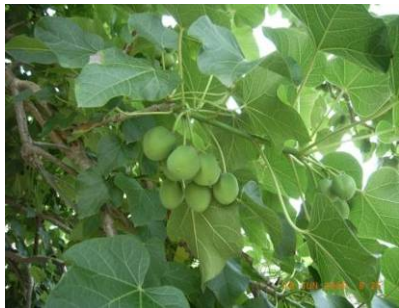


Bioenergy in Europe



Bioenergy in Europe

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Outline

- **Legislation in the EU – The RES directive**
- **Consequences for and trends of the biomass sector**
- **Current state of the Bioenergy market in the EU**
- **Bioenergy potentials and targets**



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RES directive

Core elements of the RES directive I:

- **20% RES of the final energy consumption by 2020**
→ Favours higher conversion efficiencies. Heat and electricity use instead of bioelectricity production alone from biomass
- **Binding national targets for all Member States (MS)**
- **10% RES in transport sector for all MS**
- **Indicative interim targets for all MS**



Core elements of the RES directive II:

- **National support schemes are not affected**
 - MS continue being responsible for national support schemes
- **Flexibility mechanisms: cooperation between MS**
- **National action plans (NAPs) for all MS by June 2010**
- **Administrative barriers to the use of renewables will be reduced**



RES directive

Flexibility mechanisms

- **Statistical transfers of energy between MS (only if national target is achieved)**
- **Joint projects of MS with distribution of energy from RES**
- **Joint support schemes of MS**
- **Physical imports of RES electricity from third countries**
- **Guarantees of origin only for disclosure (not tradeable)**

→ Cost reduction and easier target achievement for MS



RES directive

Electricity/gas grids

- **Priority grid connection and transmission for RES electricity**
- **Facilitation of feed-in into the natural gas grid**
- **Development of central district heating and cooling systems (e.g. bioenergy, solar and geothermal energy)**

