



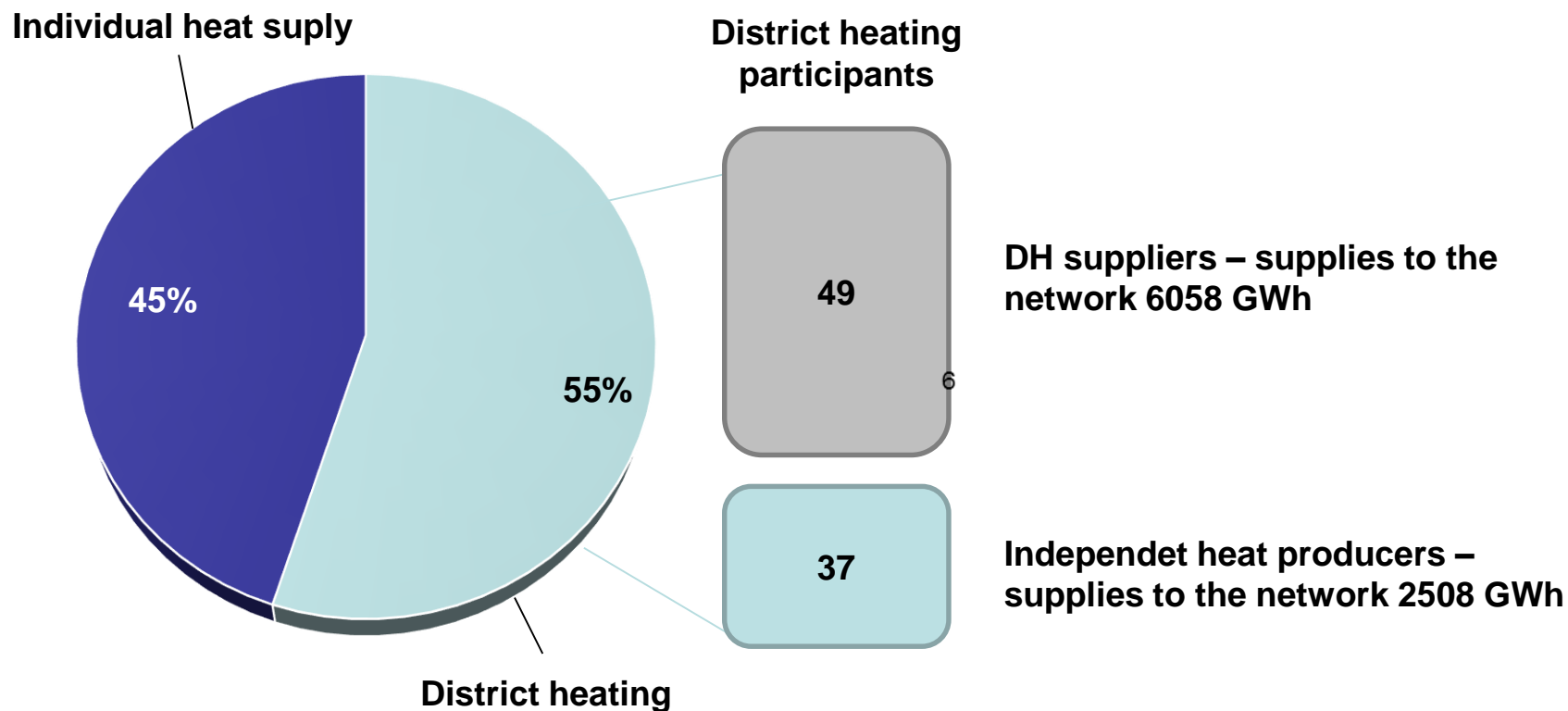
National heating and cooling strategies – the role of renewables

