

# Market developments and innovation

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26 April 2012

Copenhagen





# Content

## Market developments

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- Bioenergy targets 2020
- Biomass for heat

## Innovation

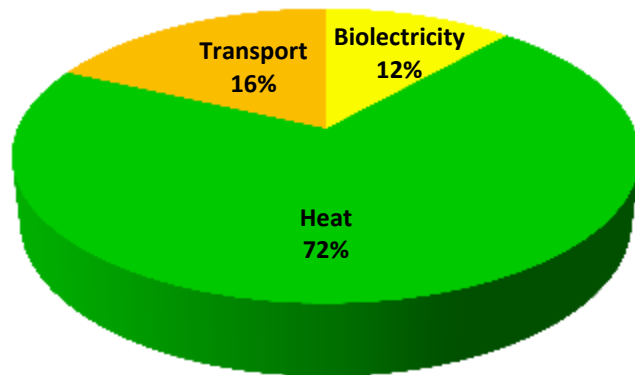
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- Strategic research priorities
- Supporting organisations

# Bioenergy 2020 targets

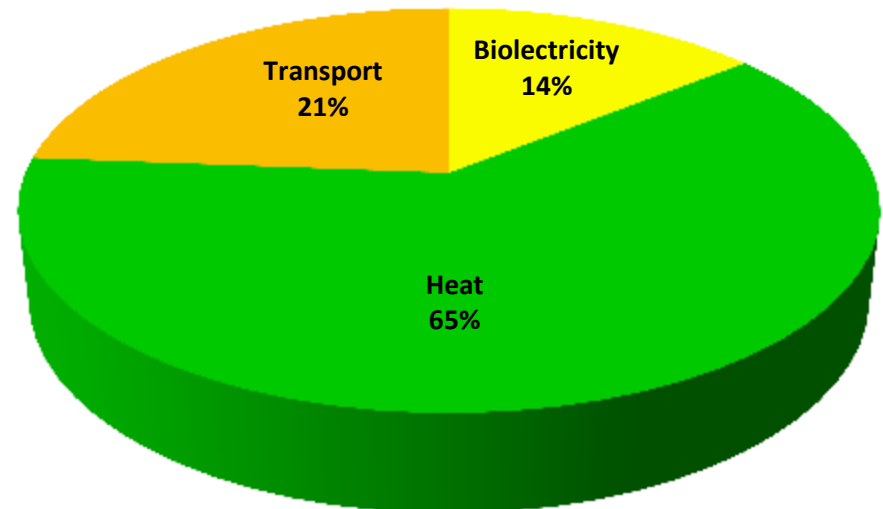
## Bioenergy targets according to national renewable energy action plans (nREAPs)

