The Role of Bioenergy in District Heating of Lithuania

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Vilnius, Lithuania

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Kammakargatan 22, 111 40, Stockholm, Sweden

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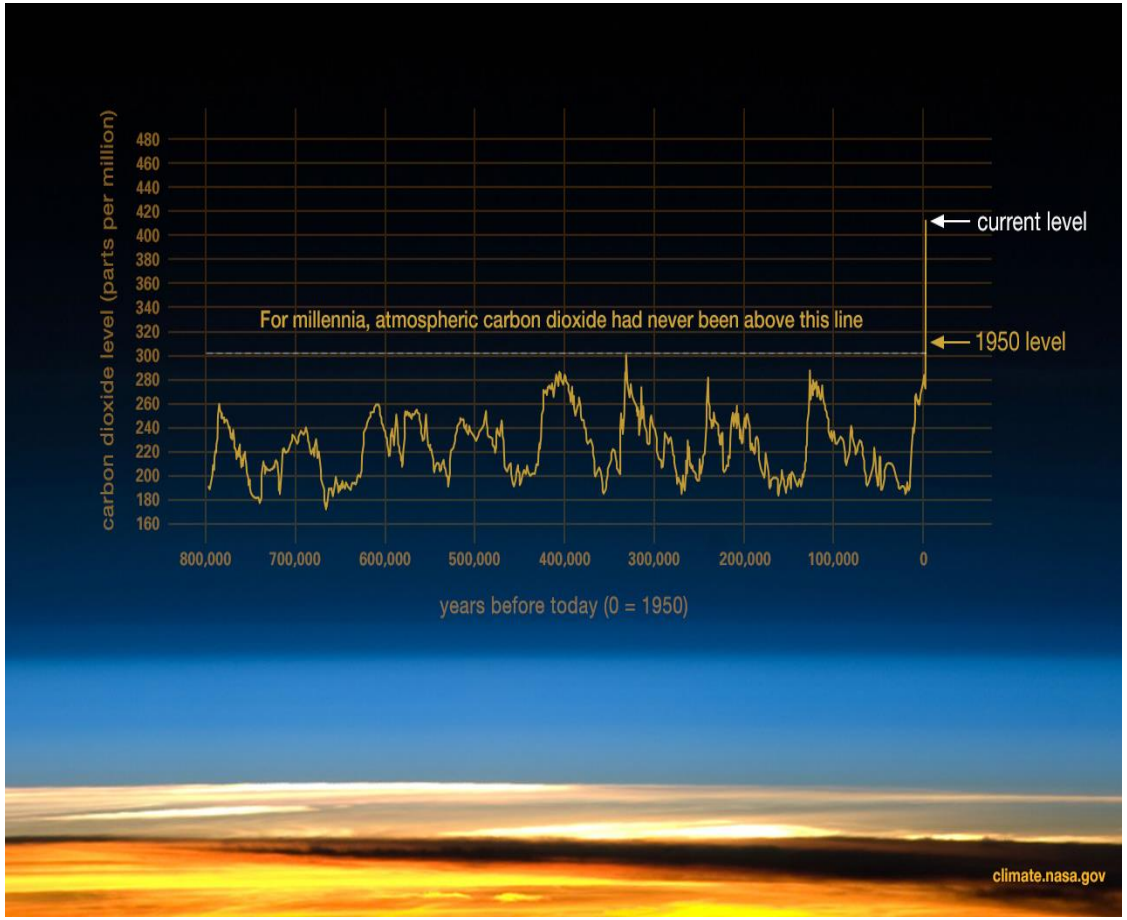
The Global Energy Transformation process

The main driver of the development of all the renewable energy technologies is understanding, that **global climate change is a fact**, which is caused by **increasing consumption of fossil fuels.**

The need **to stop** this consumption of fossil fuels is very urgent and **is an only problem solving solution.**



