

Germany	Hinrich Stolle
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<i>Institution</i>	Self-employed
<i>Position</i>	Landowner
<i>Field of work</i>	Agricultural forestry; private forest owner

Experience

<i>About the feedstock, processing & conversion</i>	<p>Hedges around the estates and fields need to be („put on the stock“) pruned regularly. Trees and shrubs are pruned in order to prevent them from growing into the fields. The maintenance of the hedges is an inconvenient duty, it is a lot of work with only little direct benefit to the farmer. Instead of value adding lumber only firewood is obtained. Strong wood is handled as firewood, mostly for the own requirements whereas thinner branches (smaller than 8 cm in diameter) are burned in place or left to rot at the field edge.</p> <p>Pruning is only allowed outside the vegetation period. The maintenance work has to be conducted with care, as inappropriate pruning damages the trees and shrubs e.g. by blunt knives; pinching; false sawing and pruning in the wrong season.</p> <p>Wood from hedges that is suitable as firewood is burned in ovens or small heating systems. Small-diameter-wood is left in place to rot. There it fulfils ecological purposes as habitat for birds, insects and amphibians. Bigger amounts are chopped to woodchips and sold to get combusted in bigger heating systems. Small amounts of wood from forestry residues remain in place. Bigger amounts are burned in Easter fires or are chopped and sold.</p>
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<i>Policies, finance tools and legal regulations</i>	<p>Hedges are only allowed to be pruned outside the vegetation period. Spatial and seasonal restrictions are based on the hatch and life rhythm of the indigenous animal and plant species.</p> <p>Hedges on banks are protected as country side elements in the Bundesnaturschutzgesetz § 22 des Niedersächsischen Ausführungsgesetzes zum Bundesnaturschutzgesetz (NAGBNatSchG) (national environment protection law under § 22 of the local here: Lower Saxony implementation law)</p> <p>After the maintenance work the further handling is determined by economic and safety relevant procedures (handling/quality/retention of the heating value/prevent loss of volume). An option for the usage of the LCMW from Hedges is combustion. According to the Bundesimmissionsschutzgesetz (emission protection law) combustion of this type of LCMW material is allowed. Like material from agricultural landscape material it can be classified as fuel. It is further described that straw and similar substances, which are not declared as food cereals can be used as fuel. Under the emission protection law, for further classification further the size of the heating system needs to be taken into account.</p>
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During the combustion of wood emissions arise (CO₂, CO, NO_x, SO₂, HC). The ash can be treated as waste disposal or can be applied as fertilizer on agricultural area.

The costs for the maintenance work are financed by the owner or farmer. They refinance the costs by selling the firewood or wood chips as fuel or using it for own purposes.

It is also possible to take advantage of grants for the planting of new hedges, for the maintenance of the hedges or the remediation of hedges. Local grants fund the planting of new hedges with a subsidy of 3,60 Euro per meter. And with the subsidy of 1,00-1,50 Euro per meter for the maintenance of the hedges.

Grants and allowances are stated under the Erneuerbare Energien Gesetz (EEG) (renewable energy law).

Also there are grants from local authorities like those from the Ministeriums für Klimaschutz, Umwelt, Landwirtschaft, Natur- und Verbraucherschutz des Landes Nordrhein-Westfalen (Ministry of climate protection, environment agriculture, nature and consumer protection in North Rhine-Westphalia).

It states that natural wood from LCMW can be accounted as agricultural product. And therefore the following activities are funded:

Investments that are related to the maintenance work; investments that are related to the processing and marketing; construction of company buildings, building of new work stations for reprocessing, establishing wood- and biomass yards. Investments in facilities for sorting, drying, to measure weight and volume, data capture and transfer. Investments to process, store and the marketing of the wood products.

The Erneuerbare Energien Gesetz (EEG) (renewable energy law) is the basis for grants and utilisation of biomass from LCMW.

The NawaRo-Bonus (bonus for „regrowing feedstock“) is granted for plants and plant compounds, which are harvested in agricultural, forestry or horticultural proceedings or during landscape and maintenance work, which are not further processed.

If more than 50 % of the material is from landscape and maintenance work a bonus of 1,98 ct/kWh is paid.

Also local funding programs apply.

The Erneuerbare Energien Gesetz (EEG) (renewable energy law) states subsidies for KWH. It also encounters the NawaRo- Bonus („regrowing feedstock“ bonus) which states that in biogas plants on top of the „regrowing feedstock“ bonus, a bonus for biomass from LCMW is granted. Therefore additionally to the „regrowing feedstock“ bonus) of 7 ct/kWh, a bonus of 2 ct/kWh electric is granted

Difficulties & barriers

Could not be identified.

Potential drivers & recommendations

The cost situation could be improved by increasing the price for conventional products like gas and oil.

We need technical new and advanced developments in the energy and feedstock extraction and investments in the development of machinery

and processing technology, which needs to be funded accordingly.

Machinery for harvest and processing technology needs to be optimised. The cost situation for the owners should be improved by grants and funding. Investments should be made in alternative and better exploitation strategies of the energy and feedstock resources.

Good practices of cooperation & participation

The hedges on banks program in Friesland is a positive example. A „hedge-manager“ who is employed by the local environment protection authority determines when and to which extent and circumstances the maintenance work is performed. The hedges are then cut by a service provider and the material is piled alongside the fields. In the next step the wood is chopped by a chopper. Afterwards the wood chips are either directly transported to the customer or are dried at a biogas plant. The wood chips are usually sold to private costumers, who own a heating system fuelled with wood chips or small agricultural businesses like poultry farms. Often partner contracts exist with the owner of the hedges.

Public acceptance regarding harvesting, processing & conversion

There is a good acceptance among the citizens. The people profit from the low price for wood chips and fire wood and the well-tended landscape. From time to time it happens that people get the impression that the hedges are being destroyed by the cutting procedures. Here explanatory work is needed.

There are rather positive effects for the residents:

- The costumers are pleased by the low prices for energy from wood chips.
- There is no increase in traffic.
- There is no odour pollution anymore caused by the direct combustion in place.
- Residents are pleased by the well-tended landscape
- The hedges are preserved as valuable landscape elements, they structure and vitalize the forestless landscape.
- The hedges are habitat and resort for numerous animal and plant species.
- They protect the fields from wind erosion and the entry of seeds that are spread through the air on the fields.
- Through an increase of dew formation and a reduction of evaporation plants have higher amounts of water available.

Public support & good governance

Good governance mechanisms

- The local authorities provide consultatory and supporting actions
- It is possible to take advantage of grants for the planting of new hedges, and for the maintenance of the hedges. Also supplementary planting is funded. The dimension of the funding is dependent on the local authorities.
- At the moment there is only little competition, as the supply of wood



chips is oriented on the demand. Based on the availability of natural resources a much higher amount of wood chip could be produced.

No special waste management is needed. The LCMW can be left at the side of the fields to rot. After combustion small amounts can be disposed in the dustbin or the ash can be applied to fields as fertilizer.

Wider insight

There is a good acceptance among the citizens. It would be important to strengthen the acceptance among the owners of the hedges to improve regular maintenance work on the hedges.

The maintenance of the hedges is conducted with knowledge about regulations and guidelines. In many cases the local authorities act inconvenient, bureaucratic and instructive. Partly they are oriented technically and ideologically very one-sided. The efforts for the bureaucratic application and handling of the founding procedures should be minimized. And the support by competent personnel of the local authorities should be improved.

Funding is needed in the area of the evolvement of more effective technical procedures and the improvement of the processing plants (possible conversion to energy carriers).

Contact information

Interlink

Stolle-Osterhoop@t-online.de