

Norway's Statkraft to Make Biofuel from Wood Chips and Other Waste

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ESTORIL, Portugal (Reuters) - Norwegian utility Statkraft has found a way to produce biofuel from wood chippings and other solid organic waste, which it says replicates in minutes a process that made crude oil underground over millions of years.

Using high temperatures and pressure, Statkraft's "hydro thermal liquefaction" process turns wood and organic waste into diesel, producing what it says is a second-generation biofuel that is carbon neutral. It emits the same amount of carbon when burned that was originally absorbed by the organic feedstock.

By using wood and other waste, Statkraft may avoid criticism directed at other biofuels that rely on vast tracts of farmland. The firm also says it wants to create a green fuel for aviation and other areas where a liquid is needed, rather than focus on cars where diesel's emissions are increasingly scrutinized.

Statkraft and Swedish forestry group Sodra have formed a joint venture called Silva Green Fuel, which will make an investment decision this year on a 50 million-70 million euro (\$56 million-\$78 million) pilot plant in Tofte, south of Oslo.

Statkraft CEO Christian Rynning-Toennesen said up to 7 percent of the new fuel, whose energy density is similar to fossil-derived diesel, could be mixed into diesel fuel and used for any vehicle without modification. With small adjustments, a diesel engine could run solely on the fuel, he said.

"This could be revolutionary, it could have the same widespread impact as wind turbines or solar photovoltaics. Mankind needs liquid fuels, just not fossil liquid fuels," he told Reuters at the Eurelectric utilities industry conference.

The biofuels industry has seen a string of failures due to technological issues, changes to subsidies and problems with obtaining sufficient feedstock, particularly in the European Union, which puts limits on how much farmland can be switched from food production to making biofuels, such as ethanol.

However, Statkraft's procedure would use wood chippings and offcuts that have no other use, alongside other waste.

“We know the technology works, but there are now also good market reasons for why this procedure has a chance of success,” said Jeremy Tomkinson, CEO of bioeconomy consultants NNFCC.

Rynning-Toennesen said the new product was not primarily aimed at passenger cars, as cities worldwide are trying to phase out diesel to boost air quality and favor electric cars.

Instead, the focus was mainly on planes, shipping and trucking, which are likely to require high-energy liquid fuels for the foreseeable future.

Statkraft’s pilot plant was expected to produce diesel “by the truckload, not the shipload” for a few years, the CEO said.

A full-scale plant would cost several 100 million euros and was at least five years away, Rynning-Toennesen said, adding that six large-scale plants could supply 15 percent of Norway’s diesel demand using only forestry waste products.

“If you add what can be produced from algae or food waste, there is no limitation on raw materials. We can take any solid organic material, even plastic,” Rynning-Toennesen said.

For now, the firm’s calculations show the new fuel is cost-competitive with regular diesel because of higher taxes on fossil-derived fuels.

“The big question for these kind of investment projects is whether this tax advantage will last long enough,” said Arij van Berkel, a biofuels specialist at Lux Research.

After converting waste into an energy-rich liquid, the process separates out the water, then adds hydrogen to produce diesel in a process similar to oil refining.

“What we are doing is the same as what nature has done over billions of years,” Rynning-Toennesen said.

Additional reporting by Alister Doyle in Oslo; Writing by Geert De Clercq; Editing by Edmund Blair
