



Bioenergy in Finland

27.05.2016, Helsinki
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Five committees

- Wood energy
- Peat
- Small scale use and pellets
- Heat entrepreneurship
- Biofuels, biogas, bioliquids (biodiesel, renewable diesel, bio SNG, biogas from digestion, bioethanol, pyrolysis oil)

Changes in the market

- Price of coal is low
- Price of natural gas low (not LNG)
- Price of oil down
- ETS prices down
- Electricity prices low

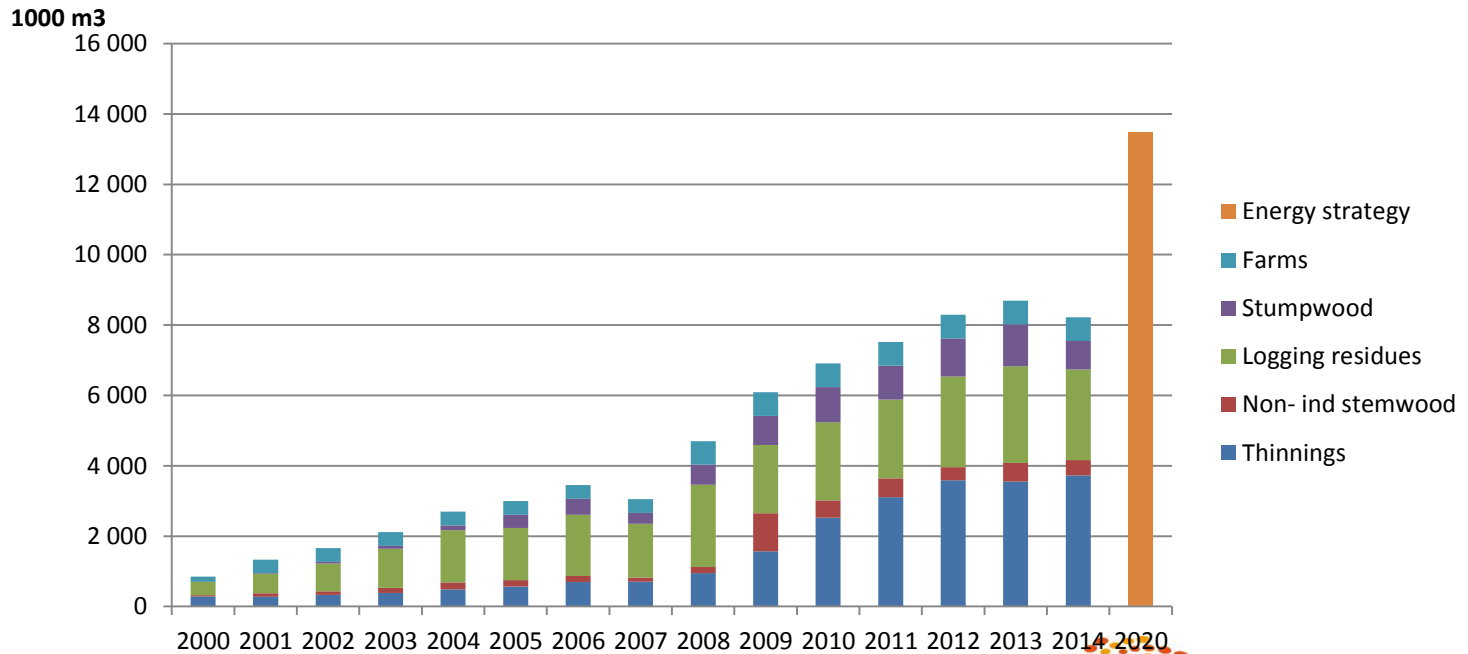


Energy policy

- Before 2010 tariff 6,9 euros for wood chips from logging residues and stumps.
- Feed in tariff max 18 euro/MWh , Connection between peat tax, ETS and tariff for electricity made by chips
- Lower tariff for "normal" pulpwood-size wood, a kind of cascading from 2019.
- 2020 +?????
- Taxes on fossil fuels for heat
- R&D

