Current situation in peat industry in Finland

Jaakko Silpola
Chairman of the Peat Committee in the Bioenergy Association of Finland

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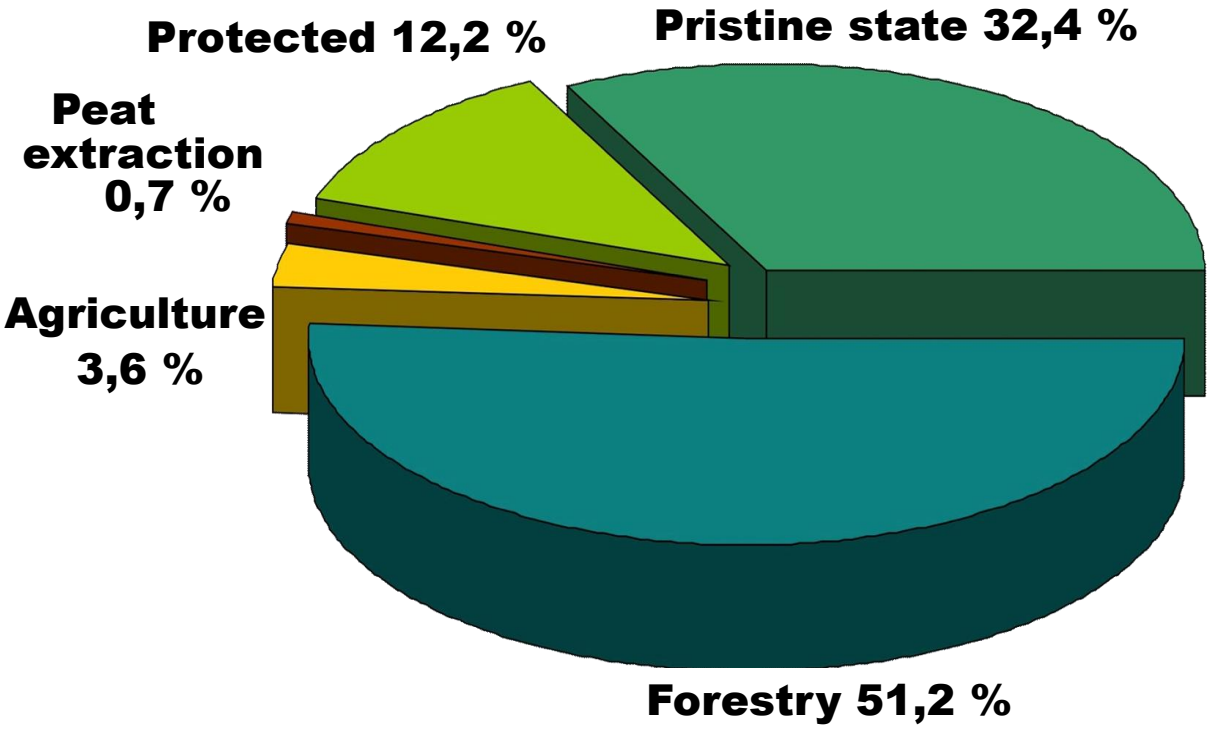
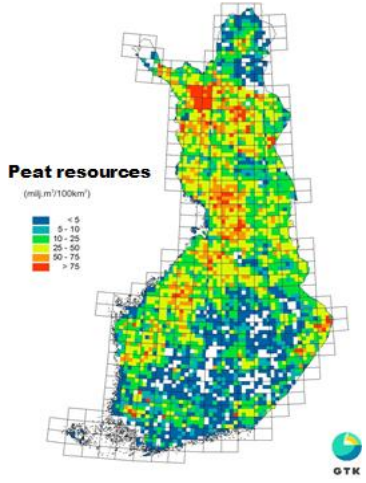
Finnish peat resources: only 0,7% utilized commercially in peat extraction



- Peatlands cover one third (9,3 mill. ha) of the Finnish land area
- In peat extraction 0,07 mill. ha (70 000 ha) or 0,7% of the total peatland area.