Source: NASA

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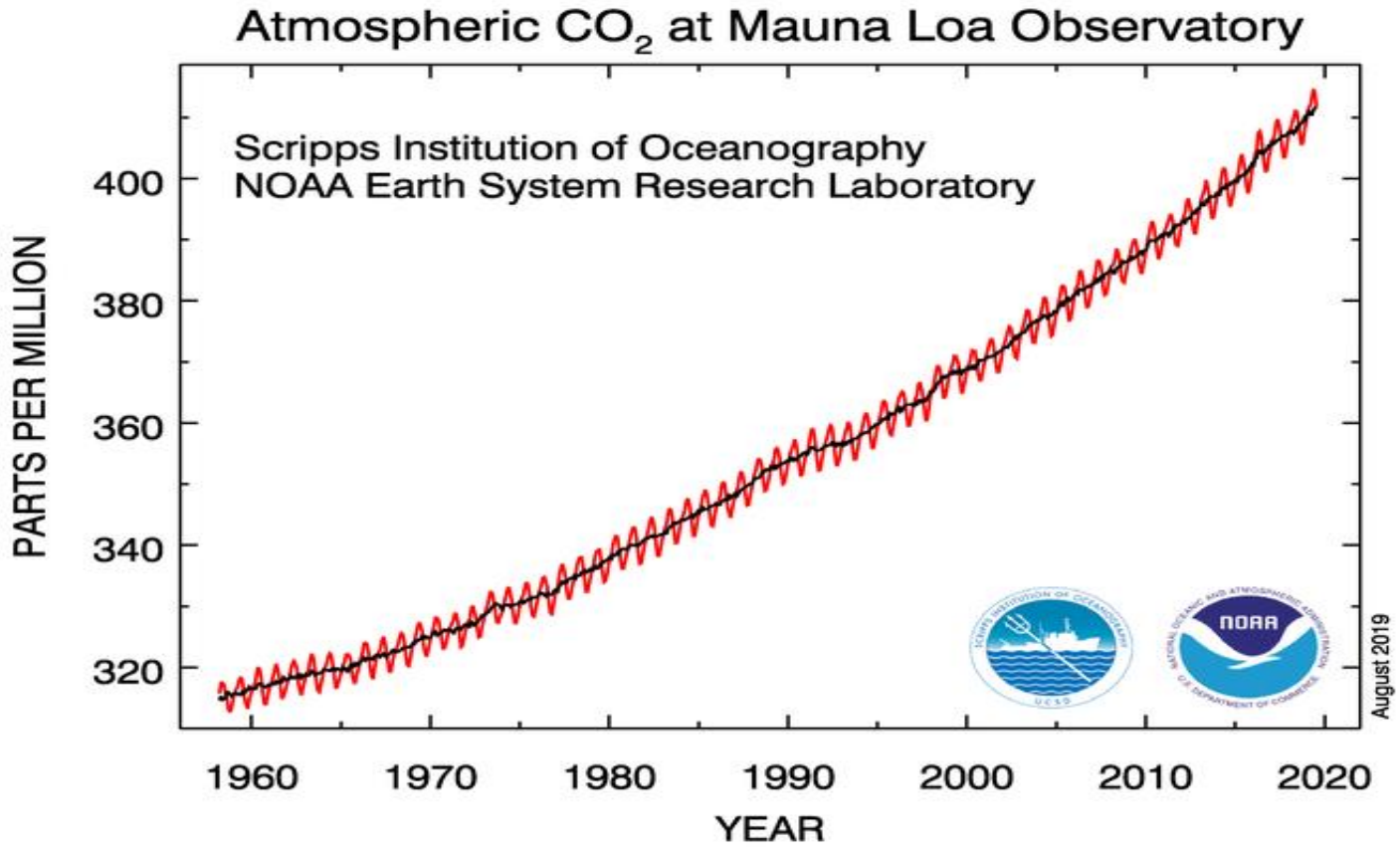
Recent CO_2 concentration



