

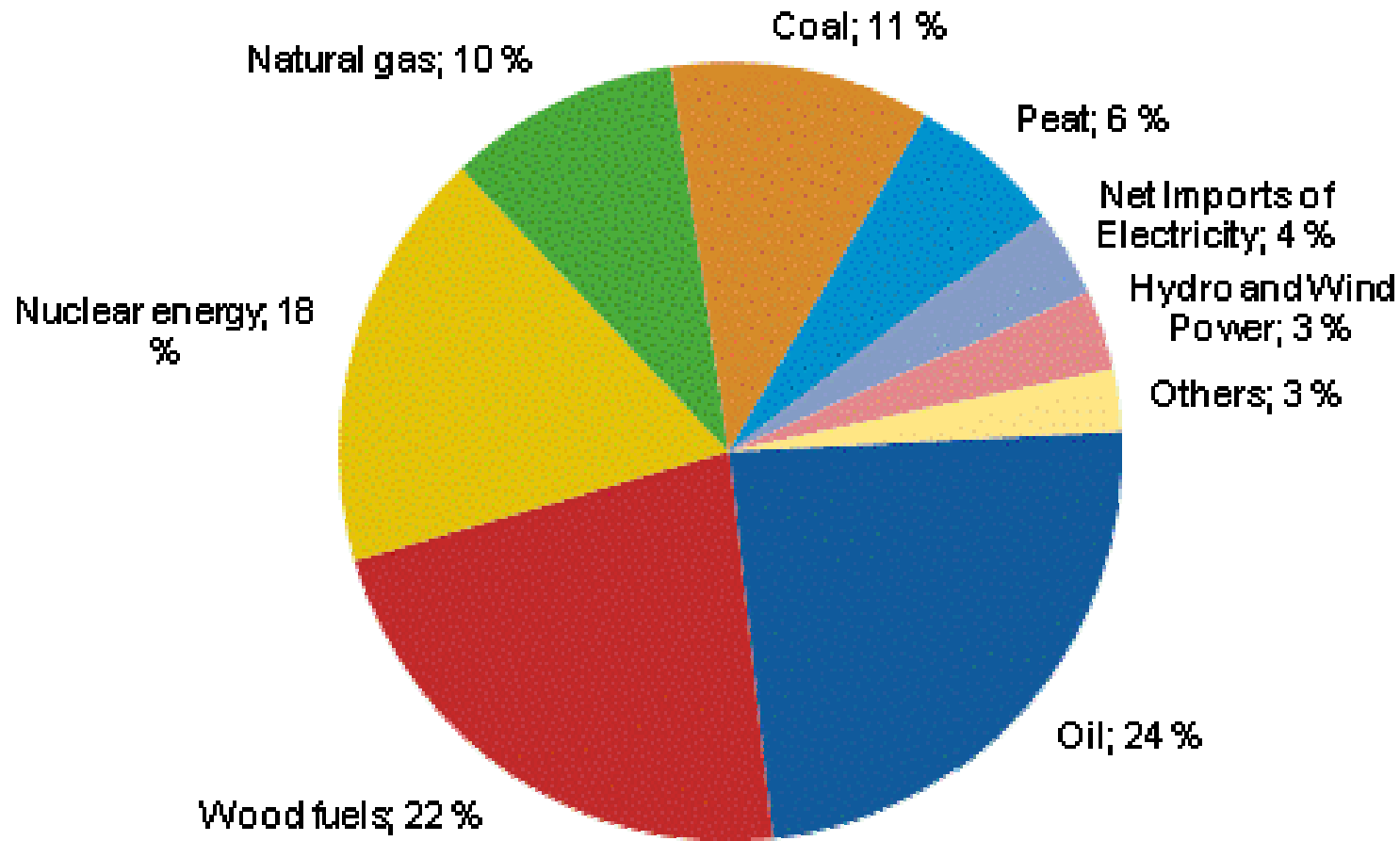
# Energy and cleantech policies in Finland