Vidmantas Macevičius, Vice-minister of energy of the
Republic of Lithuania

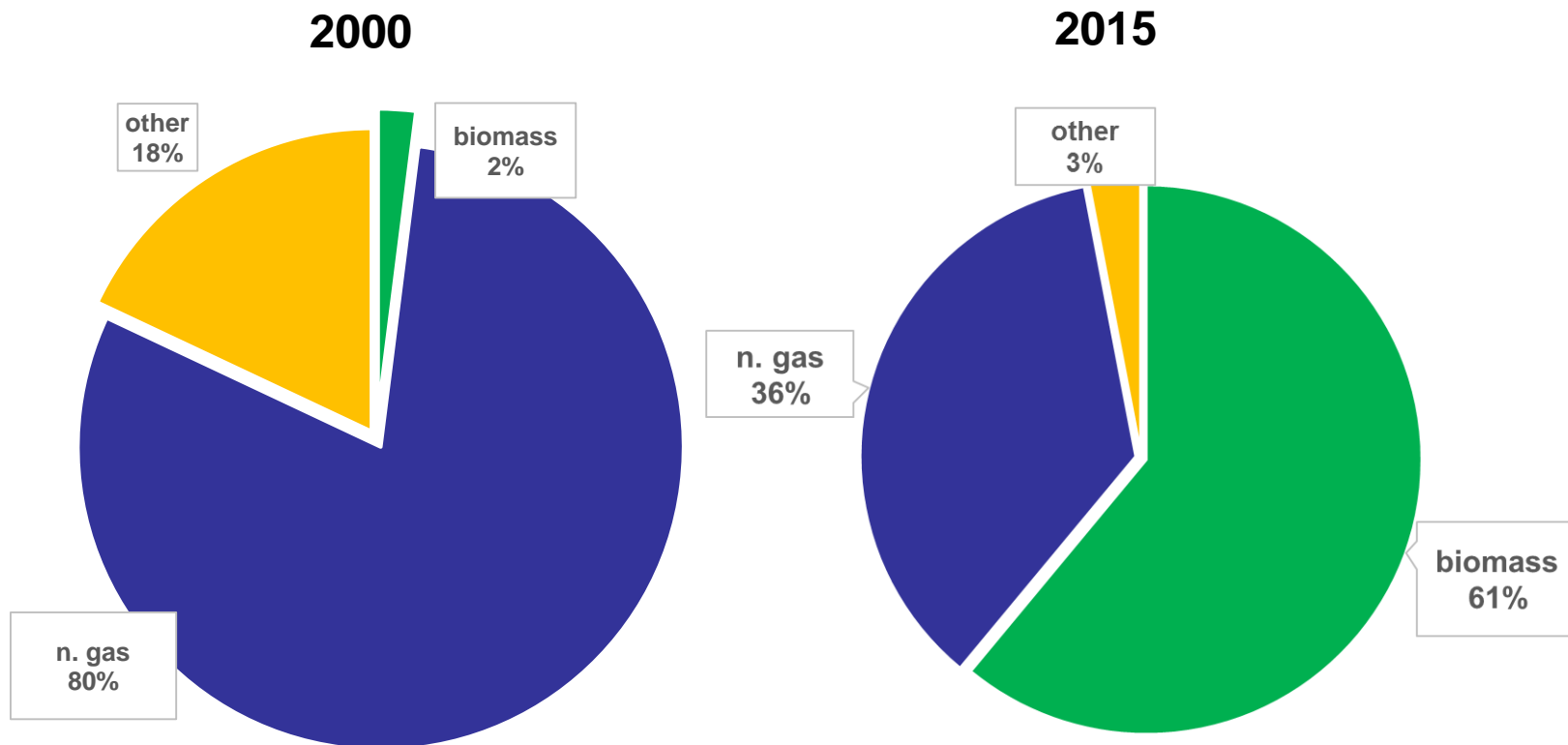
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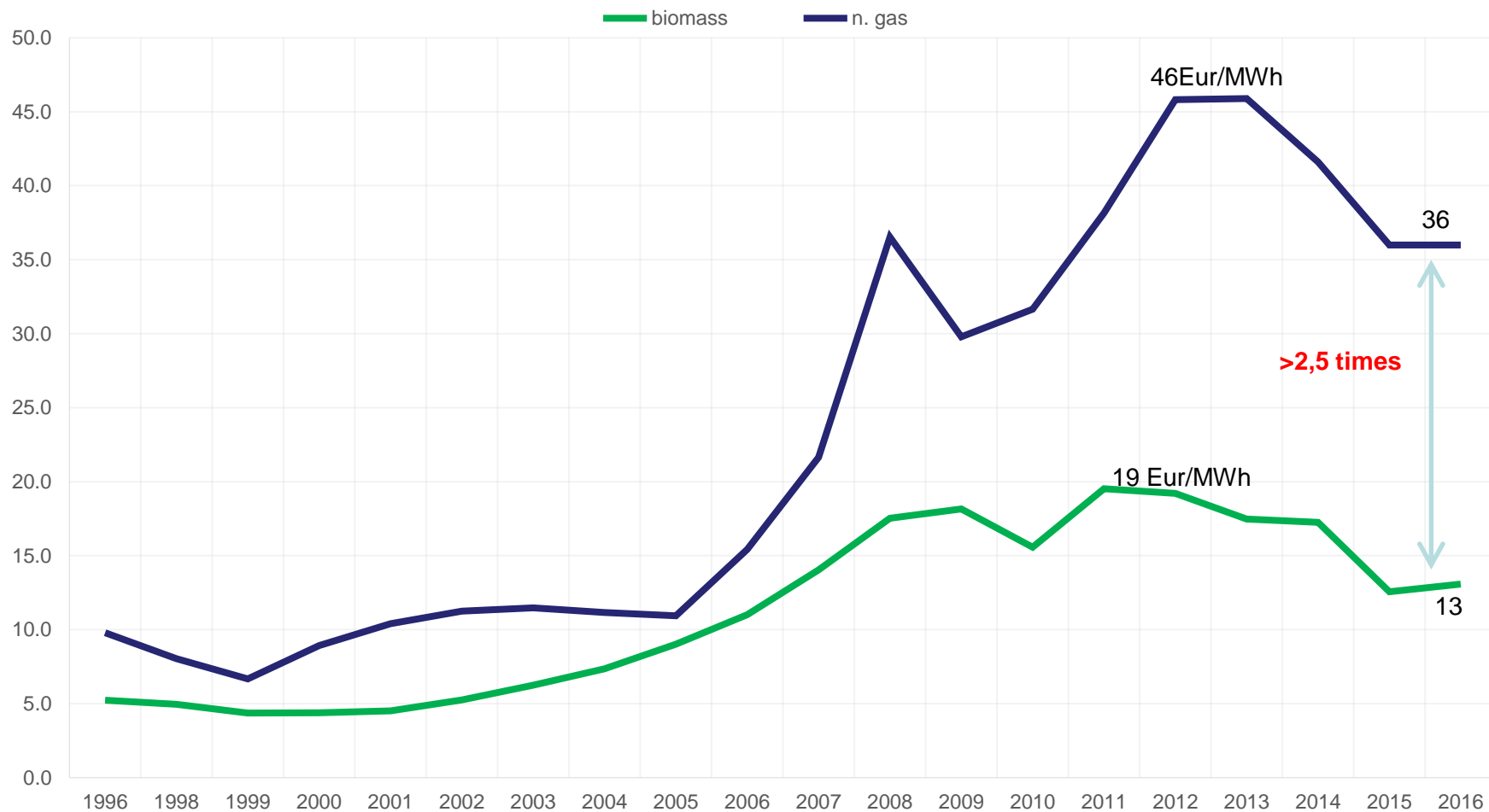
CURRENT SITUATION IN LITHUANIAN HEAT SECTOR



