

## Procurement of logging residues - today and in the future

*Altogether eight forestry operators were interviewed to get information about the current practices, and the potential challenges and opportunities related to the procurement of fresh logging residues. This infosheet presents the main results that were raised by the interviewees. Guidelines for the procurement of fresh logging residues can be drawn based on the information received from the interviews.*

### DATA COLLECTION VIA INTERVIEWS

Five interviews were conducted in Finland and three in Sweden. The aim was to interview operators who have experience in procuring logging residues. The interviewees were representatives of different forestry operators: a contractor (1), large forest industry companies (3), a sawmill (1), bioenergy supply organizations (2) and a wood supply organization (1). Some of the interviewees work only in the Botnia-Atlantica project area (2) and some operate in a wider area in Finland or in Sweden. The interviews were done during the period November 2021 – February 2022.

A questionnaire was prepared for the interviews. The operator's current practices regarding the procurement of logging residues were discussed during the interviews. If the operator did not currently procure logging residues, their previous experiences were discussed. This was followed by discussions on the possibilities of procurement of fresh logging residues and the demand and supply of logging residues in general.

### Procurement of today

All Finnish interviewees were actively procuring logging residues. The residues are transported to heat and power plants, where they are burnt to generate energy. In Sweden the business around logging residues is currently limited, especially in the northern parts of the country.

### PROCUREMENT PRACTICES

The procurement practices for logging residues are very similar in Finland and Sweden. Logging residues are generally procured on spruce-dominated final-felling areas.



The choice of a suitable site is influenced by the size of the stand and the proportion of spruce, and also by the accessibility of the site from the nearest road, transport distances, ecological restrictions or the distance to other logging residue harvesting sites. Logging residues are not procured only from the final fellings but also from forest areas that are converted to other uses.

### HARVESTING

Harvesters pile the logging residues. The piles are left to dry at the logging site before transportation to roadside storage by forwarders with special grapples and expanded load spaces. Forwarding is usually done in summer. Some interviewees mentioned that they follow the recommendation to leave at least 30% of logging residues at the logging site so that the nutrients remain in the forest.

### TRANSPORT

Logging residues are transported to the end-user from the roadside storage when demand is high in winter, usually within one year after forwarding. Logging residues are often chipped before transportation. Sometimes the residues are transported unprocessed when trucks with closed containers are used.

Currently fresh logging residues are forwarded from the logging site to roadside storage only in special cases. But one interviewee said that they only harvest fresh logging residues since they operate only on the roadsides and areas that will be converted to other uses. Fresh logging residues are usually forwarded in the same way as dry logging residues, and the residues have been then dried on the roadside.

## Future of fresh logging residues

### EXISTING MACHINERY CAN BE USED

The same equipment and machinery that are currently used to harvest logging residues would also be suitable for harvesting fresh logging residues. Some of the interviewees thought that if fresh logging residues were procured, it would be easiest that the same forwarder could handle both roundwood and fresh logging residues. The forwarder should only have special grapples to handle logging residues. Some interviewees thought that it would be most effective if a different contractor would come to forward the logging residues immediately after forwarding roundwood. In this case, the load space of the forwarder would be customized to handle the logging residues and the driver would be accustomed to handling logging residues.



### LOGISTICS AND STORAGE ARE A CHALLENGE

As one of the challenges, several interviewees highlighted the timing of information flow and logistics when harvesting fresh logging residues. If logging residues are harvested in winter, up-to-date information is needed to organize the logistics: when and where the roundwood is harvested and the logging residues are available for forwarding. A Finnish interviewee mentioned that forwarders are now fully occupied with forwarding roundwood in winter, so additional resources are needed to forward fresh logging residues.

Currently, silviculture aims to maximise the yield of the most valuable roundwood assortments in the forest, so the resources are reserved for that and the machines are in use all the time. Additional resources for forwarding capacity require that there should be sufficient demand for fresh logging residues. On the other hand, the fact

that logging residues would be harvested all year round would allow contractors to be employed throughout the year when they now only forward logging residues during summer.



### ROADSIDE STORAGE

According to the interviewees, the biggest challenge in harvesting fresh logging residues would be roadside storage. There is already now limited space on the roadside in most places to store roundwood only. Thus, there is usually no space to store the logging residues at the same time. The most valuable assortments are a priority, so roundwood must be transported to the roadside first, when usually there is no storage space left for fresh logging residues.

Two interviewees thought that fresh logging residues would not necessarily need roadside storage, and the logistics just must be well organized. One of the interviewees said that it is difficult to avoid storage, or it will increase waiting times for trucks or forwarders and thus also transportation costs.

### QUALITY OF THE NEEDLES IS IMPORTANT

The cleanliness and hygiene of logging residues may need to be considered more carefully if they will be used for other purposes than energy production. In that case, harvesting would be slower, which could increase costs. On the other hand, procurement of logging residues in winter could improve the cleanliness of the residues when the soil is frozen. Interviewees believed that fresh logging residues could not be procured during summer because of the rapid changes in needles when it is warm.

On the other hand, winter conditions can cause challenges to the procurement of logging residues because the frozen needles can fall and break already during harvesting. Procurement of fresh logging residues can also be difficult if it is snowing a lot and the residues are covered in snow. On the other hand, in winter the bearing capacity is usually better when the soil is frozen.

## ECOLOGICAL SUSTAINABILITY

Some of the interviewees mentioned that ecological sustainability needs to be noticed when harvesting fresh logging residues. Currently, the Best Practices for Sustainable Forest Management in Finland recommend that at least 30% of logging residues should be left at the site to maintain the nutrient balance of the forest. This recommendation was mentioned by most of the Finnish interviewees. The current recommendation assumes that the logging residues are dried at the site, and the needles fall off before procurement. If the logging residues are harvested fresh, the number of logging residues left at the site should possibly be reconsidered. Some of the interviewees had doubts whether fresh logging residues could be harvested in an ecologically sustainable way.

## DEMAND AND SUPPLY OF LOGGING RESIDUES

Currently, logging residues are already widely utilized in Finland. Many of the Finnish interviewees thought that in most places they already harvest all the logging residues that can be harvested cost-effectively. Some of the logging sites are also out of question due to small size, long distances, difficult terrain, or ecological restrictions. Some of the interviewees were asked whether they see any challenges if the demand for logging residues would increase in the future. However, that was not generally considered a challenge.



Currently, the demand for logging residues is high in energy use but this was not the case a few years ago, so the situation can change. Interviewees believed that demand would remain high in the near future, but it may be affected by political decisions.

One of the interviewees believed that there can be a demand for new products produced from logging residues in the future, but it may take some time before large amounts of logging residues are needed for new purposes. By then, new alternatives to wood fuel might already be developed. Therefore, the potential increased demand for logging residues for other than energy purposes may not compete with the energy use of logging residues.

In Sweden, one of the interviewees said that it would not take a very long time to start up the business around logging residues if there would be a demand. However, it takes some time to become good at it. It would also require that the high demand could be predicted to be stable for a long time for contractors to be willing to invest in needed equipment.

Another interviewee believed that the future for logging residues looks quite good now because many of the heating plants need to substitute peat with something else. Thus, many customers are currently interested in discussing long-term agreements for logging residues. In addition, also other customer segments have shown an increasing interest in logging residues, for example, pellets producers.

Based on the interviews, forest owners are willing to sell logging residues when they are selling roundwood. The procurement of logging residues facilitates the cultivation process and brings additional income to the forest owner in connection with the timber trade.

### Read more:

[Regional operating scheme for the procurement of fresh logging residue](#)

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