



Finnish Experience in Bioenergy and Biofuels

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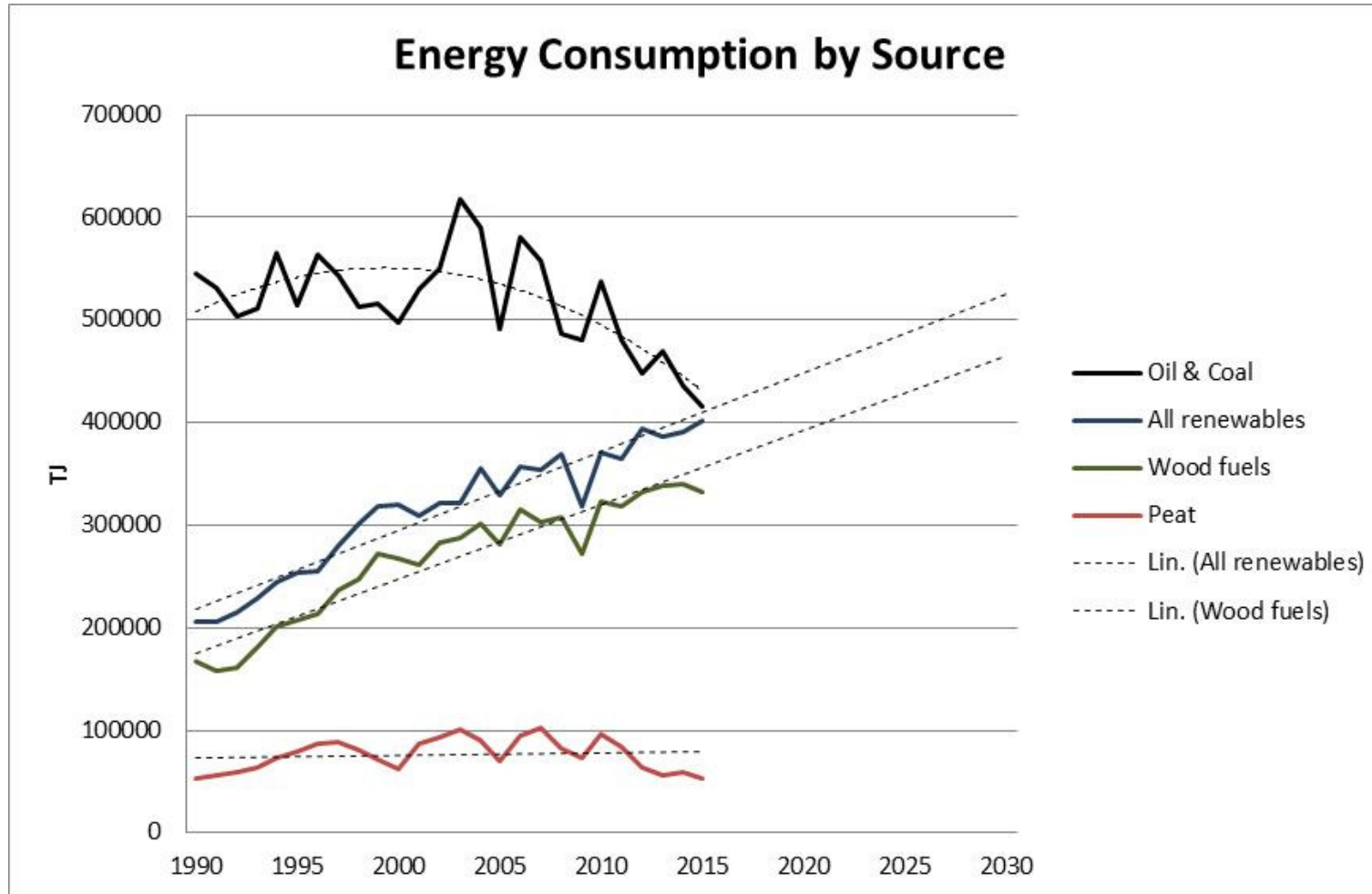
- Bioenergy Association of Finland
- Progress with Renewable Energy
- Government Programme and Investments
- Key Lessons Learned

