
SUCCESS FACTORS FOR LARGER FOREST FUEL TERMINALS

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Terminals serve an important function for forest fuel logistics, both in single mode road transport and where a transport involves a combination of road and rail. Data from Eriksson (2012) suggest that approximately 30% of forest fuel in Sweden passes through some sort of terminal. Structural changes in Sweden, such as new regulations for measurements of forest fuel, have triggered a need to find out more about what makes a terminal successful. A review of the current terminal structure for handling forest fuel was also required.

Structured in-depth interviews were held with 13 respondents from forestry companies, energy companies and logistic companies (who were running open terminals). The interviews concerned the following matters:

- What factors lie behind successful establishment of terminals?
- When is it advantageous to own a terminal, and when is it better to make use of an open terminal?
- What do forestry companies think about their ownership of terminals?

A geographical analysis was also carried out, to compare the catchment areas of existing terminals with locations of forest resources in Sweden. The amount of logging residues and stumps that could potentially be available within 75 km of existing forest fuel terminals was calculated in order to identify areas for establishing new terminals. The calculation was based on the amount of logging residues and stumps falling out as a result of regeneration felling carried out in the reference (Business as usual) scenario in SKA -VB 08 for the period 2010 - 2019. The potentials used are after deductions for ecological, technical and economic restrictions (Skogsstyrelsen 2008; Athanasiadis et al. 2009).

Location was clearly chosen as the most important success factor by all respondents and also by literature (Anon. 2006; Bergqvist et al., 2007). It is closely related to the volume passing through the terminal. A larger forest fuel terminal for seasonal storage holds around 50 000 – 100 000 m³ of chipped material, but a railroad terminal with big investments must revenue that volume many times per year.

But criterion for a good location can vary depending on the purpose of the terminal and the viewer. Locations close to forest resources create value by making onward transport and comminution more efficient, while location close to industry allows joint utilization of resources and possibly return transports. For the energy companies, control and proximity to their own furnaces is most important. Therefore a location close to the energy plant is preferred by this group. For some logistic companies, access to railroad remained the base of their entire business model, but also forest companies that didn't have present use for railroad valued railroad access as strategically important. The aspect of strategic localization between forestry resources and customers were mentioned, since terminals lengthen road transports if they are not optimally located in the supply chain. Figure 1 describes the different strategies for localization conceptually.

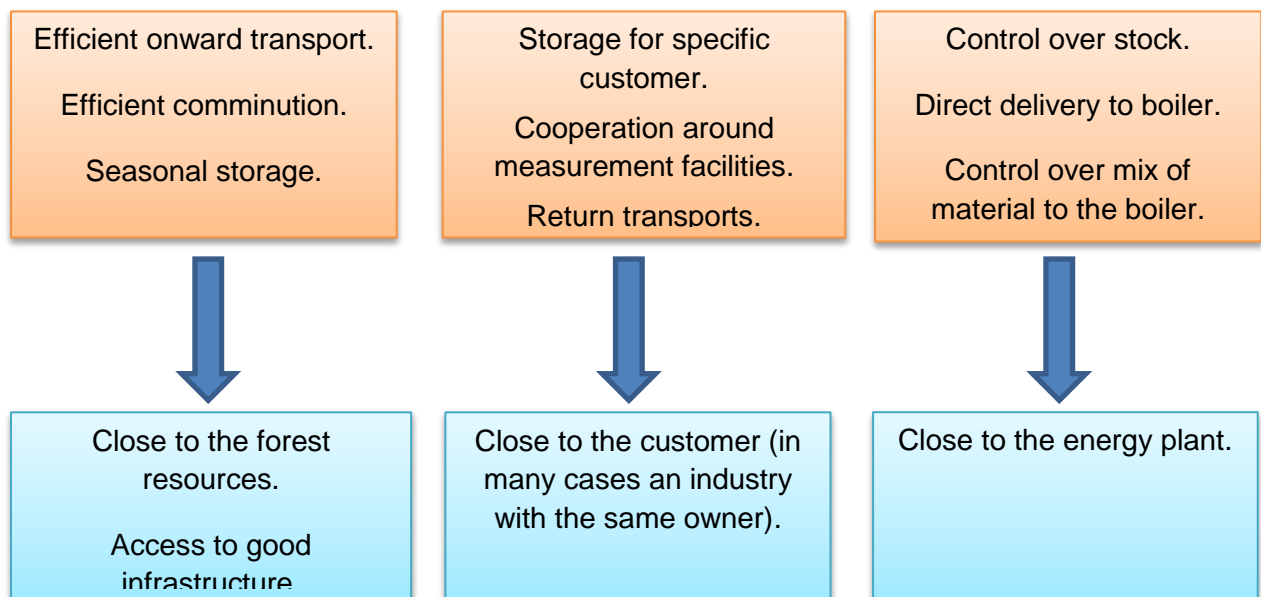


Figure 1. Different purposes for terminals and views of different respondent groups, give diverse strategies for localization.

Four additional success factors are listed below. The comparative importance between them could not be determined from the study.

- Facilities for measurements, such as scale for trucks, a measuring bridge or a drying oven. New requirements for measuring chipped material necessitates new technology, collaboration or merging of smaller terminals.
- Asphalt surface for chips handling is an important factor for ensuring quality by avoiding contaminants such as stones or gravel. However, chipped material is some times handled on gravel surfaces since end-customers rarely demanding or paying extra for asphalt.
- Skilled, flexible and customer-oriented personnel is an aspect frequently mentioned by the logistic companies running open terminals where forest companies are customers.
- Good internal logistics and order on the terminal is important for many reasons. Old material should not be locked in by new, drivers should easily find their way to the right place, cautions against fires should be taken and rail road loading should be

organized in order to minimize loading time with available resources. This was also mentioned by Enström & Winberg 2009.

Several forest companies mentioned that they want to stop using smaller terminals, especially in regions far from the costumers and instead deliver more material directly to the customer. In worst case, they had terminals located in the wrong direction with respect to the customer. Such terminals were naturally the least wanted.

Both the interviews and the map analysis indicate that forestry companies often use too many terminals. The map analysis showed that approximately 95 % of the Swedish forest fuel were to be found within the catchment areas of existing terminals. It should be stated that many of the terminals are owned by a specific forest company and they may not grant other companies access to it. Hence the real covering percentage would be lower if we consider actual accessibility to a terminal. But since most of the raw material are not passing through a terminal at all, it is likely to believe that there are actually too many terminals, at least in some regions. This conclusion is also supported by the interviews.

Consequently, new initiatives would primarily involve mergers of terminals to strategically important places (often with railroad connection) to create sufficient volumes for investments.

Literature

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