

Project # 1

Henrico County Landfill Gas Combustion Project



Project Highlights	Data		
Project Type	Landfill Gas Capture and Destruction		
Location	Glen Allen, VA		
Certification Program	Verified Carbon Standard (VCS)		
Available Offsets	2019	2020	2021
	50,000	50,000	50,000

Description

Pre-project landfill gas collection and destruction system was voluntarily installed in the East Fill area of the Landfill in 2001 with the installation of 14 wells. Based on anecdotal evidence, gas was first flared in March 2002. The Landfill consists of three smaller sanitary landfills; the East Fill, the West Fill and the Expansion.

The Project consists of two stages. Stage one (1) of the Project is the expansion of the pre-existing wellfield and installation of a larger capacity flare. During this stage, the captured landfill gas is flared, thereby converting methane to biogenic CO₂. As part of this project phase, in December 2004, Henrico decommissioned the pre-existing flare and in June 2005 a larger flare station was installed. The flare was installed on June 3rd, 2005. An additional 87 wells were also installed in all three of the landfills at this time. The wellfield was further expanded in 2006 with the addition of five new wells in the Expansion (Phases 2 and 3). In the fall of 2010 the collection system was expanded again where 18 wells were installed and connected by November 2010.

Stage two (2) of the Project involves the implementation of a beneficial use project. The captured biogas will be transported to a power generating facility located on-site and used for electricity generation. As part of this phase, a 4 MW power generating facility was constructed by Ingenco. This stage of the project was operational in September 2010 and gas collected from the Landfill is destroyed by Ingenco for electricity generation

The installation of the original landfill gas system by Henrico was completely voluntary. The expansion of the landfill gas collection and destruction system in 2005 and 2010 was also voluntary. The objective of this expansion was to be proactive and ensure that the Landfill was not off-gassing and causing odor complaints. The system was not installed in response to odor complaints or gas migration issues and no formal complaints were received. Rather, this was a proactive step taken by Henrico to be a good neighbor.

Additionality

Henrico is required to submit NMOC emission calculations every five years to ensure the landfill is not required to install a landfill gas capture system. Based on the most recent calculations, the Landfill is not expected to exceed the 50 Mg per year NMOC threshold over the duration of the crediting period. The Landfill's NMOC emissions will be reassessed annually to ensure that the Landfill is not required to install a collection system and emission reductions remain surplus to regulatory requirements. The Project was validated in accordance with the requirements of the Voluntary Carbon Standard 2007.1 in November 2009. This project is not registered under any other emission trading/ GHG programs for the destruction of methane gas from the landfill as well as the offsetting of fossil fuel-based energy with renewable landfill gas.

Co-Benefits

The Henrico County Landfill Gas to Energy Project uses Igenco Turbines to generate electricity by directly combusting methane gas from the landfill. We are arranging student intern opportunities to understand how these offsets are created and registered and correlate with information from Beulah Landfill.

- Students will have an opportunity to learn about how carbon projects are developed, measured and registered.
- They will be able to see how a landfill project could be registered in a registry like CAR or VCS; recognized as a Green-e Climate project.
- Students will also learn about methane capture and destruction in a turbine.

Project Images

