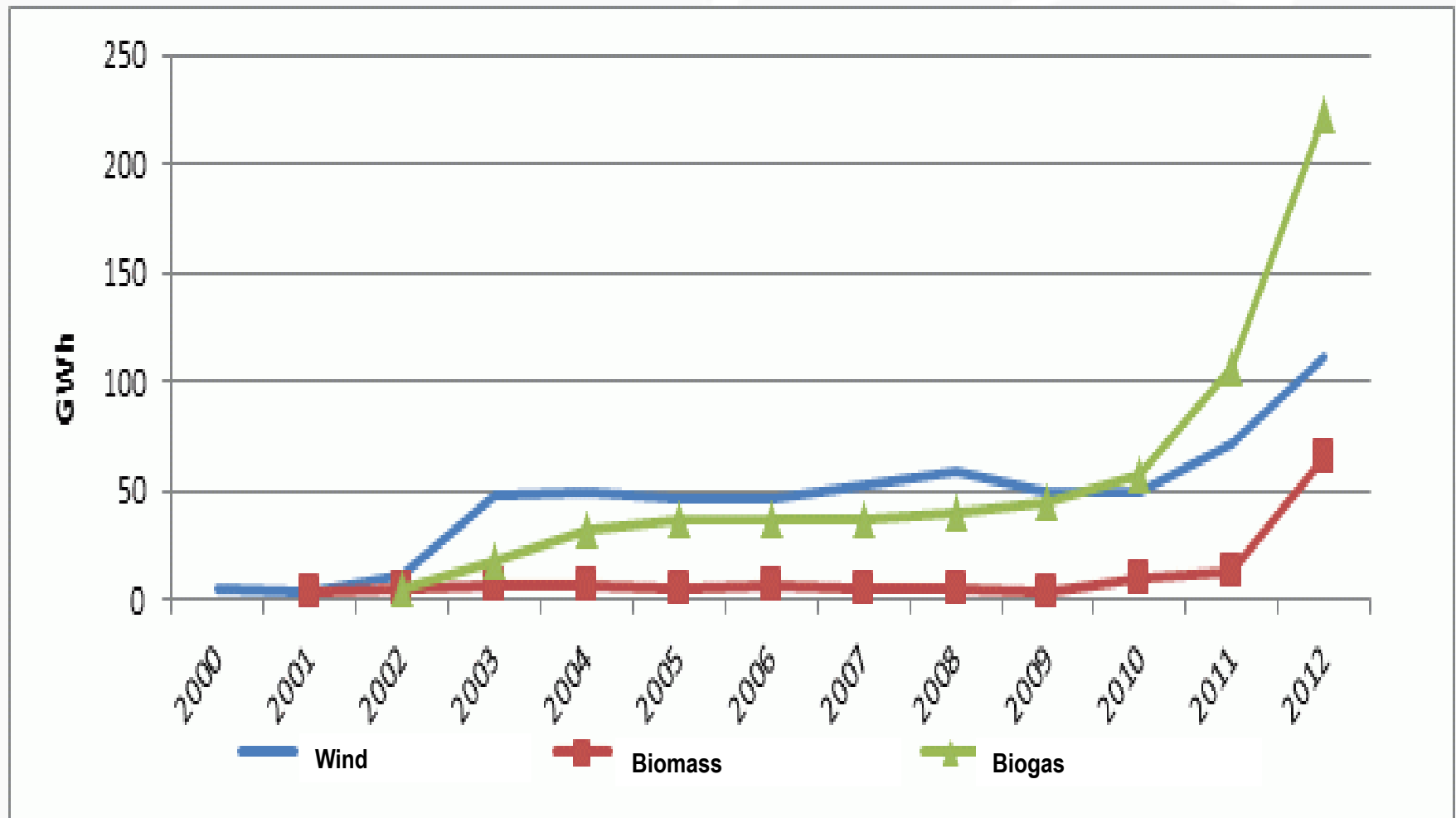
Source: MEKA



Most part of forests are certified by FSC



ELECTRICITY PRODUCTION FROM RES



Source: Ministry of Economics

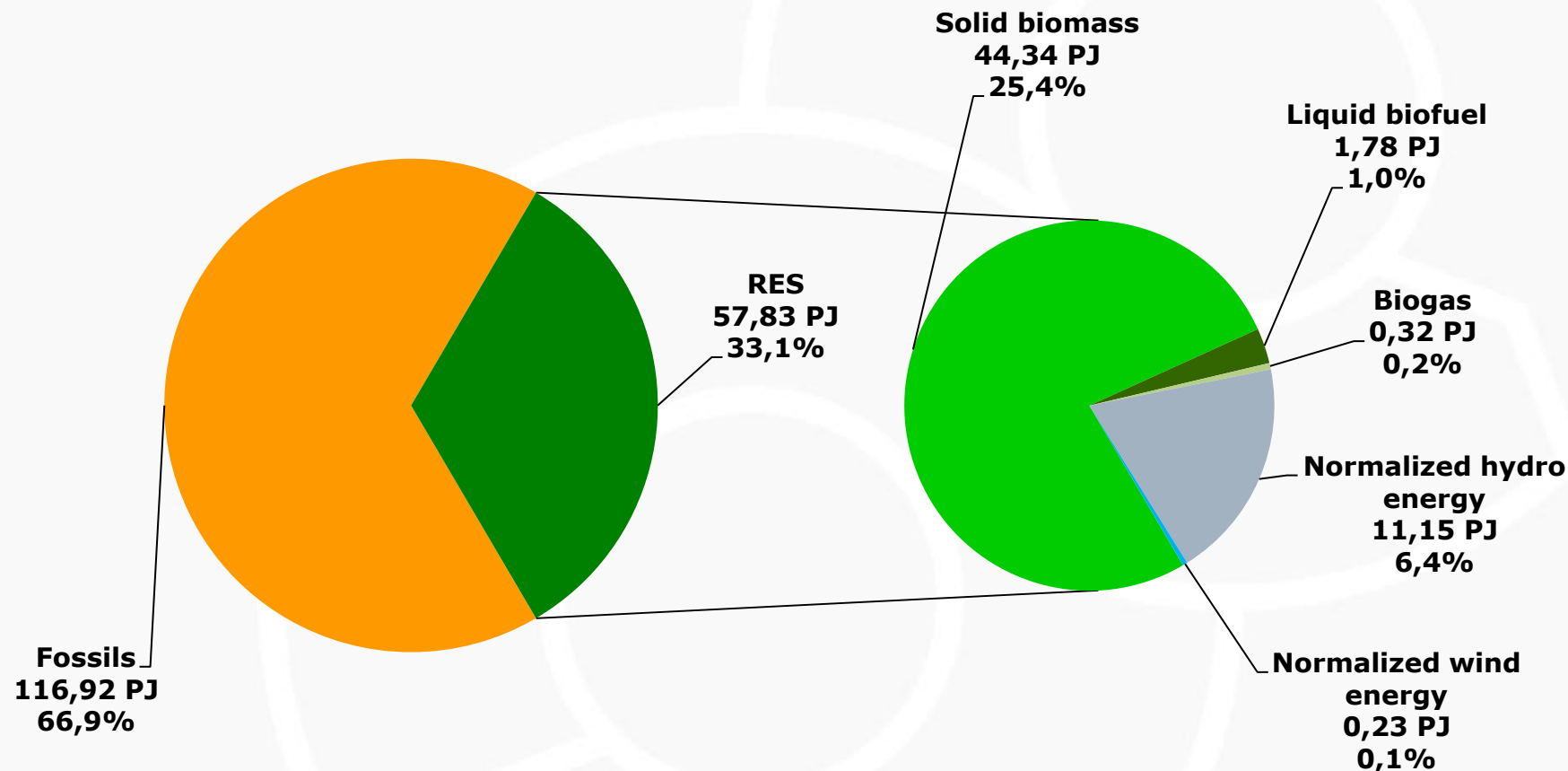


POTENTIAL FOR RENEWABLE POWER IN 2020

Type of RES	Installed capacity, MW	Electricity produced, GWh	Potential capacity, MW	Potential electricity, GWh
Biomass	56	195	150	760
Biogas	50	214	90	720
Wind	75	126	500	1500
Small Hydro	48	140	75	20
Total	229	675	815	3200
Large Hydro	1522	3000	1522	3000
Total	1751	3675	2337	6200