The Bioenergy Association of Finland



- Founded by 4 previous associations in 2011
- Around 300 members throughout the sector, ie.:
 - Companies in forest industry
 - Energy companies and heat entrepreneurs
 - Biofuel and peat producers
 - Technology and service providers
 - Project developers
 - Education and research
- The members represent the majority of renewable and domestic energy supply
- www.bioenergia.fi

Growth of Bioenergy Use

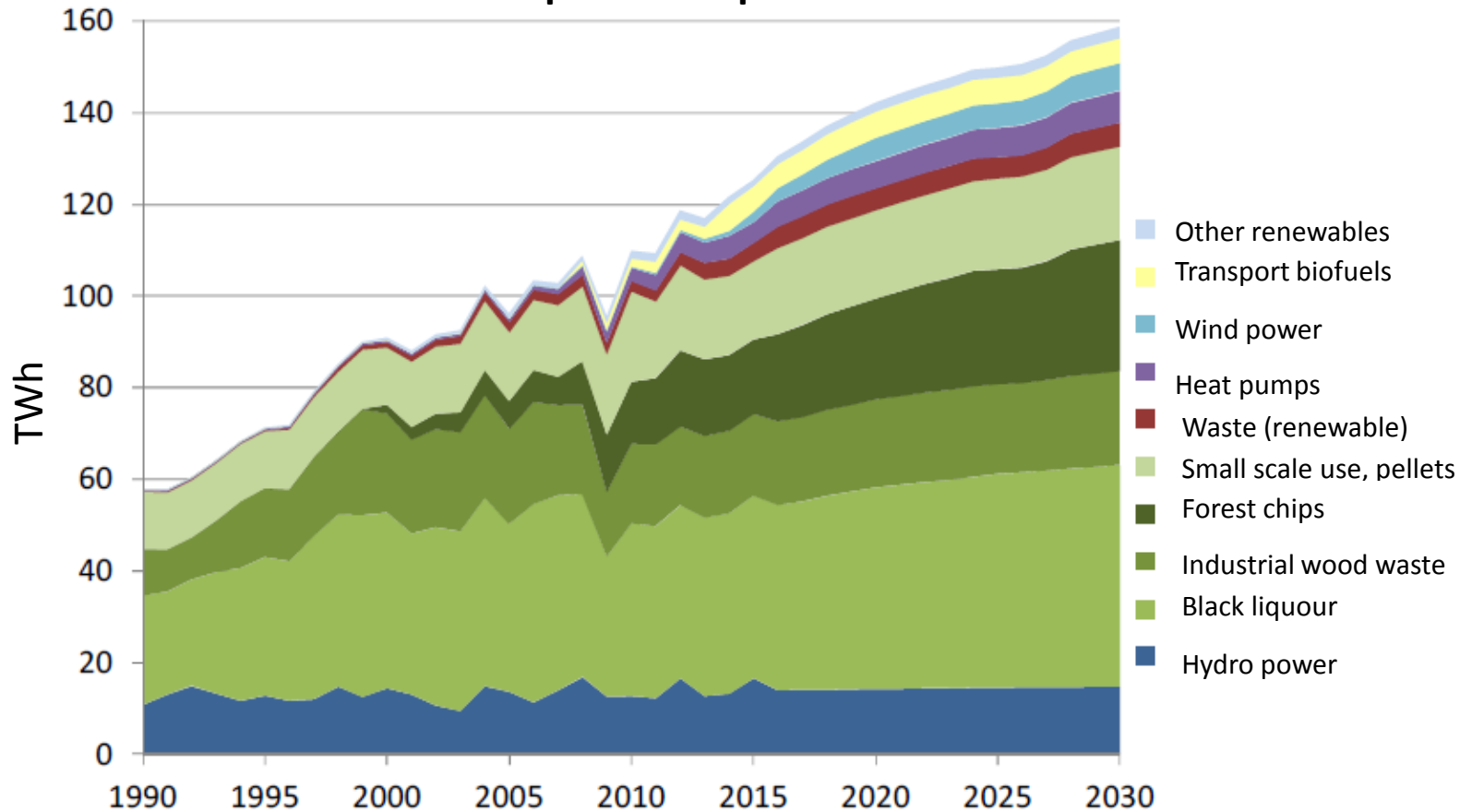


Data Source: Statistics Finland 2016

Renewable Energy in Finland



Scenario with current policies in place:

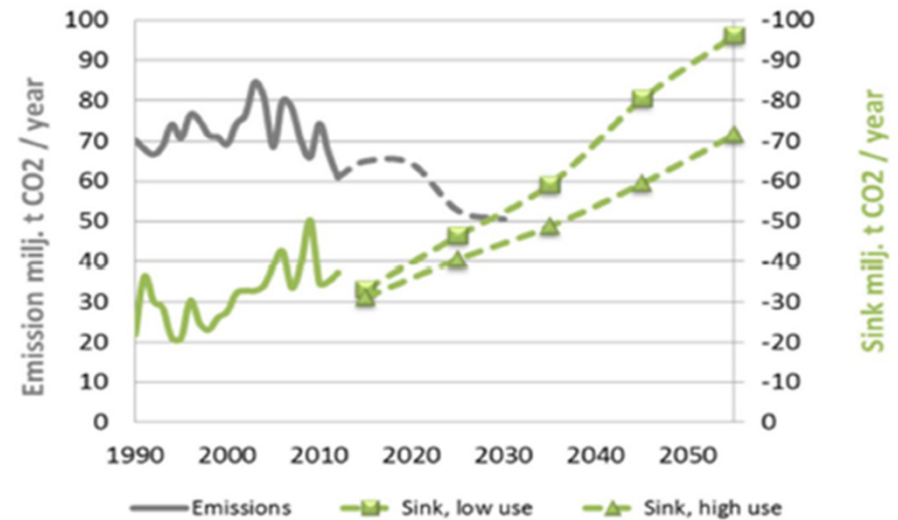


Data Source: Ministry of Economy and Employment 2016

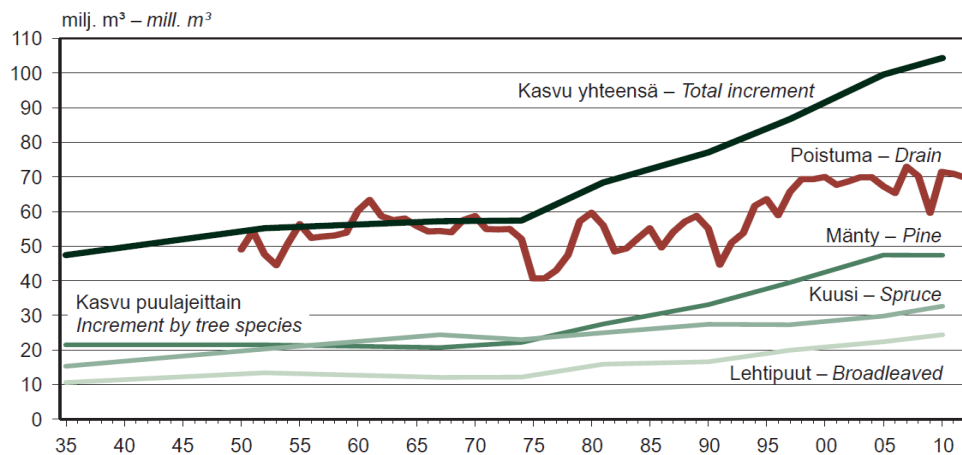


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Finnish Forests' Carbon Stock Growing Since 1960s



