



In Finland, forest energy is used in significant quantities to heat homes and other buildings. In addition, combined heat and power (CHP) plants, that produce electricity and heat, are an important part of the electricity system. Fossil fuels in energy production have largely been phased out, which has increased the use of woody biomass for energy to its current level. In the future, the use of wood energy will gradually decrease moderately. The Finnish Bioenergy Association and Finnish Energy jointly recommend that operators identify the ecological pillar of responsibility more strongly in their wood procurement, i.e. consider biodiversity and the well-being of ecosystems.

The recommendation focuses on the procurement of forest energy¹, with Finnish fuel classification 21.10, and related measures. Sourcing forest energy in a way that respects ecological values reduces environmental impacts and biodiversity loss caused by harvesting and maintains the resilience of forests. Compliance with sustainable forest management practices and consideration of biodiversity aim to ensure that all forest energy is produced sustainably.

The law guides bioenergy usage

There is a strict legal framework for the use of bioenergy, e.g. in the form of the sustainability criteria of the Renewable Energy Directive² and the EU Deforestation Regulation. When operating in a forest, several national Finnish legislations are in force³ (e.g. the Forest Act, the Forest Damage Act and the Nature Conservation Act), which form starting point to the basic level acting ensemble. In addition, several guidelines and recommendations are in use to ensure sustainable forest management, such as the comprehensive Forest Management Recommendations⁴ and the widely used voluntary forest certifications⁵. Respectively, when purchasing wood fuels from outside Finland's borders, both local legislation and guidelines as well as recommendations for sustainable forest management in the location in question, must be followed.

General recommendations

This document presents a general recommendation on matters to be taken into account in addition to the above. Situation- and operator-specific consideration, e.g. related to local conditions, is an essential part of the implementation of the recommendation. For example, operating in different vegetation zones has not been separately addressed in this recommendation, and the recommendations are not necessarily suitable for the harvesting of infrastructure sites (e.g. roadsides, field edges, land use change sites).

There are several different methods and measures to promote forest biodiversity, and the selection is guided by stand marked for harvesting and area-level planning. All these measures include the principle that measures already taken to improve the state of nature are respected and such sites are excluded from harvesting operations. Old and sturdy deciduous trees and a continuum of decaying wood are particularly important for the protection of the most endangered species.

Recommended measures to promote biodiversity in forest energy procurement:



INCREASING THE AMOUNT OF MIXED TREES

In thinnings, at least 10% of the proportion of deciduous trees is left untouched, if possible.

The number of tree species is not reduced in felling, and the number of tree species in the stand will be the same after harvesting, as before the start of forest management work. Maintaining a mixture of deciduous trees in forests safeguards the diversity of species, as mixed-tree environments provide food and habitats for more species than single-species forests. Mixed trees also promote forest health, help adapt to the changing climate and protect against forest damage.

Sturdy deciduous trees are left unharvested, as many endangered species are more demanding of tree species and use more mature wood as their habitat.



DECAYING WOOD

Decaying wood refers to dead wood or parts of a tree standing upright or on the ground, and it is an important source of food and habitat for many species. It is formed in storms, forest fires, as a result of diseases and insect infestations, and in environmental changes.

Harvesting and breakage of existing decaying wood is avoided. Large stands of decaying wood can be marked in advance so that they can be left untouched when harvesting. Saving existing decaying wood is a faster way to increase old dead wood, because it takes a long time for healthy wood left in the forest to die and decay. Forest species have different requirements for the degree of decay and the size of decaying wood, and many endangered species live in old and sturdy decaying wood. It is recommended that trees damaged by wind, snow and insects will be left in the forest, taking into account the removal obligation of the Forest Damage Act, which in certain cases requires the harvesting of fallen and damaged fresh conifers.

Dead standing trees are made at the site, because in addition to decaying ground wood, standing dead trees are also important habitats for many species. Dead standing trees are made by cutting a tree (preferably a deciduous tree species) at a height of 2–5 metres, making the tree to die and gradually decay.⁶



RETENTION TREES AND PROTECTIVE THICKETS

In wood harvesting, especially sturdy deciduous trees (e.g. aspen) are left as retention tree groups on the stand. Retention tree groups of young deciduous trees also promote forest biodiversity. Retention trees provide a habitat for species already when they are alive, and when they die, they become an important environment for species that demand decaying wood.