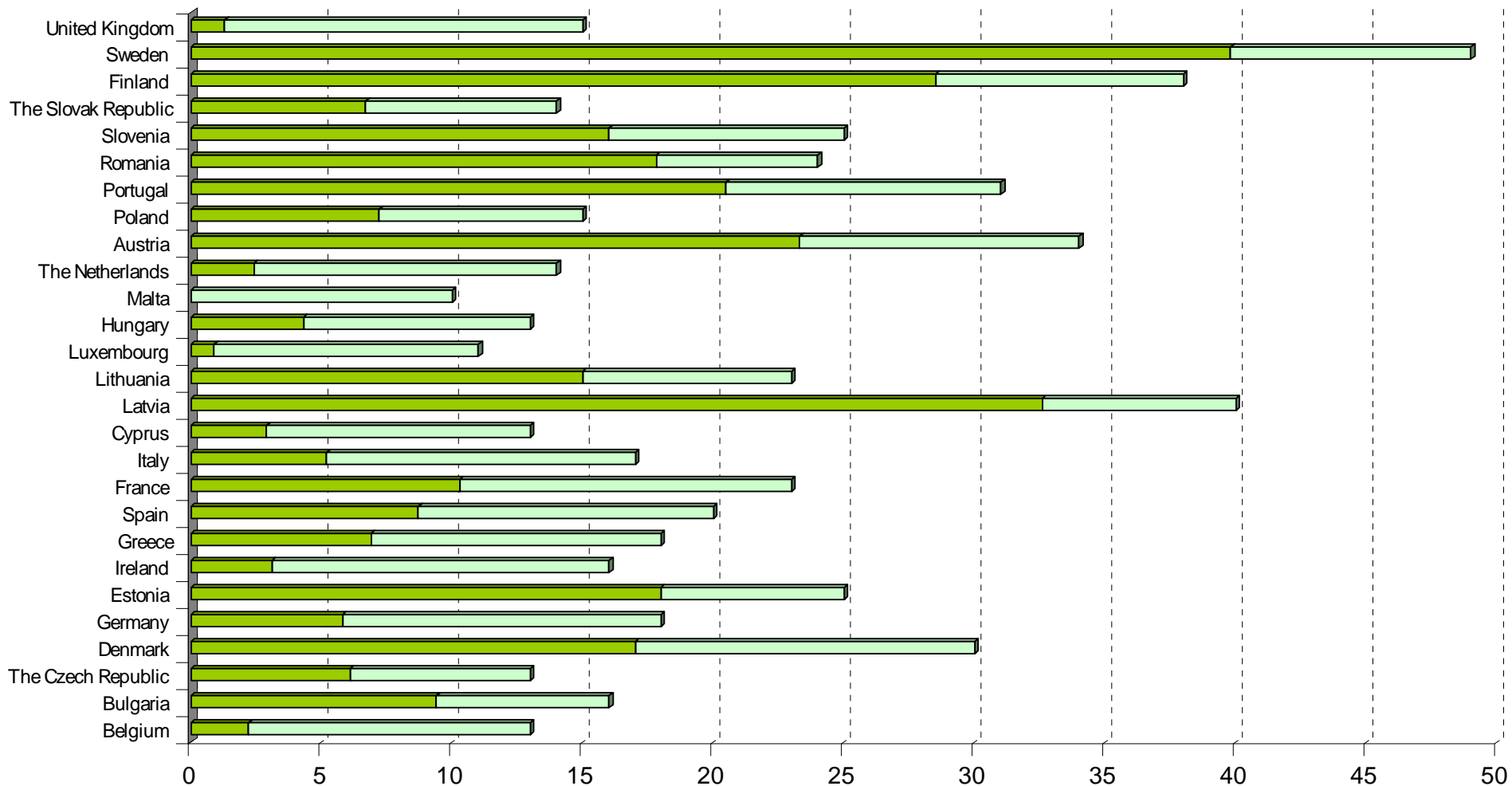


Transport sector

- **Mandatory 10% target for transport fuels from renewables by 2020**
- **Sustainability criteria have to be considered for biofuels**
 - **35% reduction of GHG emission**
 - **conservation of biodiversity and areas with high CO2 storage: no use of specific areas for biofuels**
- **Double count for specific technologies (biogas, BtL and biofuels from waste, residues and ligno-cellulosic material)**
- **Review clause for 2014: Reevaluation of measures, costs, GHG savings**
→ **Potential insecurity for investments**



National targets of the EU RES Directive



■ RES final energy 2005 □ RES final energy 2020



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Consequences and trends for the biomass sector I

- **Specific EU-wide support schemes do not exist for renewables and bioenergy**
- **Exploitation of local biomass potentials can only be reached by support schemes adapted to regional framework conditions.**
- **Electricity: feed-in tariffs are the best tools to promote bioelectricity**
→ **Main advantage: investment security**



Consequences and trends for the biomass sector II

- **Fuels: Promotion of biofuels in the transport sector by blending quotas, tax reduction for 2nd generation biofuels and incentives for consumers:**
 - Investment grants for modified vehicles (Denmark)
 - Free parking in the city centre (Sweden)
- **Heat: The trend in the EU goes towards a binding minimum of RES in the building sector for new and existing buildings. The sector is already competitive, no subsidies are needed, only support in the heating systems.**



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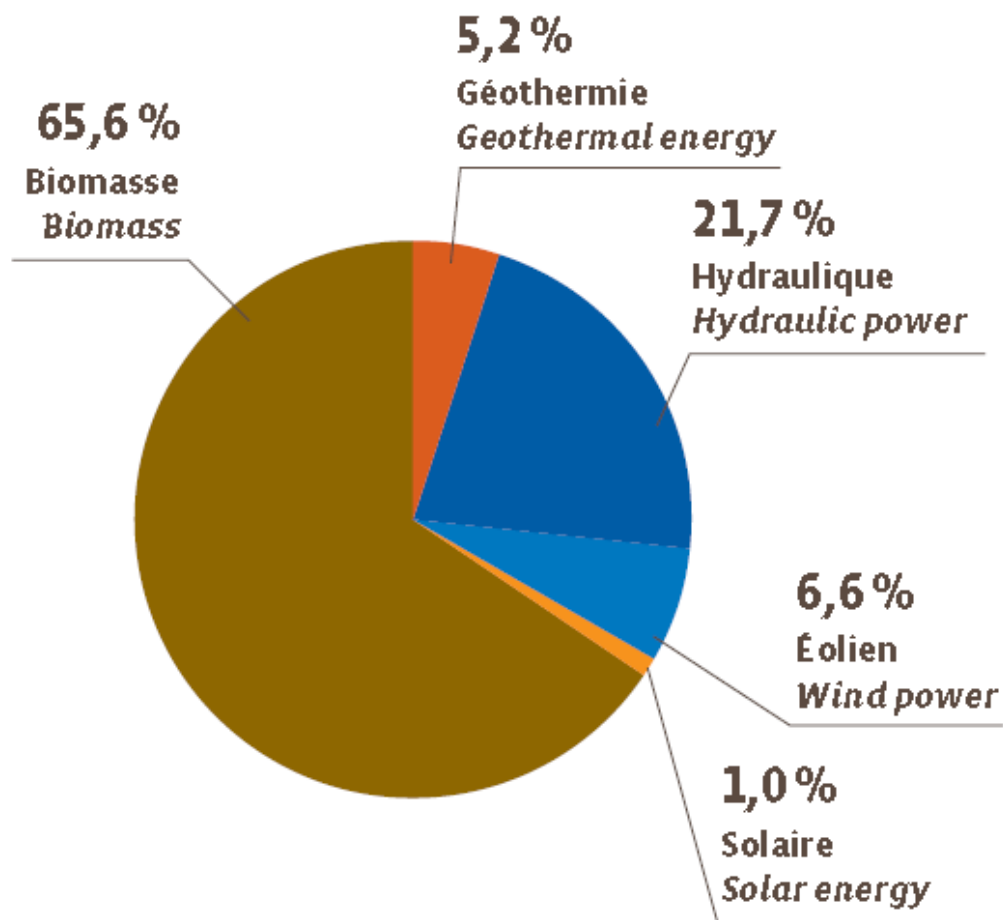