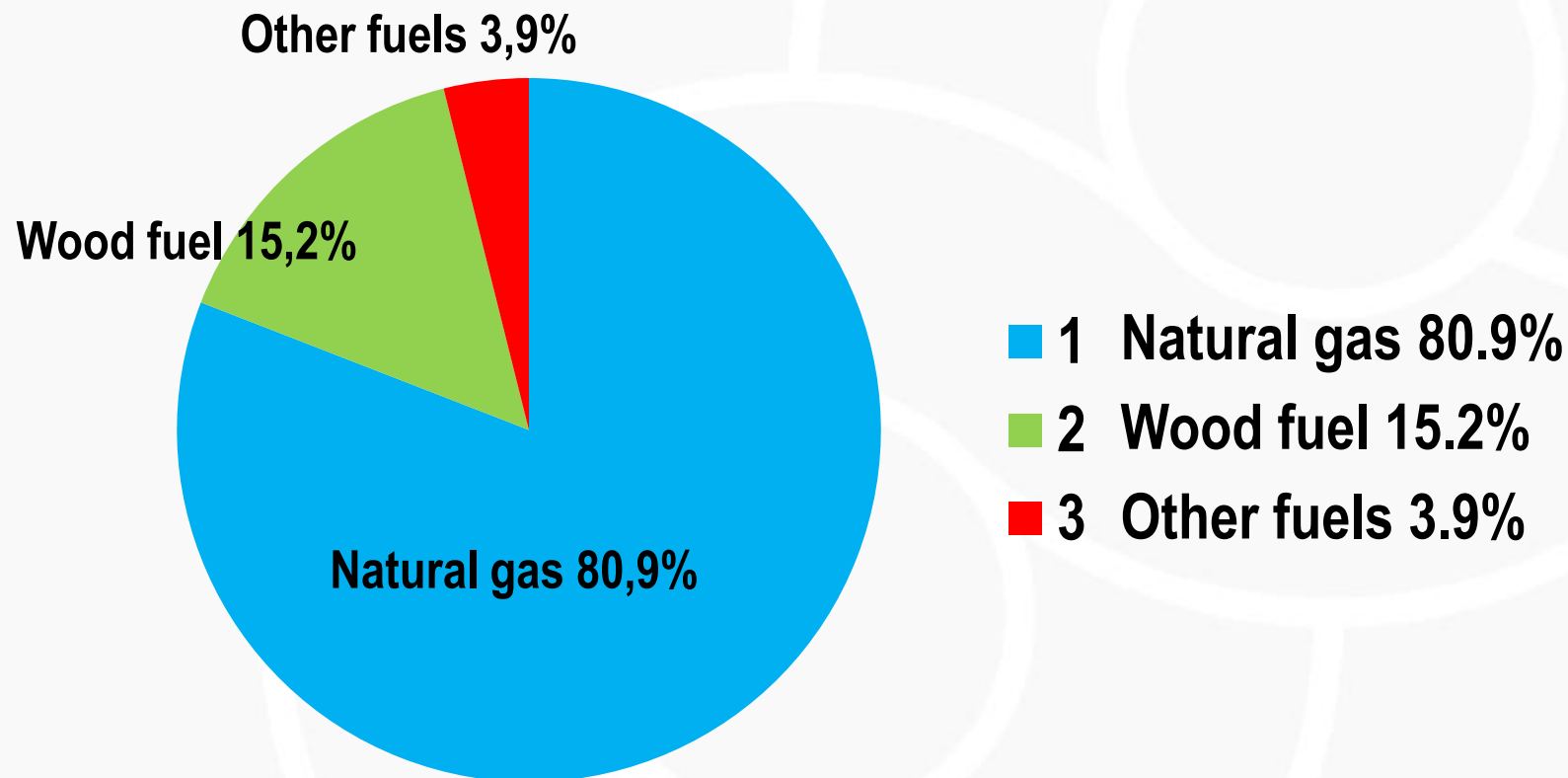
GROSS FINAL ENERGY CONSUMPTION IN 2011



Source: Ministry of Economics



FUELS IN DISTRICT HEATING



Source: Ministry of Economics, 2011





ATJAUNOJAM

CLIMATE GOALS (USE OF RES)

