Biomass Demand for Renewable Heating and Cooling

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The Biomass Supply Challenges Workshop

Rotterdam, 15 March 2012

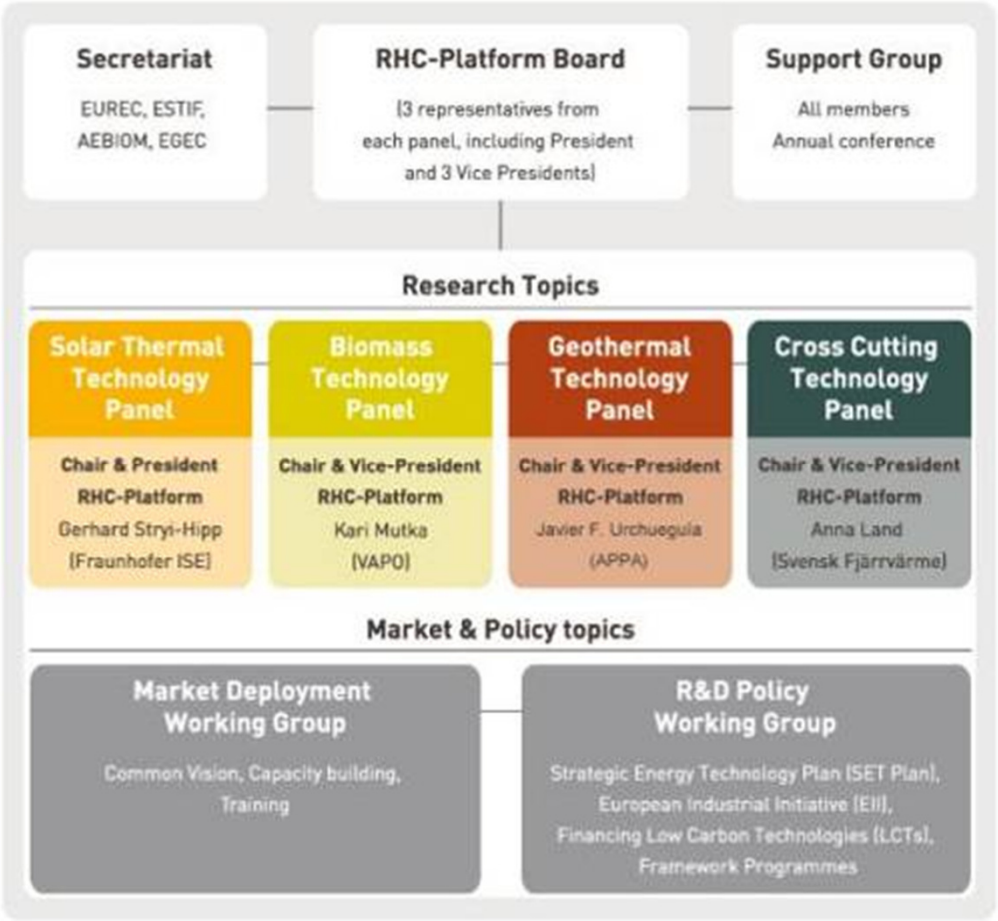
RHC Renewable Heating & Cooling

European Technology Platform

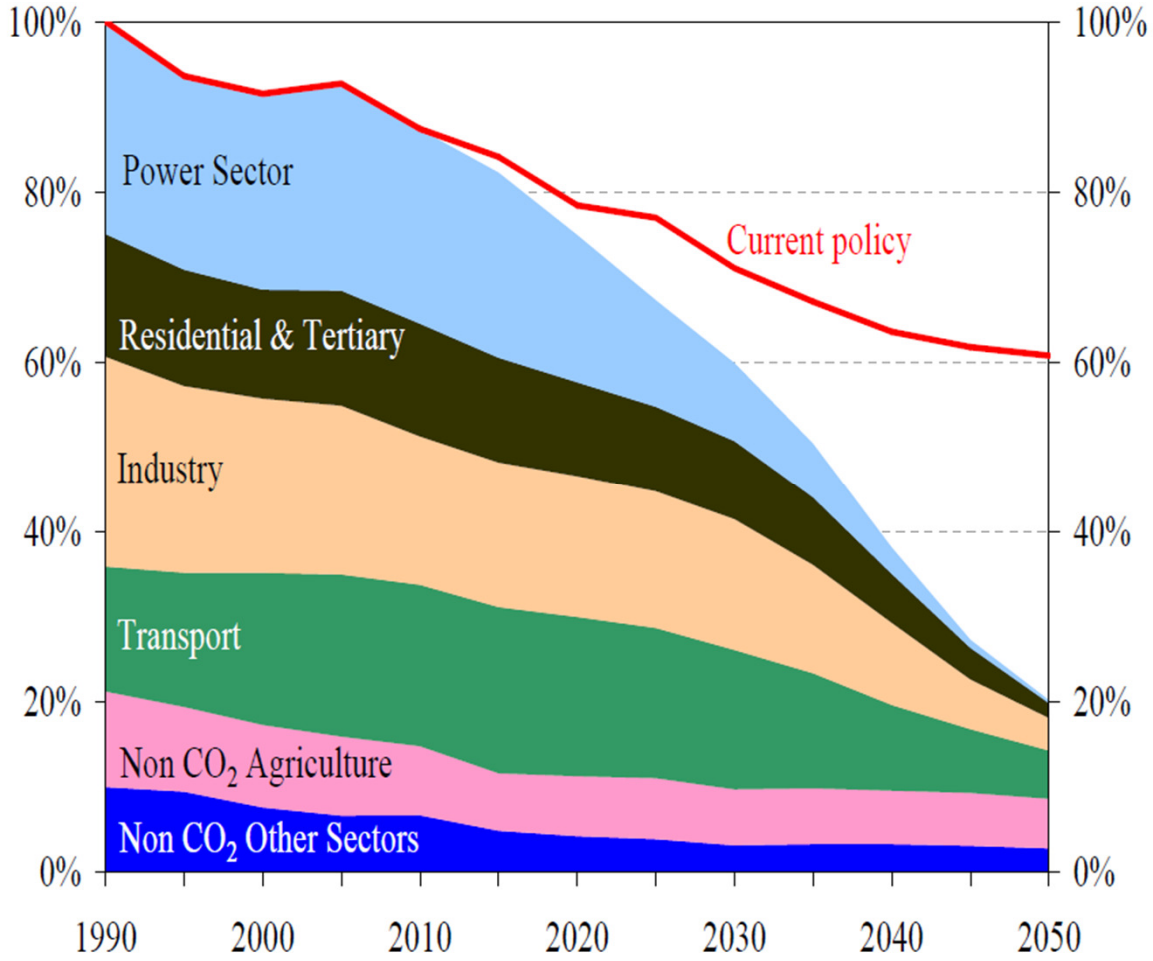
www.rhc-platform.org

RHC Platform, Structure and Actors

- 500 members from
  - 23 EU member states
  - 17 „third“ states
- representing
  - industry
  - R&D institutions
  - others
- Working areas:
- vision
- SRA, roadmap
- EC R&D programs (priorities,funding)
- working groups