Bioenergy in Europe – key figures 2007

- **Total energy consumption covered by biomass: 4.8 %**
- **Share of renewables in EU's primary energy consumption: 7.5 %**
- **Biomass is the fastest-growing sector in absolute terms of all RES**
- **Share of biomass for district heating 1%**
- **Share of biofuels in EU's road transport fuel consumption: 2.7 %**



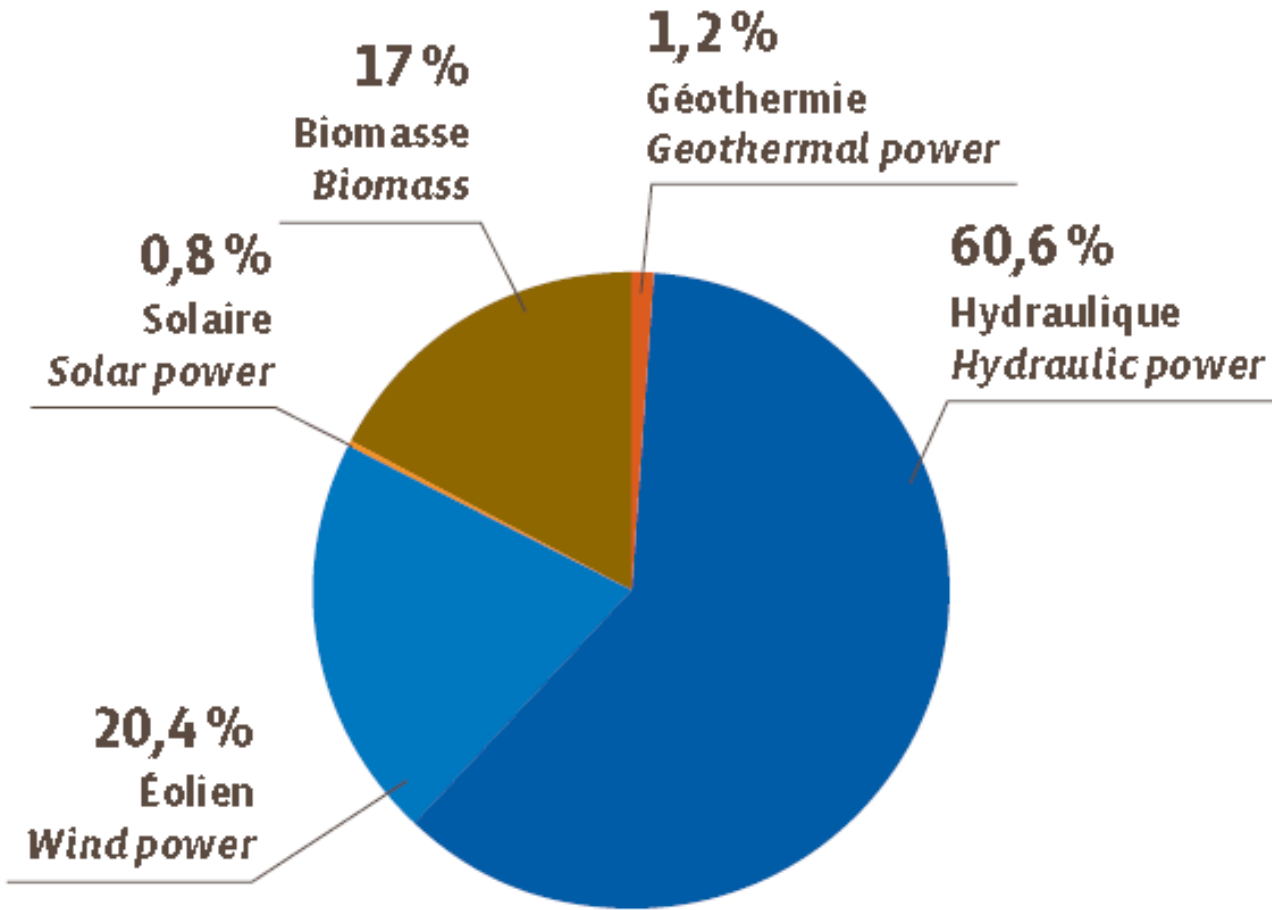
Share of sectors in the renewable primary energy consumption in 2007



