

NEFCO Carbon Finance and Funds

Operational Review 2012



Mobilising innovative
climate finance

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1 — Review of operations

The year 2012 was historic for the international climate policy regime, commemorating the twentieth anniversary of the UN Framework Convention on Climate Change. It also marked the end of the first commitment period of the Kyoto Protocol but was notable for the continued meltdown in the global carbon markets, particularly those related to the flexible mechanisms of the Protocol. The market fundamentals of limited demand with no near-term signs of an increase and a rapidly expanding supply from a large number of successfully implemented Clean Development Mechanism and Joint Implementation projects sent carbon prices for their respective credits, CERs and ERUs to near zero levels by year end.

Meanwhile, further prognoses of climate science highlight the need for urgent action in order to keep the global temperature rise to below 2°C this century. The UN Environment Programme states that emissions are 14% above the level they need to be in 2020 to meet this target. Current pledges by countries imply a temperature increase of 3–5°C, which is likely to take the world closer to dangerous levels of climate change.

The post-2012 international policy outlook to avoid such outcomes remains uncertain, at least to 2015 and beyond, with much work to be done on the Durban Platform process, which seeks to present an agreement for implementation from 2020. All major emitters are now on the same negotiating track, but the way forward will be complex, judging by the divergent positions held by the various Parties and stakeholders. The COP-18 Conference, held in Doha, Qatar, was essentially a transitional conference, marking a turning point between two negotiation cycles: closing a track started in Bali 2007-2009 and the post-Copenhagen track 2010-2012. Hence, there were modest expectations of Doha,

with the emphasis on achieving key procedural goals such as concluding the agreement for a second commitment of the Kyoto Protocol. There were no major breakthroughs on long-term climate finance, and the capitalisation of the Green Climate Fund (GCF) is still unclear, although there were procedural and governance advances in making the facility operational. The GCF is unlikely to be financing programmes for some time yet.

NEFCO's carbon procurement activities have continued to perform well even against the backdrop of a collapsing market price. The operational focus has been on getting projects through the UNFCCC project cycle to registration, and this has borne fruit with 12 more projects overcoming this final hurdle by year end. The Testing Ground Facility and the NEFCO Carbon Fund together delivered 2.05 million credits across all asset classes (AAUs, CERs and ERUs). The carbon portfolio has been significantly de-risked and consolidated, and a small number of new projects signed for prompt delivery.

In terms of climate financing, NEFCO has been working with developmental activities in the new market mechanisms space, recognising the long lead times required. These include further development of the Peruvian NAMA (Nationally Appropriate Mitigation Action) programme in the solid waste sector. NEFCO, which is co-financing the EUR 2.2 million activity together with bilateral contributions from the Nordic countries, signed a Memorandum of Understanding with the Ministry of Environment in Peru in August. NEFCO has also been proactive in convening the first international workshop on NAMA finance, held in Helsinki, and chairing a side event at Doha on exploring practical experiences of NAMAs in the context of measurement, reporting and verification requirements. NEFCO is also an inaugural member of

the NAMA Partnership, which was launched at COP 18, and will be actively engaged in the finance working group in 2013 together with other implementing agencies.

NEFCO continues to test innovative approaches to combating climate change through project activity. Through its joint administration of the Nordic Climate Facility with the Nordic Development Fund, a third call for proposals has been launched. This tranche of the EUR 18 million facility sought proposals on "Innovative low-cost climate solutions with a focus on local business development", encouraging business development that provides goods and services that will help reduce greenhouse gas emissions and facilitate climate change adaptation. Projects are being contracted in Africa, developing Asia and the Andean region, with 26 projects under implementation or completed in these regions. Four projects from the first call have been completed.

The present uncertainty in the international policy space and the carbon markets underscores the need for innovation in climate financing both at the programmatic and project level. NEFCO continues to deploy its wealth of experience in the carbon finance arena, rooted in the project-based activities, to promote new and innovative approaches to climate finance such as NAMAs and new market mechanisms.

