Forest Biomass
Terminal Properties and Activities

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Forest Industry in Circular Economy
Forest Biomass Terminal Development
A new measurement law in 2013

The amendment
All assortments, but only when sold from the forest owner must be measured. Biofuel most important newcomer.

The regulations
Only "good" methods and equipment may be used

Measuring companies must have internal control

Source: SDC
Can we fulfill the requirements?  
How does forest biomass terminals look today?  
OR

Characteristics of Swedish Forest Biomass Terminals

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Can we fulfill the requirements?

Data collection by a survey in co-operation with the Forest Industry's IT Company (SDC)

Descriptive data analyses

Totally data on 246 terminals
Well, in 1984 the Swedish Timber Measurement Council declared:

"All energy assortments should be measured and traded based on their dry weight"
Distance from a terminal to the industry, km

- < 2 ha
- 2 - 5 ha
- 5 - 10 ha
- > 10 ha

Bar chart showing distances in kilometers from different terminal types to industries:
- CHP > 100GWh
- Saw Mill
- Pulp Mill
- Rail Road
- Terminal

Legend:
- Forest Terminals
- Coast Line
- Rail Road

Map of Sweden with markers showing terminal locations and industry distances.
In total 14 different assortments were presented at the terminals.

The most widespread assortments were energy wood, logging residues and bark.

Energy wood alone accounted for 63% of the total volume handled.
Terminal Equipment, %

- Measuring Bridge: 13%, 15%, 33%, 67%
- Measuring House: 7%, 10%, 0%, 0%
- Forklift: 7%, 5%, 22%, 33%
- Wheel Loader: 72%, 73%, 67%, 67%
- Scale: 26%, 43%, 67%, 67%
- Drying Oven: 5%, 10%, 0%, 0%
- Other: 7%, 28%, 33%, 33%
Who is checking inventories, %

- Terminal Personal
  - < 2 ha: 97%
  - 2 - 5 ha: 81%
  - 5 - 10 ha: 44%
  - > 10 ha: 33%

- VMF
  - < 2 ha: 6%
  - 2 - 5 ha: 0%
  - 5 - 10 ha: 0%
  - > 10 ha: 0%

- Metria
  - < 2 ha: 0%
  - 2 - 5 ha: 0%
  - 5 - 10 ha: 0%
  - > 10 ha: 0%

- Focus Industrimätning AB
  - < 2 ha: 3%
  - 2 - 5 ha: 15%
  - 5 - 10 ha: 0%
  - > 10 ha: 0%

- Other
  - < 2 ha: 6%
  - 2 - 5 ha: 11%
  - 5 - 10 ha: 0%
  - > 10 ha: 0%
54 % of total biomass was passing terminals < 2 ha.

Terminals up to 5 ha handled 76 % of total biomass at terminals.

And terminals up to 10 ha handled 91 %.

Total mass at the terminals: 1.82 M OD t
35% of total terminal area in Sweden consists of terminals < 2 ha.

Terminals up to 5 ha add up to 64% of total terminal area.

And terminals up to 10 ha takes 78%.

Total terminal area: 478 ha
How do average terminal in Sweden look?
Average terminal in Sweden

1. Area 1.9 ha
2. 48% of its area is paved
3. Delivers material to 3.4 customers
4. Handles 2.5 assortments
5. And most likely performs comminution
Screening of comminuted material

May provide profit of 4.6 €/OD t

May increase efficiency of combustion up to ca. 10% at CHP

90% of all terminals do comminute biomass

75% of all biomass at the terminals is stored un-comminuted

Is there anything to improve?
What does screening provide?
What does screening provide?

Stored Logging Residues
What has been asked?

- Where are terminals located?
- What is their size?
- What type and how many assortments are they handling?
- What infrastructure do terminals have?
- What are the basic inventory keeping routines?
- Is there anything to improve?

What has been answered?

- Smaller terminals are closer to sawmills vs. bigger to pulp mills. All are relatively close to railroad.
- In average 1.9 ha and majority of terminals are up to 2 ha.
- 14 different assortments and 2.5/terminal
- Smaller terminals have more mobile equipment while bigger ones have better measurement equipment.
- Smaller terminals relay more on the own personal while bigger terminals rely more on the third party companies.
- Yes, there is, and it depends of...
Thank you for your attention!

www.biofuelregion.se/biohub