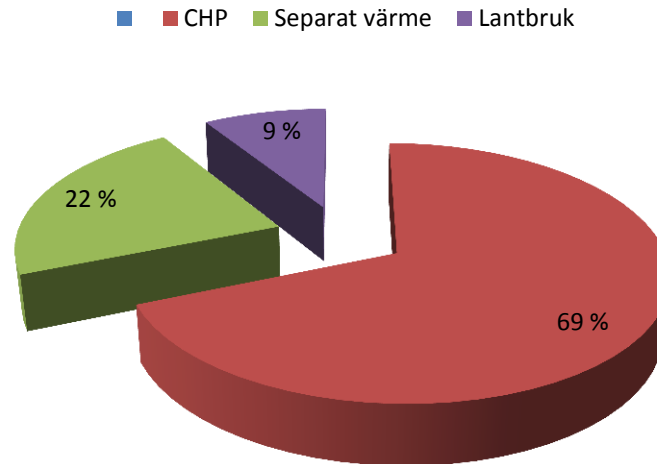


Use of forest chips, also 2015 down by 3 %



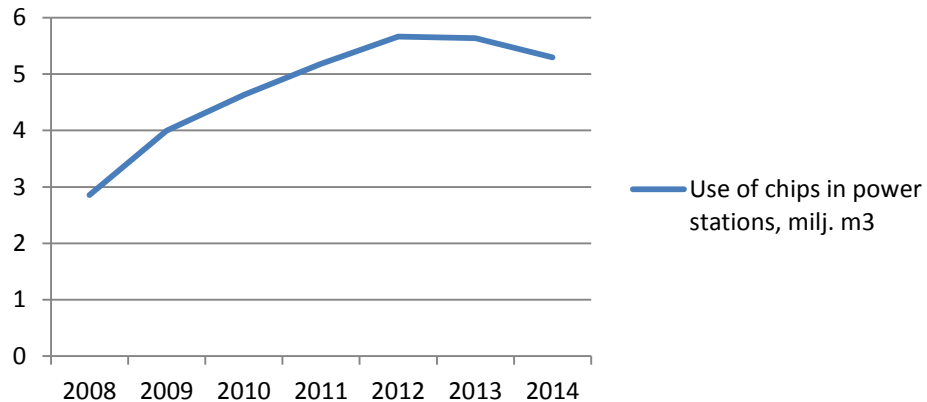
Different users of chips

- 1. CHP
- 2. Heat only
- 3. Farms



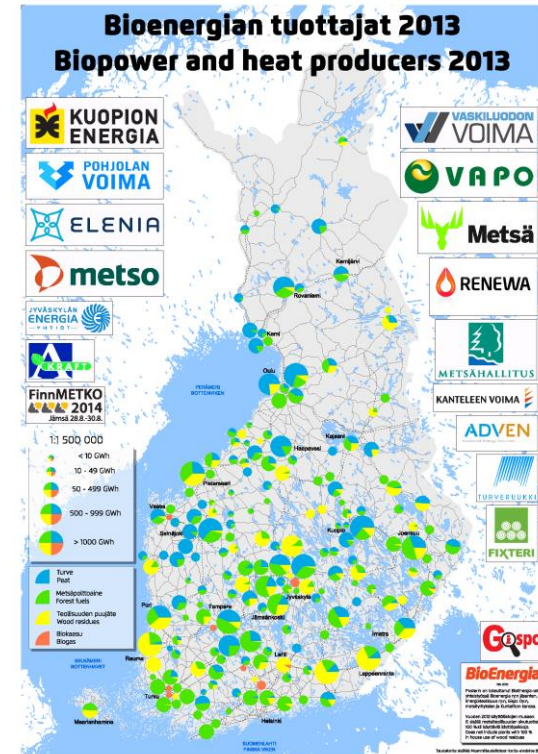
Wood chips (not barks, sawmill dust) in energy production, Metla

Use of chips in power stations, milj. m3 (including heat in CHP)

