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Vice-chancellorship of Communication and Institutional Relations

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More efficient energy from the waste from olive pruning

Experts from the University of Jaén, led by Francisco Jurado, will give a twist to the use of waste from olive pruning and aim to increase the energy use of these products. This is about a project of excellence on the implementation of the microturbine and the gas engine in the olive oil industry that has received an incentive of 130,000 euros from the Ministry of Economy, Innovation and Science.

Olive, as in the pig. Gradually envision new uses for crop king of Andalusia, but above all the waste generated in the olive industry. Experience has shown that anything goes, or almost everything. From chips, leaves, bones and wood. And it seems the green energy sector is the most benefited.

Researchers at the University of Jaén meant to incorporate gasification in the transformation of energy of all this raw material. To date, experts explain, for the residue of pruning, as well as for the rest of those from agricultural activity, viable applications were not found. Neither from a technological or economic standpoint.

The proposal is "innovative." It starts with part of a biomass (wood chips Leith from the pruning of olive trees, olive pit fragments, orujillo...), then undergoes a chemical process, making for a synthesis gas (also called 'producer gas') consisting mainly of hydrogen, carbon monoxide carbon, methane, carbon dioxide and nitrogen. And with this synthesis gas internal combustion engines or generate electricity using a microturbine can be put into motion.

Currently there are different ways to take advantage of these wastes. Through thermochemical conversion (combustion, gasification and pirolisis) and biochemical conversion.

Within this chapter, gasification seems to aim high. First, because it produces a smaller volume of waste gases and a higher concentration of pollutants the purification systems are smaller and more efficient. On the other hand, the fuel obtained is very versatile and can be used in a wide range of applications with conventional equipment. And most



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important, "the electrical performance offered by pruning once it has been subjected to gasification is 30%," says the principal investigator.

"In this sense, given the peculiarities of biomass as fuel and particular technological solutions for thorough cleaning of the gas produced by gasification can be integrated microturbine and gas engine with biomass gasification," he says.

Precisely this project will examine a specific application of the microturbine and gas engine, which will have a high potential for use in the province of Jaén. "If the microturbines and gas engines currently being developed achieve reliability, availability and low maintenance costs that the manufacturers claim, the barriers that have blocked the spread of small cogeneration plants can be saved," he concludes.