The contribution of wood to biomass energy

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Overview

1. Background
2. Present situation and policies
3. Sustainable wood supply outlook
4. Main policy issues
UNECE/FAO Timber and Forest programme

- Aim: to promote sustainable forest management in the region
- Monitoring, analysis, policy forums, capacity building
- Five areas:
  - Markets/statistics,
  - Forest resource assessment,
  - Sector outlook studies
  - Social/cultural
  - Policy, cross sectoral
What are biofuels (for this presentation)?

- Energy from all sorts of biomass
  - (my focus is on wood)
- For all types of use:
  - Heat
  - Electric power
  - CHP
  - Transport fuels
Orders of magnitude

- How much renewable energy comes from wood?
- How much wood is used for energy?
Wood most important source of renewable energy now
2. Wood use and supply in 2005

- Wood removals 2005 from forest and woody biomass outside forests:
  - For energy use: 29%
  - For material use: 71%

- Wood co-products, residues & recovered wood:
  - For energy use: 62%
  - For material use: 38%

- Total supply:
  - For energy use: 42%
  - For material use: 58%
Why develop renewable energy?
(source DG Environment)

- The development of renewable energy is a central aim of the European Commission's energy policy for 2 main reasons:
  - Reducing Carbon Dioxide (CO2) emissions – (EU committed to reduce by 8% its GHG emissions by 2008-2012- Kyoto Protocol)
  - Improving the security of energy supply and reducing the Community's growing dependence on imported energy sources.

- Renewable energy sources (RES) are expected to be economically competitive with conventional energy sources in the medium to long term.

- **2020 OBJECTIVE**: 20% of gross energy consumption from RES
What do the RES targets mean for the forest sector?

- How much wood is needed?
- How to convert RES targets to wood requirements?
How to estimate future wood use on the basis of RES targets

1. scenario for total primary energy supply (efficiency gains included?)
2. national policy target for renewable energy (MJ or % of TPES?)
3. national target for bioenergy
4. target for wood energy (same % of bioenergy, or less?)

Most countries stop at step 2!
Estimated wood energy demand 2010/2020

- On the basis of published targets
- Simple, neutral assumptions (same % share as 2005)
- No consideration of supply limits
Future wood use for energy
## Future wood balance: forest based industry and energy

<table>
<thead>
<tr>
<th>year</th>
<th>wood sources [million m³]</th>
<th>wood use * [million m³]</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>775</td>
<td>821</td>
<td>47</td>
</tr>
<tr>
<td>2010</td>
<td>791</td>
<td>976</td>
<td>185</td>
</tr>
<tr>
<td>2020</td>
<td>825</td>
<td>1274</td>
<td>448</td>
</tr>
<tr>
<td>2020 75%</td>
<td>825</td>
<td>1156</td>
<td>321</td>
</tr>
</tbody>
</table>

* required to fulfil EFSOS projections and policy objectives

- Data not directly comparable (different methods)
- No prices included
- Conservative wood supply scenario
- BUT indicates broad pattern of future demand
Future wood supply balance

Calculated future wood supply EFSOS [mio m³]

Calculated material use EFSOS [mio m³]

Combined wood use [mio m³]

- Supply forest
- Supply residues
- Material use EFSOS
- Energy goal 75%
- Energy goal 100%
There is a problem about future sustainable wood supply for energy: what next?
Solutions (several or all of the following):

- Energy efficiency
- Resource efficiency
- Mobilise more wood from inside and outside forests
- Improve recovery and recycling
- Increase forest area
- Imports of wood (from where?)
- Develop other sources of biomass/renewable energy
- Fail to meet targets
Policy challenges

- Communication between national forest programmes and national biomass action plans
- Better information needed on sustainable wood supply
- The « level playing field »: do rules for sustainable forest management (biodiversity etc.) apply to all forms of biomass energy? What about imports?
- Subsidies?
- What is the most energy efficient pathway for wood energy (heat/power/CHP/ethanol)?
- Do we need biorefineries? (questions of scale)
Thank you for your attention