

Bioenergie in der Energiepolitik der Europäischen Union und international

Dr. Heinz Kopetz
Biomasseverband

Wien, 12. November 2009
Vortrag bei der Veranstaltung «Highlights der Bioenergieforschung»
Bundesministerium für Verkehr, Innovation und Technologie



www.aebiom.org

info@aebiom.org

Gliederung

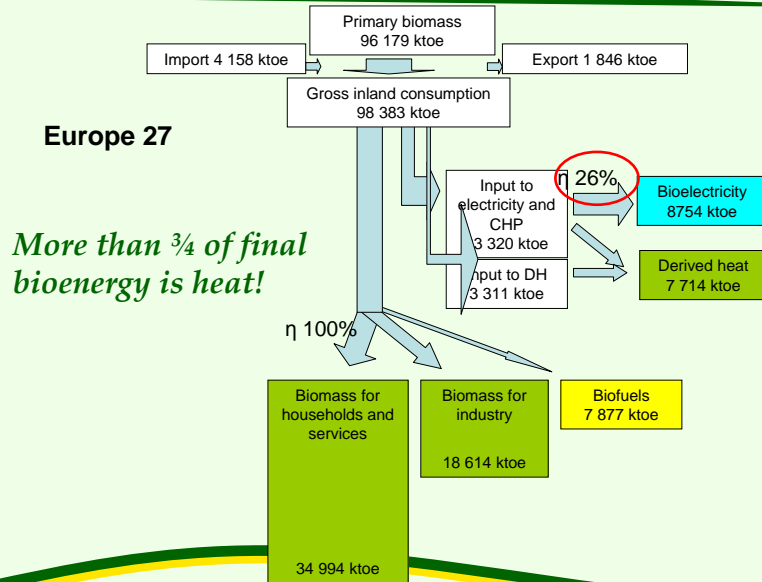
- Bioenergie in Europa
- Die politischen Rahmenbedingungen
- Aktuelle Themen, globaler Ausblick