July 2019: 411.77 ppm
July 2018: 408.71 ppm
Last updated: August 5, 2019

Record high in May 11th, 2019

415,26 ppm

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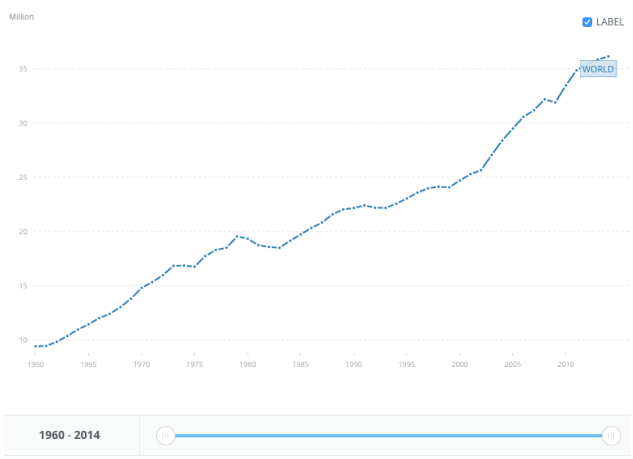
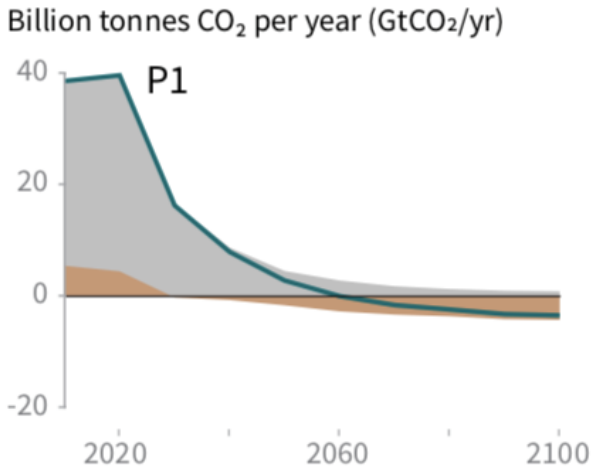
Source: NOAA

IPCC 1.5

- 91 authors. 44 citizenships. 6000 cited references. 42 000 comments
- *“Already seeing consequences of 1 degree warming through extreme weather, rising sea levels and diminishing ice”*
- Limiting to 1.5 deg. C requires “rapid and far reaching” transition in land, energy…
- **“… use of biomass can be higher … due to potential to replace fossil fuels across all sectors (high confidence)…”**

Net emissions should fall by 45% by 2030 and net zero by 2050.





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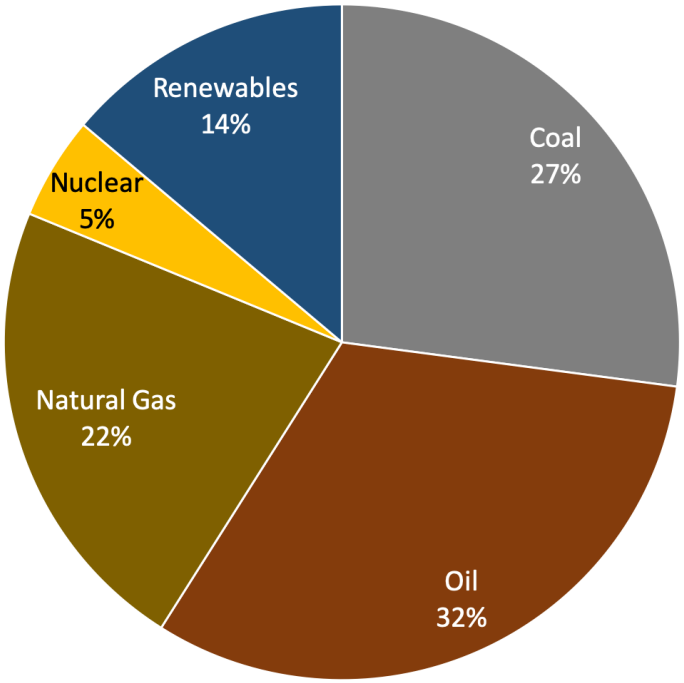
Source: IPCC