Source:
EurObserv'ER



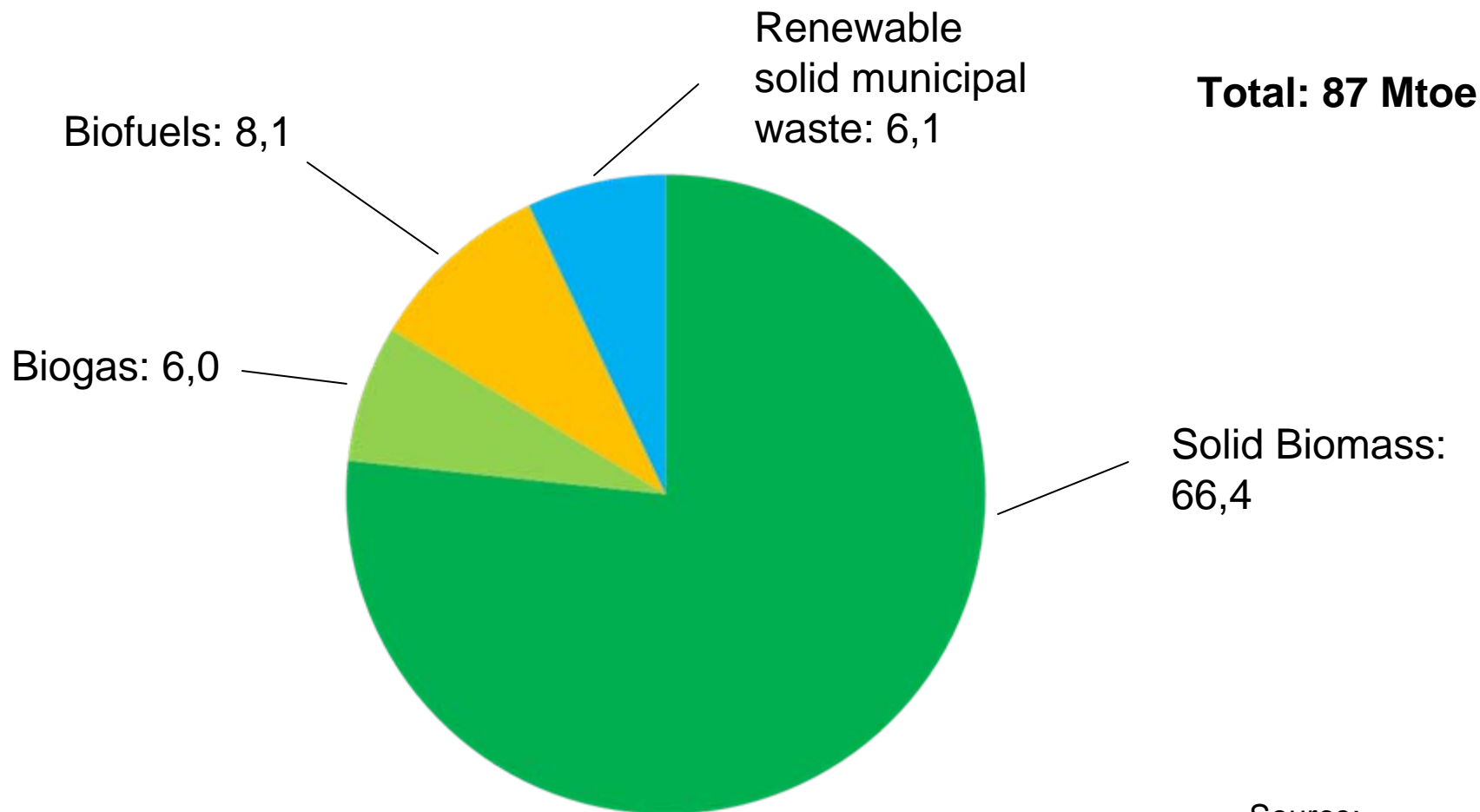
Share of sectors in the renewable electricity production in 2007



