

Capacity building ESCOLIMBURG2020 project staff

28 September 2015 – Bocholt hedgerow-based district heating

PVL (Agricultural Testing and Training Centre; Proef- en Vormingscentrum voor de Landbouw)

Biotechnicum (agricultural secondary school)

Present

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Speakers

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Hedgerows in Bocholt supply woodchips as fuel for the new heating system on the school campus of the new primary school De Driehoek, the Biotechnicum and the PVL. This is launched as a pilot project, with a cost of € 300,000. For this pilot project, a(n investment) subsidy is made available by the Province of Limburg and a partnership is established between the province, the Municipality of Bocholt, the schools, the PVL, local farmers and Agrobeheercentrum-Eco² (Centre for Agromanagement).

Hedgerows are rows of trees and shrubs. The cut wood is chipped and will be used as fuel in the new heating system on the school campus. The system will be provided with woodchips from the surrounding area. Together with numerous partners, RLLK has taken the initiative to start harvesting fuel wood from hedgerows again to heat buildings in the area. Thus, hedgerows are given an economic function again. Moreover, regularly cutting the hedgerows also creates a more diverse landscape, with different living conditions for animals and plants.

School campus and district heating

The existing school campus PVL-Biotechnicum in Bocholt was already equipped with a district heating. This district heating has been used to heat the various buildings on the campus using woodchips from the hedgerows owned by the Municipality of Bocholt.

The various buildings on the campus are owned by different parties, so the district heating connected to these buildings is also owned by different parties. Part of the district heating is furthermore located under public land.

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Municipality of Bocholt

The Municipality of Bocholt has about 75 km of hedgerows, which are made available for cyclical cutting. They are used to produce woodchips which are used as fuel for the district heating. These hedgerows are not owned by the municipality in every municipality. In certain areas (e.g. the Lummen area), they are private property.

An advantage for the municipality is that the hedgerows are maintained for them, resulting in less work for them.

The church hall of the municipality (a municipal building) is also connected to this district heating. Currently, it is being investigated which other municipal buildings can still be connected, specifically for the church.

Other buildings and homes can also be connected, this being determined by the distance to the district heating.

Approach

- First of all, it is important that the exotic species living in the hedgerows are kept under control. For example, wild black cherry is controlled. The shade offered by the hedgerows is maintained.

- A Hedgerow Plan is drawn up: this is a vision on how the hedgerows are to be managed. In this case, this plan has been prepared in cooperation with the municipality, the farmers and the local economy.

- An agromanagement group is put together to harvest the hedgerows, consisting of local farmers who take care of the pruning.

This agromanagement group is also active in wood management at other locations, to maximise use of the machines and keep the project profitable.

- A cvba (cooperative society with limited liability; coöperatieve vennootschap met beperkte aansprakelijkheid) is established for the school campus. This society determines the price of the woodchips.

- A DIPLA online tool is developed, which shows the whole process. This tool is accessible to different parties/participants throughout the process.

Harvesting

The harvest takes place every eight years. Two years later, the hedgerows will already have grown back considerably.

Wood is chipped to the right size after pruning. After pruning, the wood has a moisture content of about 50%. To be burnt, the woodchips need to have a moisture content of around 20%. The woodchips are therefore mechanically dried.

Per kilometre of hedgerow, eight tonnes of woodchips can be harvested annually, which is equivalent to 1,200–1,300 litres of fuel oil per year.

Techniques

The woodchip plant can supply 250 kW, with peaks of up to 400 kW, which is ample enough to provide all school buildings and the church hall with heat and hot water. The emissions of particulate matter also remain below the standard, although the woodchips must be well sieved and dried.

The biggest cost of the project is the boiler. The storage of the woodchips is relatively inexpensive.

RLLK also saw mobile boilers during its research abroad, which are, for example, very suitable for heating outdoor swimming pools (if used periodically).