Total contribution of bioenergy in 2010 in EU27: 85,3 Mtoe



2010

Total contribution of bioenergy in 2020 in EU27: 138,3 Mtoe

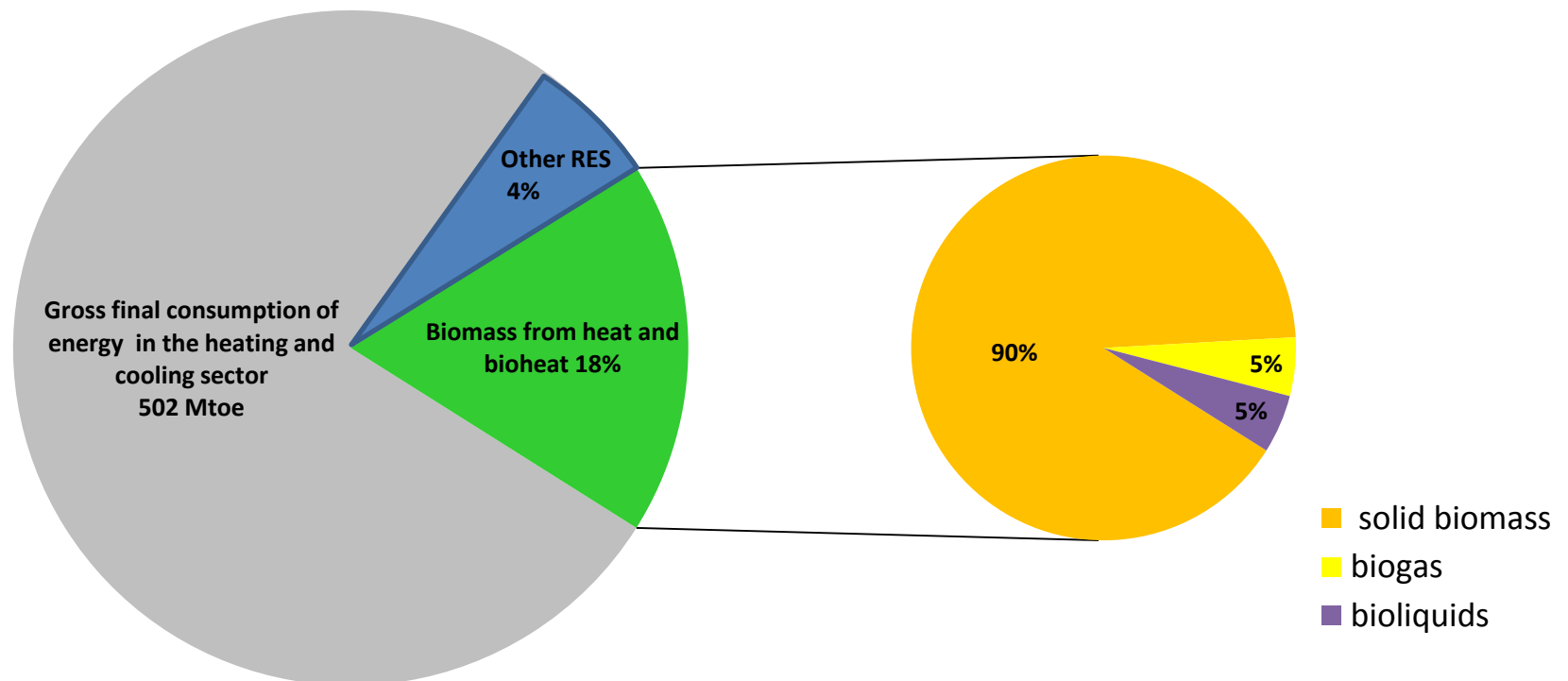


2020

Note: Bioenergy is considered as the gross final energy consumption, made up of the sum of bioelectricity, biomass for heat, bioheat (CHP, DH) and transport biofuels.

