



More bark for biofuel, more wood for MDF!

Project partner



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Pilot project concept

The project addresses the use of bark for energy production, which nowadays in the Western Macedonia region of Greece is not used at all. Bark is rather left in the forest and can even become a negative factor, in case of wild fires. Bark contains however a high calorific value and could significantly increase the biomass input for biomass power plants.

ALFA Wood Pindos S.A. is a well-established wood panel producer. They aim to ensure the necessary quantities of raw materials to cover the needs of the daily operation of the plant: currently the main supply is from the domestic residues market and covers 100% of the plant needs in heat production.

The company has installed two boilers of diathermic oil with combustion of biomass, designed to produce heat of 14.000.000 kcal / h with oil temperature of 275°C. The daily requirements of biomass fuel amount to 120-130 tons in total. The main fuels are husks and wood chips derived from the subproducts of the production process (logs peeling, mechanical separation of wood particles etc.).



The main concept is therefore the exploitation of the left over bark in forest operations as a new supply for thermal energy production in the existing plant. This demands a re-organisation of the supply chain, in order to include bark in its load capacity, the re-formation of suppliers to identify and store this raw material, the re-structuring of the production site of the company to be able to store, chip and feed the bark in the boilers.

In this sense, the advisory support of the mentoring package was expected to be used exactly to achieve these targets: with the assistance of the external consultant, the company will put an effort to re-organise its supply chain by means of contacting actors and stakeholders and help them communicate the needs to identify and store the raw material, re-structure its production site for the new storage and feeding needs.

SecureChain Project Partners



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The ALFA Wood group is the pilot project leader, represented by the owners, Mr. Anthony and Chris Adamopoulos. The external consultant of the company is Dr. George Ntalos. His main task was to re-organise the company's supply chain by communicating the concept to the actors and stakeholders in the supply chain, and target the needs to identify and store the raw material, and re-structure the production site for the new storage needs.

Results

According to the new business plan, Alfa Wood examined the possibility to substitute part of the energy wood, which is currently used as biofuel in the company's biomass boilers, with bark from the logs that the company uses to produce its main product (MDF).



Alfa Wood conducted a series of analyses of various percentages of bark within the fuel mixture, from a 80% bark to 100% bark. The laboratory analyses, carried out with support from CERTH/CPERI, demonstrated that it is feasible to substitute for a great part, even entirely, the useful wood with bark, the latter having a high calorific value and therefore acting sufficiently as a biomass fuel.

With the assistance of the SecureChain partners CLUBE, CERTH, BOKU and UPC, further feasibility calculations of such a substitution were performed. The results are encouraging as the economic benefits seem to follow the increase of the rate of substitution, without any further losses in technical or other dimensions of the operation of the company. Alfa Wood has however to pay attention how to best re-organise both its feedstock storage facilities and its supply chain: the various inflows and their combination need to be clearly separated and optimised in order to improve both the quality of its MDF products and the production of thermal energy for its needs.

Additionally, two further issues have been examined: The provision of the bark as a raw material is necessarily related to the operation of the forest owner cooperatives, which, following a new relevant law that forces them to merge, is expected to change the wood market in Greece. The company will follow closely this drastic change, to communicate with the new organisational schemes that will emerge and assist their mentoring and coaching, in order to secure standard quantities and qualities of wood supply.

At the same time, the company will also look into alternative biomass suppliers to ensure its supply in this context. Contacts with other companies in the SecureChain project (AZ Bioenergeia) generated potential mutual interest in developing energy crops. Finally, ALFA Wood also has shown interest in participation in a potential solution to establish a District Heating network for the nearby town of Grevena.