



## **Nordic Energy Futures - Conference**

**Perspectives on the development of Nordic energy  
and the EU climate and energy policy package**

Part 1: Energy efficiency and district heating

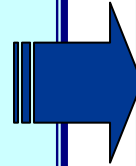
### **Energy efficiency in Finnish industries**

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*“Voluntary energy conservation agreements have proven to be the best practical way of promoting energy efficiency among companies!”*

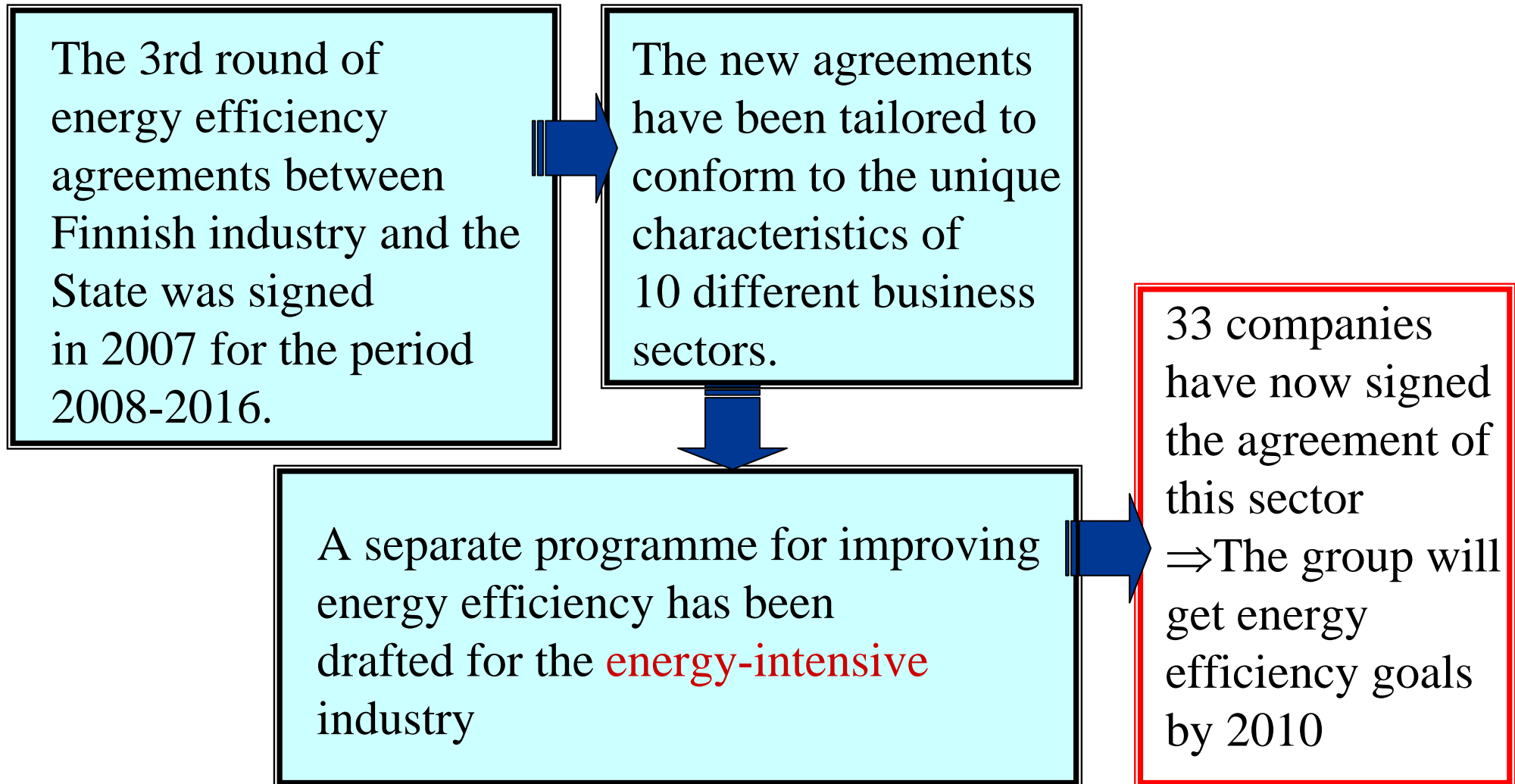
242 Finnish companies  
Investment 1997-2007:  
377 M€  
Subsidies for energy audits:  
21.6 M€  
Subsidies for investment:  
16.8 M€



**Savings/a:**  
**Fuel: 6.28 TWh**  
**Electricity: 1.07 TWh**  
**CO<sub>2</sub>: >2.3 Mt**  
**Energy cost:>135 M€**

*Without energy saving agreement work  
these companies would had in 2007  
5.4% higher heat and fuel use and  
2.8% higher electricity use!*

## Finnish industry: New voluntary energy saving agreements



## Energy saving targets/potential of Finnish industry

Energy Services Directive  
9% (17.8 TWh) energy  
conservation target upon  
Finland for the period  
2008–2016