THE STRUCTURE OF PRIMARY FUELS FOR DISTRICT HEAT PRODUCTION IN 2000-2015



DYNAMIC OF N.GAS AND BIOMASS PRICES, EUR/MWh



BIOMASS USAGE IN DISTRICT HEATING: 2000-2015

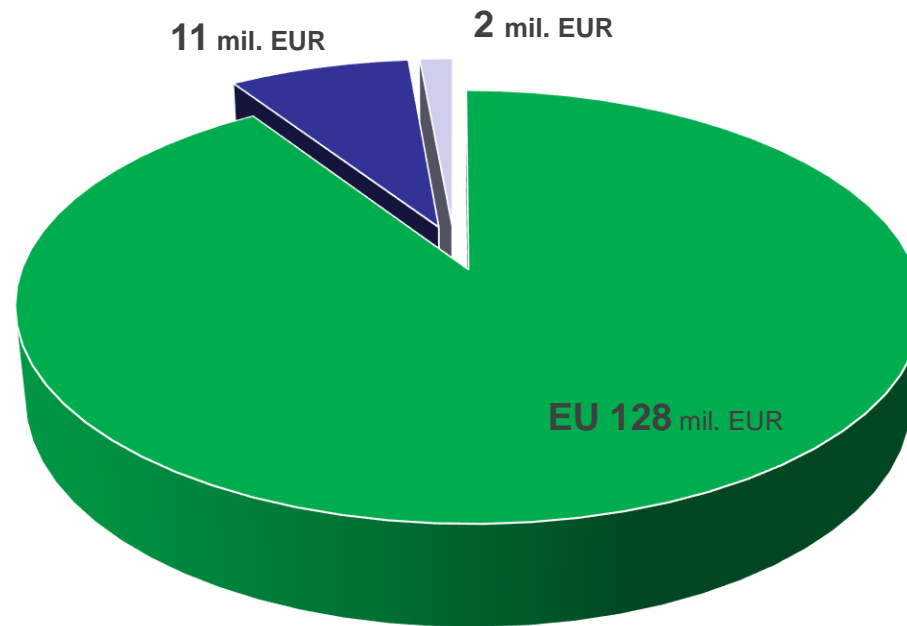


During 2000-2015 was created **more than 1500 MW** biomass capacity

600 MW were financed by EU funds

Total investment during 2007-2013 period was **225 mln. Eur**, **88,7 mln. Eur** was from EU funds.