Low Carbon Economy

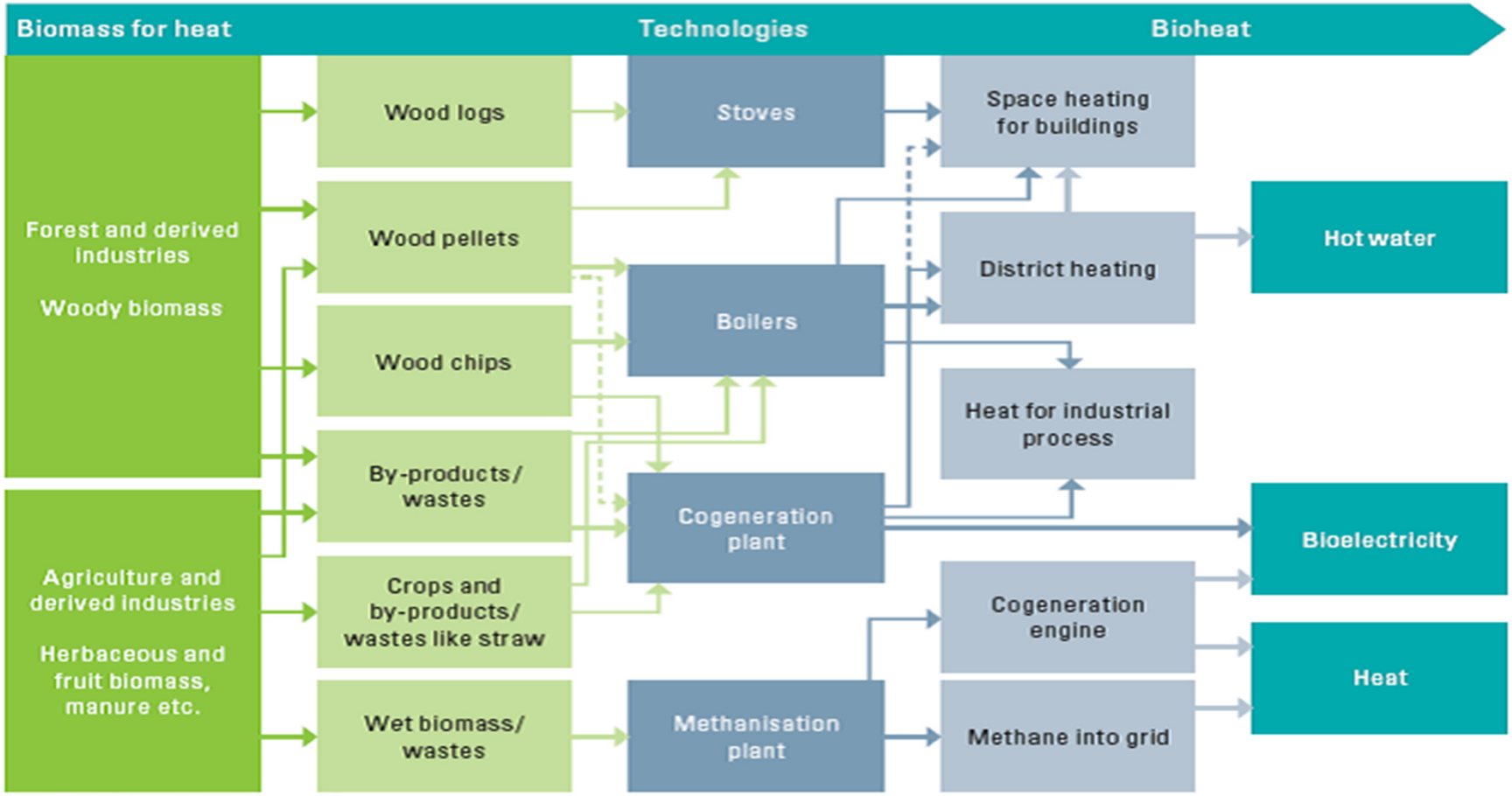


We need to reduce our GHG emissions by 50% (EU : 80-95%) to keep temperature increase below 2°c, and the current pledges are not sufficient.

- Power sector : - 96% !
- Residential&Services : -90% !
- Industry : - 85% !