*The share for industry  
(non Emission Trading  
Scheme 20%) would be  
22%, 4.0 TWh/9a and  
0.47 TWh/a*

Finnish industry  
consumed 47.84 TWh<sub>e</sub>  
(52% of total) in 2007

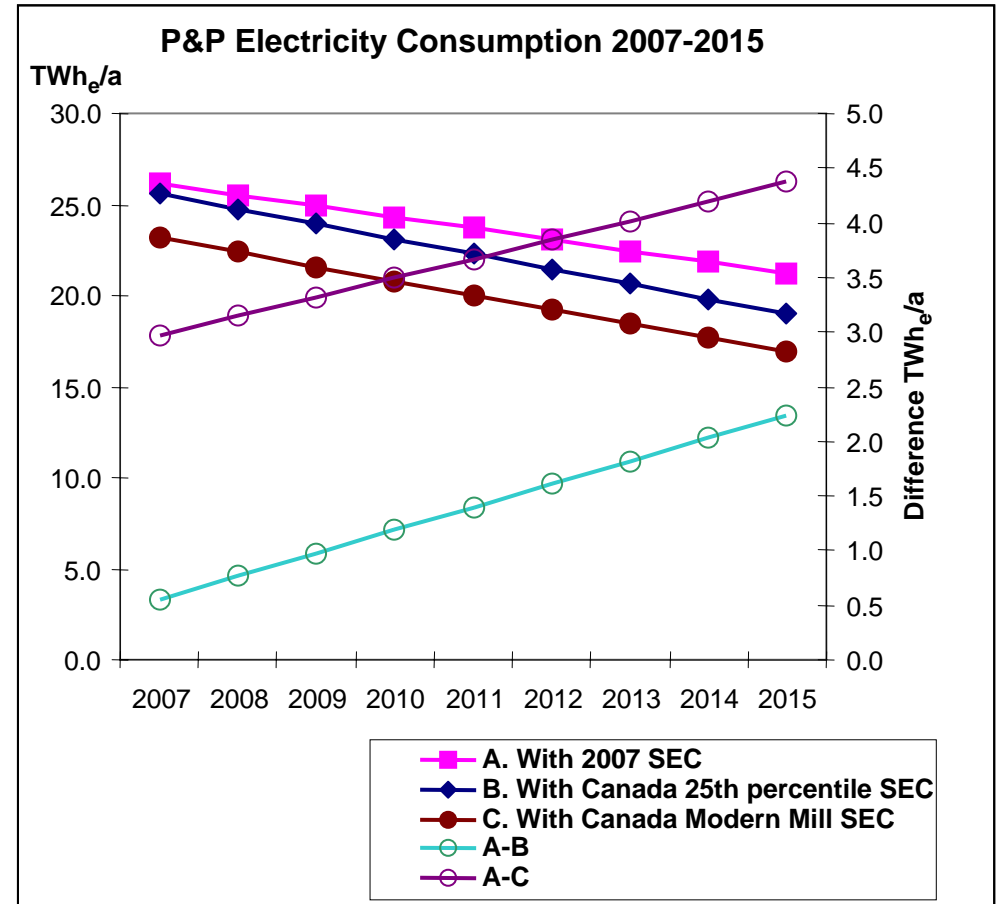
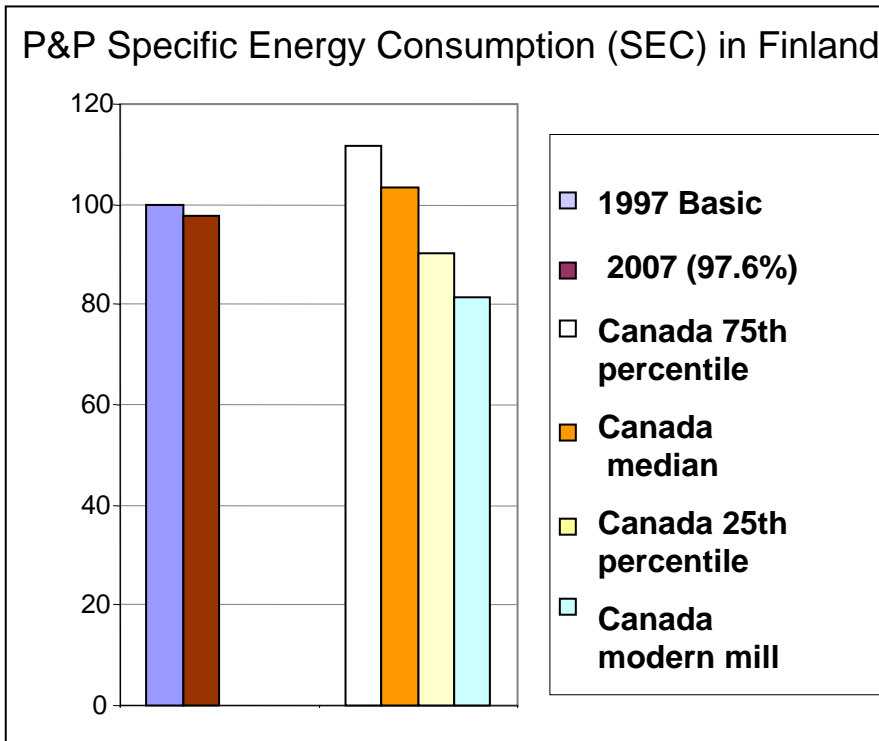
*5% of that means saving  
target of 2.4 TWh<sub>e</sub>/a*

in 2007 Finnish industry  
approximated the future  
energy saving potential to  
be each year