FINANCIAL SUPPORT FOR DH SECTOR IN 2007-2013



BALTPOL ENERGY EXCHANGE – THE FIRST AND ONLY BIOMASS EXCHANGE IN EUROPE

BRIEF HISTORY:

- 2010 – Established.
- 2010-2012 – operated Power Exchange in Lithuania (Nord Pool Spot trading platform was introduced).
- 2012 – Energy Resource Exchange license obtained.
- 2013 August – in-house developed biomass trading platform launched.
- 2015 July – 200th member was registered in Biomass Exchange.
- 2016 January—256 (70 b.+186 s)

THE TARGETS ARE:

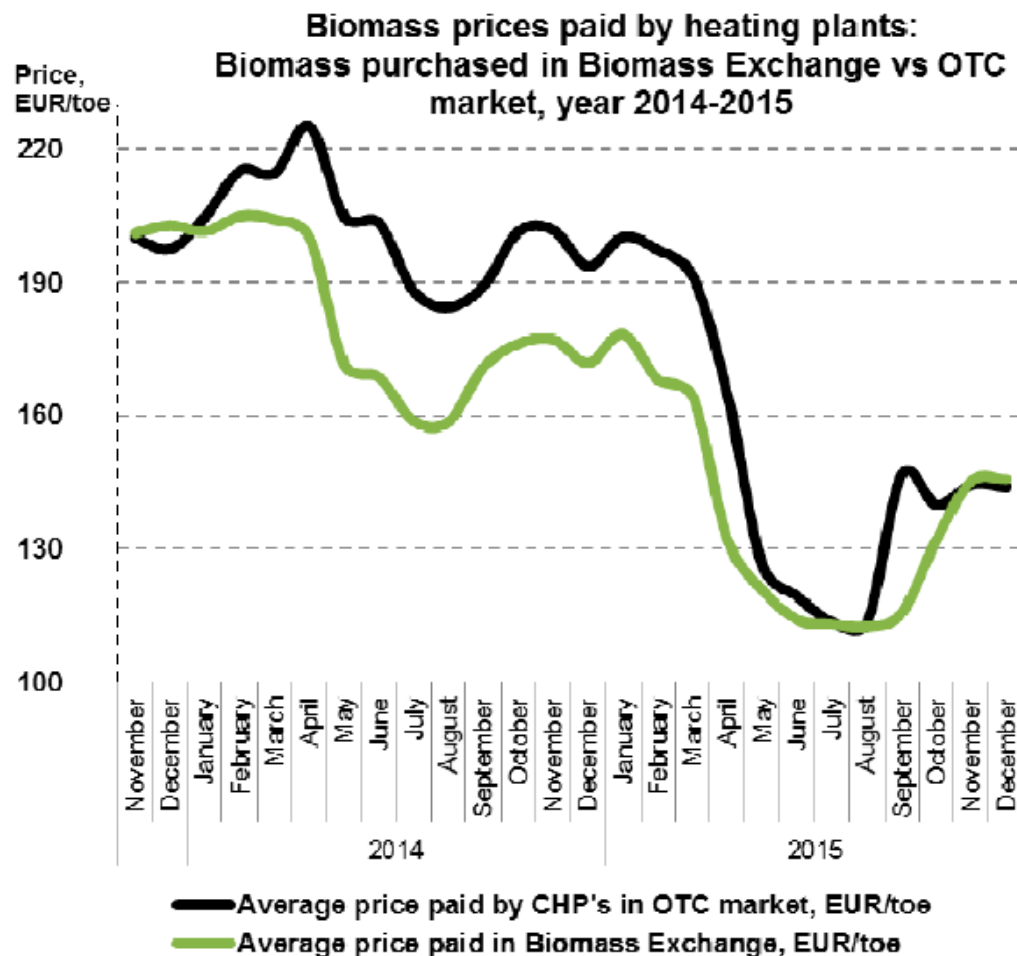
- to increase transparency of biomass sector
- to involve more market players into trading process
- an efficient stimulation of market competition
- to ensure efficiency of trading and settlement processes
- implement product and process standardization
- to increase sustainability of biomass sector
- a fair market price determination.

THE MAIN TARGET OF BIOMASS EXCHANGE IS A TRANSPARENT, EFFICIENT, OPEN AND COMPETITIVE BIOMASS MARKET.