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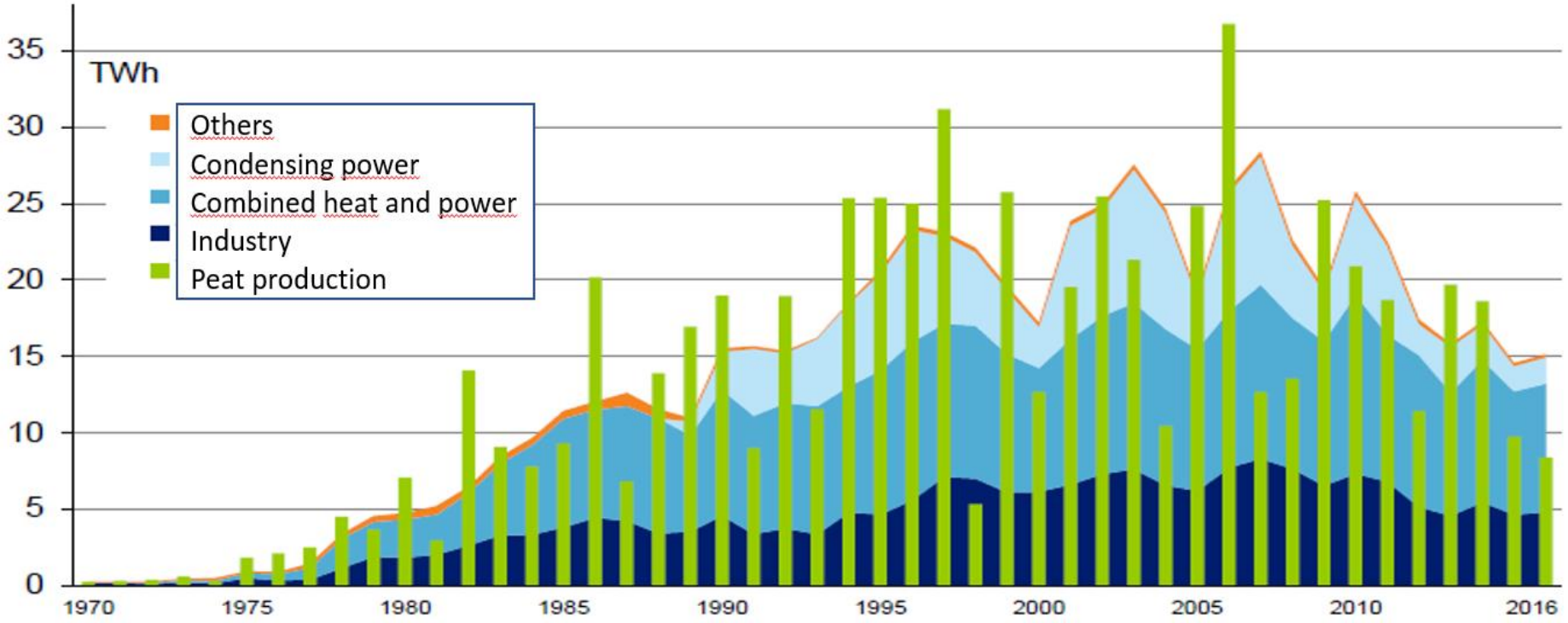
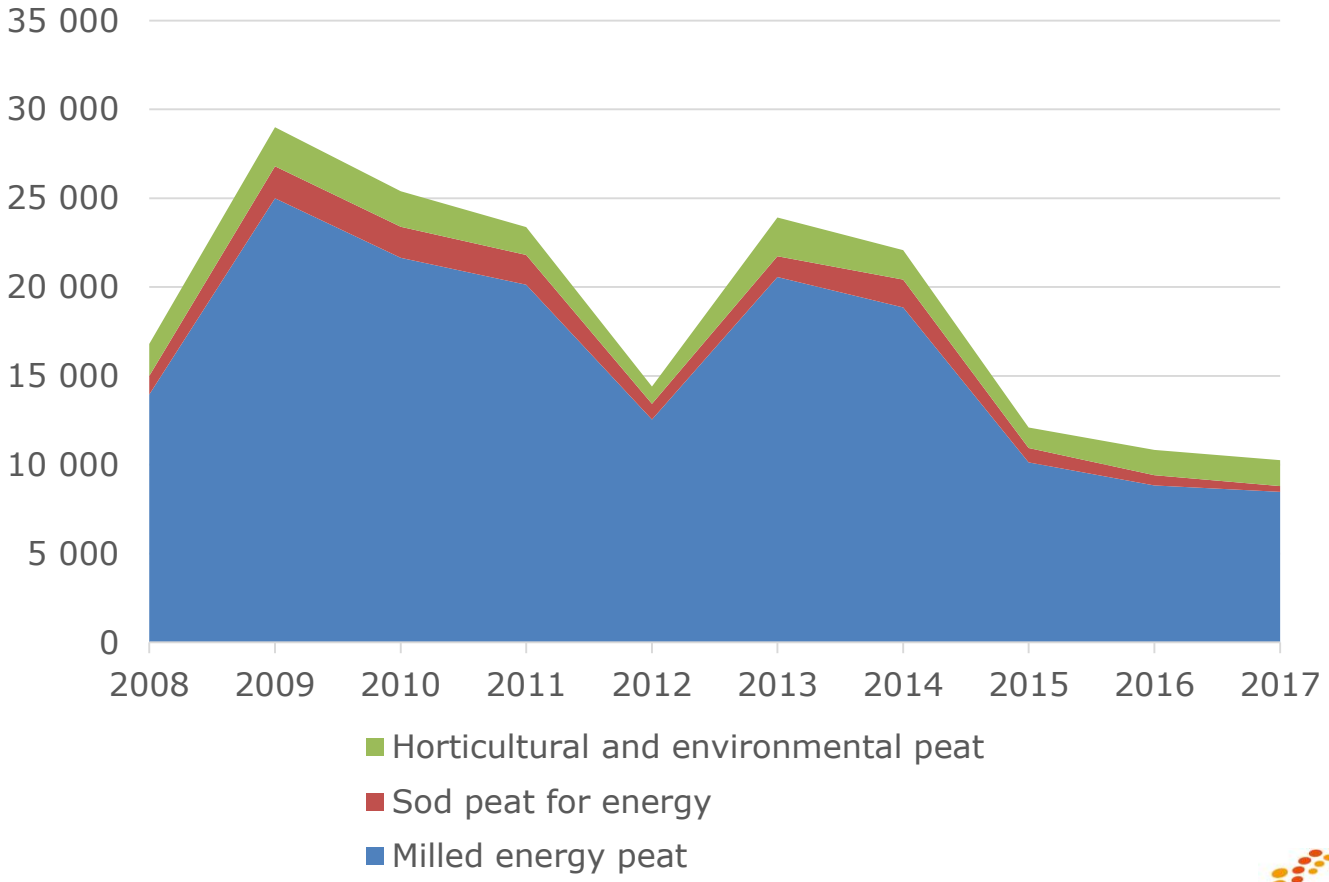
Energy Peat Production and Use by Client Sectors