www.aebiom.org

info@aebiom.org

EU 27: Biomass to Bioenergy

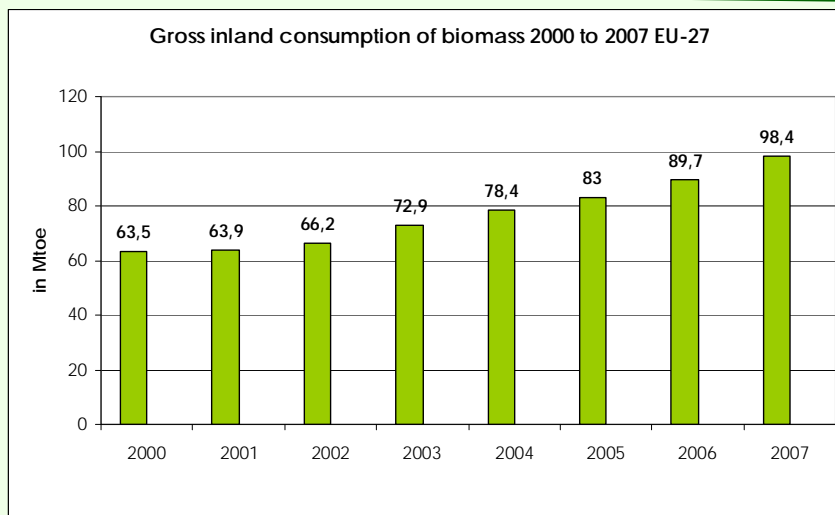


www.aebiom.org

info@aebiom.org



EU 27: development of bioenergy, Mtoe

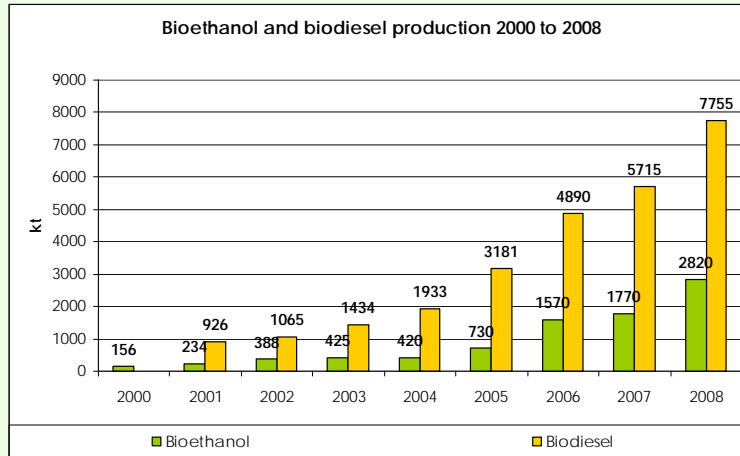


www.aebiom.org

info@aebiom.org



EU 27: development of biofuels



Source: Bioethanol: AEBIOM (2000 to 2003), Bundesverband Ethanolwirtschaft Deutschland (2003 to 2008). Biodiesel: EBB.



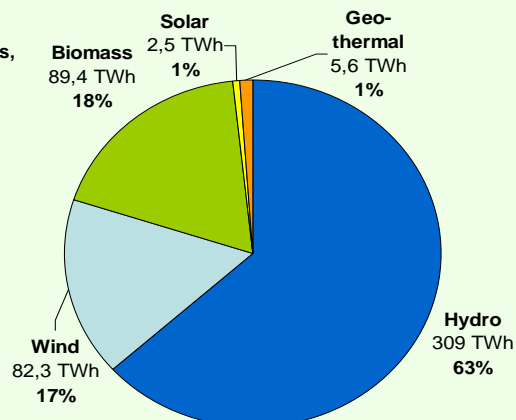
www.aebiom.org

info@aebiom.org

Electricity generation from Renewables in the EU

Electricity generation from Renewables, EU-27, 2006, in TWh

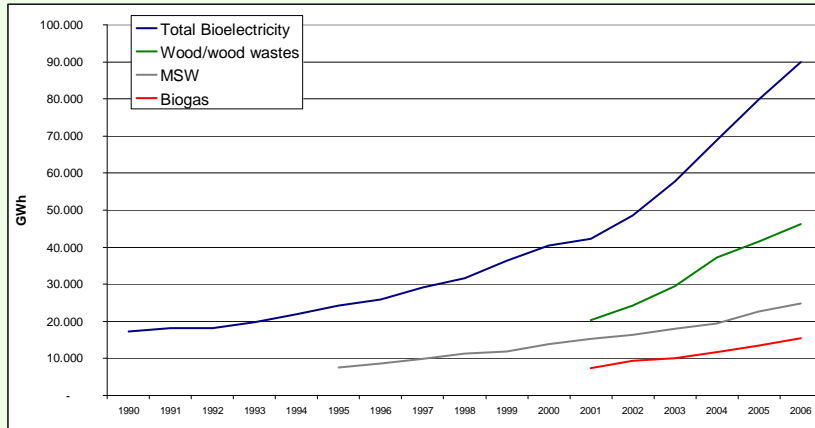
	TWh	%
Hydro	309,0	63,2
Wind	82,3	16,8
Biomass	89,4	18,4
Solar	2,5	0,5
Geotherm.	5,6	1,1
total	489,2	100



www.aebiom.org

info@aebiom.org

Bioelectricity in EU



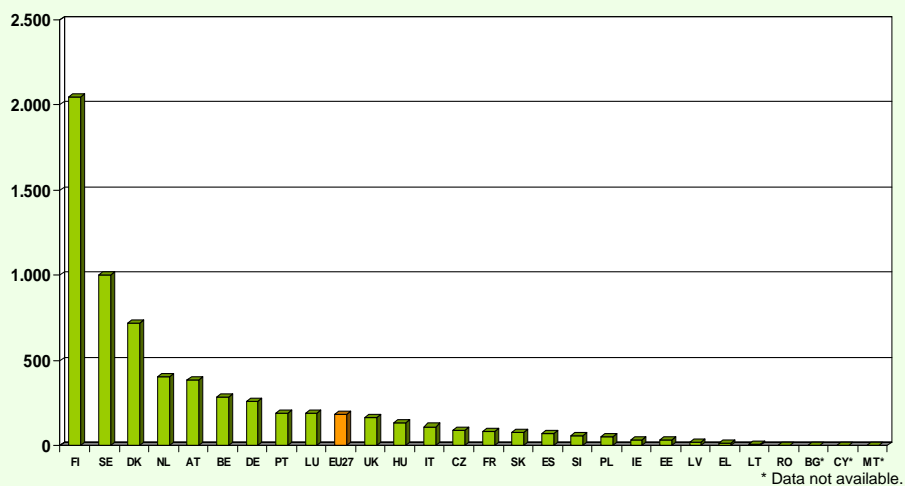
Almost 90 TWh bioelectricity were produced in 2006, with high growth rates in the last years (+16%/y in the last 5 years).