Source : DG Climate Action, Aebiom

Biomass sources and use of of biomass in different applications



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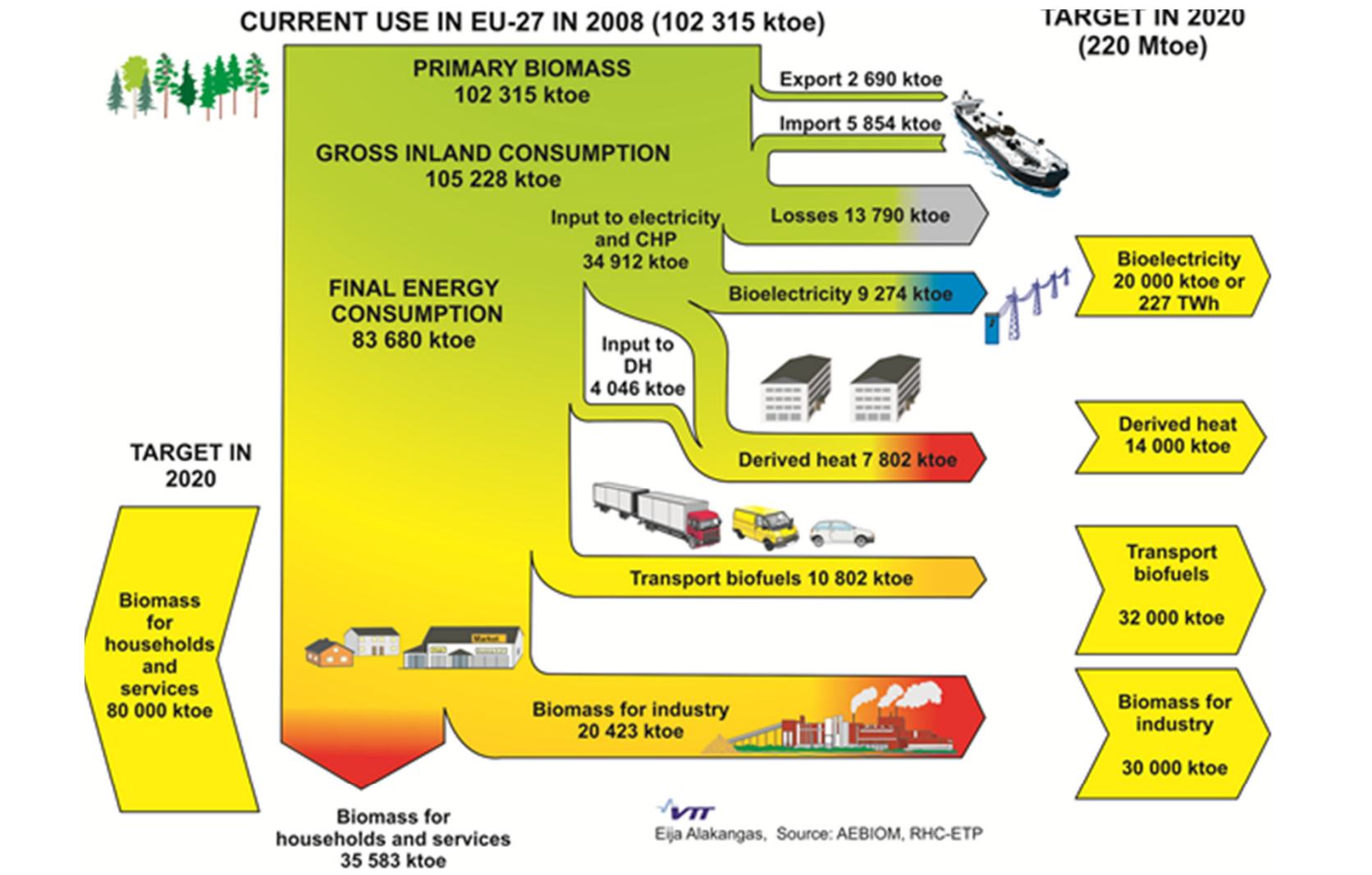

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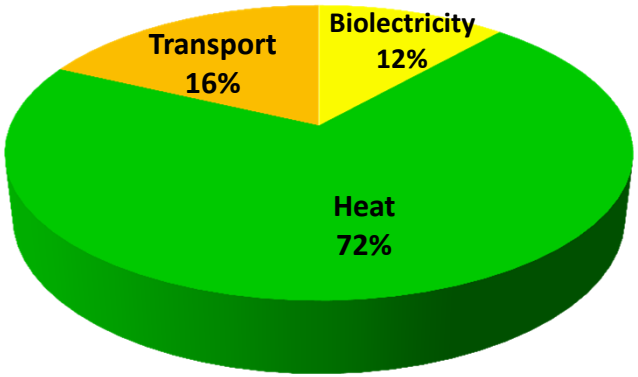
Table 2 - Summary of biomass/bioenergy targets (source: RHC platform, biomass panel)