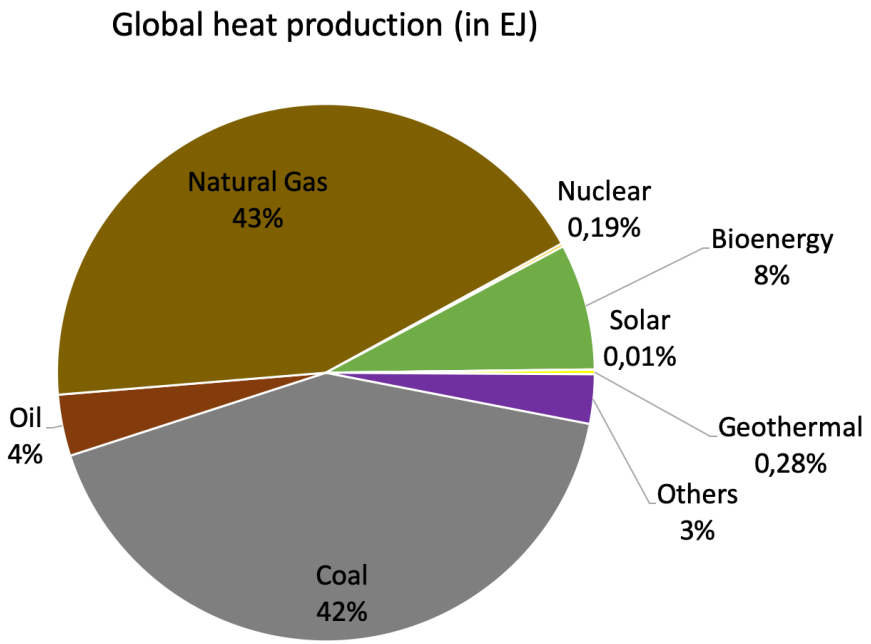
Total energy supply



Total Primary Energy Supply (2017) - 585 EJ

- Energy supply is dominated by the supply of fossil fuels: coal, oil and gas
- Energy supply increased by approx. 1.5% annually driven mainly by increased production of natural gas (2.4%)
- Renewables supply is stable at 13 – 14% since 2010

Global heat production



- Globally, about 14.5 EJ of heat energy is produced in CHP and heat only industries
- 40% of the heat is from burning coal while natural gas has become the leading heat source globally (42.%) since overtaking coal in 2015
- Renewable share in **modern** heating sector is only at 8 – 9% - dominated by use of biomass
- **Traditional** use of biomass for heating and cooking in less developed regions is significant

Lithuanian DH Sector – the Facts

- DH network is present in every city and in majority of smaller towns of Lithuania
- Total length of DH network – 2861 km
- Heat via DH provided to 53% of buildings (~70%-80% of buildings in the cities)
- 49 licensed DH companies operating
- Installed capacity of biomass boilers - ~1600 MW
- 44 Independent Heat Producers, providing 30,8% of heat (2018)
- Total production of Heat – 8,98 TWh, supplied to consumers – 7,59 TWh; losses - ~15 %
- Total number of DH consumers – 702.360
- Average heat consumption – 144 kWh/sq.m./Year (in Scandinavia – 128 kWh/sq.m./Year)
- Total consumption of biomass (wood chips over 90%)- ~550.000 toe

