Bioenergy in Lithuania:

Low prices  New jobs  Clean environment

Lithuanian Biomass Energy Association LITBIOMA
Vilma Gaubyte
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LITHUANIAN Biomass Energy Association LITBIOMA was established in **summer of 2003**

LITBIOMA is currently comprised of **54 members**

LITBIOMA is a national licensor for an **Enplus** certification system

In 2014 LITBIOMA founded **Scientific and Technical Council** which is now comprised of 13 scientists
Bioenergy sector in Lithuania
Forests cover ~ 33.2 percent of Lithuania (2,200,000 ha)
Every year Lithuania needs **31 TWh** (without transport)

- **Power generation**: 11 TWh, 35%
- **Heat production**: 20 TWh, 65%

Lithuania can produce **40 TWh**

- Biomass: 25 TWh, 63%
- Hydroelectric: 1 TWh, 2%
- Biogas: 2 TWh, 5%
- Solar energy: 2 TWh, 5%
- Wind energy: 5.5 TWh, 14%
- Municipal waste: 3 TWh, 8%
- The underground: 1 TWh, 3%

Source: Lithuanian confederation of renewable resources
Power and heat generation from biomass:

- Residential: 2016 - 80%, 2020 - 80%
- Industry: 2016 - 65%, 2020 - 80%
- Agriculture: 2016 - 33%, 2020 - 50%
- Other: 2016 - 6%, 2020 - 12%
The use of biomass for energy production in the DH sector:

- **2004**
  - Biomass: 10%
  - Other fuel: 6%
  - Natural gas: 84%

- **2016**
  - Biomass: 65%
  - Other fuel: 3%
  - Natural gas: 32%

- **2020**
  - Biomass: 80%
  - Other fuel: 1%
  - Natural gas: 19%

Source: The Lithuanian District Heating Association
The real benefits of biomass
For Lithuania dependence on imported fossil fuels from Russia was an economic and political challenge.

Lithuania became a MS of the EU in 2004, paying the highest price for imported gas. This price became recognized as “political” price, having nothing in common with the market situation.
The comparison of natural gas and biomass price (including transportation and capacity fee) without VAT

Source: The Lithuanian District Heating Association
Bioenergy sector in numbers

- **Annual Turnover**
  - ~ **410 mln Eur**
- In 2016 companies exported technological equipment for
  - ~ **100 mln Eur**
- In 2020 export (forecast)
  - ~ **300 mln Eur**
- Lithuanian biomass energy companies employ
  - ~ **7500 employees**
- The average employee salary
  - ~ **1110 Eur**

(1,5 times higher than the average salary in Lithuania (713,9 EUR))
KAUNAS TOWN

~80% of heating demand

~50% lower price

Source: SC „Kaunas energy“
JONAVA TOWN

- ~30% lower price
- ~60% of heating demand

Year | Wood chips | Natural Gas | Fuel Oil | Price of heat (Eur ct/kWh)
--- | --- | --- | --- | ---
2012 | 99.5 | 0.5 | | 7.63
2013 | 33.4 | | | 7.36
2014 | | 56.4 | | 5.87
2015-09 | | | 64.2 | 5.55
Greenhouse gas (CO₂) emissions in DHS:

*prognosis*
Global path

The world and Europe in particular need a fossil fuel exit strategy to stop the further growth of the CO$_2$ concentration in the atmosphere in order to achieve the targets of Paris.
Europe is leading the switch to renewable energy

- Paris agreement (COP21)
- European Commission Clean energy package
- Declaration of Graz which was signed by major biomass associations (Including LITBIOMA)

The world needs an exit strategy to leave fossil fuels, step by step and year by year.
Conclusions

- Bioenergy deployment offers significant potential for climate change mitigation
- Europe has a specific responsibility to lead the way to a fossil free society
- Stable and low price of biomass, lower price of heat for consumers
- Lower CO2 emissions
- Increasing number of jobs
- Development of technologies
- Improved cooperation of science and business
- Rural development
- Improved foreign trade balance

As the result - increased energy independence and better environmental situation
Lithuanian Biomass Energy Association LITBIOMA
Ukmergės str. 283B, Vilnius
E-mail asociacija@biokuras.lt