

Poster presentation

Energy demand of briquetting and pelleting of wood based by-product

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ABSTRACT

Because of the depleting and increasingly expensive fossil fuels, today the energy derived from renewable energy sources is getting increasingly important. Because of the specificity of our country we can count on smaller or larger expansion of five main renewable energy sources on longer and shorter term: biomass, geothermal, solar, wind and water. Out of these biomass which currently has the largest share will continue to have the largest share, however it should be emphasized that it should be classified as finite renewable energy source in contrast with the wind or the sun. Among other things, that is why it is necessary that we extract at the right time and with the right efficiency as much energy as possible from wood-based by-products- if we cannot extract any other valuable product, or only at a price of great energy and economic investments - available in the domestic wood industry plants in large quantities and we use the thus obtained energy with the corresponding efficiency.

In Hungary, several major "industry" of the production of briquettes and pellets has evolved, so we split the basic manufacturing facilities in three groups:

1. First wood processing plants, the resulting product in situ,
2. Second after the acquisition of by-products of wood-product plants and the collection of agricultural by-products (eg straw, corn stover) (dedicated specialist companies)
3. Third energy plantations can be obtained "raw materials" breeding power.



Through the production of briquettes and pellets referred to in the list with completely different energy investment we can obtain a fuel which has higher energy density, smaller footprint and comfort like natural gas compared to the starting materials. In all three cases we can talk about non-drying and after drying energy breeding. Of course, we can find a number of individual enterprises, where raw material drying is not possible, therefore these enterprises need dry raw material, which restricts the possibilities (for example they cannot receive wet raw material from sawmills, thus have to purchase raw material from distant places, which will increase their raw material input costs). We can see that through the briquetting and pelleting process we have to count with heat and also with electricity use, the ratio of which is determined by the applied technology and the properties of raw material.

Our aim was – within the cases in the first and second point – to investigate the energy use of briquette formulation and pelleting of wood-based by-products generated through wood machining.