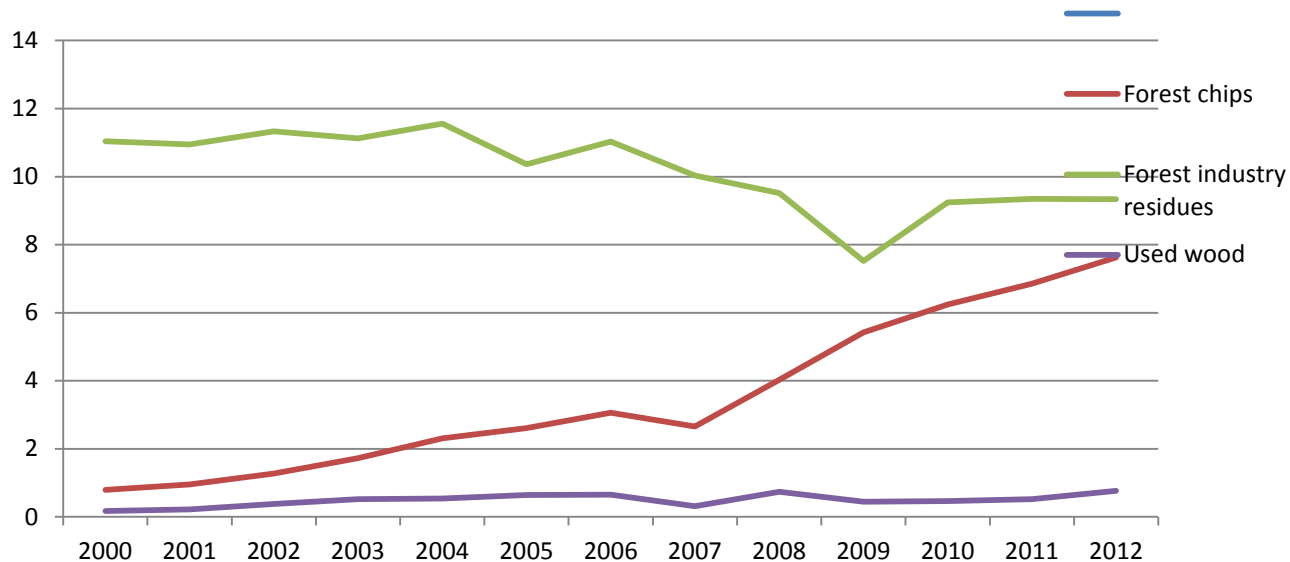


New 2012-2013; No big new plants 2014 or 2015 using wood

- Hämeenkyrö 2012, CHP 70 MW, 450 GWh
- Porvoon Energia, 2013 CHP 50 MW, 350 GWh (150)
- Fortum, Järvenpää, 2013 CHP 400 GWh
- Tampere 50-100 GWh pellets
- Jyväskylän Energia wood share 30->70 %
- Vaskiluodon Voima, 2013, CHP, 140 MW, 800 GWh