Lähde: Tilastokeskus ja Bioenergia ry

Peat production in Finland 2008-2017, 1000 m³



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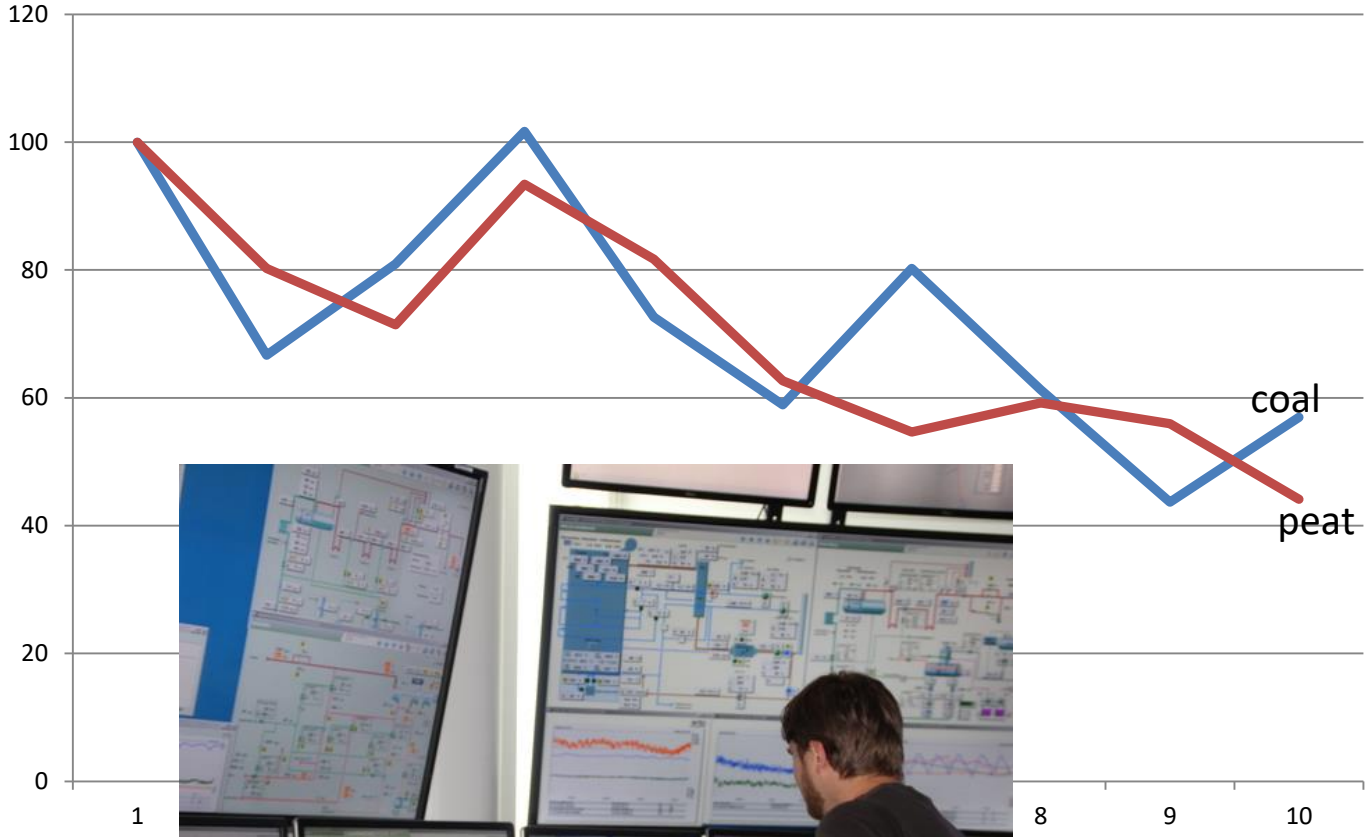
Peat versus Coal usage during 2007-2016



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Current Situation of Peat Industry in Finland

Environmental permits for peat production	67.000 ha
- of which active production area in 2017	48.500 ha
- of which energy peat production	42.000 ha
- new environmental permits for peat production	~1.000 ha/yr
- actual peat production areas released to after-use	2.000 – 3.000 ha/yr
Peat producers (having permits)	~100 companies
Small peat extraction areas (<10 ha, no licence)	~300 entrepreneurs

Special feature in Finland: High percentage of white peat is used for animal bedding purposes, in some years up to 60% of all non-energy peat.

