



The Use of Energy Peat in Finland

Baltic Peat Forum 2013

Vilnius, 5 September 2013

Jouko Rämö, The Bioenergy Association of Finland

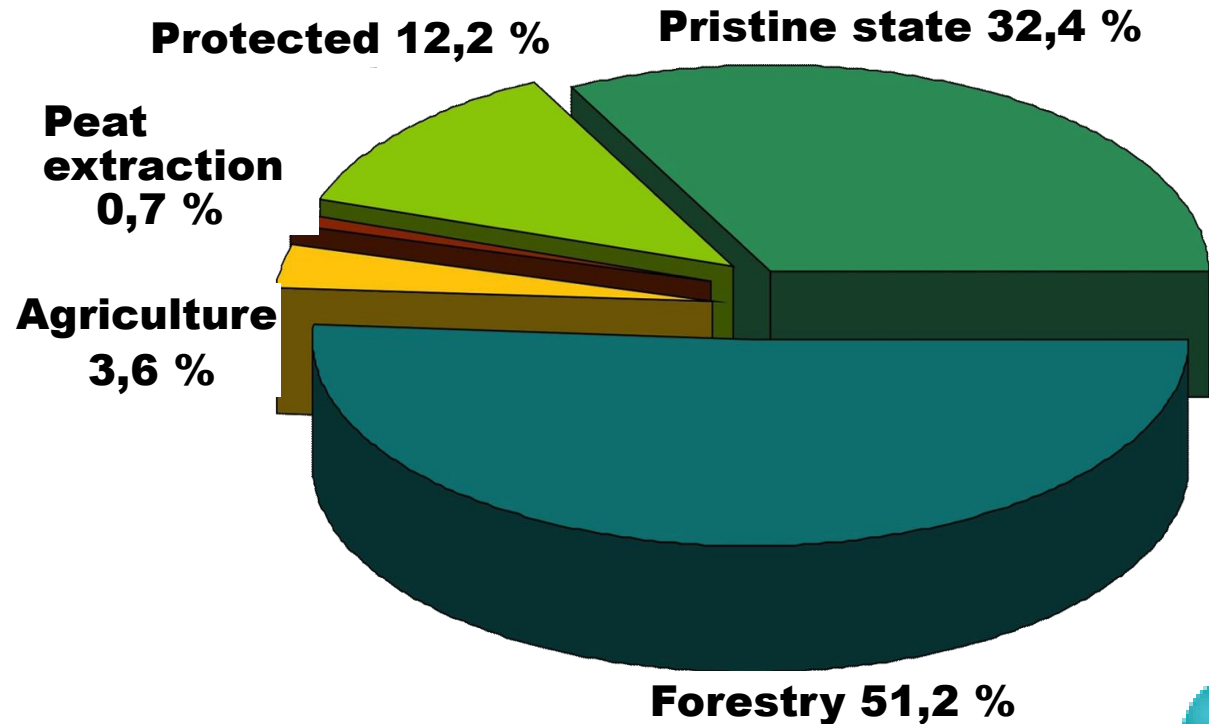


Bioenergia

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

- Finland is literally (in Finnish) a “peatland” where almost one third of the land area or approximately 9.3 million ha are covered by peatlands, which would be equal to the surface of Lithuania and half of Latvia.
- **Only 0.7 % (0,07 mill. ha) is used for peat extraction i.e. commercially utilized.**
 - Peat extraction areas cover only 0,2% of the Finnish territory.
- Technically suitable resources of peat in Finland: 12 800 TWh. Vast!

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.