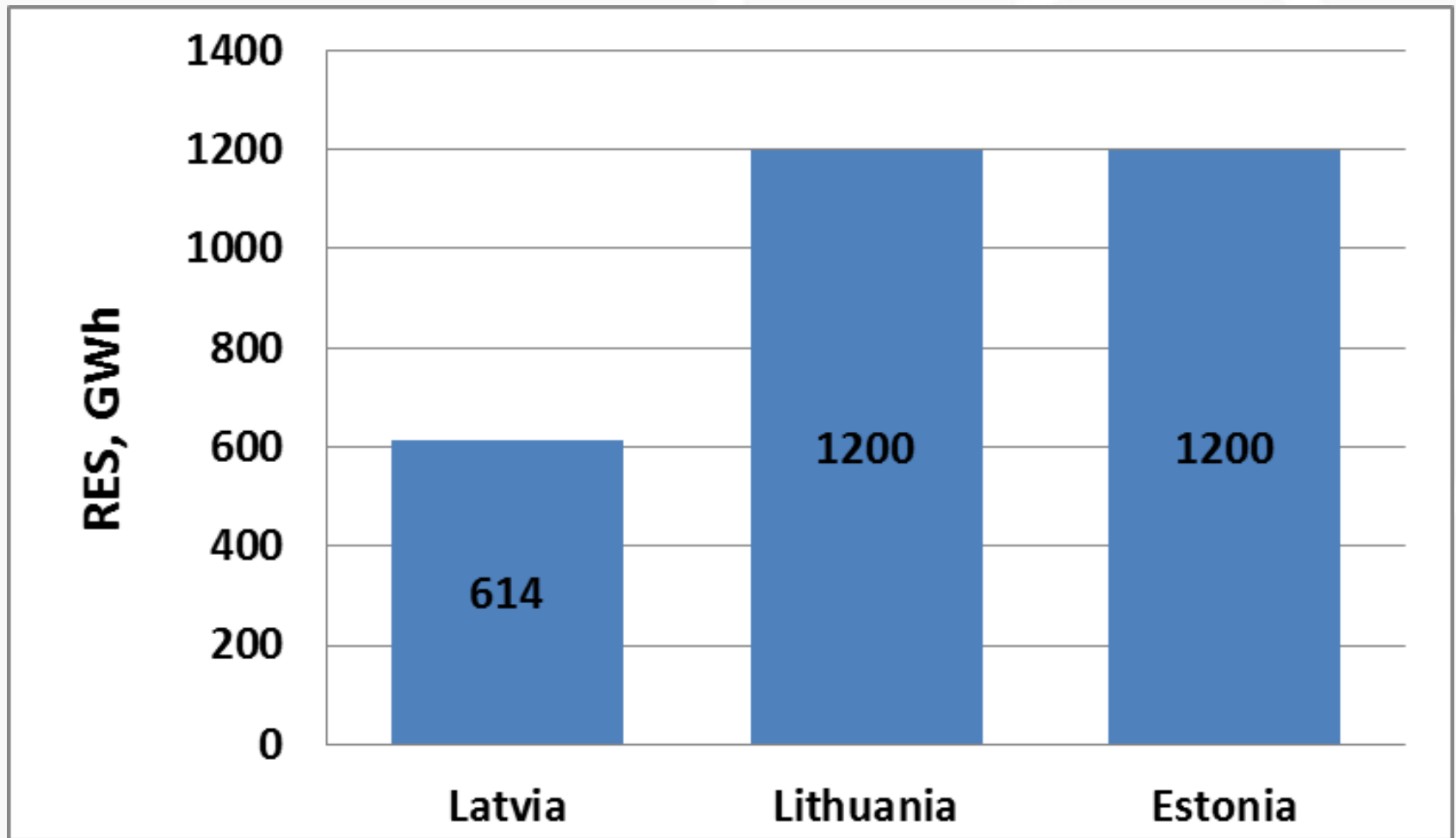
	EU	Latvia
2020	20 %	40 %
2030	27 %	50 %





