

Turkey

# Landfill Gas Extraction & Electricity Generation

A leading European landfill gas to electricity production project

Emission Reductions



**819,000t**  
CO<sub>2</sub> e p.a.

Project Technology



**Biogas:**  
Landfill gas

Project Standard

**Gold Standard<sup>®</sup>**

Waste management is one of the most pressing environmental problems in newly industrialized countries. Turkey has seen dramatic urbanization over the last decade, but environmental sustainability services are struggling to keep up. For example, it is still common practice in Turkey today to dispose of unprocessed waste in landfills. Landfills emit large amounts of methane, which is 21 times more potent as a greenhouse gas as is carbon dioxide. Another issue is the production of a liquid in the landfills called leachate. This occurs as water seeps through the landfill and is contaminated with various chemicals within the waste. If the landfill is not properly lined, this liquid seeps into the ground and enters into local water resources, posing a significant health risk.

Located in Istanbul Metropolitan Municipality, the project is based in two landfill sites and involves the construction and operation of landfill gas extraction and utilization systems. The K m rc oda Landfill Area is located on the Asian side of the city and contains more than 30 million tons of municipal solid waste (MSW). The landfill is situated on 44 hectares and disposing of approximately 6,000 tons of MSW daily. Whereas, the Odayeri Landfill Area is located on the European side of the city and contains more than 55 million tons of MSW. The landfill is situated on 90 hectares and disposes of 13,000 tons of MSW daily. The two sites collectively dispose 19,000 tons of municipal solid waste every day. The installed capacity of the generators are 33.807MW and 16.980MW. Together, the two sites deliver, on average, 417GWh of electricity to the local grid every year.



**info**



about project standards and technologies:  
[firstclimate.com/tech](https://firstclimate.com/tech)

Supported Sustainable Development Goals





# Sustainable Development

Beyond removing carbon emissions, all our climate protection projects generate multiple additional benefits for people and the environment. These projects support the United Nations Sustainable Development Goals.



Leachate is a significant risk for uncovered landfills. All landfills with at least 60cm of clay and 30cm of soil are included in project to minimize leachate. More than 200 wells will also be equipped with leachate pumps to divert leachate to wastewater treatment pumps.



Still today, Turkey largely depends on imported petrol and natural gas for energy. Using landfill gas to generate electricity will decrease the dependency on energy imports leading to a more sustainable energy mix in Turkey.



The project creates numerous job opportunities through the construction, operation and maintenance phases of the project. The project has been given a +1 rating by Gold Standard due to training and job quality aspects.



Generating over 417 GWh of electricity every year, this project is one of the largest landfill waste to electricity production plants in Europe. The technologies and equipment used are also state of the art and high performing.



The project reduces the need to import fossil fuels whose emissions contribute to climate change and environmental problems. In addition to this, it reduces the emission of methane from the landfill, which is 21 times more environmentally damaging than carbon dioxide.



Landfill gas, or LFG, contains trace amounts of volatile organic compounds, which are local air pollutants. The capture and combustion of LFG reduces such emissions. It improves local air quality and reduces the exposure to odors.



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