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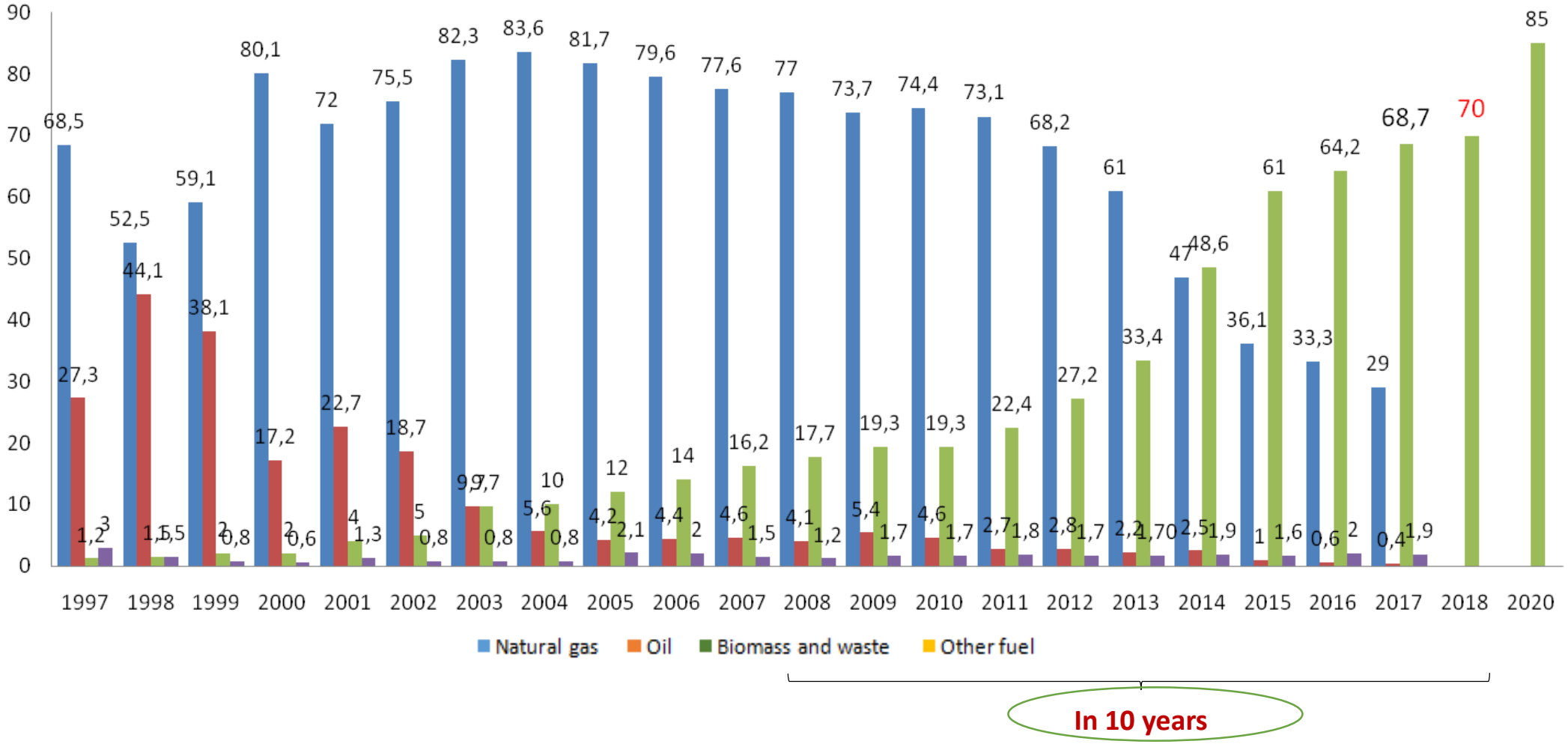
Source -LDHA

