

*Baltic Sea Region Testing Ground Facility*

## *Operational Review 2007*

*Carbon Financing for Sustainable Energy  
Investments in the Baltic Sea Region and Ukraine*



## Introduction

The Baltic Sea Region Testing Ground Facility (TGF) is a EUR 35 million regional carbon finance facility. It is structured as a Public-Private Partnership (PPP) between governments, private sector utilities and industrial companies in the Baltic Sea region. The TGF is a compliance vehicle that purchases Assigned Amount Units (AAUs) and Emission Reduction Units (ERUs) from energy-related and other projects on behalf of its investors. It is managed as a trust fund by the Nordic Environment Finance Corporation, an international financial institution owned by the five Nordic Governments, based in Helsinki.



Heat Network Reconstruction, Strezhevoi, western Siberia

## Review of Operations by the Fund Manager

The Fund Manager's emphasis in 2007 has been the origination of investment projects and taking existing projects through the UNFCCC project cycle. By year end, a total of seven ERPA's were concluded and signed. Of these, three apiece are located in Estonia and Lithuania. An important milestone was the first contract signed in the Russian Federation in September 2007, with the Khimprom waste coke gas utilisation project. Additionally, another 14 Option Agreements were in force and two agreements had lapsed. The majority of these projects are in final ERPA negotiations, although it is expected that some of these projects may not be concluded.

The general JI market has expanded significantly in terms of projects presented to the Track 2 procedure. The TGF has been an important player in this sector of the market, being listed as a participant in 14 of the 110 projects by mid January 2008 (including co-purchased projects), third behind the most active individual buyers, the Netherlands and Denmark. However, in the broader market, the number of projects put forward for final determination (the JI equivalent of "registration") has been disappointing, with only 2 projects by year ended and only one approved. Following the fulfilment of certain formalities in Lithuania, TGF has put forward three projects for final determination from that country, Lapes landfill gas utilisation project and the Benaiciai and Sudenai-Lendimai wind power developments.

The fund capital was fully paid in by the end of 2007, but disbursements have so far only been made as advance payments for projects in Estonia and Lithuania.

The TGF is fulfilling the objectives set for it by BASREC. It has evaluated over 140 projects ideas in the Baltic Sea Region and Ukraine, screened and presented 64 of these to the TGF Investors' Committee. 79% of these Project Idea Notes (PINs) are in the renewable energy and energy efficiency sectors. Two thirds of projects were located in Russia. As of January 2008, around three quarters of the fund capital was allocated in the form of Emission Reduction Purchase Agreements (ERPAs) and Option Agreements.

TGF has been hampered by regulatory and procedural issues. The evolution of the host country procedures in some jurisdictions has been somewhat disappointing, and slow in many others. Four Letters of Approval have been secured from Estonia and Lithuania, and the first from Ukraine. The TGF is looking to make applications once the final details for the Russian procedure are published. On the international scene, the progress of project preparation has been slowed by bottlenecks in the determination process.

The Facility has been independently evaluated by the Nordic Council of Ministers, and fared well in terms of the assessment of the fund performance, in spite of the constraints surrounding the JI mechanism. The active procurement phase of the Facility is due to be concluded in 2008, and the Fund Manager is looking at opportunities for further fund developments to build on the pipeline and networks now established in the countries of operation.

January 2008

Ash Sharma  
TGF Manager

Magnus Rystedt  
Managing Director, NEFCO

## Baltic Sea Region Testing Ground Facility



*Biomass Utilisation, Leningrad Oblast, Russia*

The Facility has its origins in multilateral energy cooperation in the region. The energy ministers of the Baltic Sea Region Countries and the European Commission decided in 1999 to enhance the energy cooperation in the region with the creation of BASREC (Baltic Sea Region Energy Cooperation). The countries and institutions participating in BASREC are the Governments of Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia and Sweden. The European Commission is represented by the Directorate General for Transport and Energy (DG TREN). One area of BASREC's focus is the Kyoto Protocol, its implications for greenhouse gas emissions, and the opportunities it creates for project implementation.

In November 2002 the ministers of energy of the BASREC countries decided to make the region a Testing Ground for Joint Implementation (JI) projects. The Testing Ground Agreement for Flexible Mechanisms of the Kyoto Protocol was signed on 29 September 2003 by seven countries – Denmark, Finland, Germany, Iceland, Lithuania, Norway and Sweden. The Agreement came into force in February 2004. Since then, Estonia, Latvia and Poland have also signed or acceded to the agreement. Russia has yet to accede, and Ukraine was not a signatory.