Helsinki 2.12.2014

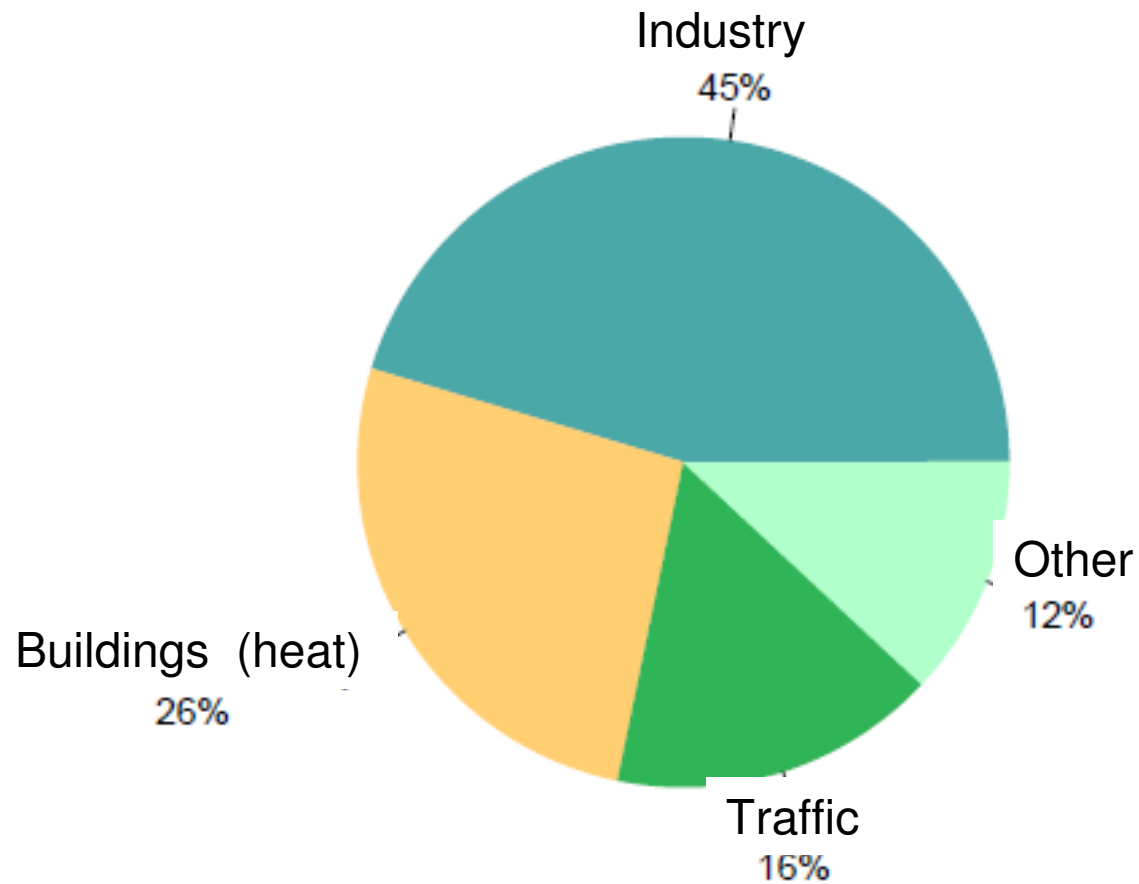
Juho Kortenieniemi  
Ministry of Employment and the Economy  
Finland



# Total energy consumption by energy source 2011



# Energy consumption by sector 2012



Total energy consumption by sector was approx 1 400 PJ.



# The main drivers of the energy policy are:

- Security of supply, self-reliance, cost competitiveness
- European 20 – 20 – 20 targets by 2020
- Reduction of greenhouse gases