Success story – Biomass in Lithuanian DH sector



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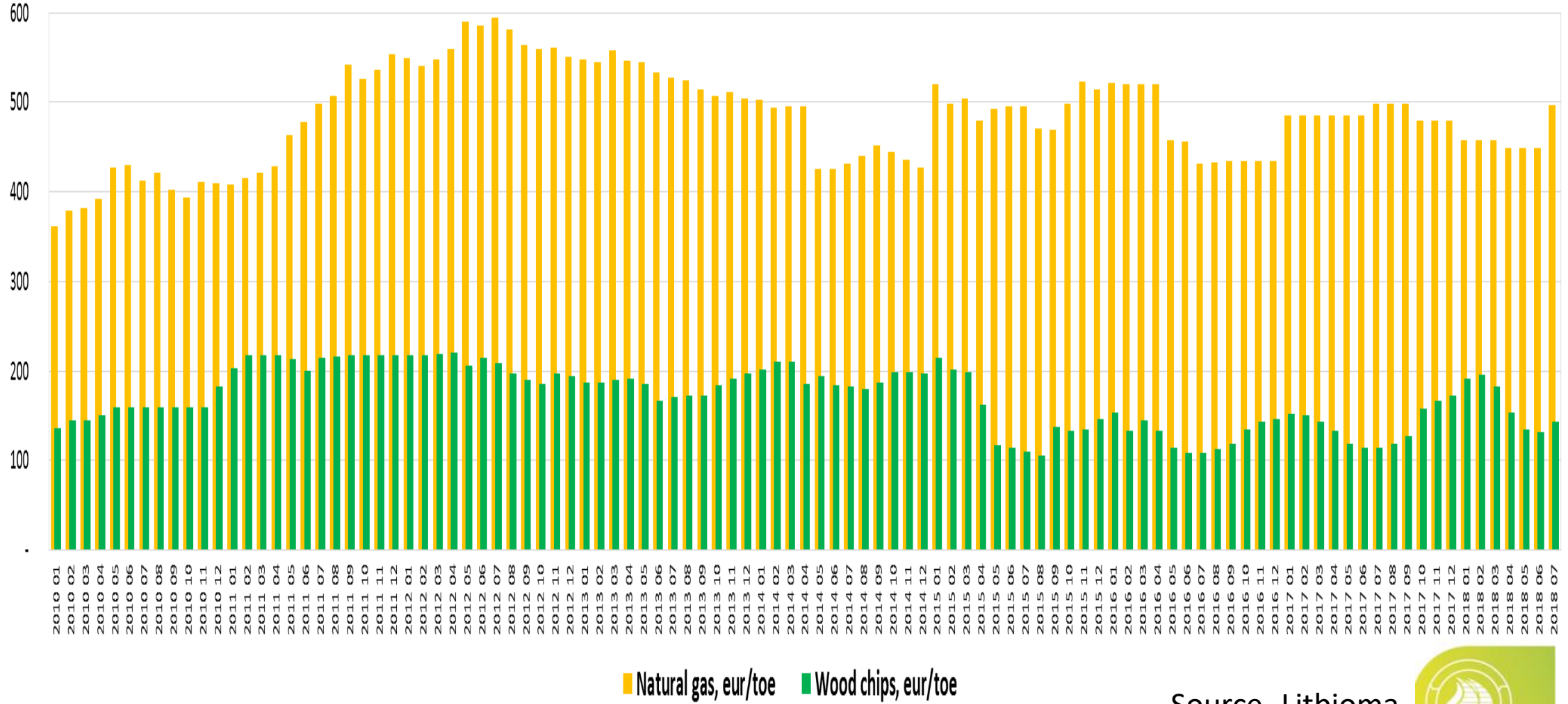
Comparison of prices at the Boiler-house for Biomass and Natural Gas



Source -Litbioma

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As a result – reduced prices for Heat in Lithuanian cities