## Objectives

The objectives of the Testing Ground were originally :

- to build capacity and competence to use the Kyoto mechanisms and promote common understanding of concepts, rules and guidelines for use of the flexible mechanisms of the Kyoto Protocol, to promote realization of high quality projects in the energy sector generating emissions reductions;
- to collaborate in addressing administrative and financial barriers and the level of transaction costs, especially regarding small-scale JI projects;
- to facilitate generation, ensure issuance and transfer of ERUs and AAUs related to or accruing from JI projects and Emissions Trading.

Since then, the TGF has developed into a commercially functioning carbon purchase fund based on the Public Private Partnership principle. This has mirrored the significant development of a carbon market globally in which private sector actors are increasingly taking on a more proactive role.

The TGF invests in projects owned and operated by private enterprises, public utility companies, public-private partnerships and municipal, regional or governmental authorities.

Due to the BASREC origins, energy related projects are given priority, with a focus on:

- renewable energy (biomass, small scale hydro power, wind power and geothermal)
- fuel switching
- energy efficiency
- energy conservation and fugitive emission reductions

However, also other sectors such as waste (e.g. waste to energy, recapturing and utilisation of methane from landfills) and projects related to reduction of other greenhouse gases are also eligible. Investments in these projects have been made only where there is an energy component.

## Investors in the TGF

The TGF is a public private partnership which has investors from six Governments and nine heat and power and industrial companies. It is capitalised at EUR 35 million, split equally between public and private sectors:

Kingdom of Denmark	DONG Energy A/S (Denmark)
Republic of Finland	Fortum Power and Heat Oy (Finland)
Federal Republic of Germany	Gasum Oy (Finland)
Republic of Iceland	Keravan Energia (Finland)
Kingdom of Norway	Kymppivoima Oy (Finland)
Kingdom of Sweden	Outokumpu Oyj (Finland)
	Vapo Oy (Finland)
	Vattenfall Europe Berlin AG & Co. KG (Germany)
	Vattenfall Europe Generation AG & Co KG (Germany)



Benaiciai Wind Farm, western Lithuania

## Portfolio Overview

The Fund Manager has sought to diversify portfolio risk across project types, with an emphasis on renewable energies and energy efficiency projects, and the Facility's countries of operation, taking into account the technical and realisable JI potential in those markets.

Since 2005, a total of 64 Project Idea Notes (PINs) have been screened by the Fund Manager and submitted as investment proposals to the TGF IC. Of these, 3 have been rejected (none in 2007). The breakdown of these projects by project type and geography is presented below:

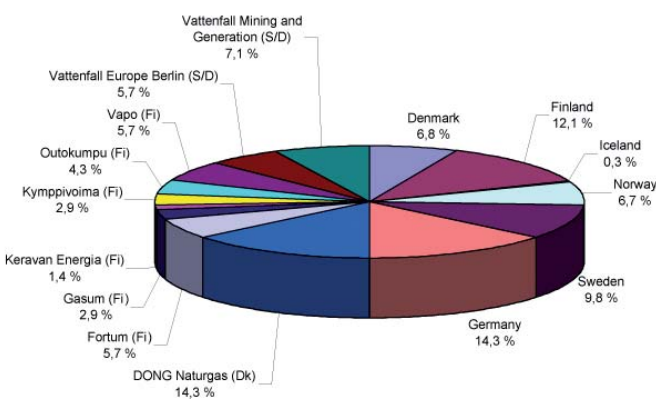


Figure 1 Baltic Sea Region TGF Subscriptions

## Regulatory and Market Overview

There have been significant developments in the regulatory environments in the host countries in 2007, most notably in Russia.

An important development has been the official notification of the Lithuanian Designated Focal Point to the UNFCCC. This has allowed three projects to be put forward for final determination, at a time when only two projects have been submitted globally, one of which is under review.

Thus far all investor country Letters of Approval have been requested and received from Sweden.

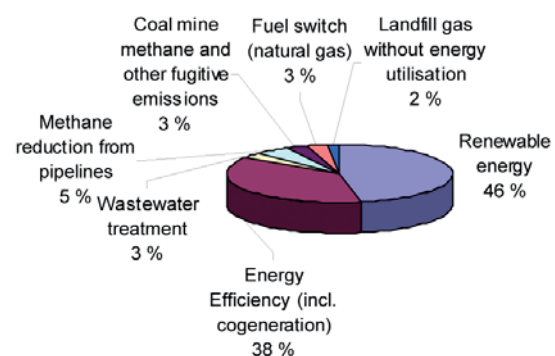


Figure 2 Project Idea Notes Submitted to IC By Technology

The graph shows a strong emphasis toward renewable energy and energy efficiency projects, with the distribution of the former between wind and biomass/biogas technologies. Similarly, the geographic distribution below shows the expected bias toward Russia, and good representation from the Baltic states (except Latvia).