ATJAUNOJAM

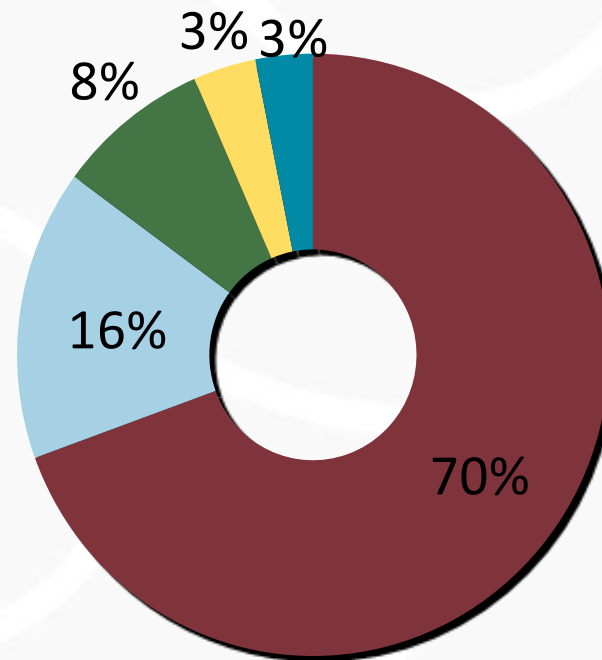
INCREASE OF RES POWER PRODUCTION IN 2013



STRUCTURE OF FEED IN SUPPORT

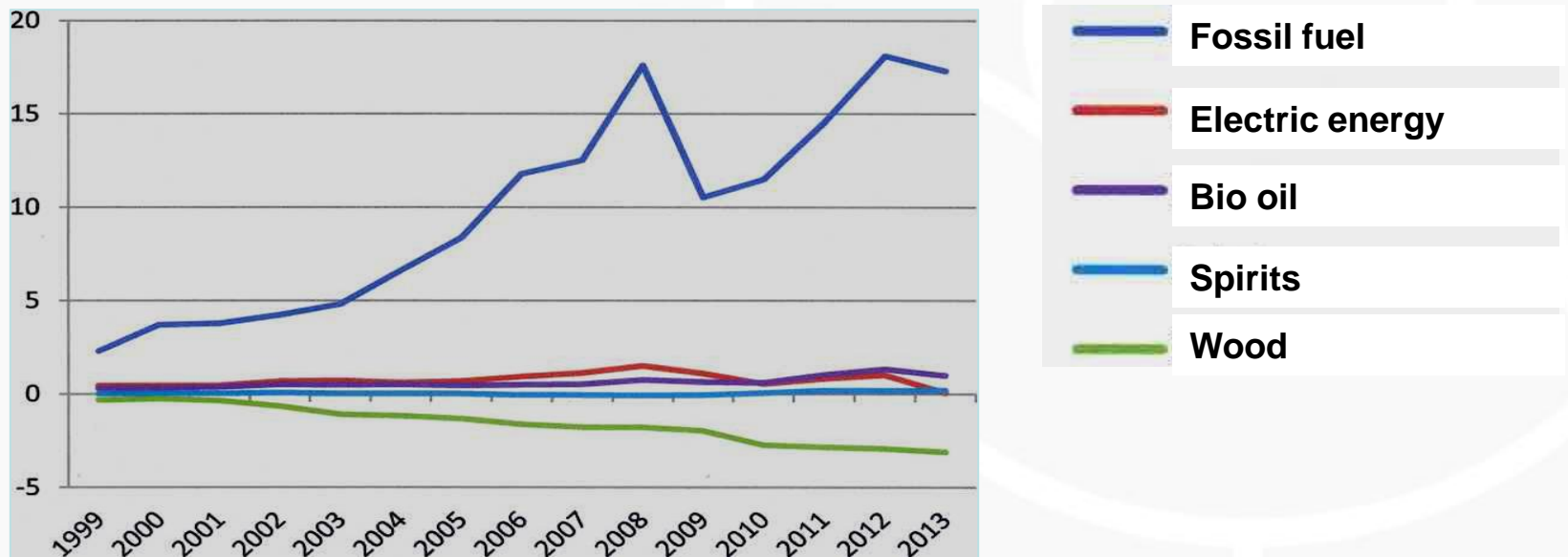
70% or 236,9 million EUR annually are paid to support Russian
under mandatory procurement
and feed-in tariff

- Cogeneration stations consuming natural gas
- Biogas power stations
- Biomass power stations
- Wind power stations
- Hydro power stations below 5 MW



EXPORT-IMPORT BALANCE OF ENERGY SOURCES

Million EUR/day



Balance of each day in 2013:

- Expenses on imported fossils **-17,3 million EUR/day**
- Income from exported wood fuel **+3,1 million EUR/day**