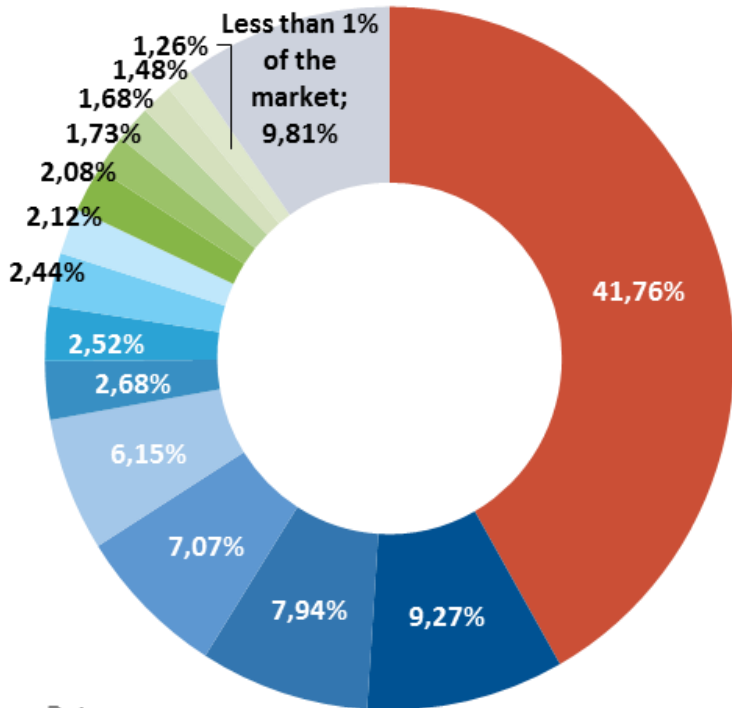
ENSURING TRANSPARENCY AND COMPETITIVE PRICES

- Regulated energy companies are legally obligated to acquire solid biomass in Baltpool energy exchange:
 - Year 2014 – 10%
 - Year 2015 – 50%
 - Year 2016 – 100% of total consumption.
- Biomass Exchange turnover in Y2015 ~40 million EUR.
- More than 64% of biomass acquired by regulated energy companies was bought in Baltpool.
- Biomass Exchange ensures trade transparency and competitive prices.
- Further geographical expansion of Biomass Exchange project is expected in nearest future.



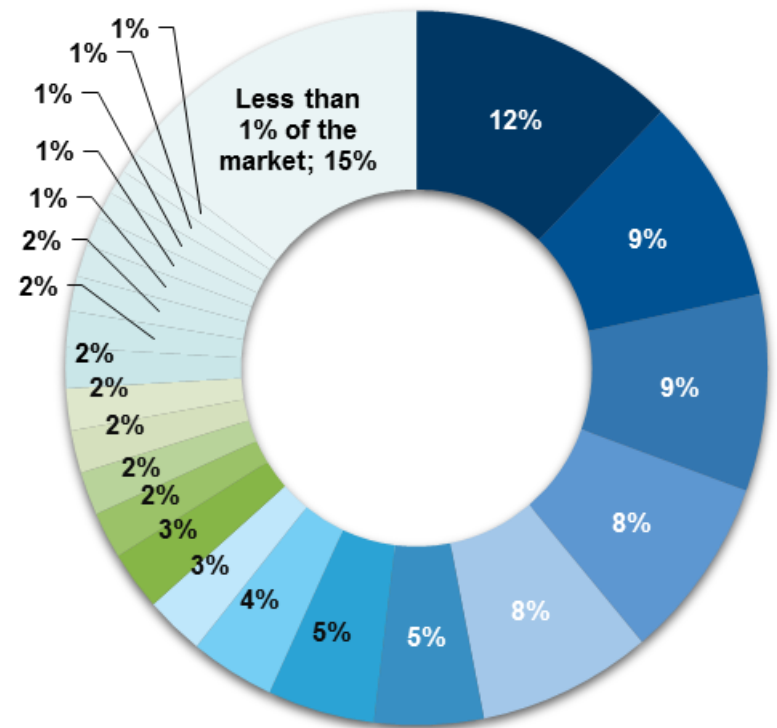
COMPETITION LEVEL INCREASED SIGNIFICANTLY

High concentration in CHPs' biomass supply side in Lithuania (2012-2013)



Data:
National Control Commission For Prices And Energy
2012-2013 heating season biomass suppliers' market share according delivered biomass quantities to regulated CHP's

Low concentration in biomass supply side in biomass exchange (Y2015)



Data:
Energy Exchange Baltpool UAB

RENOVATION OF BUILDINGS

Energy and CO₂ savings

Multi-apartment buildings

Renovated till now – 976

196 GWh and 45 000 t CO₂

Renovating – 1748

350 GWh and 82 000 t CO₂

Planing to renovate – **3658**

731 GWh and 170 000 t CO₂

Public buildings

Renovated till now – 912

182 GWh and 42 000 t CO₂

Renovating now – 30

6 GWh and 1 500 t CO₂

Planing to renovate – **300**

60 GWh and 14 000 t CO₂

In total
1525 GWh
355 000 t CO₂



THE NATIONAL HEAT SECTOR DEVELOPMENT 2015-2021 PROGRAM (1)