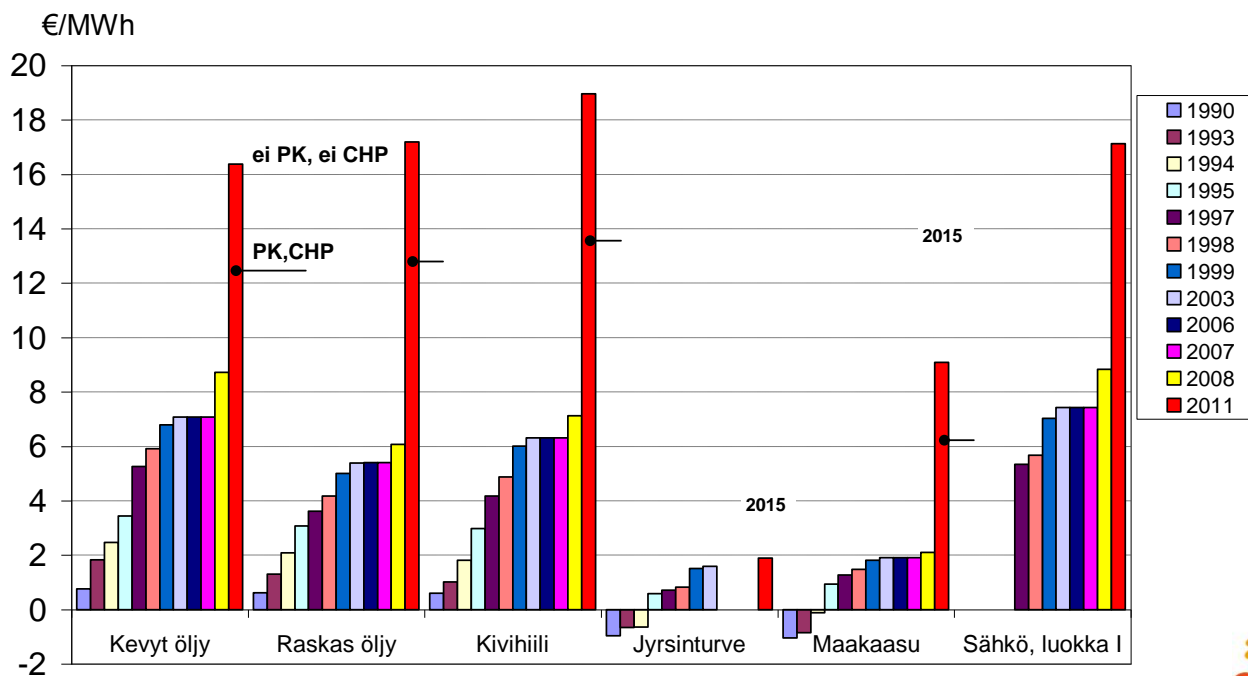


Use of solid wood for energy, Metla



Taxes on fuels for heating

Valmisteverojen kehitys Suomessa 1990-2011





Being planned and to be decided, or not

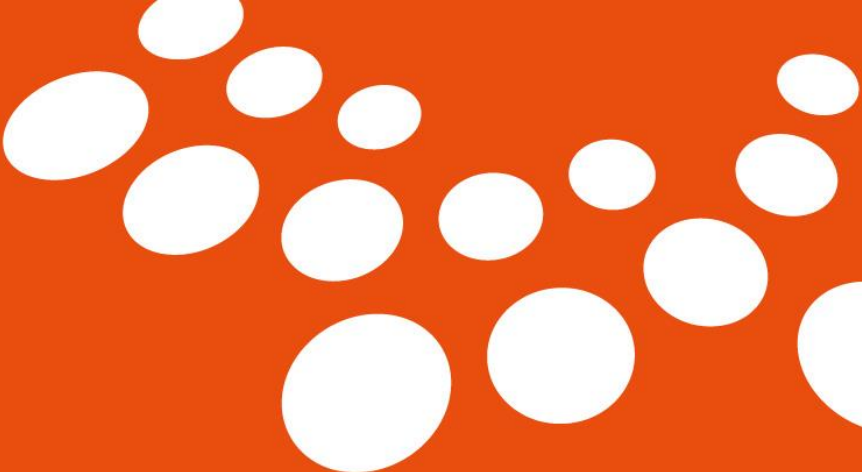
- No new plants since 2013; own decisions, market situation for electricity
- Turku: Turku Energia + Fortum construction started
- Helen (Helsingin energia) now the "third" alternative, heat only solutions
- Tampere (Tampereen sähkölaitos) heat only
- Rovaniemi (Rovaniemen Energia) 1600 GWh, heat only
- Joutseno (Metsä Group, Helen, Gasum) 2015 1500 GWh, not interesting
- (Green Fuel Nordic, Iisalmi, Savonlinna, x GWh)
- Oulun Energia 2019
- (Kotkan Energia + Kotka Mills 70 MW)
- Imatra heat only
- Lahti Energia, suggested heat only, CHP maybe later
- Several biorefinery projects (bio-oil, Kaidi renewable diesel)





Other measurs

- - R&D in the 1993-2003
- - Export efforts



Thank you for your attention!