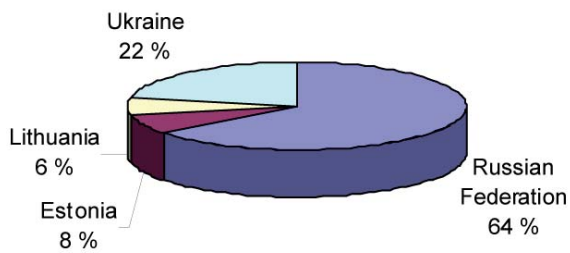


Figure 3 Project Idea Notes Submitted to IC by Country

In total, the Facility has committed in the form of ERPAs 1.05 million tCO<sub>2</sub>e saved. In addition, there are further Option Agreements (conferring the rights to negotiate a final ERPA) for projects representing 3.48 million tCO<sub>2</sub>e saved.

### Current TGF Portfolio as of January 2008

Project and Location	Category	Emission Reductions (tCO <sub>2</sub> e)	Status
Estonia : Saaremaa animal waste management project	Renewable energy, waste treatment, CHP	88,000	Contracted
Estonia : Viru Nigula 24 MW wind power development project*	Renewable energy	384,000	Contracted
Estonia : Kunda 7 MW wind power project	Renewable energy	93,000	Option Agreement
Estonia : Vanakula 9MW wind power project	Renewable energy	127,000	Contracted
Lithuania : Lapes landfill gas utilisation project, Kaunas	Waste management, energy generation	188,000	Contracted
Lithuania : Benaiciai 16MW wind project	Renewable energy	166,000	Contracted
Lithuania : Sudenai/ Lendimai wind projects	Renewable energy	110,000	Contracted
Russia : Murmansk district heating rehabilitation project*	Energy efficiency (supply side)	297,000	Under contracting
Russia : Khimprom waste coke oven gas utilisation project, Kemerovo	Energy efficiency (supply side)	354,000	Contracted

Project and Location	Category	Emission Reductions (tCO <sub>2</sub> e)	Status
Russia : Vodokanal methane reduction and cogeneration, St Petersburg*	Wastewater treatment; biogas CHP	688,000	Under contracting
Russia : Zhesart biomass fuel switch, Komi Republic	Renewable energy, fuel switch	77,000	Under contracting
Russia : Strezhevoi Energy efficiency, Tomsk oblast	Energy efficiency	90,000	Under contracting
Russia : Priozersk fuel switch /energy efficiency, Lenin-grad oblast*	Renewable energy, fuel switch	200,000	Under contracting
Russia : Nevskaya Poultry manure utilisation *	Renewable energy, waste management	237,000	Under contracting
Russia : Petrozavodsk Fuel Switch *	Fuel switch	175,000	Under contracting
Russia : Kirov oblast Biomass and natural gas fuel switch *	Renewable energy, fuel switch	995,000	Under contracting
Russia : Chelyabinsk landfill gas utilisation	Waste management, energy generation	TBC	Under contracting
Russia : Boiler House Conversions from coal to biomass	Fuel switch, renewable energy	162,000	Under contracting
Russia : CHP Unit Fuel Switch from Mazut to Biomass	CHP, Fuel switch, renewable energy	376,000	Under contracting
Ukraine : Nova Eco Wind Power Development (100MW), Crimea*	Renewable energy	3,680,000	Under contracting
Ukraine : CHP Project, northern Ukraine	Renewable energy	TBC	Under contracting

Note : Emission reductions reported are those accruing to the project over the contract period. Asterisked projects are co-purchased with another buyer. TBC - to be confirmed

The breakdown of emission reductions by technology demonstrates TGF's continuing emphasis on renewable energy, particularly wind, solid biomass and biogas and energy efficiency. It is the Fund Manager's opinion that this distribution continues to reflect a reasonable diversification of delivery risks across project types, host countries and size of project.

The average contract size is approx. 200,000 tCO<sub>2</sub>e over the contract period.



Landfill operations, Chelyabinsk, Russia

It should be noted however that some of the projects could fail ultimately to deliver emission reductions for investment related or JI approval reasons.