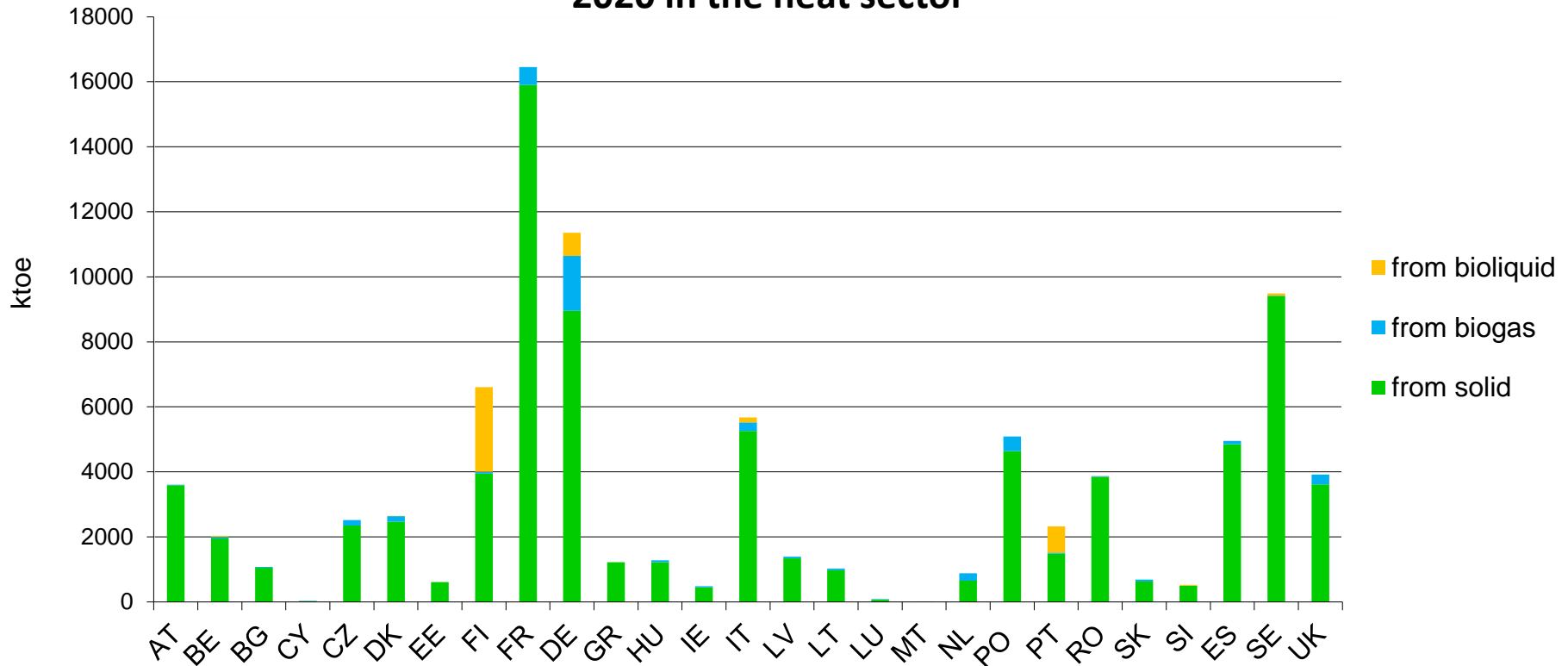
# Biomass for heat

## Consumption of energy in heating and cooling in EU27 in 2020



# Biomass for heat and Bioheat

Expected contribution of biomass in  
2020 in the heat sector



# Strategic Research priorities for Biomass Technology

## Security of supply

- Cost-efficient, sustainable supply of biomass fuels (agro, forest & new raw material)
- Storage, drying and logistics
- Improvement of fuel quality
- Solid and recovered fuels from biodegradable fraction of waste

## Integrated concepts and predictive management

- Hybrid systems
- Regional concepts
- Enhanced concepts for co-utilization – biorefineries
- Predictive management of energy flows
- Development of heat storage technology



# Strategic Research priorities for Biomass Technology

## Efficiency and emissions

- Lowest emission and highest efficiency residential technologies
- Cost-effective micro-CHP
- Small scale gasification systems
- High efficient tri-generation
- Highly efficient large-scale or industrial CHP with enhanced availability and increased high temperature heat potential
- CO<sub>2</sub>-negative bioenergy systems

## Flexibility

- Fuel and load flexible boilers

## Sustainability

- Development of sustainable supply chains of forest and agrobiomass
- Assessment of the environmental and social impact of biomass production and utilization





# Supporting organisations

ARITERM 

EnBW

WIP

  
KWB  
The biomass heating system

 VAPO

steag



 SINTEF

mw power  
metso-wärtsilä joint venture

 VTT

 ISFTA

 HELECTOR  
S.A. Energy & Environmental Applications

 värmeforsk

 SP

orientación  
sur   
VISIÓN SOSTENIBLE

 POLISH TECHNOLOGY PLATFORM  
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# Next steps...

## Implementation: Technology Roadmap

### 1. Value chains

#### **Small scale CHP for domestic, industrial or regional solutions**

Feedstock: High quality biomass feedstock; biogas, solid or liquid biomass for combustion and gasification and heat and electricity production

Technologies: Combustion, gasification, fuel cells

#### **Tri-generation**

Feedstock: High quality biomass feedstock; biogas, solid or liquid biomass for combustion and gasification

Technologies: Combustion, gasification, fuel cells

#### **Advanced fuels (new solid biocommodities, thermally treated biomass fuels, pyrolysis oil) replacing coal and fossil oil in CHP**

Feedstock: All biomass, but especially agrobiomass and forest residues

Technologies: Torrefaction process, biocarbonisation, biogas upgrading or other thermal treatments, combustion or gasification tests of advanced biomass in large CHP boilers or industrial CHP, pyrolysis oil and other oil production, burner combustion technology

#### **High efficient large-scale or industrial steam CHP with enhanced availability and increased high temperature heat potential (up to 600°C)**

Feedstock: Biogas and solid biomass

Technologies: Combustion and gasification

**Demonstration of optimised and integrated regional concepts (including smart grids) in several European countries**

### 2. Financing: identification of appropriate instruments/programmes

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# Thank you for your attention!

And if you still haven't done it:  
Sign up as a member on [www.rhc-platform.org](http://www.rhc-platform.org)

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25-26-27 JUNE 2012

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