Ash Sharma Vice President
Magnus Rystedt Managing Director
NEFCO, January 2013

2 — New market mechanisms and market readiness activities

NEFCO undertakes developmental activities to promote the concept of market-based mechanisms as an important means of mobilising international finance for climate action. It maintains close and established ties to its respective governments and official networks including the Nordic Working Group for Global Climate Negotiations (NOAK).

Nordic Partnership Initiative

NEFCO seeks to facilitate the innovative concept of NAMAs. The Nordic Partnership Initiative (NPI), which includes NEFCO and the Nordic Council of Ministers, was formally constituted in October 2010 with a mission to start a pilot initiative to test up-scaled support for Nationally Appropriate Mitigation Action (NAMA¹) approaches to climate change mitigation, focussing on solid waste management in Peru and the cement sector in Viet Nam. The NPI was formally launched at the Durban Climate Change Conference in South Africa (COP17) in December 2011.

NEFCO's role has been to administer the multi-donor trust fund and as implementing agency for the proposed two-year programme. Following preparatory missions to Lima, a Memorandum of Understanding was signed in August 2012 with the counterparty, the Peruvian Ministry of Environment (MINAM). The project implementation will com-

¹ — The concept of Nationally Appropriate Mitigation Actions (NAMAs) was first introduced in the UN climate negotiations by the 2007 Bali Action Plan which calls for "nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable" (MRV'ble) manner.

Eric Usher (left) from UNEP and Ash Sharma from NEFCO at the NAMA Finance workshop in Helsinki in October 2012.

mence in early 2013 and focus on addressing gaps in data quality and building institutional capacity to allow the sector to access international climate financing. The NPI programme will support the carbon market infrastructure for MRV standards, inventories and baselines in Peru, the strengthening of which will be required whichever mechanism is ultimately implemented. The NPI will also aim to support Nordic priorities in the international climate negotiations.

NEFCO is also participating with MINAM in regional activities as part of the NPI. The institutions presented their joint activities at a UNFCCC workshop on NAMAs for the Latin America and Caribbean region, held in Medellin, Colombia, in October 2012.

Highlights

- MoU signed for Nordic Partnership Initiative in Peru, and procurement for technical assistance programme commenced
- NEFCO hosts the first international workshop on NAMA Finance in Helsinki
- NEFCO becomes an inaugural member of the NAMA Partnership, and participates in its working group on Finance

Helsinki workshop on NAMA finance

NEFCO in association with the Nordic Council of Ministers and the UNEP Bilateral Finance Institutions Climate Change Working Group (BFI-CCWG) successfully hosted an International Workshop on NAMA Finance in Helsinki on October 4th. The event attracted 50 participants from 13 countries and was well received internationally.

UNEP Bilateral Finance Institutions Climate Change Working Group

NEFCO continues to work with the Paris-based UNEP Bilateral Finance Institutions Climate Change Working Group, which also includes Agence Française de Développement (AFD, France), KfW Entwicklungsbank (German Development Bank) and the Japanese International Cooperation Agency, in order to allow coordination among implementing agencies on climate finance issues of common interest. In 2012, the group updated its climate finance mapping exercise for the third year. In addition, a thematic report on NAMA Financing was prepared with input from the partners, also taking into account the findings of the Helsinki event.

Project reports and outputs from the all the above initiatives are available at → www.nefco.org/newsroom/publications



PATRIK PASTENBERGER

Case study

Financing sustainable energy through remittance flows in Bolivia

KEITH DANNEMILLER / CORBIS / SHOGY



More than USD 350 billion of remittances are sent every year from immigrants to developing countries.

Gaia Consulting Oy in cooperation with Asociación de Cooperación Bolivia España, Arc Finance and the Basel Agency for Sustainable Energy is implementing an innovative project in Bolivia under the second call of the Nordic Climate Facility.