www.aebiom.org

info@aebiom.org

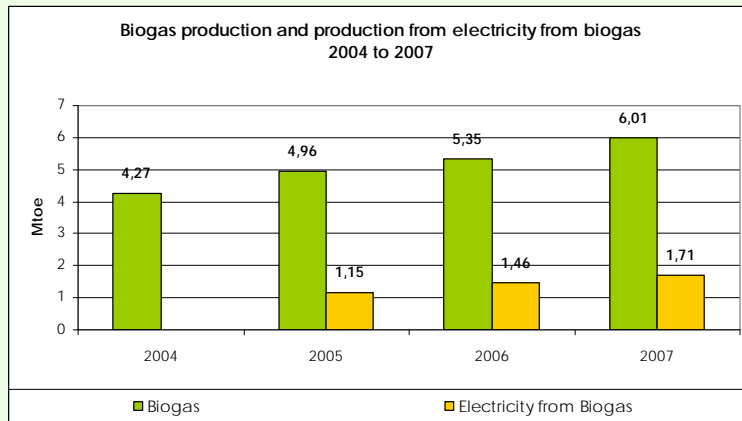
Electricity from Biomass in kWh/capita



www.aebiom.org

info@aebiom.org

Increasing role of biogas



Source: AEBIOM (2004 to 2006), Eurobarometer (2007).



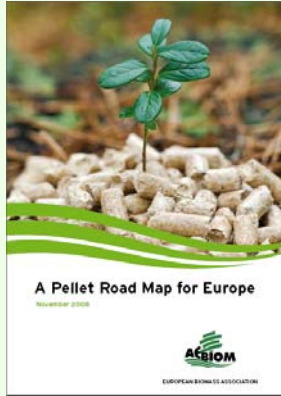
www.aebiom.org

info@aebiom.org



Pellets

A road map for pellets in Europe



- AEBIOM workshop on 26 June 08
- ROADMAP for policy makers, energy managers, as support to renewable action plans.
- Target : from 7,5 Mtons to 50-80 Mtons in 2020
- Measures : awareness, financial incentives, regulations, quality of products and services, supply and distribution systems, etc.

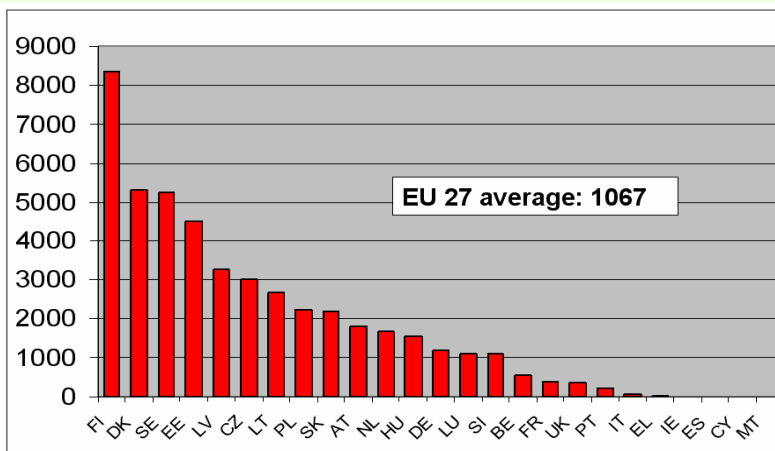


www.aebiom.org

info@aebiom.org

District heating in Europe, 2003, kWh/capita

Big differences between North, West and East of Europe! ad; Lt above average 2800kWh/cap, hereof ca 450kWh from biomass, in Sweden 3000kWh/cap. LI: Plus 1000kWh/cap = 12PJ and 2GW investment, (600Mio€)



www.aebiom.org

info@aebiom.org



Gliederung

- Bioenergie in Europa
- **Die politischen Rahmenbedingungen**
- Aktuelle Themen, globaler Ausblick



Der neue europäische Rahmen

Energie- und Klimapaket 2008

- Ziele 20 -20 -20 (CO₂-Reduktion, Anteil Erneuerbare, verbesserte Effizienz)
- Richtlinie für erneuerbare Energien (2009/28/EC)
- Und weitere Richtlinien