Depending on biomass share in fuel mix:
-25% to -40%

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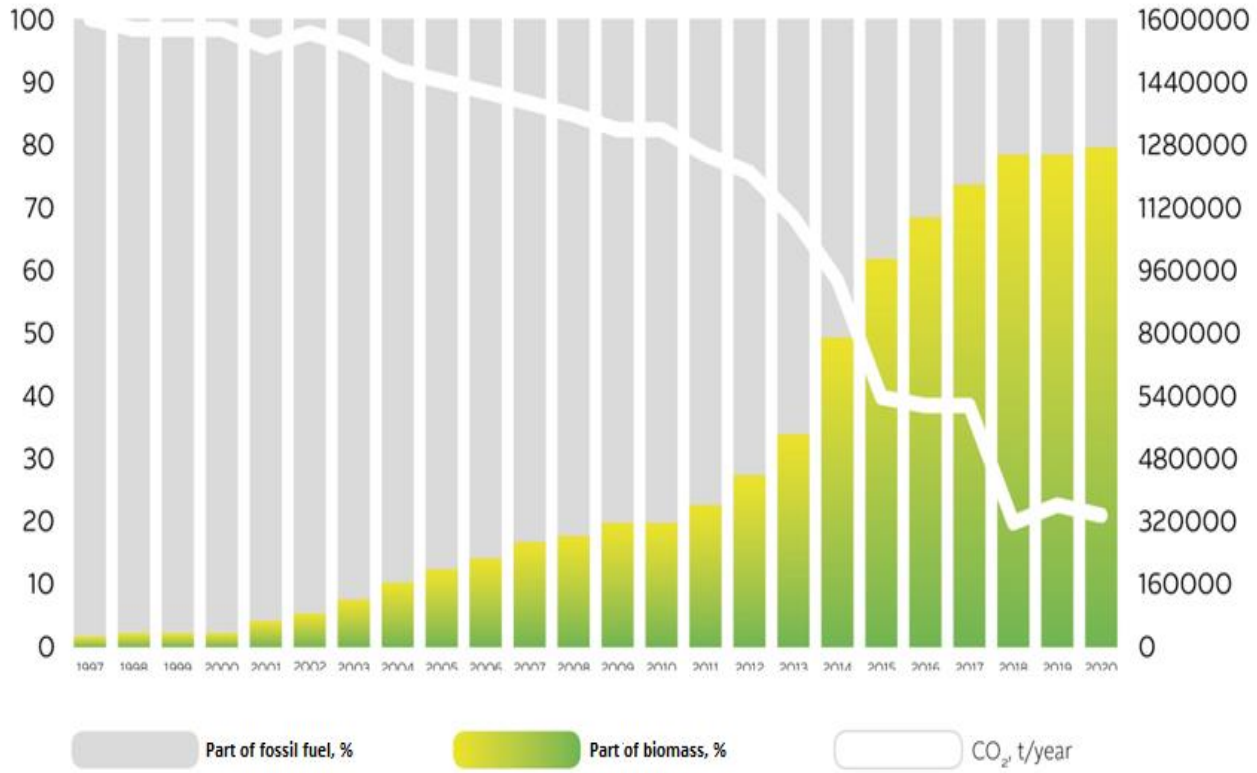
Reduction of Carbon Dioxide



SINCE 2000 CO_2 EMISSIONS REDUCED IN DH

-70 %

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Direct effect of using local Biomass instead of imported natural Gas

VALUE: ~ 320 MLN EURO

VALUE: ~ 115 MLN EURO

Savings: ~ 200 M EUR/year

Source: Litbioma

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Global Initiative of Lithuania

- President of Lithuania G.Nausėda declared a global initiative “Transition to sustainable Heating” at 74th UN General Assembly
- For the first time heat is highlighted as the most important energy source (~50% of all the energy)
- Initiative is supported by number of countries
- Lithuania’s success story in this field is an object to follow

Global Bioenergy Development Directions

- **Faster transition process** – from fossil fuel to renewable energy sources, including Bioenergy.
- **Next wave** of Bioenergy development will be related to better utilization of **agriculture residues** as biomass resource. Technological break-through is ahead.
- Solving the **renewable mobility.** Development of technologies of 2nd generation liquid biofuel production.

