



WOOD GASIFICATION IN LATVIA: TODAY AND IN THE FUTURE

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ABSTRACT

The paper analyses the possibility of using wood gasification technology in CHP plants in Latvia.

According to requirements of EU directive on Renewable Energy Sources, the part of renewable sources of energy used in Latvia must be 40% in 2020. To satisfy these requirements, recently some types of energy strategies for Latvia were elaborated. During the investigation significant attention was paid to wood gasification.

Gasification is a thermodynamical process that converts wood and woody biomass to a gaseous fuel. Gaseous fuel can be used for highly effective CHP technologies, including gas turbines.

In sustainable forestry, the cycle of carbon for trees is closed, and forests form a renewable reservoir, or sink, for carbon. It follows that using wood helps to mitigate climate change caused by greenhouse gas emissions.

Forests and timber are Latvia's main resource. Forestland and former agricultural land which now satisfies the identification criteria for a forest cover 55.9% of the national territory. It can be expected that the amount of forest cover in Latvia will continue to increase. Low-quality stemwood, branches and stumps that are left unutilized at logging sites form a large potential reserve of wood energy.

Today in Latvia there are no CHP plants where wood gasification would be used. This could be explained by many reasons:

- the space required for transporting and storing wood chips is greater than needed for other fuels. Therefore, wood is a local fuel which is used usually close to the source.
- the transportation and cleaning of stemwood, branches and stumps, which could be used for gasification, is expensive.
- the primary costs of gasifier, filter, and other equipments are relatively high.

However, wood gasification can be successfully applied in Latvian CHP plants. The success depends on definite circumstances, which were analysed in the paper: power of CHP plant, distance of transportation, quality and composition of fuel, etc.