*4.11 TWh of fuel and  
0.9 TWh of electricity*

# Pulp and paper industry energy saving potential

P&P electricity consumption was 26.1 TWh in 2007 (29% of total, 54% of all industry)



Based on the production forecast by Metla

➤ Practical saving potential 0.2–2 TWh<sub>e</sub>/a,  
theoretical could be even 4.4 TWh<sub>e</sub>/a



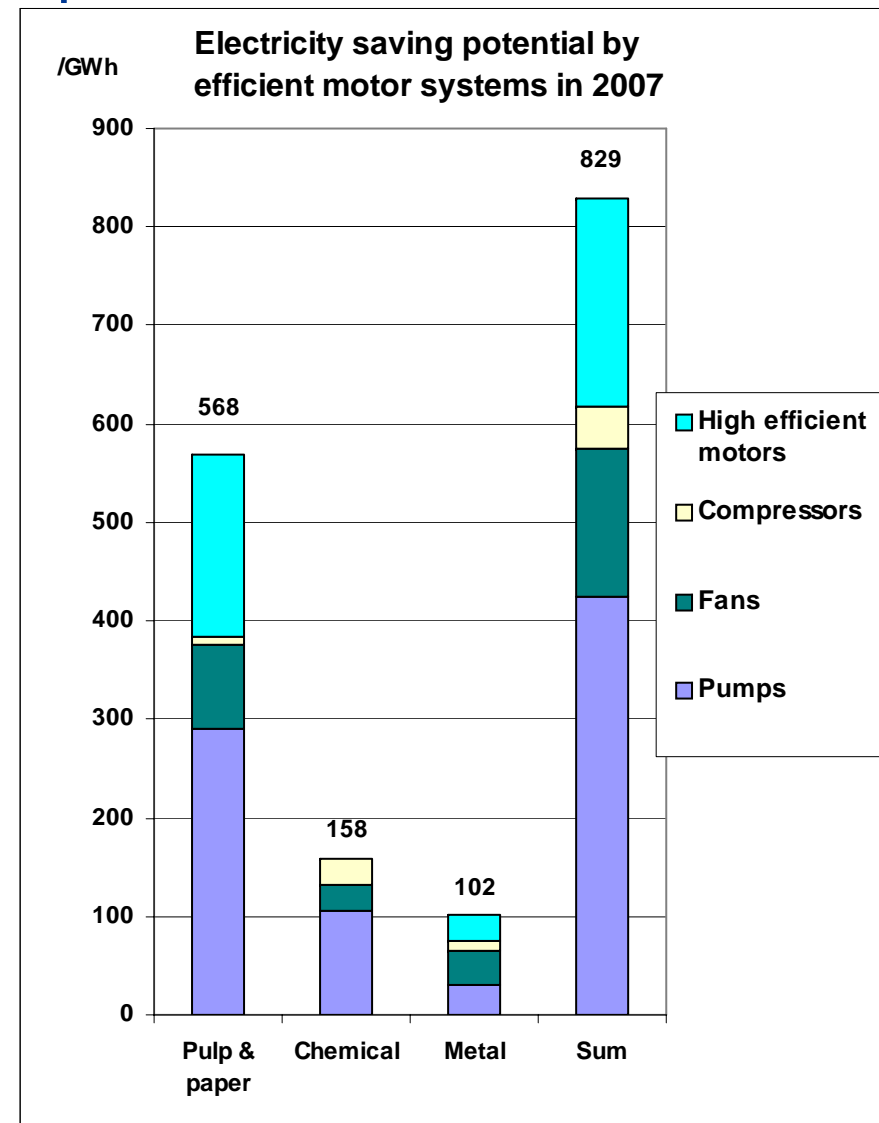
## Examples of energy saving actions and potentials:

*Energy efficient motor systems* (energy efficient motors and frequency converters) in Finnish energy intensive industry,

➤ **total savings ~830 GWh/a, ~33M€/a** (2.2% of the total electrical energy use of industry).

*Improved compressed air systems* (e.g. decreased pressure)

➤ **total savings ~300 GWh/a, ~10 M€/a** (0.6% of the total electrical energy use of industry).



# To achieve higher energy efficiency...

- *Required a well-defined management approach*
- *Continuous measurements and improving actions*
- *Best Practice Approach*
- *Next Practice Approach, new innovations*