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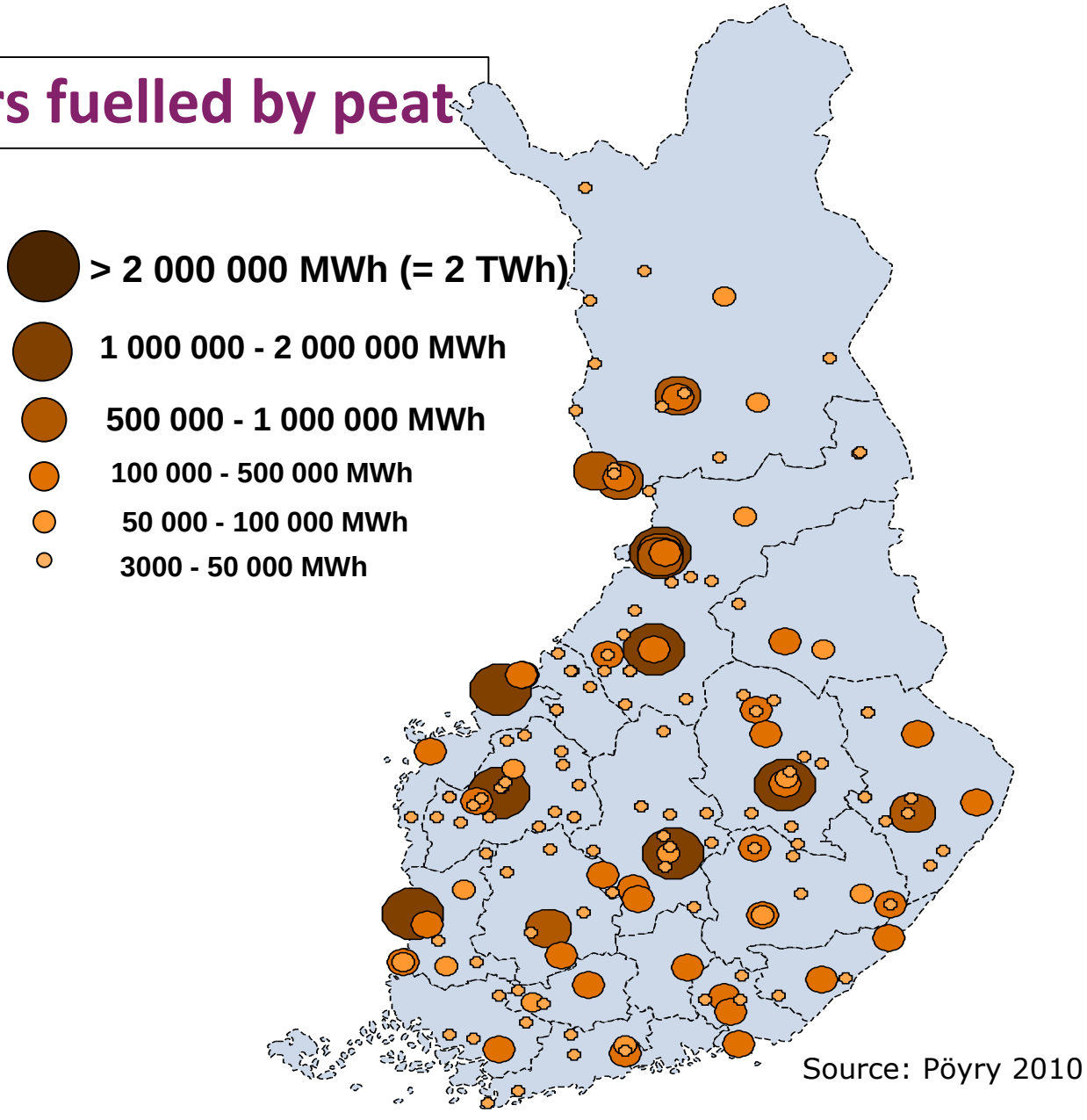
Power plants and boilers fuelled by peat

Around 60 power plants (mostly CHP) and more than 120 heat boiler plants use peat together with wood-based fuels.

Around 600 000 people in Finland live in homes that are heated by peat.

Peat fuels around 20% of all CHP production in Finland.



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Source: Pöyry 2010

Peat and wood in the boiler – strongly tied together

- Finnish communities and industry base their energy production mainly on domestic fuels – peat and wood.
- In the combined heat and power production (CHP), both peat and wood have an equal share and together cover almost 40 percent of all CHP production.

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Why wood needs co-firing of peat?

- Combined heat and power (CHP) production plants in Finland have conventionally utilized wood and peat together.
- Needles and bark in wood fuels contain impurities, which cause crust on the inner surfaces of the boiler. Crusting shortens the life of boilers.
- Problems arising from impurities can be effectively reduced by burning wood and peat together.
- Modern boilers used in CHP plants have greater resistance to logging residues which include bark and needles.

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Peat is a local energy source restoring national economy and trade balance

- Co-firing of peat and wood-based biomass supports Finland’s national economy, trade balance and energy security and helps to reduce emissions.
- These indigenous fuels can help decrease dependence on imported fuels & electricity and provide income opportunities and welfare to local communities.

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Energy tax on peat as of 2011 and the link to wood energy subsidy

- There are financial subsidies for the increased use of wood in existing CHP plants which burn wood and peat.
  - The purpose of the subsidy is to increase the competitiveness of wood against all other fuels (imported fossil fuels and peat) and enhance for more use of wood fuels.
  - However, this subsidy only applies to electricity produced from wood, and the amount of the subsidy is bound to the tax of peat and the price of emission allowance (EUA).

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Peat industry operates under strict environmental legislation in Finland

- Peat extraction in Finland is operated under strict environmental licenses.
  - Several efficient water treatment methods.
  - Noise and dust are also restricted.
- The Finnish peat industry is committed to develop alternatives to the after-use of the cut-away peat extraction areas.
- The CO2 emissions of the peat-fired power plants and heat boilers are controlled through the EU emissions trading scheme.