Wichtige Neuerungen aus der Sicht der Bioenergie

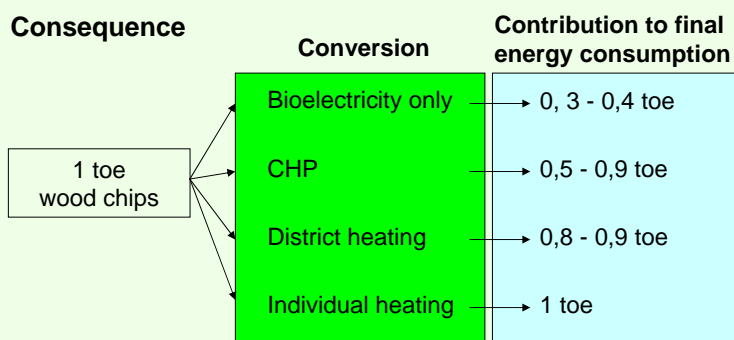
Gegenstand	bisher	neu
Vorgangsweise	Nach Sektoren	Integral: heat, electricity, fuels
Ziele	indikativ	Verbindlich inklusive 10 % für Transport
Aktionsplan	nein	Ja, detailliert bis Juni 2010
Zielpfad	allgemein	Detailliert, alle 2 Jahre Berichte
Aufgabe Mitgliedsländer	Sektorale Ziele erfüllen	Über Zuteilung der Biomasse zu Submärkten selbst entscheiden
Definition der Ziele	Endenergie für Treibstoffe und Strom, kein Ziel für Wärme	Alle Subziele als Endenergie

www.aebiom.org

info@aebiom.org



Energy structure



The same toe wood can participate up to 3 times more to reaching the target !

www.aebiom.org

info@aebiom.org



Estimated biomass domestic supply

in 2015 and 2020 in PJ

		2006	2015	2020
Biomass from forestry	Direct supply of wood biomass			
	Indirect supply of wood biomass			
Biomass from agriculture and fishery	Agricultural crops and fishery products			
	Agricultural by-products / processed residues			
Biomasse from waste	Biodegradable fraction of municipal solid waste including biowaste			
	Biodegradable fraction of industrial waste			
	Sewage sludge			
Total				

Erwartete Konsequenzen

- 1 Mehr Betonung auf effiziente Umwandlungsstrategien
- 2 Wärme aus Biomasse wird wichtiger
- 3 Anbot ausweiten
- 4 Biomasse aus der Landwirtschaft wird wichtiger
- 5 Neue Rolle für Biogas
- 6 10% Treibstoffe auf Basis verschiedener Technologien

Konsequenzen der Richtlinie:

Stärkere Betonung der Wärme

- Auch Biomasse ist begrenzt. Erwartet wird stärkere Betonung der effizienten Nutzung, KWK, Wärme allein.
 - Rasche Entwicklung der Einzelheizung mit Biomasse (Pellets!)
 - Mehr Biomasse für Fernwärme, besonders Osteuropa
 - Vielleicht da und dort Neuorientierung der Strompolitik – mehr Effizienz
 - Große neue Investitionsmöglichkeiten



www.aebiom.org

info@aebiom.org

The costs of federal support programs

per one ton of avoided GHG

data from Austria

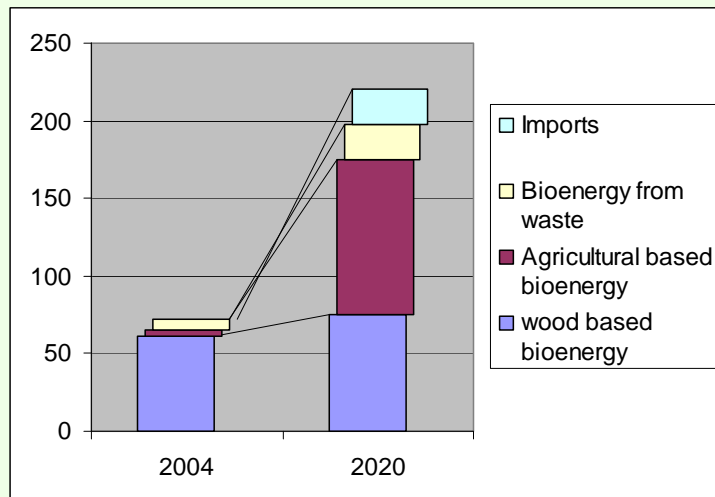
Bio-energy path	€/t CO ₂ reduction
Biomass for individual heating (pellets, chips etc.)	6 - 9
District heating with biomass (without grid investment)	30 - 40 (20 -30)
Cogeneration with biomass	40 - 50
Biogas for electricity, heat and transport	Higher than 100
biofuels	Higher than 100



www.aebiom.org

info@aebiom.org

More biomass from agriculture land (Mtoe)