Source: FEI

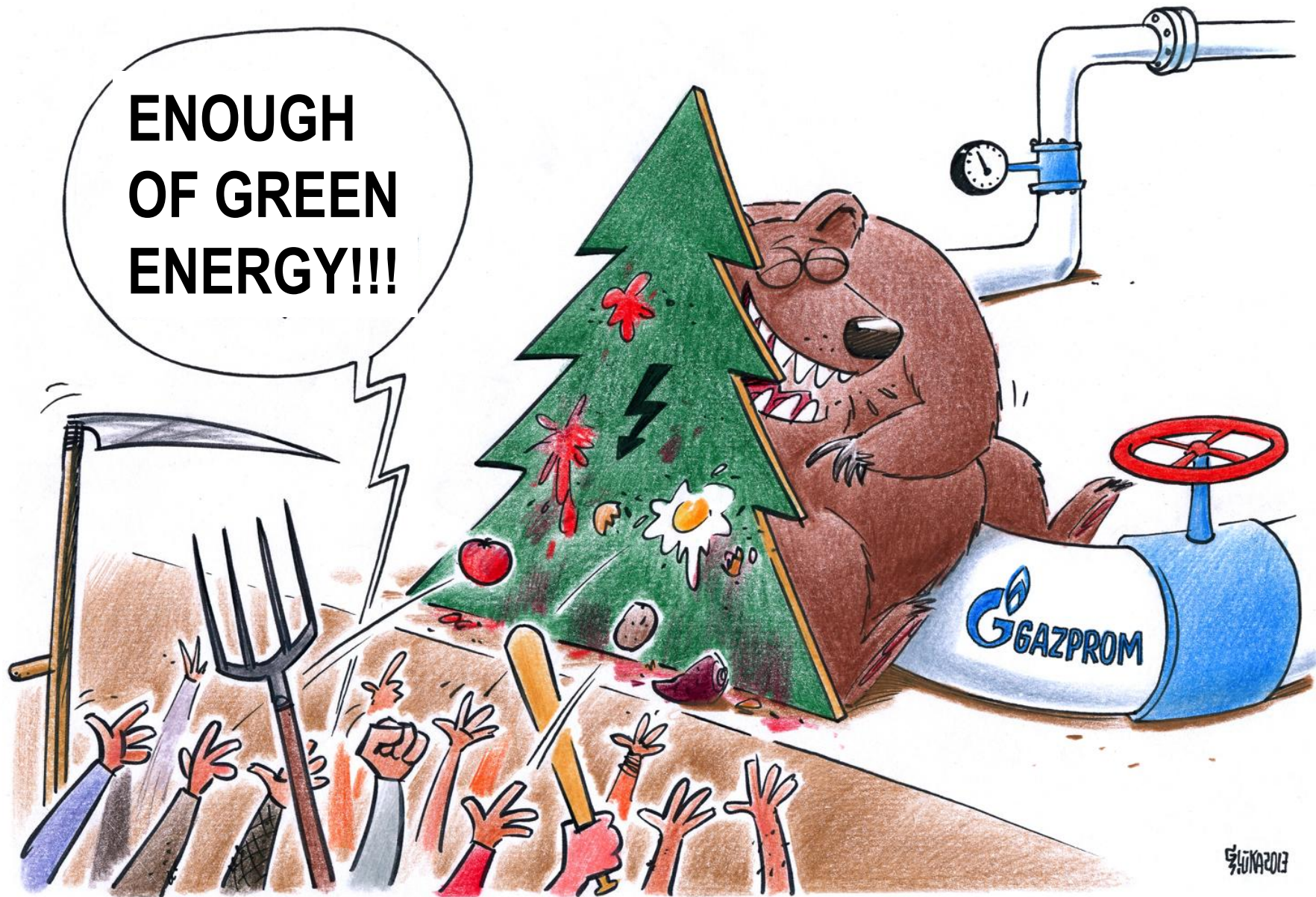


SUMMARY

- **Latvia has sufficient amount of local renewable resources to cover its self-consumption**
- **EU is the main driver for RES developments in Latvia**
- **Clear local policy decisions and support mechanisms are urgently required**
- **Former strong influence of Gazprom are decreasing**
- **The key to success is closer and more concrete cooperation**



**ENOUGH
OF GREEN
ENERGY!!!**



© 2013 KAZAKHSTAN



Questions?



Dr.Sc.Ing. Edgars Vigants
Mob. +371 29 212 789
edgars.vigants@gmail.com