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More peat extraction licences needed

- There is a serious bottleneck to make sufficient new peat areas available:
  - Old extraction sites developed are approaching their end of production.
  - Ecological requirements have gone up considerably
  - There is limited administrative capacity to deal with all permits
    => 20,000 hectares, i.e. third of the total Finnish production area today, is waiting for being processed by permission authorities.

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Drainage classification was created in Finnish Peatland Strategy in 2012

- Finnish Strategy on sustainable and responsible use and protection of the mires and peatlands was accepted in August 2012.
  - The strategy work created an up-to-date understanding of the diversified and sustainable use of mires and mire nature and peatlands and reconciled the different needs relating to their use.
  - The strategy has a strong preference to use/protect certain 'grades' of peatland.
    - In the Finnish "Natural State Grading" system the grades go from 0 (=irreversibly changed) until 5 (=no disturbance factors present, mires still in a more or less natural state).
    - Grades 4 and 5 have very high natural value and should not be used for peat production.
    - Grades 0, 1 and 2 are generally open for peat extraction. Grade 3 may be used under certain conditions.

Peat in the Energy & Climate Strategy

- Each Government draws up a national energy and climate strategy.
- The Government in office reviewed the Finnish Energy and Climate Strategy in autumn 2016. Peat got some neutral remarks as being domestic fuel and it should be kept competitive against imported fossil fuels.
- Earlier, in October 2014 the parliamentary committee released its report on energy and climate roadmap for 2050.
  - Peat got positive remarks (jobs, energy security, trade balance etc.) and also following statement was given:

    ”**Finland should not abandon the use of energy peat as long as imported fossil fuels are used.”**

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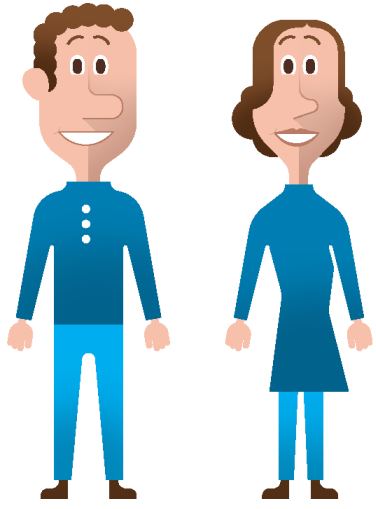
Fifty per cent from Finland by 2030

We can do it!



The Bioenergy Association of Finland

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We can produce energy domestically

2014

- In 2014, 35% of the energy used in Finland was produced in Finland
- In 2030, Finland will produce 50% of the energy it uses, and the other 50% will be imported

2030

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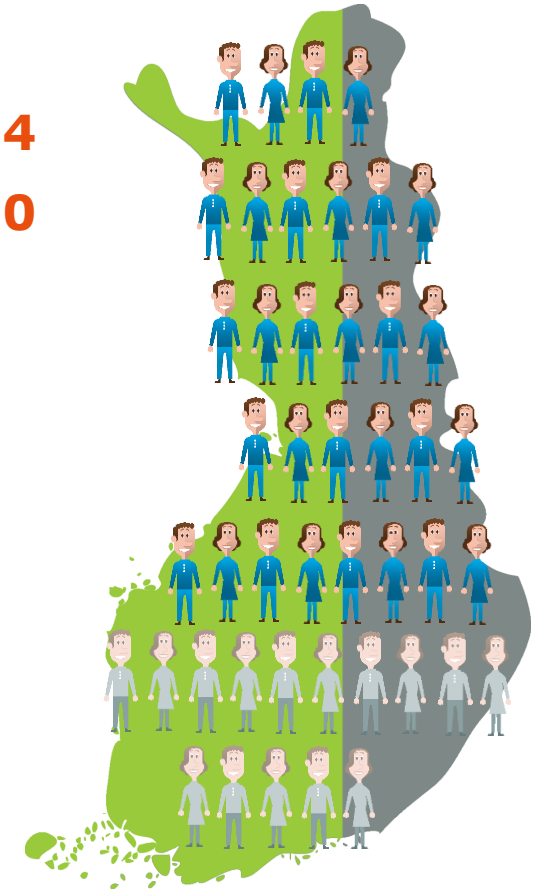
We can create jobs

- At the moment, domestic fuels employ 30,000 people, either directly or indirectly
- A 50% self-sufficiency rate in energy will create 15,000 new jobs
- Wood energy and peat production create jobs also in regions where the number of jobs is currently small