Source:
EurObserv'ER



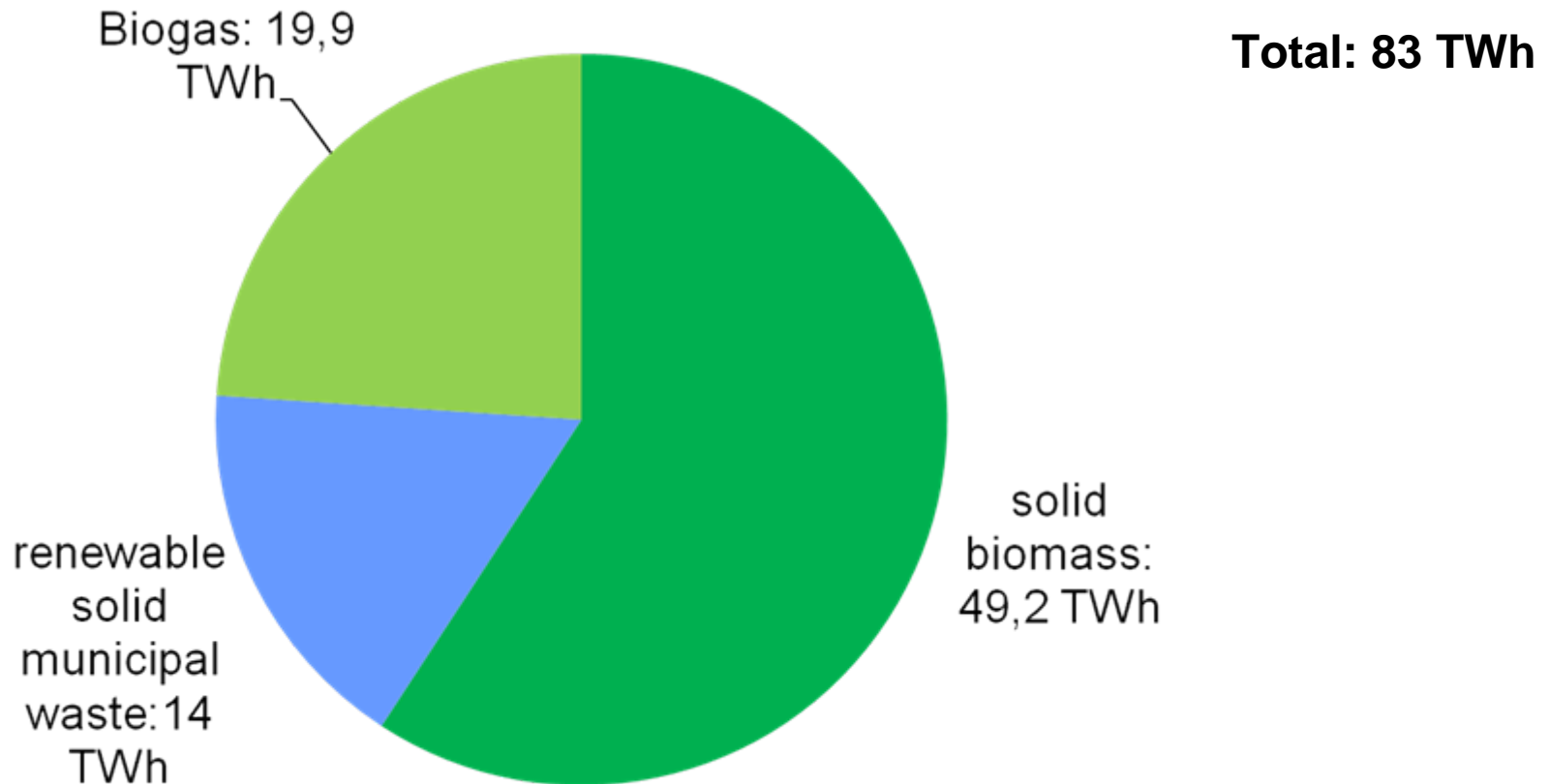
Primary energy production of each biomass resource in 2007 (in Mtoe)



Source:
EurObserv'ER



Share of each biomass sector in electricity production from Biomass in 2007 (in TWh)



Source:
EurObserv'ER



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Bioenergy potentials and targets in Europe (Source: AEBIOM)

- **+110 TWh (~10 Mtoe) Electricity from biomass by 2020. 50 % of the additional 110 TWh can be produced with biogas**
- **+ 90 Mtoe additional final heat by 2020. Main obstacles: missing district heating grids, lack of capital to change the heating systems, information and know-how**
- **+ 27 Mtoe additional contribution from biofuels by 2020**
- **Total additional contribution of biomass by 2020: 127 Mtoe final energy**



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**Thank you for
your attention!**