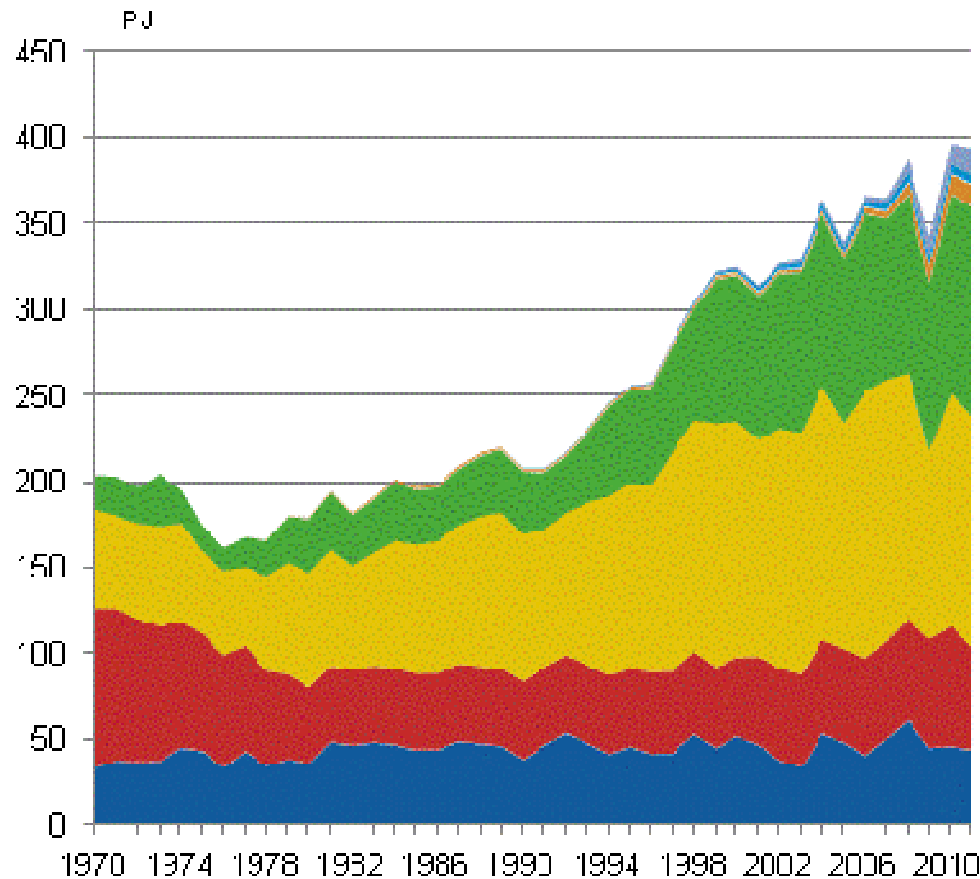


# EU regulation for energy policy

- Finnish energy and climate policy is based on EU regulations
- EU energy and climate targets 2020 were set 2008
- Average targets 2020 for EU
  - Greenhouse gas emissions down by 20 %
  - Share of renewable energy 20 %
  - Increase in energy efficiency 20 %
- Finnish targets 2020
  - Greenhouse gas emissions down by 20 %
  - Share of renewable energy up to 38 %
  - Increase of energy efficiency 20 %
  - Traffic fuels should contain renewable components 20 %