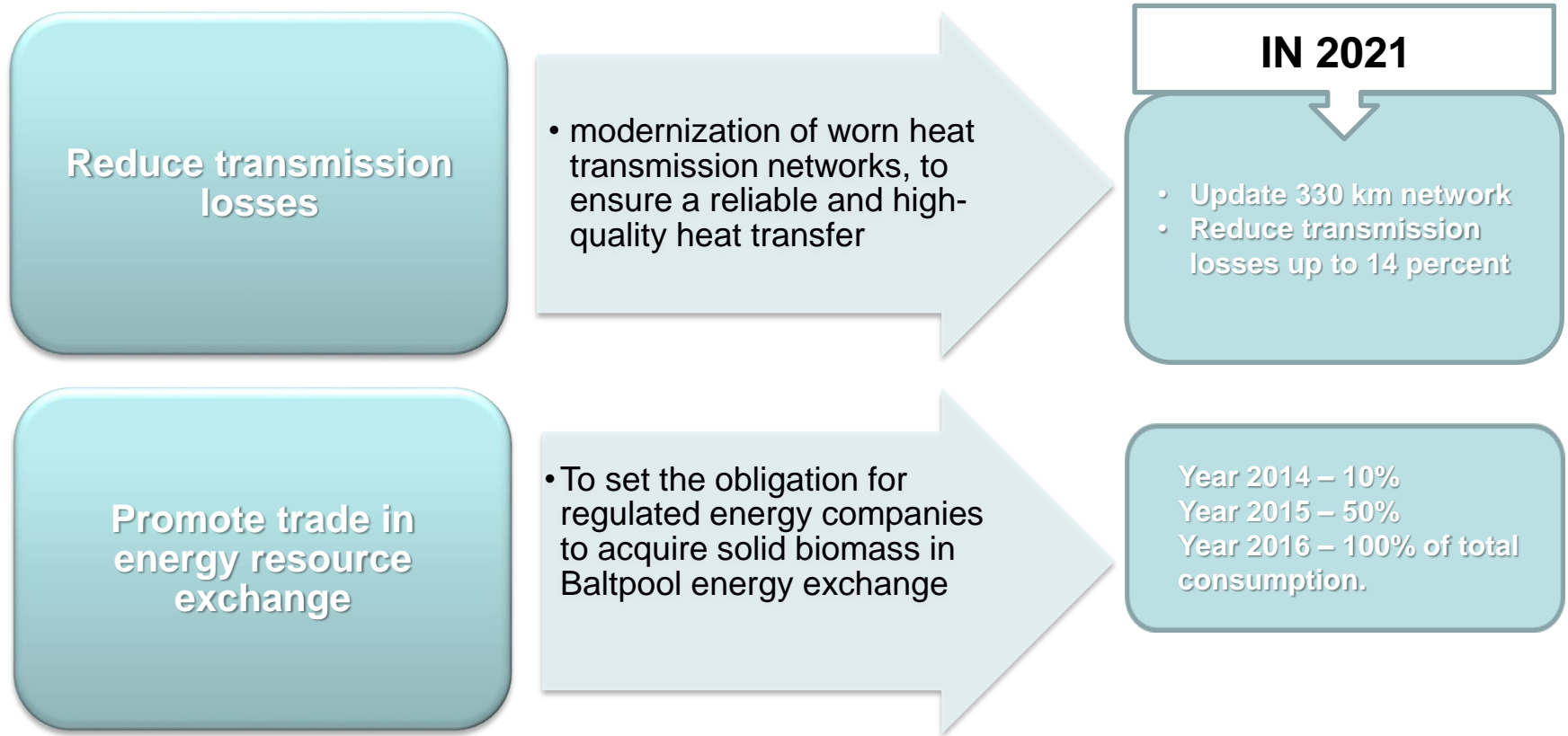
Reduce the heat price and environmental pollution giving priority to local and renewable resources in a fuel balance

- in order to increase local competitive electricity output, promote high efficiency cogeneration
- reduce heat generation plants pollution and ensure the development of renewable energy sources usage
- to set the transparent district heating systems development planning and regulatory rules

IN 2021

- To reduced heat price by 20%.
- Renewable and (or) local energy resources part in district heating fuel balance – 80 percent.