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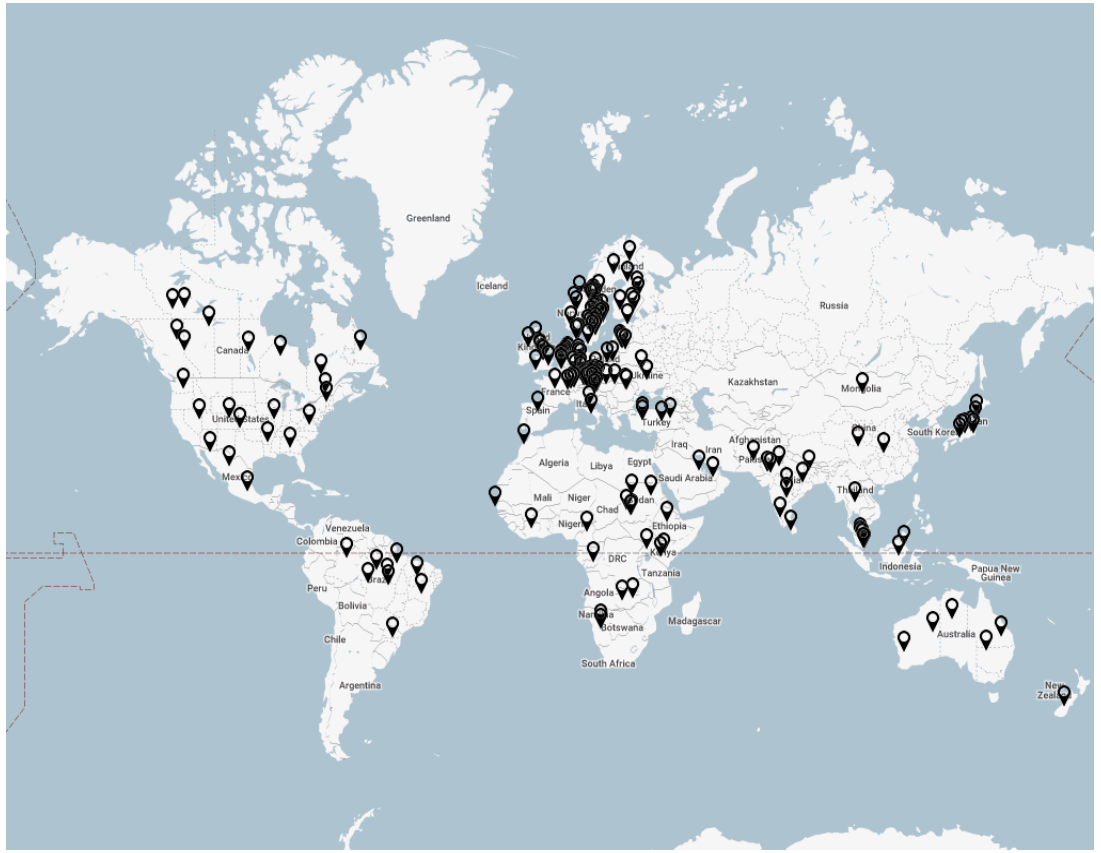
About the WBA

Our Mission

To promote the sustainable development of bioenergy on a global level and to support the business environment for bioenergy

- Member driven organization with more than 250 members from all continents
- More than 65 countries represented in the membership
- Established in 2008
- Secretariat in Stockholm, Sweden
- Branch-office in China, with Indonesia and Canada on the way



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Join WBA as a Member

- WBA is leading global voice on bioenergy.
- Engagement at senior levels with pragmatic **environmental NGOs**, multilateral institutions such as the UN, IEA, IRENA and the international media to speak up for bioenergy.
- As a member, our association provides an opportunity to take part in **high-value mission trips** to different parts of the world
- Membership in the global bioenergy community also enables you to have **latest information** about biomass and bioenergy developments around the world
- Access to WBA's knowledge tools to understand best practices in forest management, agriculture and industrial processes.

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Thank you!

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