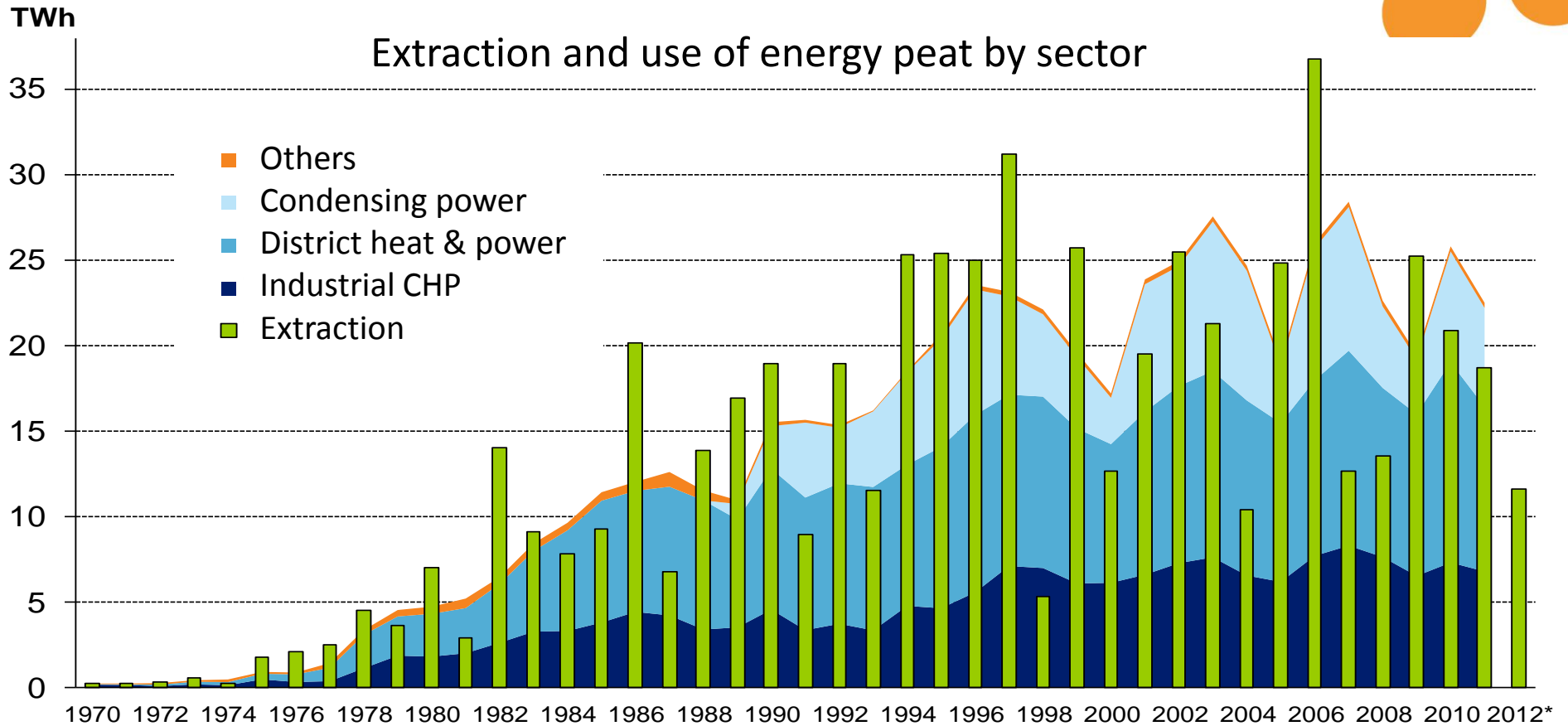
Energy peat extraction and consumption in Finland

- Roughly 90% of Finnish peat production is used for energy. Other uses (horticulture etc.) small. Practically no exports of energy peat.
- Milled peat dominates in extraction and consumption, its share is 93%.
 - Rest is sod peat and also minor amounts of brickets and pellets.
- The extraction of energy peat varies a lot: between 5-37 TWh (past 20 years)
 - In normal production years a share of the energy peat is stored for upcoming year as a reserve.
- Consumption of energy peat has been on average 23 TWh.
- Peat covers around 5-7% of Finnish primary energy consumption and also electricity consumption.
- Summer 2012 was exceptionally bad with less than 12 TWh of extraction. (Estimate for 2013: 19 TWh.)
 - Difficulties in peat deliveries during last winter.
 - Supply of peat was not sufficient to cover all demand.