[Mtoe]	2007	2020	2030	2050
Primary biomass	96.2	200	270	330
Imports	4.2	20	30	40
Exports	1.9			
Gross inland consumption	98.4	220	300	370
Input to electricity and CHP	33.3	65	80	95
Input to DHC	3.3	10	20	15
Input to biofuels 2G/biorefineries	0	5	10	30
Biomass use by households and services	35	80	115	130
Biomass use by industries	18.6	30	35	45
Total electricity (TWh)	8.8 (102)	20 (227)	35 (404)	56 (645)
Total biomass for heat	53.6	110	150	175
Total bioheat (or derived heat)	7.7	14	32	56
Total biofuels	7.9	32	45	70
Total energy consumption from biomass	**78**	**175**	**261**	**357**

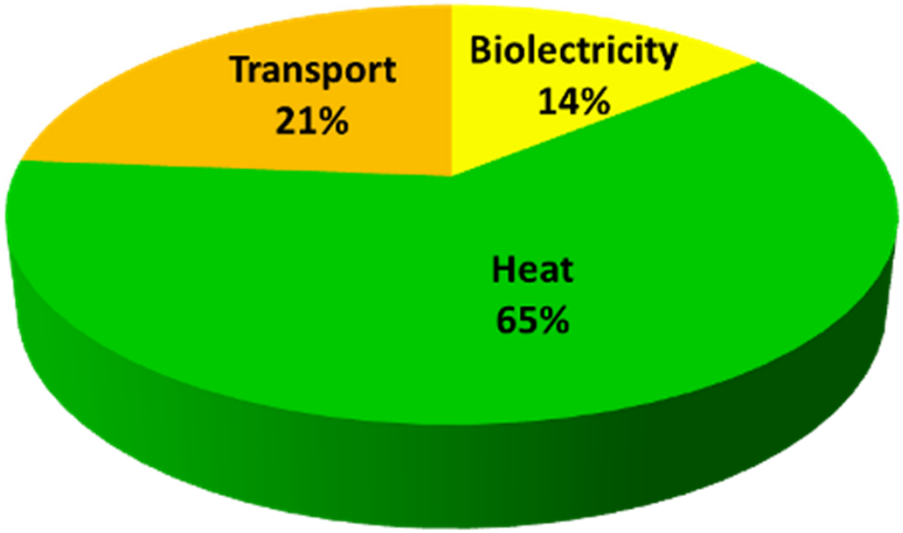
Bioenergy targets according to national renewable energy action plans (nREAPs)

