Bioenergy in Europe
Status quo and outlook 2020

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About AEBIOM
European Biomass Association

- Represents and promotes interests of bioenergy stakeholders
- 30 national associations
- About 80 associated companies
- Activities: lobbying, workshops, newsletters, European projects, working groups, conferences and networking, etc.
- Based in Brussels in the Renewable Energy House.
- Member of EREC (European Renewable Energy Council) and WBA (World Bioenergy Association).
www.AEBIOM.org

Annual report 2010
Member’s catalogue
www.pelletcouncil.eu
Content

• European framework
• Status Quo
• Example of pellets
• Outlook 2020 – nREAP
• Conclusion
European framework
We are moving towards a Common European Energy Policy

European framework

Bioenergy markets

RES Directive
- Sustainability framework

ETS
- New period after 2013
- NER300

Energy taxation

Low Carbon Economy
- Coming … Energy Roadmap 2050
- Later … Members States strategy

SET plan
- Bioenergy Initiative
- RHC platform
- Smart Cities

Standards
- EN 14961

European framework

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**Taxation**

**Directive 2003/96** → minimum energy tax on motor fuels, heating fuels and electricity

Revision → energy tax (9.6 €/GJ for motor fuels, 0.15 €/GJ for heating) + CO₂ tax (20 €/t)

Motor fuels:
- Higher tax on diesel, LPG, gas
- Biofuels are exempted from CO₂ tax and can be exempted from energy tax until 2023.

Heating:
- Higher tax on coal, diesel, gas
- Biomass exempted from CO₂ tax and energy tax

*Convincing member states in the next challenge!*
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
Status quo bioenergy

CURRENT USE IN 2007 (98 Mtoe)

PRIMARY BIOMASS
96 179 ktoe

GROSS INLAND CONSUMPTION
98 383 ktoe

Input to electricity and CHP
33 320 ktoe

Losses 13 541 ktoe

Bioelectricity 8 754 ktoe

Input to DH
3 311 ktoe

 Derived heat 7 714 ktoe

Transport biofuels 7 877 ktoe

Biomass for industry
18 614 ktoe

Biomass for households and services
34 994 ktoe

Export 1 846 ktoe

Import 4 158 ktoe

Bioenergy represents about 7% of final energy consumption in Europe

Eija Alakangas, Source: AEBIOM, RHC-ETP
Annual increment in growing stock: 314.6 Mm$^3$

Natural drain: 37.1 Mm$^3$

Forest chips for heat and power production: 24.7 Mm$^3$

Import of round wood & chips: 77 Mm$^3$

Plywood: 4.5 Mm$^3$

Solid biofuels in plywood industry: 2 Mm$^3$

Chips: 4 Mm

Fibre and particle board: 63.5 Mm$^3$

Solid biofuels in board industry: 9.5 Mm$^3$

Solid biofuels in chemical pulp industry: 10.4 Mm$^3$

Chemical pulp industry: 69.7 Mm$^3$

Black liquor: 69.7 Mm$^3$

Domestic round wood for industry: 280.8 Mm$^3$

Sawn timber: 116.9 Mm$^3$

Sawdust and chips: 108.6 Mm$^3$

Wood industry: 81.9 Mm$^3$

Chips export: 11.2 Mm$^3$

Recovered paper: 86.6 Mm$^3$

Pulp industry: 152.8 Mm$^3$

Solid biofuels in mechanical pulp industry: 5.5 Mm$^3$

Mechanical and semimechanical pulp industry: 36.6 Mm$^3$

Small-scale use of forest chips: 8.3 Mm$^3$

Firewood: 76.4 Mm$^3$

Export of waste wood: 14 Mm$^3$

Export of round wood: 40.6 Mm$^3$
Pellets, a booming market
Pellets market overview

Major wood pellet markets in Europe - 2009 (in Ktonne)

