



Preferred wood biomass feedstock characteristics for biomass procurement decision-making by end-users

In improving the decision-making process for industrial end-users of wood biomass, it is important to understand the end-users' perceptions of biomass properties in relation to their conversion processes and supply preferences.

The aim of an expert analysis was to get an insight into end-users' views on preferred wood biomass feedstock characteristics. The features investigated included facility location, its size, biomass storage, handling, and procurement for different wood-based industrial services. The results can support product development and secure new roles in alternative business environments by existing and future terminals or so-called biohubs.

From an industrial biomass end-user's perspective, a pre-defined biomass assortment is a vital aspect when deciding on feedstock procurement at a bioenergy facility. The key decision-making attribute seemed to be the type of biomass assortment. Sawdust was the most preferred type (35%), followed by stem wood chips (20%) and energy wood (15%) of a total of seven biomass assortment sub-categories (stem wood chips, sawdust, logging residues & tree part chips, pulpwood, bark, agricultural residues & by-products, energy wood/low quality roundwood).

Most facilities had a good understanding of generally defined assortments, but their views on specific biomass properties (e.g. ash content levels, particle size, and moisture content) were rather unclear and weakly defined. The accepted range of biomass moisture content was very wide, even though most facilities received their feedstock within 10% of their estimated optimum.



KEY WORDS

Bioenergy, expert analysis, decision making, terminals, biohubs, end-users;

COUNTRY/ REGION

Finland, Poland, Spain

AUTHORS

Robert Prinz (Luke)
Johanna Routa (Luke)

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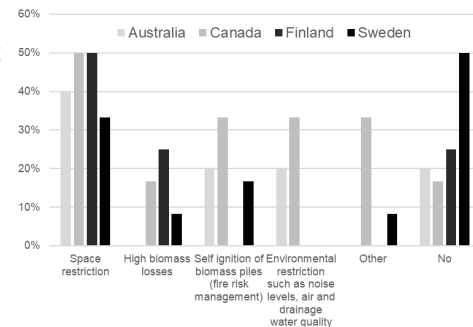
The procurement of wood biomass feedstock for production was a key part of the daily operations by each facility. The length of procurement contracts were part of the supply risk evaluation and price optimisation process. The most common contract periods were for up to 1 or 3 years.

Most common reported problems related to biomass storage:

- a lack of space (most common),
- biomass loss,
- self-ignition, and
- environmental restrictions.

A possible solution to the most common issue:

To mitigate some of the problems related to storing biomass at their own facilities, 75% of the Finnish respondents were willing to rent out extra storage with a 24/7 access. Nevertheless, facilities were less willing to move some of their storage volumes to the supplier's side (25% of Finnish respondents), e.g. to share the risks associated with storage. Most preferred to rent extra storage to address their space restrictions instead of delegating suppliers to handle the biomass on their behalf.



Source: Kons, K.; Blagojević, B.; Mola-Yudego, B.; Prinz, R.; Routa, J.; Kulisic, B.; Gagnon, B.; Bergström, D. Industrial End-Users' Preferred Characteristics for Wood Biomass Feedstocks. *Energies* 2022, 15, 3721. <https://doi.org/10.3390/en15103721>

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BRANCHES is a H2020 "Coordinaton Support Action" project, that brings together 12 partners from 5 different countries. The overall objective of **BRANCHES** is to foster knowledge transfer and innovation in rural areas (agriculture and forestry), enhancing the viability and competitiveness of biomass supply chains and promoting innovative technologies, rural bioeconomy solutions and sustainable agricultural and forest management.



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