



## *Landfill Gas to Energy Conversion, Turkey*

This Gold Standard VER project is concerned with how the landfill gas, which is produced during the decay of the organic matter disposed of in landfills, is used to generate electricity.

### The Location



The landfill gas recovery project is located in the metropolitan regions of Turkey's capital Ankara in the center of the country and Adana, an important agricultural and industrial center close to the Mediterranean shore.

### The Project



The two landfill sites are handling the waste of millions of inhabitants from two Turkish metropolitan regions. Approximately 60% of the waste consists of organic materials.

The project owner's vision is to develop the landfill as a "zero waste" landfill, where the environmental impacts of the existing and future land filled waste is limited, or even neutralised. This includes two solutions: the first for the existing waste and the second for the fresh waste entering the landfill.

The solution for the existing waste is the implementation of a Land Fill Gas (LFG)

extraction and utilisation system. For the fresh (or future) waste the envisaged solution is the implementation of a bio-digester and a gasifier. The successful implementation of this vision is considered to be only viable with the income from carbon credits.

Furthermore the project includes the construction of a sorting facility and recycling centre. The successful implementation of the first two phases creates the financial stability required for the implementation of the third phase of the "zero-waste" vision.

The collected landfill gas, consisting mostly of methane, one of the strongest greenhouse gases, is not only avoided from being released into the atmosphere but is also used for sustainable electricity generation in a 22.6MW gas engine, displacing fossil fuel power from the Turkish grid.



## The Benefits

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Apart from contributing to the fight against global warming the project also brings the following benefits:

- Waste heat from the Ankara project gas engines is also used for the heating of nearby greenhouses that produce cluster tomatoes without any demand for fossil fuels. Now that the city got rid of the landfill emissions, residents are provided with fresh high quality vegetables. 100% material recovery has been achieved within this system which is a brand new application in the literature of environmental technologies.
- Creation of temporary jobs for locals in the construction phase
- Creation of permanent jobs for operation and maintenance of the waste sorting, recycling, and power production
- Significant reduction of odours and amendment of local air quality
- Rehabilitation of former landfill sites, enabling new residential areas



## The Details

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Key data project no. 300708  
Average emission reductions per year: 570'000 tCO<sub>2</sub>e  
Commissioning date: 2006  
Standard: Gold Standard VER



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