Association Européenne pour la BIOMasse

www.aebiom.org

info@aebiom.org



10% renewables for the transportation sector

10% alternative for the transport sector based on

- first generation fuels,
 - biomethan,
 - electricity and
 - second gen. fuels in regions of Europe with sufficient wood supply
- *In the directive double counting for 2nd generation fuels and electricity for the 10% target, not for the national target.*

www.aebiom.org

info@aebiom.org



Gliederung

- Bioenergie in Europa
- Die politischen Rahmenbedingungen
- **Aktuelle Themen, globaler Ausblick**



Aktuelle Themen

- ILUC – indirect land use change
- Sustainability – Nachhaltigkeit
- RHC-ETP: Renewable heating and cooling-European technology platform
- EIBI – European Industrial Bioenergy Initiative
- SET – Strategic Energy Technology plan;
investment in the Development of Low Carbon Technologies
- small scale cogeneration
- New energy crops



Globale Potentiale der Biomasse

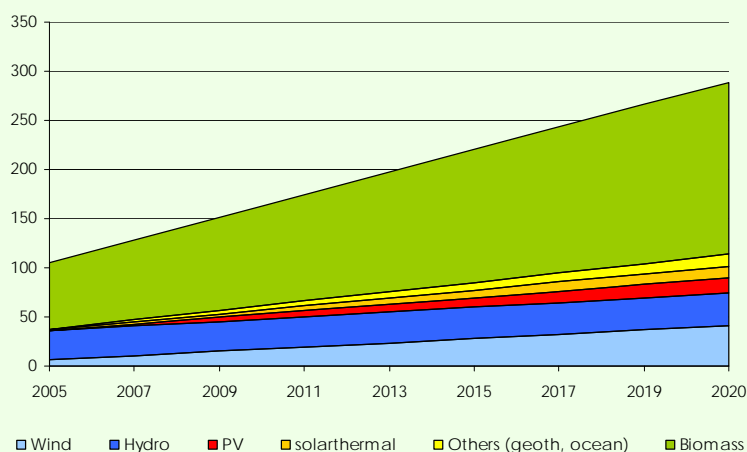
- **Annual global contribution of bioenergy: about 50 EJ, 10% of global consumption**
- **Annual production of biomass**
- The annual global primary production of biomass is 4,500 EJ of solar energy captured each year. An increasing of the efficiency with 10%, by irrigation, manuring, fertilizing and/or improved management e.g. cultivation of idle land, corresponds to the total current global energy demand. A prerequisite for the substantially high bioenergy potential in all regions is that the present inefficient and low-intensive management systems are replaced by the best practice and technologies.
- The potential for energy from biomass depends e.g. on land availability. Currently, the amount of land devoted to growing biofuels is only 0.19 % of the World's total land area and only 0.5 % of global agricultural land. From all of these perspectives, the evidence gathered by the report leads to a simple conclusion: Biomass potential for energy production is promising. The shift in the energy mix from fossil fuels to bioenergy is technically no problem. However, more efforts must be put on making the total systems efficient.
- If we compare the average figure on the total global bioenergy production potential in 2050 of 1390 EJ with the highest scenarios on the global primary energy consumption 2050 of 1041 EJ, we see that the World's bioenergy potential is sufficiently large enough to meet the global energy demand in 2050.

www.aebiom.org

info@aebiom.org



Development of all RES 2005 - 2020



www.aebiom.org

info@aebiom.org





AEBIOM
European Bioenergy Conference &
RENEXPO[®]
Bioenergy EUROPE

European Bioenergy Conference
April 28th - 29th, 2010
Albert Hall, Brussels, Belgium

www.renexpo-bioenergy.eu
www.aebiom.org



info@aebiom.org