# Renewable energy sources and development



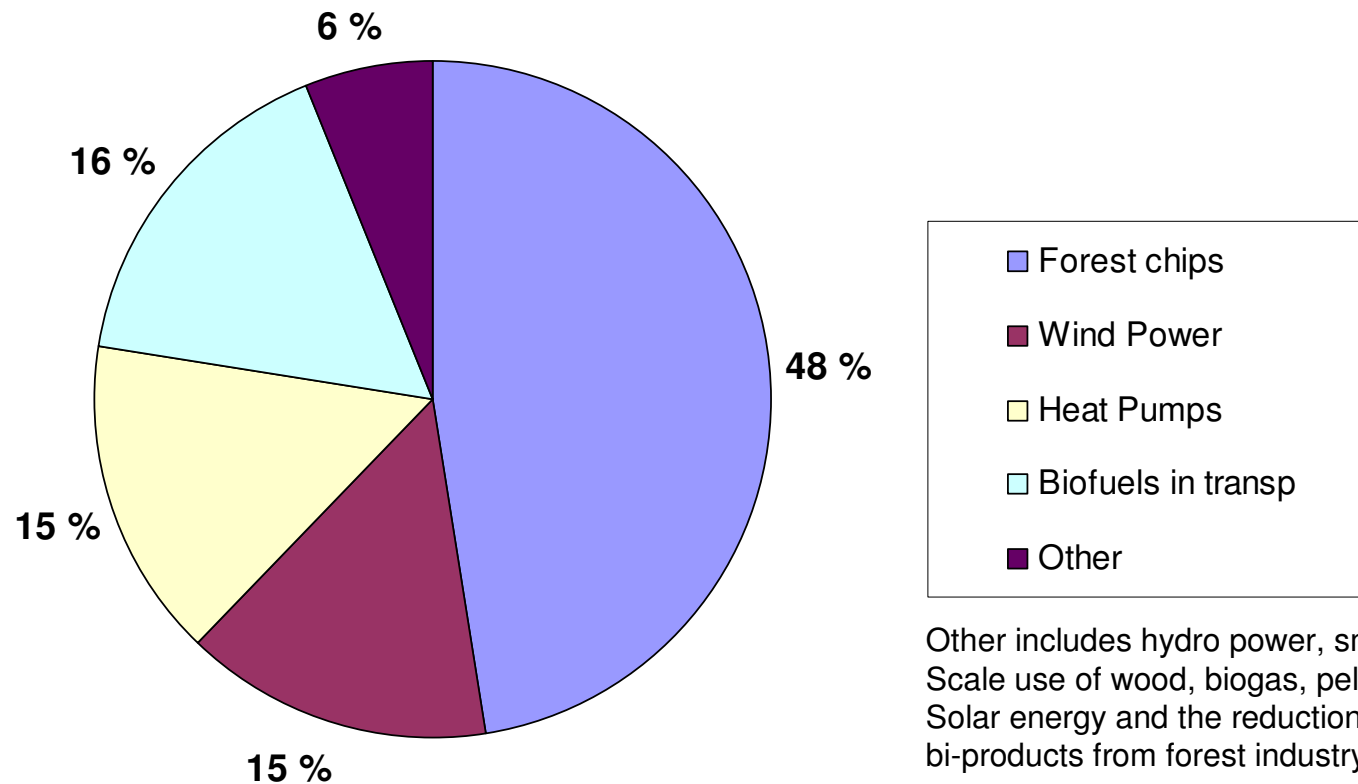
- Other biofuels
- Recovered fuels (bio-fraction)
- Heat pumps
- Wood fuels in industry and energy production
- Black liquor and other concentrated liquors
- Small-scale combustion of wood
- Hydro power

+ Rapid growth: Wind power



# Estimated shares in the increase of renewable energy in primary energy in 2005-2020 , %

Increased use of RES in primary energy 39.2 TWh  
and in final consumption 37.5 TWh



# CHP-production and district heating – energy efficient combination

- According to statistics
    - 1 / 5 of total energy consumption in Finland was used to heat residential buildings
    - 1 / 2 residential buildings were connected to district heating systems, however over 80 % in major cities
    - Almost 3 / 4 of district heat production was based on CHP, which efficiency can be over 90 %
- Finland is one of the biggest users of CHP and district heat in the world





# Energy efficiency in Finland is based on voluntary agreements and continuous improvement

- Finnish energy efficiency policy is based on voluntary energy efficiency agreements  
(<http://www.energiatehokkuussopimukset.fi/en/>)
- Parties are ministries and unions (e.g. Finnish energy industries), companies then join the programs
- In practice energy efficiency is improved e.g. by audits and Energy audits and government support for energy efficiency investments
- In total reported yearly results of agreements are (all agreements)
  - Saved heating energy and fuels: 3,5 TWh
  - Saved electricity 2 TWh
  - Saved energy costs: 225 MEUR
  - About 1,4 % of total energy consumption



# Summary of Finnish cleantech strategy



TYÖ- JA ELINKEINOMINISTERIÖ  
ARBETS- OCH NÄRINGSMINISTERIET  
MINISTRY OF EMPLOYMENT AND THE ECONOMY

# Vision and Strategy

## Cleantech

- Includes energy technology business

## Vision

- Finland is a global super power in cleantech business

## Strategic targets

- The country brand attracts foreign investments
- The visibility of Finland in the international decision making will grow
- Finland strengthens its position in cleantech innovations

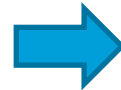


# Numerical Targets



2012

Turnover\* € 25 B



2020

€ 50 B

75 % exports

40 000 new cleantech jobs

- Energy and forest industry cleantech business to be added



# Priority Actions for the Strategy Implementation

1. Cleantech up to a top theme of the country brand
2. Advancing investments
3. Creating demonstration environments
4. Cleantech Finland Board



**Thank you for your attention!**



TYÖ- JA ELINKEINOMINISTERIÖ  
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