2014

2030



Employed directly

Employed indirectly

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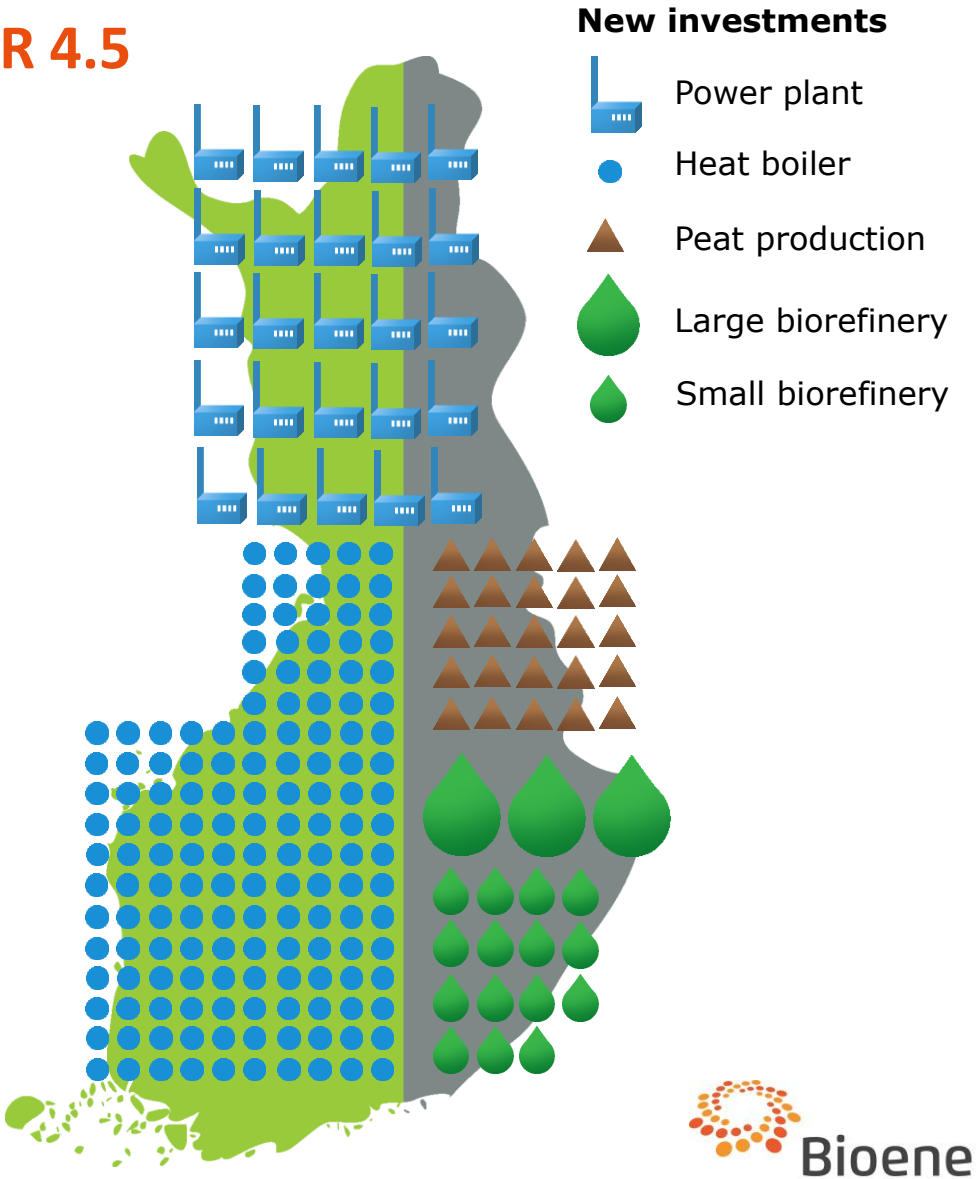
We can make investments of EUR 4.5 billion

- The use of domestic fuel: New power plants, boilers, peat production areas, biorefineries and growing technology companies

2030



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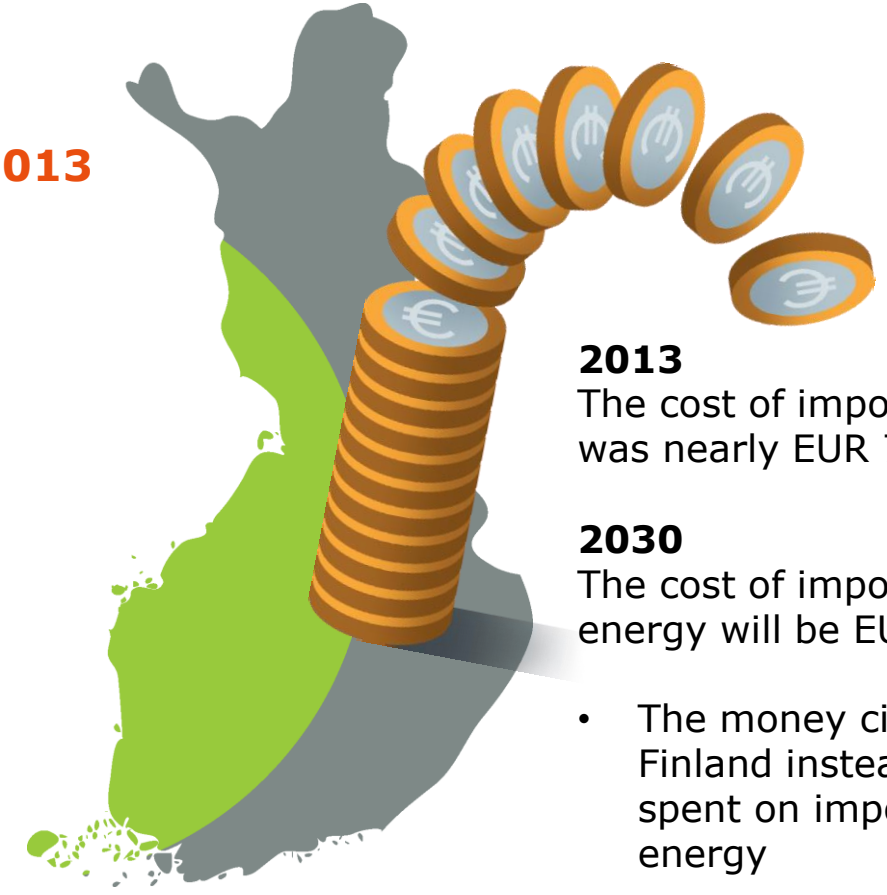
We can achieve notable economic growth