Source: Koponen et al (2015),
VTT Technology 237

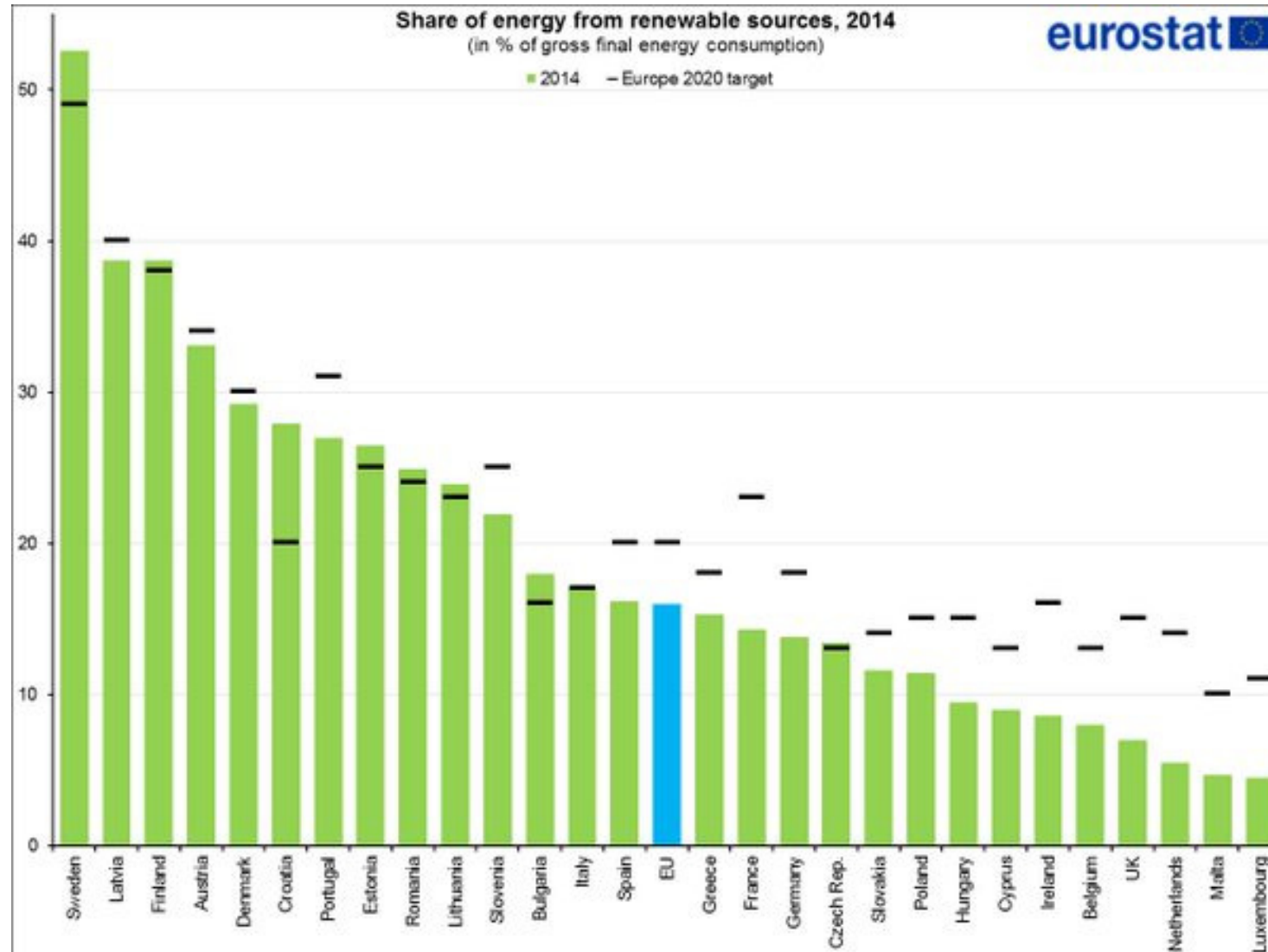


Lähde: Metsäntutkimuslaitos – Source: Finnish Forest Research Institute



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RE Status vs. EU Targets



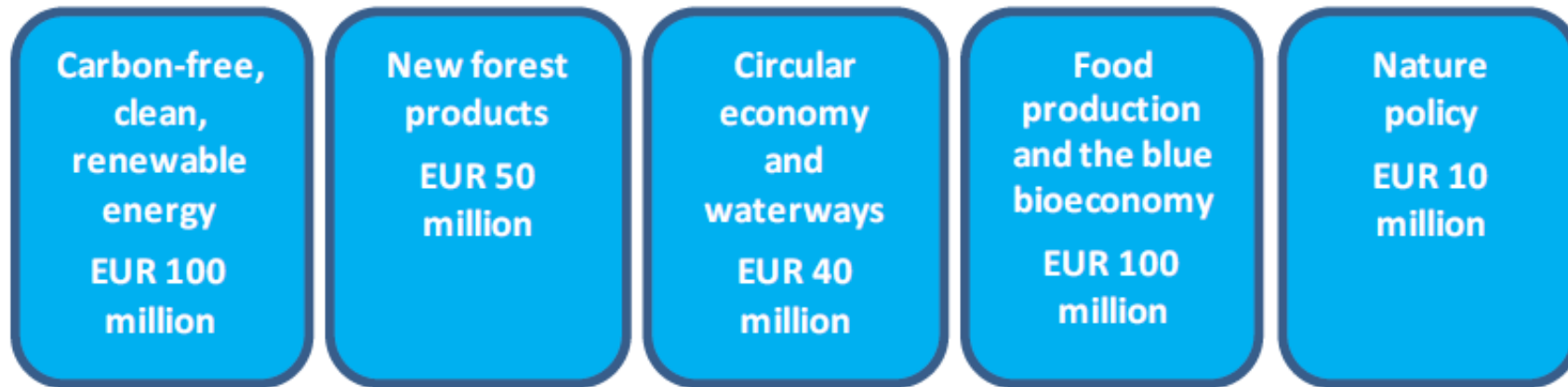
Government Programme 2015



- Finland has achieved the 2020 climate objectives already during the government term (i.e. 2015-2019)
- Renewable energy will be increased in a sustainable way so that its share will rise **to more than 50 %** during the 2020s and the self-sufficiency **to more than 55 % (including peat)**
- **Coal will no longer be used** in energy production and **the use of imported oil for the domestic needs will be cut by half** during the 2020s.
- Share of **renewable transport fuels to 40 % by 2030**
- The **use of wood** will be diversified and **increased by 15 million cubic metres** a year, and its value added will be raised.

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Strategic Priority: Bioeconomy and Clean Solutions => 300 million EUR investment



February 2016:

- 9.6 million EUR for a geothermal project
- 9.9 million EUR for 4 projects promoting use of biogas in transport

March 2016:

- Remaining support 80 million EUR for 2017-2018 (2017: 52 Million EUR)
- 54 Applications with overall investments 3.4 billion EUR

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Key Lessons Learned



- **Bioenergy has grown hand in hand with the forest industry**
 - Material and energy use of wood complement and are to a significant extent dependent on each other
- **Bioenergy has provided a very cost-efficient option to increase RE use**
 - Current feed-in tariff for electricity from wood-based CHP is 18 €/MWh_e cf. solar-tariff in Germany 92-130 €/MWh_e (EEG 2014)
- **Transport biofuels one of the key means to achieve the 2030 ESD target in Finland**
 - Blending mandate for advanced biofuels has been effective
- **It is possible to combine significant bioenergy use with growing forest carbon stocks**
 - important to address sustainability in harvesting



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Thank you for your attention!

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