Untreated protective thickets, i.e. game thickets, will be spared during harvesting, to provide food for several animal and bird species. Thickets are formed from trees of varying sizes that contain undergrowth. Good places for protective thickets are near retention trees and areas that are difficult to access and have a low value in terms of wood production. The aim is to place protective thickets and groups of retention trees close to protected areas and valuable habitats to increase the connectivity of habitats and thus the mobility of species.



TAKING WATER BODIES INTO ACCOUNT

A sufficient buffer zone will be left on the shores of waterways on a site-by-site basis, taking into account the slope of the ground and the type of soil.

Harvesting of stumps must be avoided in buffer strips and in their immediate vicinity, because the lifting of stumps breaks the soil surface and increases the risk of leaching. Species that differ from other forests often live near waterways, and at the same time, erosion and nutrient loads flowing into waterways are prevented.

¹ Statistics, Fuels classification. https://stat.fi/tup/khkinv/khkaasut_polttoaineluokitus.html

² Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources

³ <https://mmm.fi/metsat/lainsaadanto>

⁴ <https://metsanhoidonsuosituset.fi/fi>

⁵ <https://www.pefc.fi/>

⁶ <https://energia.fi/julkaisut/lahopuuselvitys-tapio-palvelut-oy-2023/>



PARTICULARLY DIVERSE AND VALUABLE HABITATS

Avoid obtaining forest energy from valuable habitats⁷ where forest biodiversity or the number of endangered species is high, and the area has been identified by the authorities. Such areas often have their own special species and differ from the rest of the forest environment, especially in terms of nutrient and water management. Consideration should also be used in areas where the conservation value has been removed due to a change in the legislation (those that have been removed from “the tenth provision” of the Forest Act). Such areas often include broad-leaf woodland, sun-drenched and burnt environments, and ridges. Due to the edge effect, the aim is to target biodiversity measures close to these habitats, in commercial forests.



HARVESTING STUMPS

Stumps are harvested for energy only from suitable sites, which is always determined on a case-by-case basis. For example, spruce stands can be suitable for this, and at the same time, the formation of root rot is prevented.

The stumps of old deciduous trees are not harvested because they are valuable to biodiversity. The stumps are lifted using a method in which the stump is divided into parts and lifted so that only part of the main roots rises. This prevents the ground from breaking and soil from being transported by stumps.

OTHER NATURE MANAGEMENT METHODS TO CONSIDER

other nature management methods that operators can examine in their own activities. For example, it may be advisable to take into account the nesting times and places of birds in some environments. In addition, extending the rotation period can increase the amount of decaying wood and old and sturdy trees. It is not recommended to carry out renovation ditches at all, and in Finland, they have practically almost ceased to be carried out.

MONITORING COMPLIANCE WITH NATURE MANAGEMENT METHODS IS RECOMMENDED

It is recommended that the above-mentioned environmental impacts of wood procurement will be monitored by, for example, self-monitoring, external audits, and the creation of monitoring indicators and the communication of their results. In addition, checklists can be created with the procurement to take the means into account – for example, the nature management checklist of the Multi-Forest Project⁸.

⁷ For example, according to the Finnish Forest Centre: <https://www.metsakeskus.fi/fi/metsan-kaytto-ja-omistus/metsien-suojelu-ja-elinymparistojen-hoito/muut-arvokkaat-elinymparistot-ja-luontokohteet>
⁸ <https://www.metsakeskus.fi/fi/metsan-kaytto-ja-omistus/metsanhoito-ja-hakkuut/talousmetsien-luonnonhoito/luonnonhoitotoimenpiteiden-muistilista-ja>

This recommendation is valid until further notice. The need for updates will be assessed after possible legislative amendments affecting operations or when significant new scientific research data will be published. The Bioenergy Association of Finland and Finnish Energy collect information on the number of operators complying with this recommendation and publish the information on their websites. In addition, information is collected on observations made through possible self-monitoring/audits.

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