Bioenergia

EXTRACTION OF ENERGY PEAT VARIES A LOT

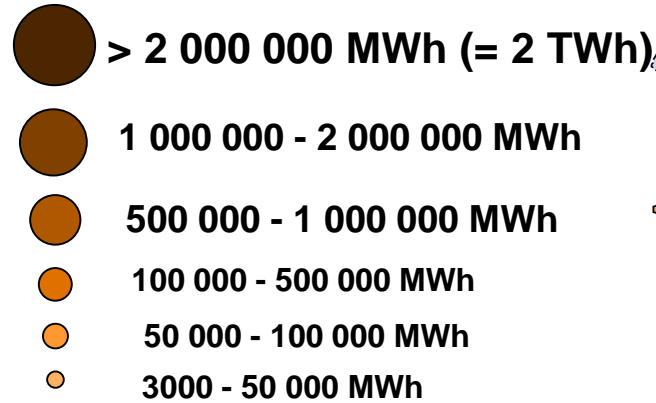


Source: Bioenergy Association and Pöyry

Power plants and boilers fuelled by peat

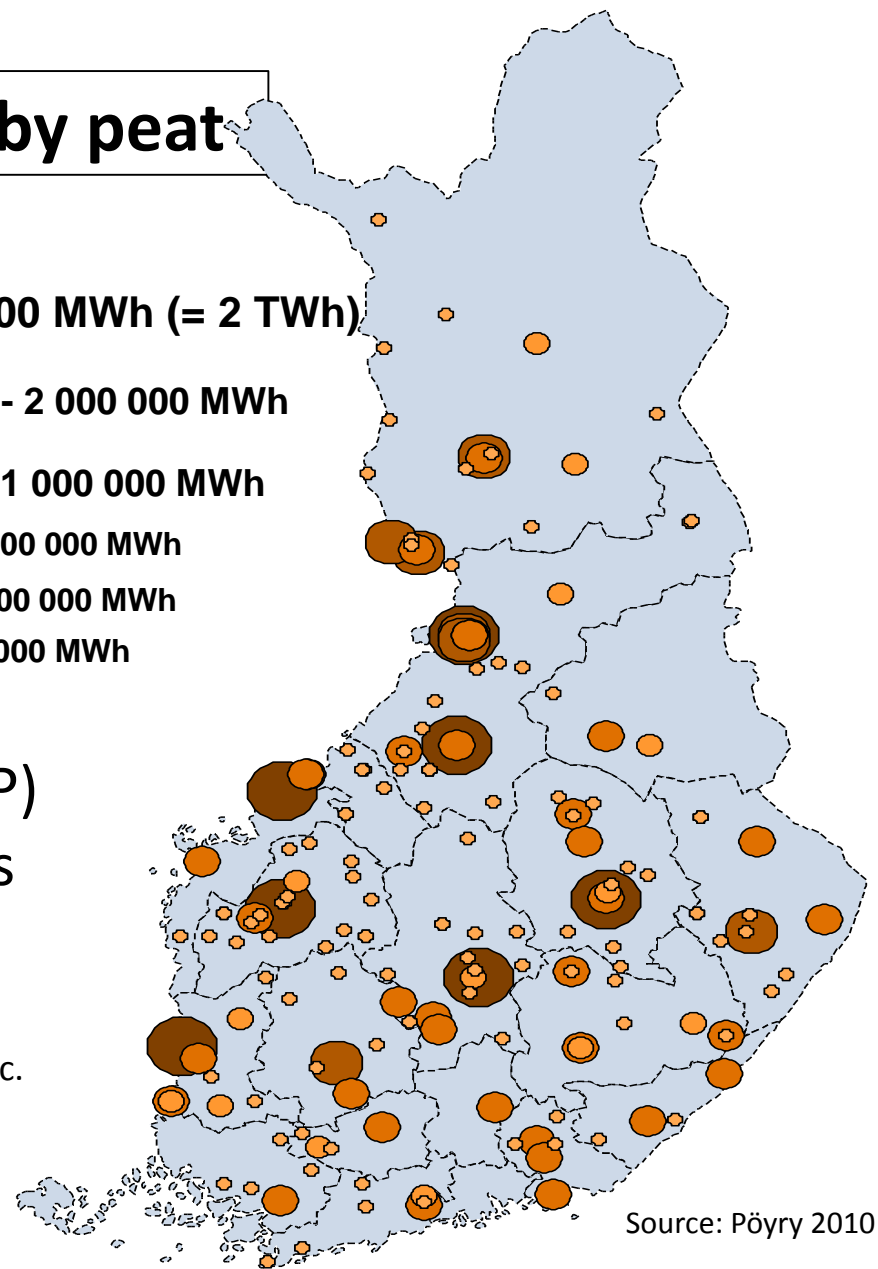
- Two thirds of the peat-fuelled power&heat comes from co-generation (CHP) plants. Rest is condensing power and separate heat production.
- Peat fuels around 20% of all CHP production in Finland.
- Around 600 000 people in Finland live in homes that are heated by peat.

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.

Excluding small heat boilers in individual farms etc.



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 CHP, both peat and wood have an equal share and together cover almost 40 percent of all CHP production.
- The use of peat and wood is strongly tied together
 - Existing power plants use wood fuels as much as availability and technical restrictions of boilers allow.
 - Peat is either main fuel or it supports and supplements the use of wood.
 - Nowadays peat is not used as a sole fuel. Before, there were a couple of boilers, but today all boilers in Finland co-fire peat with wood.

