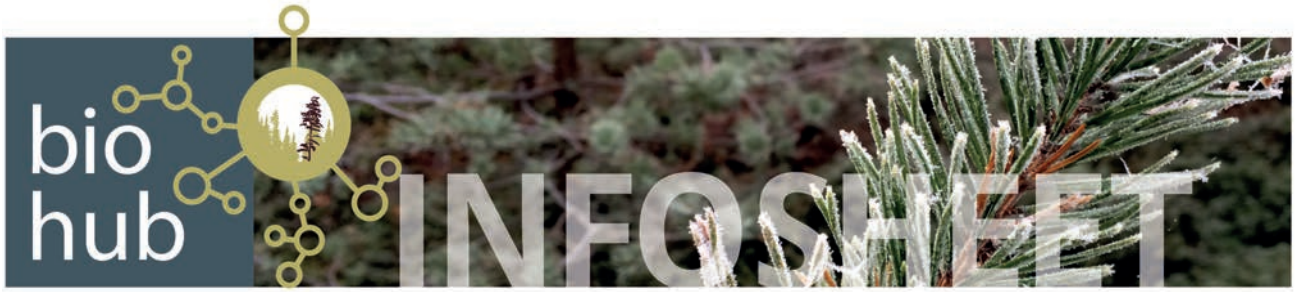

NOVEMBER 2016 | # 2

Terminal workshop- 5 key questions

As part of the BioHub project, a forest terminal workshop was arranged in Umeå 2-4 November 2016. During the workshop, terminal stakeholders representing industry, research and society discussed five key questions related to terminal development. Here, we summarize the answers to these question. The workshop is the start of a terminal network between terminal stakeholders in Sweden and Finland.

Study visit to Umeå Energy CHP-plant, Dåva. Nov 3 2016

1. PROBLEMS AND BOTTLENECKS RELATED TO FOREST TERMINALS

For round wood terminals, one bottleneck is often the limited storage area at the mill, which lowers the material flow from the terminal to the mill. Annual utilization of machinery (minimize waiting/idle times for the machinery) and space should be increased.

For terminals handling large volumes of wood fuels, the costs and fuel consumption for terminal operations and transports can be lowered with the use of hybrid/electric technologies.

Wood fuel quality

Terminals have to be able to increase the quality of wood fuels (sieving or sorting) at a reasonable cost that the market is willing to pay for. Wood fuel flows at terminals are usually too small to invest in specialized equipment. Immature and unstable biomass markets pose a threat to such investments. A more cost effective system for screening of the biomass would be useful for terminals.

Benefits that can be obtained via wood fuel supply through terminals;

- Widening access of forest fuel procurement areas from regional to a national scale
- Increased security of supply through easily available storages
- Large supply volumes can be delivered by an individual operator
- More stable prices and a more even quality of delivered fuel can be achieved

Keeping track of the stored volumes

The terminal owner needs to better keep track of the stored biomass volumes at the terminal. This can be achieved with use of techniques for stockpile inventory (e.g photogrammetry). This is today used in some round wood and biomass terminals. Terminals can also enable small deliveries for smaller CHP and heating plants.

Problems related to storage of chipped wood fuels

Biological activity in chipped biomass piles can cause problems such as dry matter losses, fuel quality degradation and increased risk of fire. Problems can be solved with better methods of stack building and storage together with better routines for monitoring of moisture content in stored piles (e.g. IR cameras, wireless sensors for temperature, etc.).

2.SUITABLE LOCATIONS FOR TERMINALS

A suitable location for a terminal is in proximity to the junction of main roads, railway, waterways as well as proximity to the forest and end-users. A helpful tool for optimal location is GIS based information systems.

3. OWNERSHIP OF TERMINALS

Today many terminals are owned by one single forest company and have been designed to supply their own industries with deliveries of round wood. Access to this kind of terminal is often closed for other end users competing for the same biomass assortments. This can result in "half-utilization" of terminals, which is not optimal.

Terminals can also be owned by a municipality or a private company that can lease the land from the municipality. In the first case, the terminal can expand and look for new customers, while in the second case, the terminal has to look for the costumers first and expand progressively.

The challenge for private owners as well as municipalities is to design and operate the terminals in the most cost effective way. It is important to be as flexible as possible and to adapt to short term and long term changes in market situations.

Industry and municipalities often have different opinions on who should own a terminal. An open terminal may result in more efficient use of terminal space. An open terminal with both round wood and wood fuel assortments may also over time develop more activities to create added value for the end customer. New types of ownership models need to be developed, especially new business models for shared ownership. Such models can show the way for more cost effective terminals in the future.

4. MANAGEMENT CHALLENGES FOR TERMINAL OPERATORS

Timing of terminal activities is often a challenge and with better information of end user needs, better timing of activities such as crushing and delivery of wood fuels can be chosen. For round wood terminals material flows should be uninterrupted.

Round wood and wood fuels often have different seasonal needs for storage space. Wood fuel storages build up to buffer for winter demand. In spring, need for round wood storage increases at the same time as need for wood fuel storage decreases. To achieve better utilization of space and machinery, integration of biomass and round wood terminals is a possible way forward. In this way, terminals can grow and be more profitable.

5. VISION FOR FUTURE TERMINALS

Future terminal should be big and multifunctional in order to be profitable. The terminal should also be designed for efficient rotation of different biomass assortments. To better fulfil the end consumer's just in time delivery needs, advanced information management systems is needed. Measurement, classification and labelling of different biomass assortment will be developed step by step.

This will enable better quality control management and also upgrading of new biomass assortments to better fulfil customer's quality demands. New emerging bio refineries may have other quality demands and pre-treatment of the biomass may be needed. By delivering the right assortment to the right customer at the right time added value can be created for better profitability for both the terminal and the end user.

Here you can find more information about the Terminal workshop. See link!

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