

USING LANDFILL GAS FOR POWER GENERATION TO LOWER GREENHOUSE GAS EMISSIONS

Sustainable HELECTOR project with Jenbacher engines in Greece wins global environmental award

Background

For more than 20 years, HELECTOR has worked in the field of waste management and green energy production. Its significant expertise and specialization allow HELECTOR to provide integrated waste management solutions, including the design, construction, and operation of modern waste treatment plants, as well as alternative fuel production and biogas and biomass energy recovery projects.

Mavroraichi landfill site has operated in the greater area of Langadas Municipality of Thessaloniki, Greece, since 2008. In support of the European goal of a successful and sustainable transition to a climate-neutral economy by 2050, HELECTOR was chosen to build and operate a modern power plant that would be powered by landfill gas (LFG) and supply the local area with electricity.

Jenbacher cogeneration for improved air quality

Since August 2020, HELECTOR has operated the Mavroraichi LFG Power Plant, where three of INNIO Group's Jenbacher J416 engines each supply 1,173 kW of power. With a corresponding permit of up to 3.52 MW, the power plant is individually interconnected with the HEDNO medium-voltage substation near Liti village.

Clarke Energy Hellas LTD, the authorized distributor of INNIO Group's Jenbacher engines in Greece, was responsible for the engines' supply and commissioning.

»This recognition is not just evidence of our commitment towards environmental protection, but it also highlights the innovative approach of our project. We are proud that HELECTOR'S nomination stood out amongst numerous other initiatives on a global level for its contribution to a better and more sustainable future. We are happy to have achieved this sophisticated and outstanding project together with Clarke Energy and INNIO Group's Jenbacher solutions for landfill gas.«

Christos Chasapopoulos, operations manager at the Mavroraichi site, at the Energy Globe Award 2023



Results

Because the landfill gas produced in the landfill cells is collected and transferred to the power plant, renewable electrical energy is generated and greenhouse gas emissions are avoided, significantly improving air quality.

The project was so successful at turning waste into energy while reducing methane emissions that it received the Energy Globe Award in 2023 in the AIR category. According to the award: "The 3.52 MW landfill gas power plant effectively mitigates methane emissions and showcases the global potential of scalable waste-to-energy projects."

Key technical data

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| Installed engines | 3 x J416 |
| Energy source | Landfill gas |
| Electrical output | 3.52 MW |
| Electrical efficiency | 42% |
| Year of commissioning | 2020 |

Customer benefits

- Reduces greenhouse gas emissions and addresses the critical issue of climate change.
- Produces thousands of MWh of clean energy annually, supplying neighboring households and industries with reliable power.
- Improves the environment, reduces odor, and enhances quality of life in the region of Central Macedonia.
- Feeds renewable energy into the grid.
- Contributes to the collective European goal of a successful and sustainable transition to a climate-neutral economy.
- Incorporates the principles of the circular economy by applying modern and innovative waste management methods.



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