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



2010

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

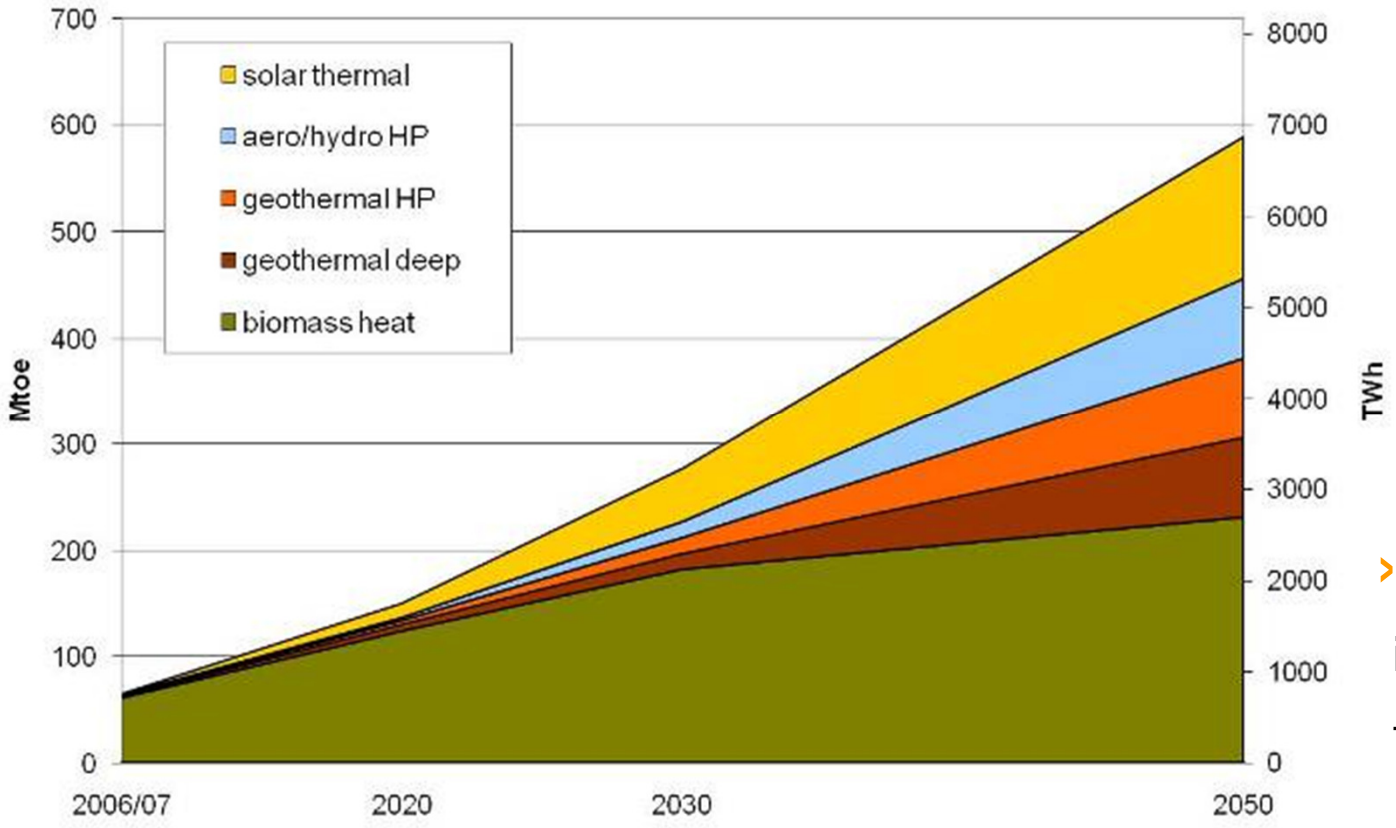


2020

Source: AEBIOM, based on NREAPs

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.