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 reduce emissions. These indigenous fuels can help decrease dependence on imported fuels&electricity and provide income opportunities and welfare to local communities.
- Peat is a necessary part of the local energy supply and socially beneficial especially for rural areas. Peat as a local or regional energy source has low transportation costs.
- Peat should remain competitive particularly in relation to the imported fossil fuels (hard coal) in order to allow the investment potential of the installations using indigenous fuels.

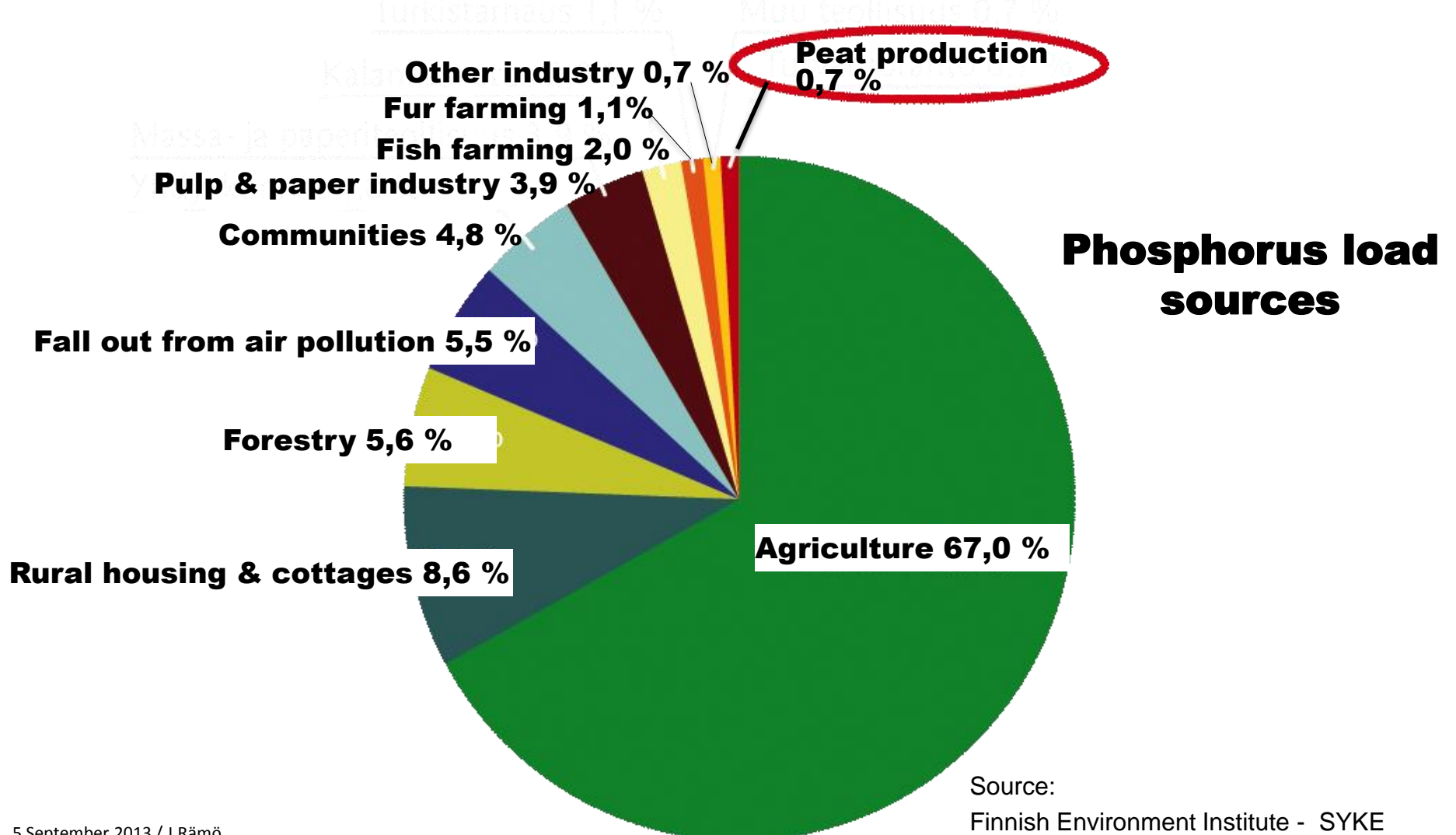
Peat creates employment and welfare to Finland

- Peat extraction does not threaten Finnish peat reserves.
- Regionally speaking, peat production and consumption is highest in Ostrobothnia (North-Western Finland) and inland.
- The total employment effect of energy peat industry in Finland is about 9 000 man-years (=full-time employment).
 - Peat brings also extra income to farmers, whose livelihood is limited by the small farm size and poor climate conditions.
 - There are also hundreds of private contractors and entrepreneurs in peat harvesting and logistics.
- Ballpark estimate of the turn-over of the energy peat industry in Finland: the total value of the energy peat chain is not far from one billion euros.
 - From the extraction of energy peat and all the way to the heat&power business fuelled by peat.
- Peat has a great impact on communities in rural areas as peat brings extra income to people and regions which are less developed economically.

