

Press release

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Cutting-edge Power-to-Liquid project transforms municipal waste-derived CO₂ into sustainable aviation fuels (SAF) in Portugal

One of the first synthetic eFuel production units in Europe could be implemented at LIPOR's Energy Recovery Plant, nearby Porto. With an innovative technology configuration and design, it is set to revolutionize the waste-to-energy industry while simultaneously decarbonizing the aviation sector.

An interdisciplinary consortium, formed by LIPOR (Intermunicipal Waste Management of Greater Porto), P2X Europe and Veolia is launching feasibility studies for a fully integrated industrial-scale Power-to-Liquid (PtL) facility at the Maia Energy Recovery Plant (Waste-to-Energy, WtE).

The project will allow the production of green synthetic eFuel for the aviation industry from the CO₂ captured from the waste gas stream of the WtE plant combined with green hydrogen. In a first phase, up to 100.000 tons of captured biogenic CO₂ will be recycled for conversion into eFuels and ultimate upgrading into synthetic green end products, such as drop-in eKerosene, eDiesel and specialty chemical products.

The envisaged Carbon capture and utilisation (CCU) implementation at LIPOR's Energy Recovery Plant consists of capturing, extracting and purifying the biogenic part of CO₂, present in about 60% of the carbon dioxide emissions generated as a result of the incineration process.

As part of the highly innovative PtL project, CCU technology can be seamlessly integrated into the existing energy recovery plant, resulting in near-zero - or even negative - CO₂ emission power generation, thus significantly improving the environmental and energy balances of municipal waste incineration.

This initiative is therefore a decisive strategic step for LIPOR in achieving its mission of transforming municipal waste into new resources through the implementation of innovative and circular practices.

It sets a milestone in the WtE industry as it moves away from the linear "take-make-use-dispose" model and offers a ground-breaking alternative to accelerate the world's transition to a credible circular economy, which is fully in line with Portugal's energy and climate policies and the country's ambition to achieve Carbon Neutrality latest by 2050.

José Manuel Ribeiro, President of LIPOR said:

"This project sets a good example on how waste management systems can make a relevant contribution to the decarbonization of the economy and to Carbon Neutrality. And more than contributing, they can lead, paving the way through innovative projects like the one that we

are going to implement and which will also contribute to position Portugal among the first countries to invest in the circular carbon economy.”

José de Melo Bandeira, Veolia Portugal CEO added:

“Carbon capture technologies are part of the journey for decarbonizing our industrial processes. Reducing or eliminating greenhouse gas emissions has its own limits, therefore capturing, storing or using these gases is critical for successful global results. This project is an excellent example of collaboration between various industrial players for the ecological transformation, towards innovative and challenging solutions that will create a benchmark and hopefully inspire others to follow.”

Christoph Weber, P2X Europe co-CEO added:

“By capturing CO₂ from the waste gas stream before being released into the atmosphere, the “Waste-to-Jet” project gives non-recyclable municipal waste a climate-friendly afterlife. Integrating PtL technology into existing WtE plants provides a unique solution for the simultaneous decarbonization of waste management and air travel.”

About Veolia

The Veolia group aims to be the benchmark company for ecological transformation. With nearly 179,000 employees worldwide, the Group designs and deploys game-changing solutions that are both useful and practical for water, waste and energy management. Through its three complementary business activities, Veolia helps to develop access to resources, preserve available resources, and replenish them. In 2020, the Veolia group supplied 95 million people with drinking water and 62 million people with wastewater services, produced nearly 43 million megawatt hours of energy and treated 47 million metric tons of waste. Veolia Environnement (Paris Euronext: VIE) achieved consolidated turnover of 26.010 billion euros in 2020. www.veolia.com