Common Vision – RES potential

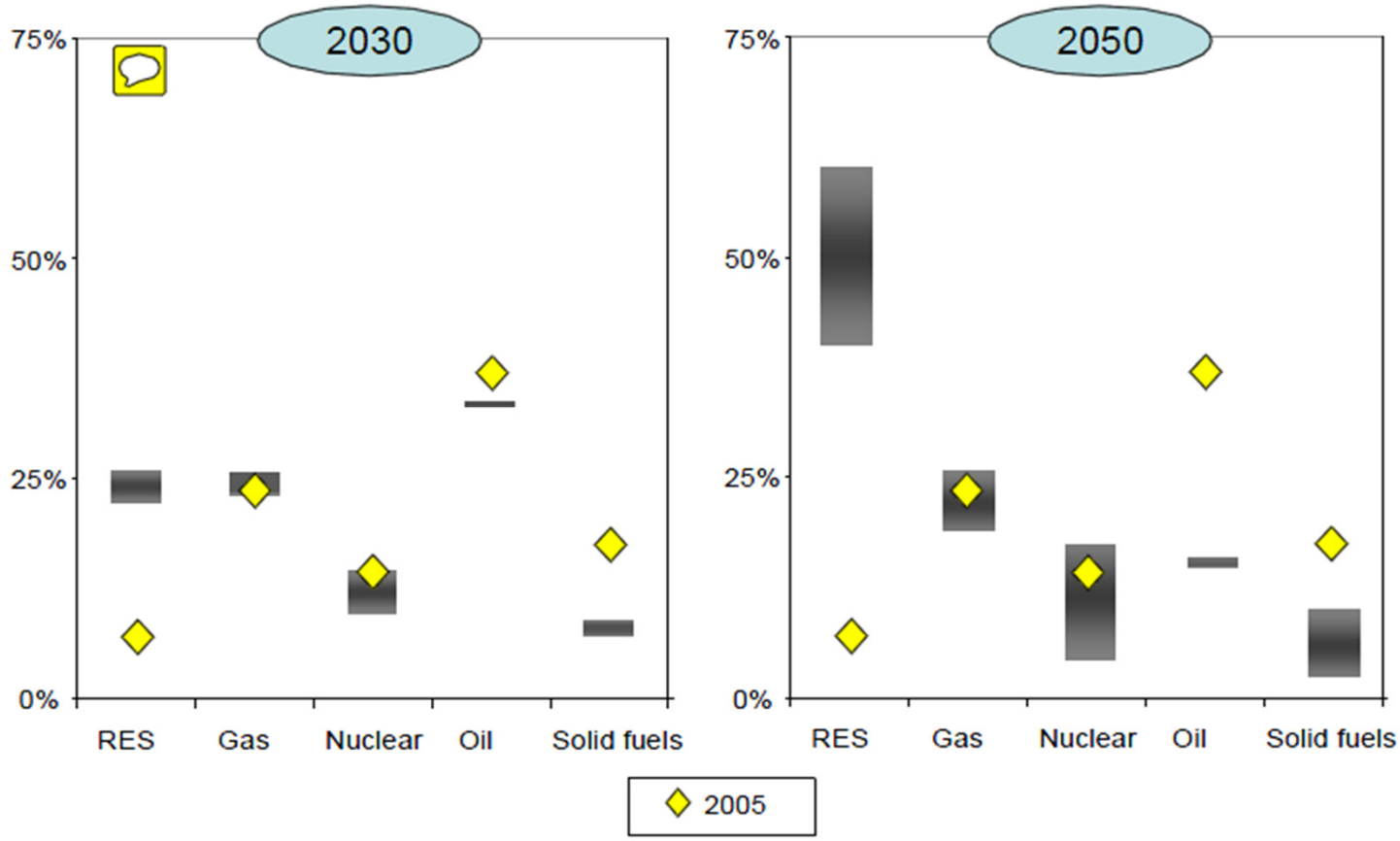


› main biomass increase expected from agriculture

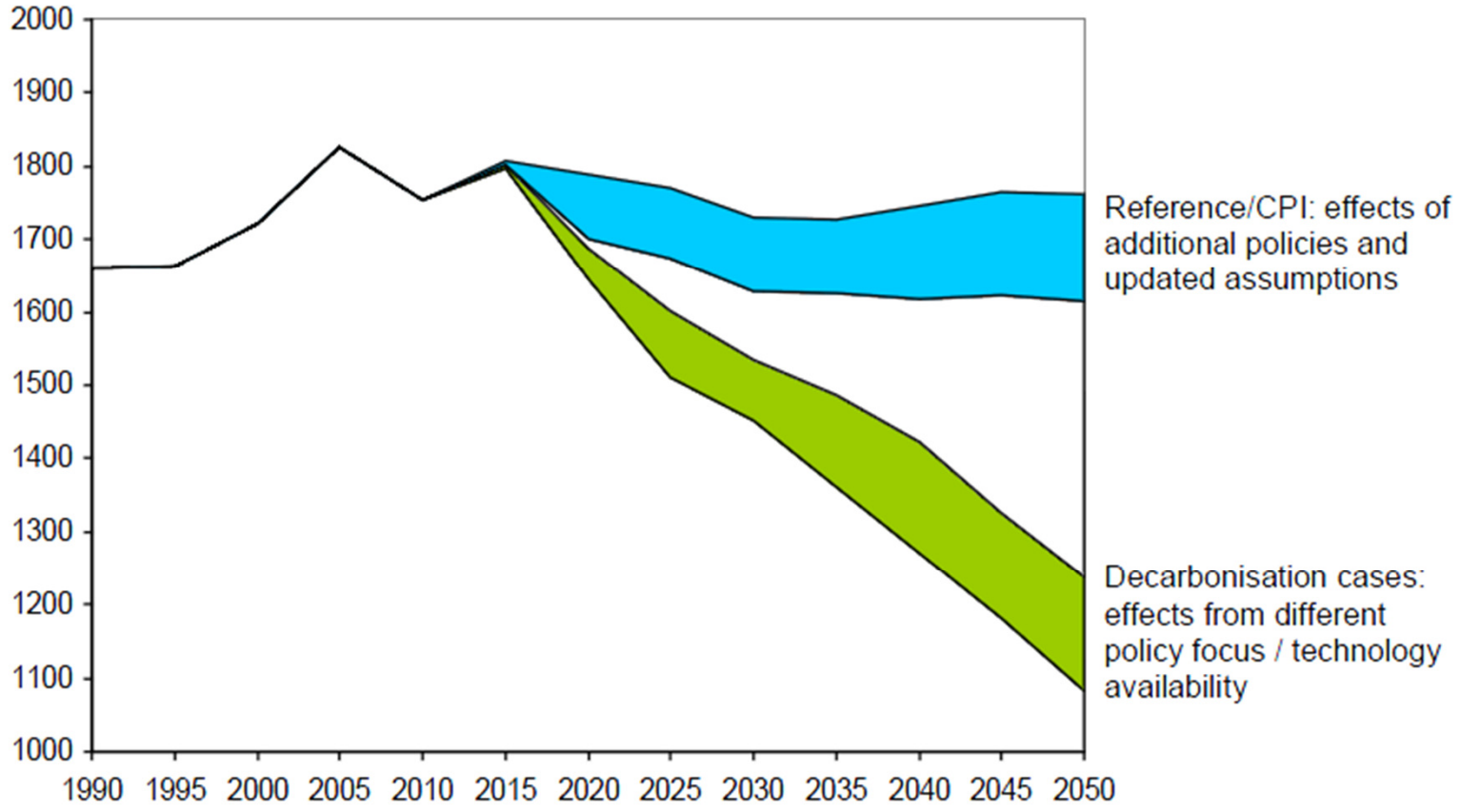
Biomass supply 2020-2030-2050. Source: Biomass Panel

		2007		2020		2030		2050	
		Surface [Mha]	Biomass [Mtoe]	Surface [Mha]	Biomass [Mtoe]	Surface [Mha]	Biomass [Mtoe]	Surface [Mha]	Biomass [Mtoe]
Agriculture	Energy crops	5.2	10	20	43	25	75	30	129
	By-products		4		20		30		30
	Other						5		15
Forestry	Residues		18		40		55		55
	Industry by-products		54		65		65		66
Waste			10		32		40		35
Imports			2		20		30		40
Total		5.2	98	20	220	25	300	30	370

Energy Roadmap 2050. EU decarbonisation scenarios compared with 2005.



Energy Roadmap 2050, energy saving in different scenarios



Conclusions

- There is huge potential for biomass in heating and cooling
- Heating and cooling is about 50% of total energy use today and will be one of the most important ways to use energy also in future
- Biomass will be the most important renewable source of energy for heat, cold and electricity also in long term
- Sustainability criteria of biomass is one of biggest question marks for biomass supply in EU
- We need all sustainable biomass resources to supply heating and cooling, transport and electricity sectors
- Energy saving and energy efficiency are necessary to make the targets come true
- A lot of research and development is needed to achieve the targets

Questions and proposals

- **Because it looks obvious, that there will be a shortage of biomass for different purposes, what is the priority of different needs? Highest added value? Sustainability? Efficiency? Security of supply?**
- **What is the subsidy policy of EU and member states? Is harmonized policy needed?**

- **Actions needed:**

  1. **EU sustainability criteria to be published as soon as possible**
  2. **Evaluation of biomass resources according to the criteria**
  3. **Priority of the different needs, if there is shortage of biomass**
  4. **EU- and national subsidy policy according to the priority. Common subsidy policy in EU?**