

TGF Project Profile : Landfill Gas Utilisation Project, Chelyabinsk, Russia

The Project Activity

The landfill gas utilisation project in Chelyabinsk is a Joint Implementation project developed between the Russian Federation and the investor countries and companies of the Baltic Sea Region Testing Ground Facility TGF (Iceland, Norway, Sweden, Denmark, Finland and Germany, DONG Energy, Fortum, Kymppivoima, Keravan Energia, Gasum, Outokumpu, Vapo, Vattenfall Europe and Vattenfall Europe (Generation) and the Danish Environmental Protection Agency (DEPA) for the account of the Kingdom of Denmark. The project proponent is the City of Chelyabinsk. The project developer and author of the Project Design Document is LLC Teplopribor ECO, which has been working in conjunction with DEPA.

The project proposes to build and operate installations for the extraction and utilisation of the landfill gas (LFG) at the site. The project will reduce GHG emissions by reducing presently uncontrolled methane emissions.

Technology

The technology proposed for the extraction and utilisation of biogas can be regarded as standard technology commonly used in the EU. The basic operational principle is the generation of vacuum in the waste mass allowing extraction of landfill gas. The main components of the active collection system to be installed are the gas extraction wells and collection piping, the gas pumping equipment (mechanical blowers), which create a suction pressure in the system necessary for extraction of the LFG, the gas treatment unit including the condensate and gas utilization unit (for production of heat and electricity), and monitoring and control system.

Nature of Emission Reductions

Greenhouse gas (GHG) emissions from the "business as usual case (BAU)" currently employed by the municipal landfill of Chelyabinsk will be reduced through the collection of the

landfill gas and the subsequent destruction of the methane component in a gas engine.

The emission reductions would not occur in the absence of the project activity due mainly to financial barriers and national circumstances. These barriers are described as follows:

- LFG recovery is not required under the current legislation established in the Russian Federation.
- The Government's future policy is to close down small landfills and to focus on larger, regional landfill sites. Simultaneously, the policy is to develop waste collection services according to modern standards, such as separated collection of organic wastes, plastics, glass etc.
- There is no economic incentive for the capturing and combustion of methane from landfill gas since there will be no revenues from sources such as selling of electricity or thermal energy.

Without the income from the sale of ERUs, the project activity would not be carried out because financing for the necessary investments is hardly available for municipalities in the Russian Federation.

The investment project is estimated to result in an emission reduction of 200,000 tCO₂e p.a. over the Kyoto commitment period (subject to pumping trials in autumn of 2007). The emission reductions will be purchased jointly by the TGF for the account of its investors and DEPA for the account of Denmark.

For a full explanation of the methodology used (CDM approved methodology ACM0001) please refer to the Project Design Document.

Other Benefits

The Project will result in considerable benefits for the region and globally, as well as

- Reduced risks for human health through improved health and safety, nuisance and local amenity

- Reduced risks of uncontrolled landfill gas migration such as fire and explosion
- Technology transfer and capital investment into the key municipal environmental infrastructure sector

Contribution of Carbon Finance

The project investment represent a capital investment of €3,3 million. The projects are financed through a mixture of own equity, loan financing and carbon finance contribution from the TGF and DEPA.

The financing of the project foresaw a contribution from the JI mechanism, and a Letter of Endorsement was received from Russian Ministry of Economic Development and Trade in December 2005.

For Further Information

Ash Sharma, Manager, Testing Ground Facility,
Nordic Environment Finance Corporation

ash.sharma@nefco.fi

Jakob Forman, DEPA, jaf@mst.dk or Oksana Chueva, DEPA Coordinator, Russia;
oxana.chueva@peterlink.ru

Evgeniy Klimov, Teplopribor Eco evklimov@tpcel-eco.ru

For General Information on the TGF, visit
<http://www.nefco.org/tgf>