2013



2013
The cost of imported energy was nearly EUR 7 billion

2030
The cost of imported energy will be EUR 4 billion

- The money circulates in Finland instead of being spent on imported energy

2030

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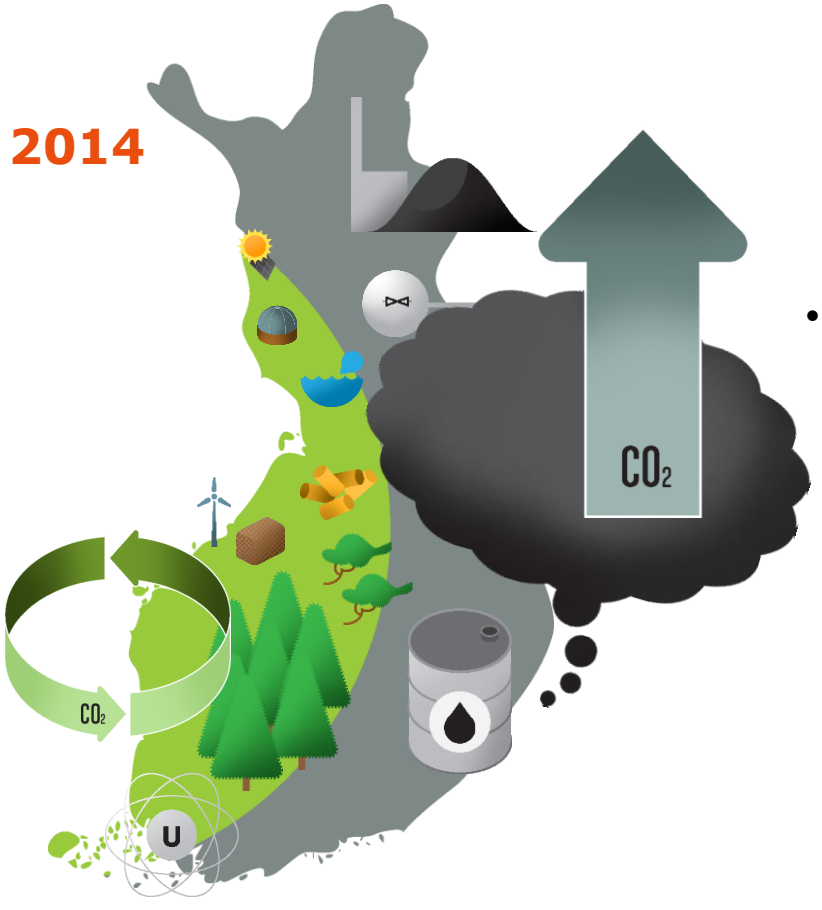
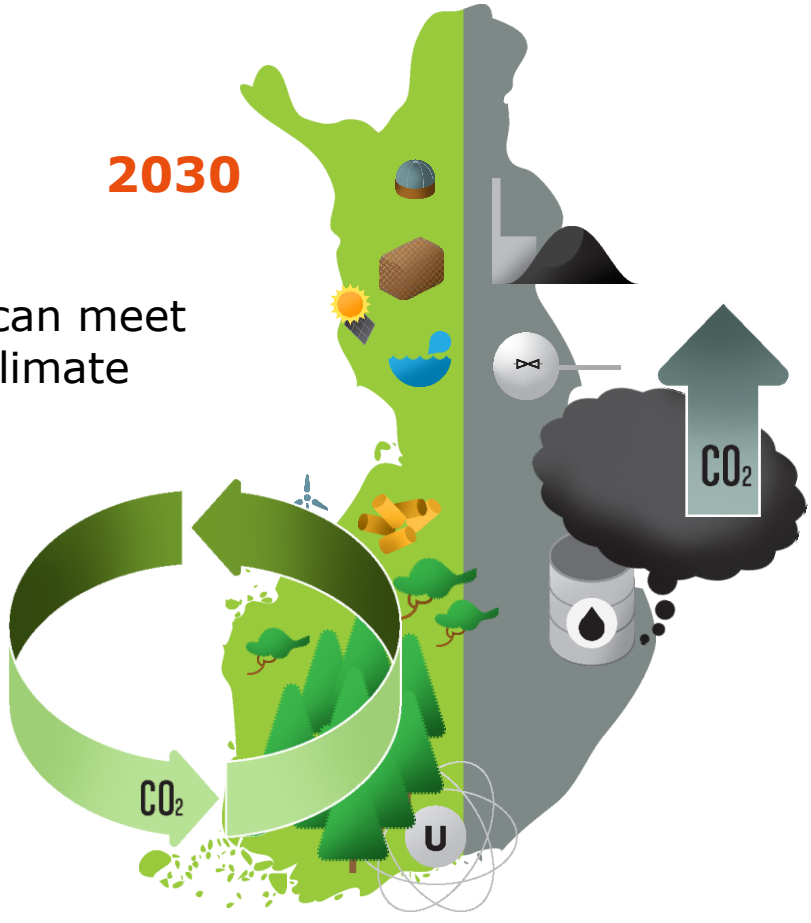
We can combat climate change



