Global wood pellet markets – key regions, developments and governance

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IEA Bioenergy Task 40
Global wood pellet industry and market

Global Wood Pellet Industry Market and Trade Study
- Published 2011
- Market data as of 2010
- Most downloaded IEA Bioenergy T40 study

Global Wood Pellet Industry and Trade Study 2017
- Published 2017
- Market data as of 2015/16

Studies can be downloaded via:
http://task40.ieabioenergy.com/iea-publications/task-40-library/
http://task40.ieabioenergy.com/
Global wood pellet industry and market

- data inventory of more than 30 countries
- information on
  - regulatory framework,
  - volumes,
  - prices
- references: official statistics, other wood pellet studies and expertise of IEA country representatives
Global wood pellet industry and market
Global wood pellet production – 2000 until 2015

• Development:
  • global wood pellet production increased steadily
    2006: 6-7 Mt, 2010: 14.3 Mt, 2015: over 26 Mt
  • emerging countries/regions >> East Asia, South-East Europe
Global wood pellet industry and market

Global wood pellet production – 2000 until 2015

Source: IEA Bioenergy Task 40:
Global Wood Pellet Industry and Trade Study 2017

http://task40.ieabioenergy.com/
### Global wood pellet industry and market

#### Global wood pellet production & consumption – 2015

<table>
<thead>
<tr>
<th>share by region</th>
<th>main countries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Europe (EU28)</strong></td>
<td></td>
</tr>
<tr>
<td>54% of global production</td>
<td>Germany, Sweden</td>
</tr>
<tr>
<td>75% of global consumption</td>
<td></td>
</tr>
<tr>
<td>• 64% for heat generation</td>
<td>Italy, Germany</td>
</tr>
<tr>
<td>• 36% for electricity</td>
<td>UK</td>
</tr>
<tr>
<td><strong>North America</strong></td>
<td></td>
</tr>
<tr>
<td>35% of global production</td>
<td>U.S., Canada</td>
</tr>
<tr>
<td>12% of global consumption</td>
<td></td>
</tr>
<tr>
<td>• consumption mostly for heat</td>
<td>U.S.</td>
</tr>
<tr>
<td><strong>Asia</strong></td>
<td></td>
</tr>
<tr>
<td>Rising</td>
<td></td>
</tr>
<tr>
<td>both in production and consumption</td>
<td>Vietnam</td>
</tr>
<tr>
<td>and consumption</td>
<td>Japan, South Korea</td>
</tr>
</tbody>
</table>

IEA Bioenergy

http://task40.ieabioenergy.com/
Global wood pellet industry and market

Global wood pellet consumption & export – 2015

Source: IEA Bioenergy Task 40: Global Wood Pellet Industry and Trade Study 2017
Global wood pellet industry and market
Trade – 2015

• cross-Atlantic trade relationship (US-UK) >> industrial
• intra-European trade >> non-industrial
• emerging: intra-Asian trade >> industrial
Governance wood pellets
Sustainability criteria – situation so far

• No mandatory sustainability criteria known for residential / non-industrial use of wood pellets in any country
• Contrary to liquid & gaseous transport biofuels, no uniform sustainability criteria apply to solid biomass use for energy were in the EU in place
• Four EU countries have developed national schemes: UK, Netherlands, Belgium and Denmark, with similar but slightly different criteria
• Currently, no sustainability criteria in Japan, situation unclear in South Korea, but concerns about sustainability of feedstock are increasing
### Table 3. Summary of sustainability requirements and possibilities for harmonization.

<table>
<thead>
<tr>
<th>I. Level of requirements</th>
<th>RO, RHI, CfDs RTFO - UK</th>
<th>GCs Wallonia–BE</th>
<th>GCs Flanders – BE</th>
<th>IA - DK</th>
<th>SDE+ - NL</th>
<th>Current Harmonization Level</th>
<th>Harmonization Possibilities</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Legally binding to receive support</td>
<td>Legally binding to receive support</td>
<td>Legally binding to receive support</td>
<td>Voluntary</td>
<td>Legally binding to receive support</td>
<td>Low</td>
<td>±</td>
<td>Harmonization possible between the Netherlands and the UK</td>
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<tr>
<td>II. Timeline of implementation</td>
<td>March 2016</td>
<td>Already implemented</td>
<td>Already implemented</td>
<td>January 2016</td>
<td>To be determined</td>
<td>Medium</td>
<td>±</td>
<td>Harmonization possible between four countries</td>
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<tr>
<td>III. Sustainability Requirements Coverage</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Greenhouse Gas Emission:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Calculation method</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Medium</td>
<td>±</td>
<td>Harmonization possible between four countries</td>
</tr>
<tr>
<td>- Limit compared with 1990 level</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Medium</td>
<td>—</td>
<td>Harmonization possible between four countries</td>
</tr>
<tr>
<td>- Time of implementation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>High</td>
<td>—</td>
<td>Harmonization possible between four countries</td>
</tr>
<tr>
<td>Land Use:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sustainable forest management:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal, sustainable sourcing &amp; certification</td>
<td>✓</td>
<td>±</td>
<td>±</td>
<td>✓</td>
<td>✓</td>
<td>Low</td>
<td>—</td>
<td>Harmonization possible between the four countries</td>
</tr>
<tr>
<td>Forest productivity and well-functioning</td>
<td>✓</td>
<td>±</td>
<td>±</td>
<td>✓</td>
<td>✓</td>
<td>High</td>
<td>✓</td>
<td>Harmonization possible between four countries</td>
</tr>
<tr>
<td>Biodiversity protection</td>
<td>✓</td>
<td>±</td>
<td>±</td>
<td>✓</td>
<td>✓</td>
<td>Medium</td>
<td>✓</td>
<td>Harmonization possible between four countries</td>
</tr>
<tr>
<td>Ecosystems conservation</td>
<td>✓</td>
<td>±</td>
<td>±</td>
<td>✓</td>
<td>✓</td>
<td>High</td>
<td>✓</td>
<td>Harmonization possible between four countries</td>
</tr>
<tr>
<td>Feedstock categories</td>
<td>✓</td>
<td>±</td>
<td>±</td>
<td>✓</td>
<td>✓</td>
<td>Low</td>
<td>—</td>
<td>Harmonization rarely possible between four countries</td>
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<tr>
<td>iLUC</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Governance: wood pellets
Sustainability criteria - harmonization

• Harmonization of sustainability criteria/systems will be important to ensure tradability of wood pellets as a commodity
• However, with different types of criteria (iLUC, carbon debt), different indicators and threshold levels, this is anything but easy
• Implementation of systems also ongoing in the Netherlands / under review in Denmark
Governance wood pellets
Sustainability criteria – recent update

• Recently on EU-level the “new” RED II (Renewable Energy Directive) was passed; in place 2019 onwards regulating 2021-2030
• RED II sets the first European-wide sustainability criteria for solid biomass
• This shall ensure a sustainable production, irrespectively of the geographical origin; it is not affecting small installations
Governance wood pellets
Sustainability criteria – recent update

Outlook
Challenges & options for the global wood pellet market

• Shift of the center of global trading?
• Demand/options for new applications?
• Impact of sustainability criteria?
Thank you very much for your attention!

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