THE NATIONAL HEAT SECTOR DEVELOPMENT 2015-2021 PROGRAM (2)



NEXT PERSPECTIVES FOR BIOMASS

2014-2020 m. EU funds for
RES development
124 mln. EUR

Fossil fuel-fired
boiler
modernization“

Promotion of
high efficiency
cogeneration in
Vilnius

Low-power
cogeneration
biofuel
promotion

MODERNIZATION OF HEATING FACILITIES IN VILNIUS AND KAUNAS CITIES DISTRICT AREAS

ENVIRONMENTAL AND ECONOMIC BENEFITS

- Vilnius and Kaunas CHP project would **reduce methane and CO2 emissions** from landfills and district heating sectors - Vilnius and Kaunas CHPs Project would result in more than ~300.000 tons of CO2 emission reduction annually
- Reduced landfill
- Decrease the prices of thermal energy production

INCREASED EFFICIENCY

- Vilnius and Kaunas CHP project would increase energy **efficiency of using primary energy** by ~ 40 %

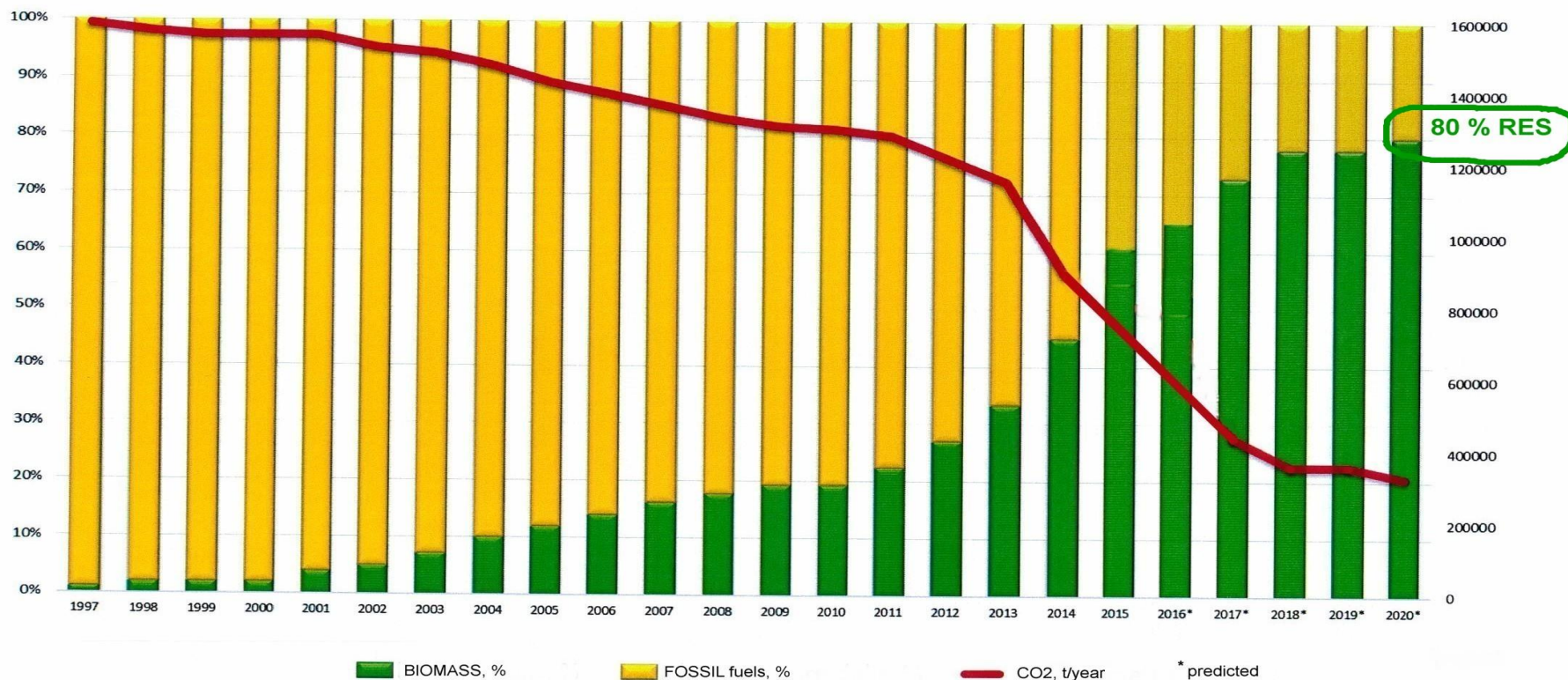
STRENGTHENED LITHUANIA'S ENERGY INDEPENDENCE

Increase the usage of local and renewable energy sources:

Vilnius CHP		Kaunas CHP	
MWe	MWt	MWe	MWt
88	227	24	70
Waste and biomass		Waste	

CONCLUSIONS:

CO2 emmision in DH sector

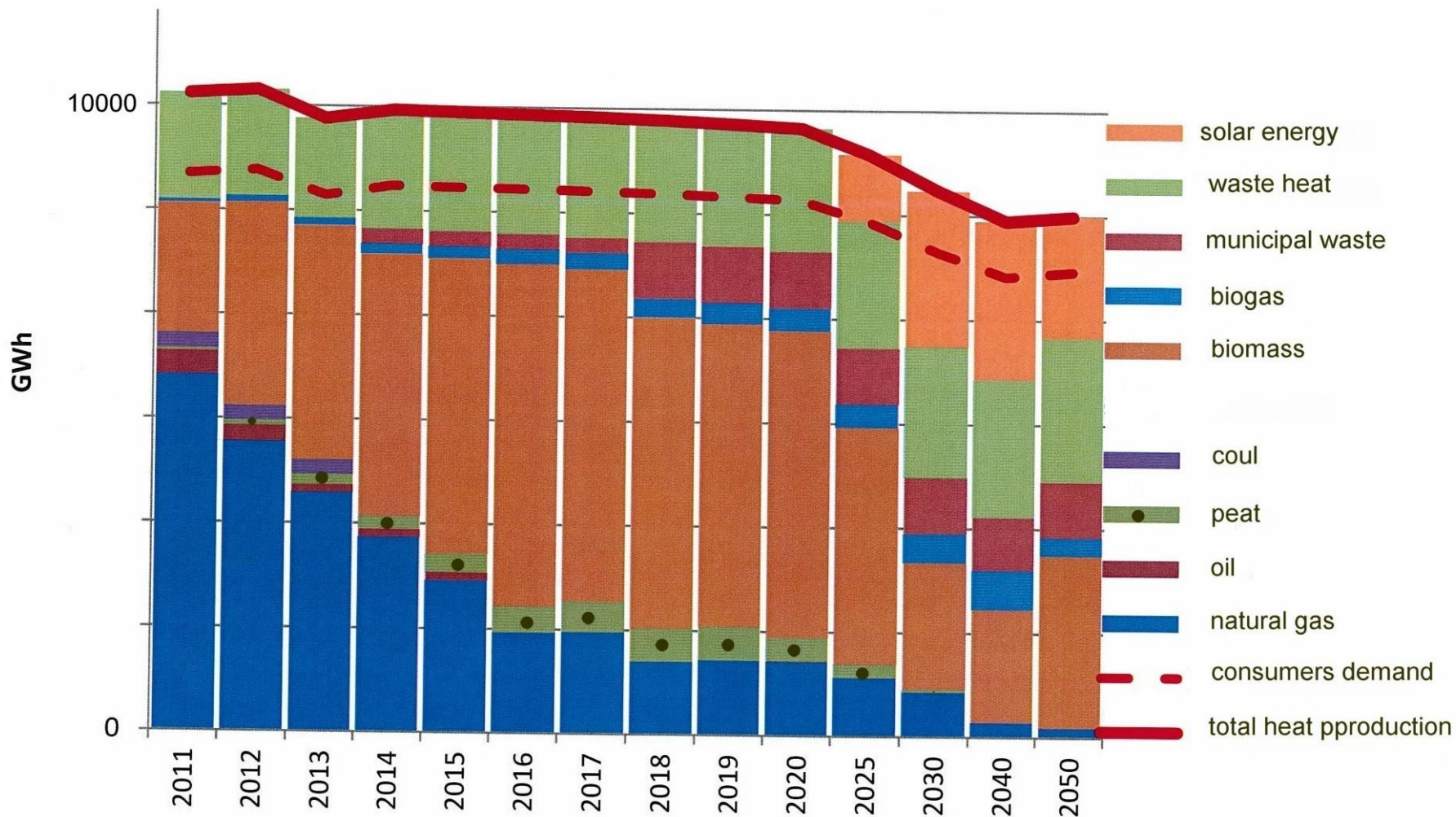


source : LITBIOMA

SOCIO-ECONOMICS ASPECTS

- Stable and low price of biomass-lower price of heat for customers
- Increasing number of jobs (*now more than 6500*)
- Development of technologies
- Improved cooperation of science and business
- Rural development
- Improved foreign trade balance (*export of technological equipment – more than 50 mil Euro in 2015, expect 300 in 2020*)
- Biomass consumption growing in industry (*1300 GWh 30% of energy in 2015, expect 55% in 2020*)

NATIONAL ENERGY STRATEGY DRAFT GUIDELINES IN DH



Conclusions

- District heating – 55 % of LT heating sector.
- Biomass currently constitutes 60 % of district heating. Recently – radical shift from gas.
- Increasing biomass capacities reduces heating price for consumers.
- Biomass exchange – platform for competitive biomass market (2014 – 10 % of biomass traded; 2016 – 100 % of biomass will be traded).
- Target for 2020-2021 – 80 % RES in heating fuel balance, 20 % heating price reduction.
- EU Strategy on Heating and Cooling – right step forward, we should work on concrete instruments – especially financing.

**THANK YOU FOR
YOUR ATTENTION!**