Pellets market overview

2010 production

Source: EPC members, bioenergy international, AEBIOM estimate

Significant over capacity in 2010!
Pellets market overview

- EU consumption in 2010: about 10 Mtons
- Imports 2010: about 2.6 Mtons
- Roughly half for power, half for heat

But many open questions

- How will EU and third country production will co-exist?
- Raw material availability and price? What alternative?
- Competition with material?
- Pellets market from over-capacity to shortage?what impact on prices?
- Impact of sustainability criteria?
- Will torrefaction play a key role?
Conclusions I

• **EU legislation is increasingly influencing markets.**

• **Bioenergy is 7% of the energy consumption, spread among power/CHP/DH, households, industry and transport.**

• **Pellet production and markets are expanding worldwide.**
Bioenergy Outlook 2020

“This is our plan for the next 1,000 years.”
National Renewable Energy Action Plans (nREAP)

- All nREAP submitted
- Various quality → Commission is reviewing the plans and will ask for clarifications, and maybe more!

Renewables

Total gross final energy consumption in the energy efficiency scenario in EU27 and contribution from renewable sources (RES)

Source: nREAP, AEBIOM calculation

**Member States are globally more ambitious than their EU commitment!**

*However some targets are disappointing (AT, SE)*
Renewables / Bioenergy

Source: nREAP, AEBIOM calculation

Member States are counting very much on bioenergy!
Bioenergy

Estimation of total contribution expected from biomass in 2020 in EU 27, total 134 Mtoe

- Heat 62%
- Transport 24%
- Electricity 14%

Source: nREAP, AEBIOM calculation

Most of the biomass will still be used for heating applications
Bioelectricity

Consumption of energy in electricity in EU27 in 2020

- Total consumption of energy taking into account the effects of energy efficiency
- Biomass 7%
- Solid 5%
- Biogas 2%
- Bioliquids 0%

Source: nREAP, AEBIOM calculation
Expected increase from bioelectricity 2010 to 2020

Source: nREAP, AEBIOM calculation

Member States want to double bioelectricity production in the coming 10 years
Bioelectricity

Expected contribution from biomass in 2020 in the electricity sector

Source: nREAP, AEBIOM calculation
Bioelectricity

Driving forces

- ETS scheme
- National measures

Electricity support schemes: Quotas (blue) and feed-in prices (yellow)

Finland: new feed-in tariff for small CHP + heat premium
Belgium: green certificate favouring CHP
Germany: bonus for CHP
Biomass for heat

Consumption of energy in heating and cooling in EU27 in 2020

Source: nREAP, AEBIOM calculation
Biomass for heat and Bioheat

Expected increase from biomass in 2020 in the heat sector

Source: nREAP, AEBIOM calculation

Member States want to increase biomass for heat and bioheat by 46% in the coming 10 years
Biomass for heat and Bioheat

Expected contribution of biomass in 2020 in the heat sector

- **bioliquid**
- **biogas**
- **solid**

Source: nREAP, AEBIOM calculation
Biomass for heat

Driving forces

• Competition with fossil alternatives
• National schemes

France: tax advantages, heat fund
UK: Renewable Heat Incentive
Biofuels for transport

Consumption of energy in transport in EU27 in 2020

Total consumption of energy in transport sector 314792 ktoe

Biofuels
- 9%

Hydrogen
Renewable electricity
Others

9% of which advanced biofuels (Art. 21)

Source: nREAP, AEBIOM calculation
Biofuels for transport

Increase in Biofuels 2010-2020

- Increase 2010-2020
- of which 2G
Biofuels for transport

Driving forces

• Obligation
• Fuel quality directive
• EU standards
• National schemes
Conclusions II

- nREAP are key plans, but some targets are disappointing
- Measures still need to be reinforced
AEBIOM
European Bioenergy Conference &
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Bioenergy Europe

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PELLETS
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BIOMASS as a world energy commodity

SPEAKERS from the EU institutions, bioenergy industry, financial institutions, trade associations and NGOs

www.renexpo-bioenergy.eu
Thank you for your attention

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