- Finland can meet the EU climate goals



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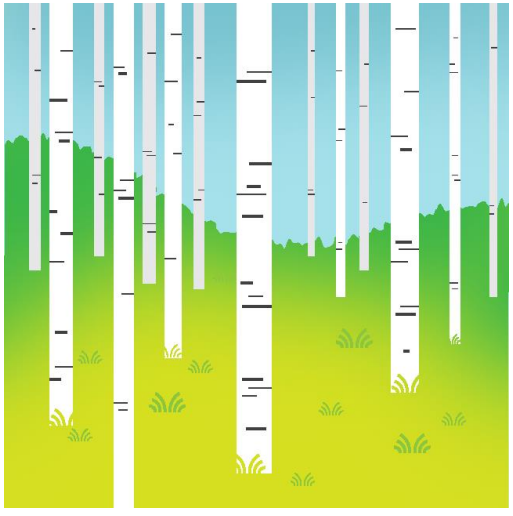
We can produce energy in a responsible way: PEAT

- Peat is only produced on peatlands that are no longer in their natural state

- We keep emissions to waterways at a minimum and develop the practices



- Cut-away mires are used for a variety of purposes after peat production

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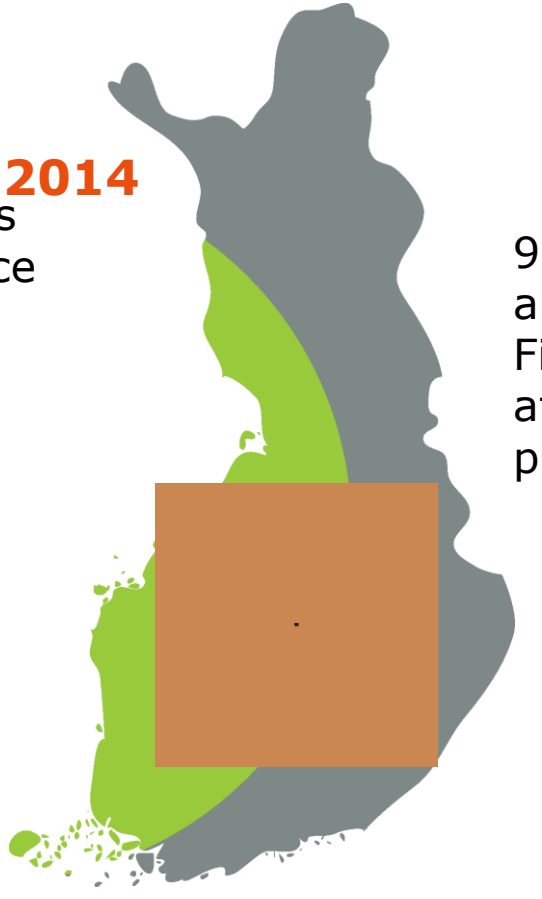
We can produce Finnish energy in a sustainable way: PEAT

- New production sites are needed to replace the cut-away areas
- Only 0.7% of all peatlands will cover the need also in the future

2014



2030

99.3% of mires and peatlands in Finland **are not** affected by peat production

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Fifty per cent from Finland requires in peat production and usage

Securing the availability of domestic fuels

- making the permit process for peat production simpler and quicker

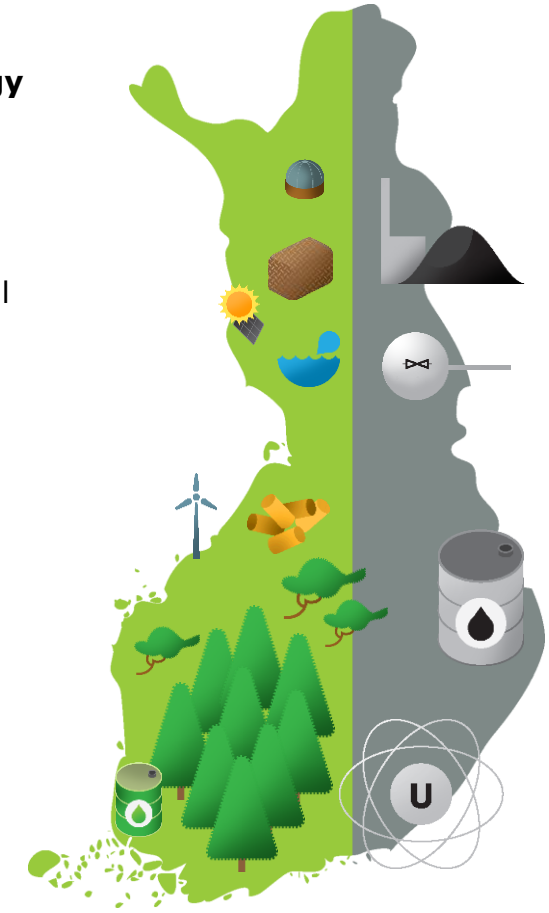
Improving the competitiveness of Finnish bioenergy compared to imported energy

- removing the tax on peat and granting equivalent support to wood chips operations

Allowing new bioenergy investments and the export of bioenergy technology

- securing sufficient investment support for renewable energy to biorefineries and thermal enterprises
- making the permit process for investments simpler and quicker

We can do it!



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Heat – and peat – is needed!

Thank you for your interest!

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