Peat industry operates under strict environmental legislation in Finland

- Peat extraction in Finland is operated under strict environmental licenses issued by the environmental authorities.
 - There are several efficient water treatment methods, for instance, that are selected on a case-by-case basis. Concerns related to noise and dust are also taken care of.
- New environmental protection methods are continuously being researched and developed together with environmental authorities and consultants, universities and other research institutions.
- The Finnish peat industry is also 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.

Less than 1 % of water courses' nutrient load comes from peat production



More peat extraction licences needed

- There is a serious bottleneck at the moment to make sufficient new peat areas available in time. It is caused by a combination of factors:
 - Many extraction sites developed in 1970s are approaching their end of production.
 - Ecological requirements have gone up considerably over the last few years and are somewhat unclear to the personnel in the regional administrative agencies.
 - There is limited administrative capacity to deal with all permits, resulting in a long queue (20,000 ha, i.e. third of the total Finnish production area today) waiting for being processed.
 - The public opinion and even environmental authorities in recent years have been affected by the rumours that exaggerate negative environmental effects (on watercourses) of peat extraction.

Peat in the Energy & Climate Strategy 1/2

- The Finnish Energy and Climate Strategy has been reviewed this spring.
- Government submitted the strategy to the Finnish Parliament in March and since then it has been examined and discussed.
 - In the autumn the Parliament will give its report on the strategy together with some resolutions.

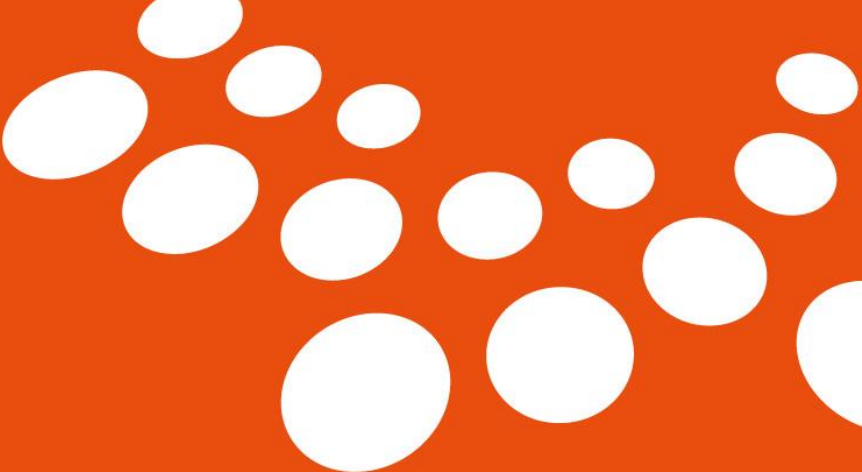
Peat in the Energy & Climate Strategy 2/2

- Energy&climate strategy admits that the peat is indigenous fuel and has regional economic advantages and contributes to security of supply and self-sufficiency as well as trade balance.
- Still, the unpleasant policy target in the strategy is that because of the negative environmental impacts of the use of energy peat, it should be cut back by third by 2025 compared to the average use.
 - The strategy states that peat should not be replaced by hard coal or other fossil fuels.
 - However, there are no measures to prevent this from happening.
 - Peat has been replaced to some extent by hard coal in 2012 and in 2013.
 - ❖ Reason: Poor availability of peat together with increased excise duty for peat and low market price of hard coal .

Political Parties and Energy Peat in Finland

- The current anti-peat Government in Finland is a majority coalition formed by six Parties from right to left:
 - No sympathy or understanding for peat - although it's domestic and has positive impact on trade balance.
 - The current Government has a strategy to cut back the use of energy peat by third by 2025.
- The two Parties most in favour for peat, the Center Party and the (True) Finns Party are not in the current Government.
 - Both of them are nowadays among four major parties in Finland.
 - The next Parliamentary elections will be held in April 2015 and the energy strategy will be reviewed thereafter.





THANK YOU.