## Sustainable Development Benefits

Most TGF projects offer significant broader environmental, and sustainability benefits as well as climate change mitigation. These include, for energy sector projects:

- cost savings through improved efficiency and reduced fuel consumption and energy losses;
- providing an additional financial impetus for the transition to a lower carbon economy, reducing reliance on increasingly expensive fossil fuels;
- reduced levels of local air pollution through elimination of coal and mazut (heavy fuel oil), with benefits for human health;
- reduced groundwater pollution through reduced release of nutrients (primarily for animal waste treatment systems);
- improved operational reliability and comfort levels for communities, (for example district heating rehabilitations) especially important in colder environments;

- employment related benefits through job creation and retention, also training and development of new skills, and
- capital investment, technology transfer and introduction of best practices.

## Capacity Building, Dissemination and Communication

An important aspect of the TGF's mandate is dissemination and communication, examples of which include:

- Communication and dissemination of all public project related information can be found at [www.nefco.org/financing/carbon\\_finance](http://www.nefco.org/financing/carbon_finance). The TGF webpage has been reconstructed as part of the overhaul of the NEFCO website, with more information added in the Russian language.
- Participation in a variety of international fora both to promote the Facility and disseminate knowledge on the carbon market more generally, including events organised by the Nordic institutions, the EU and the UNFCCC. NEFCO was represented once more at the COP/MOP meeting, held last year in Bali, Indonesia and presented its experiences at two JI events in Bonn.

## Stakeholders & Partnerships

TGF engages with a wide range of stakeholders in the region in the course of its business.

- As regards emission reduction purchases, the Facility often co-finances projects with other institutions in order to diversify risk and to extend its project reach. In 2007, this included a Framework agreement covering four projects with Denmark in Russia.
- For project identification and preparation, the Facility works with a wide range of institutions such and consultants. Within the host countries, TGF engages with a number of Government organisations, institutes, consultants and project developers within the NEFCO network to source projects.
- In terms of capital equipment and engineering work, the projects supported by TGF have employed a wide range of suppliers and contractors, including significant local content (the TGF is not tied to investor country suppliers).
- TGF also commissions consultancy work as part of its technical assistance programme to support its investments including project design documents, business plans/risk assessments and determination studies. It has used firms from Denmark, Finland, Norway, Germany, Estonia, Ukraine and Russia. By the end of 2007, it had committed in total EUR 470,000 to such procurement.

## **Governance**

The governance of the Facility is based on a set of Operating Guidelines and overseen by an Investors' Committee, which usually meets 4 times a year.

The Chair of the Committee is a revolving post, and was held in 2007 by Germany. At the end of 2007 the Investors' Committee had the following composition :

Bengt Boström,  
Swedish Energy Agency (Sweden)

Inge Gerhardt-Pedersen,  
Danish Energy Agency (Denmark)

Kenneth Topgaard Chmura,  
DONG Energy (Denmark)

Barbara Appel,  
Ministry of Environment (Finland)

Pirja Heiskanen,  
Fortum (Finland)

Uwe Schroeder-Selbach,  
Federal Ministry for Economics and Technology  
(Germany, Chair)

Helga Barðadóttir,  
Ministry of Industry and Commerce (Iceland)

Dag Trygve Enden,  
Ministry of Petroleum and Energy (Norway)

Asko Dahlbom, Vapo (Finland)

Antje Buder, Vattenfall Berlin (Germany)  
and Vattenfall Generation (Germany)

## **TGF Staff**

The Facility currently operates with five full time staff equivalents, and in addition, draws significantly upon the resources of the NEFCO team in terms of environmental and technical due diligence and financial administration. Two local experts in Ukraine are employed on a full-time consultancy basis, and NEFCO's local project coordinators are used in Russia.

TGF staff during 2007 were:

Ash Sharma,  
TGF Manager (Coordination, origination, investor relations, marketing, project management )

Janika Blom,  
Legal Counsel (Legal, contractual and institutional issues & project management - currently on maternity leave) replaced by Lotta Aho from 1 November 2007)

Raili Kajaste,  
Chief Technical Advisor (technical due diligence, origination & environmental issues)

Vladimir Morozov  
(Origination & project management in Ukraine)

Vasyl Vasylchenko  
(Origination & project management in Ukraine)

Tina Nyberg  
(Administration matters)



## **Further Information**

For additional information on the TGF please visit [www.nefco.org/financing/carbon\\_finance](http://www.nefco.org/financing/carbon_finance) or contact:

Ash Sharma

Senior Investment Manager, Carbon Finance & Funds

Direct +358 40 081 1327 Fax +358 9 630 976

Nordic Environment Finance Corporation (NEFCO)  
P.O.Box 249 (Fabianinkatu 34)  
FI-00171 Helsinki FINLAND