More than USD 350 billion of remittances are sent every year from immigrants to developing countries. The rationale behind the project is to reach this population by encouraging immigrant populations in developed countries (e.g. Spain) to target remittance flows to purchase renewable energy products or more efficient appliances for their home countries.

The project builds on an identified desire by immigrants to control the use of the remittances that they send to their home countries and invest the money in tangible assets (like a solar home system or an improved cook stove). The premise of this concept is that it uses a small portion of the money, which could potentially be sent by the immigrants to their families, to buy sustainable energy technology that can provide an immediate benefit to the immigrants' families to improve their energy needs and offer a more cost-efficient way to use the money.

The goals of the project are to foster the use of sustainable energy technologies in developing countries to meet the energy needs of remote rural households

and poverty alleviation. The project intends to test and develop different business models that use remittance flows as the financing mechanism to facilitate the purchase of small-scale renewable energy equipment or energy-efficiency appliances for immigrants who are working in a developed country where the delivery of the equipment would be to their families in their country of origin.

The core benefit of this project is that providing sustainable access to energy improves the income, assets, productivity and quality of life of poor families and their communities. By promoting clean energy, the project also aims to contribute to the reduction of greenhouse gases, thereby mitigating climate change risks.

If successful, this project would provide a powerful example of an alternative way to finance sustainable energy technology in developing countries to families living in poor conditions. Early research through focus groups in both Bolivia and Spain held in 2012 confirms that regardless of the economic slowdown in Spain, there is an identified demand that supports the concept.

NEFCO carbon funds (NeCF and TGF)

The NEFCO Carbon Fund (NeCF) is a global public-private partnership carbon procurement vehicle, capitalised at EUR 165 million. It was launched in March 2008 for the long-term purchasing of greenhouse gas emission reductions under Joint Implementation (JI) and the Clean Development Mechanism (CDM) up to 2020. The NeCF is directed towards private investors (corporate entities with compliance obligations under the EU Emissions Trading Scheme, or EU ETS) as well as sovereign investors.

Highlights

- The pioneering TGF carbon fund enters its last year of operation and holds the final Investor's Committee meeting in Helsinki
- Three new JI emission reductions purchase agreements signed
- 12 further CDM projects successfully registered
- 2.05 million emission reductions delivered to investors in the form of ERUs, CERs and AAUs
- Contract review successfully undertaken to consolidate and de-risk NeCF and TGF portfolios

Projects

The NeCF has sought to invest in a wide range of greenhouse gas mitigation projects including – but not limited to – renewable energy projects (e.g. biomass, small-scale hydropower, wind), energy efficiency and fuel switching. Projects should be in line with the requirements of the Kyoto Protocol, in particular the fulfilment of the requirements of the CDM Executive Board and JI Supervisory Committee, and the eligibility criteria under the EU ETS including, to the extent possible, any guidance on post-2012 provisions. The Fund has sought to focus on renewable energy and energy efficiency.

CDM regulatory and market overview

As expected, a key outcome of the Doha Conference was the prolongation of the Kyoto Protocol into a second commitment period, 2013-2020. Thirty-seven countries, accounting for only 14% of global emissions, have pledged to reduce their emissions compared with the base year through binding caps. The combined target is 18-20% below the 1990 levels, but the target will be revisited by April 2014 when they will be asked to enhance ambitions to between -25% and -40%. Key NEFCO countries of operation, Belarus and Ukraine are among the new Parties to the Protocol subject to ratification of the Protocol by the respective countries.

Five Annex I parties do not have a KP2 target, namely Canada, Japan, New Zealand, Russia and the USA, and hence are prohibited from transferring or acquiring credits from the second period. This is likely to reduce demand for CDM/JI credits. This compounds the issue of reduced demand for credits largely due to EU ETS reaching quantitative limits, but there may be demand from new national and local carbon markets. However, most analysts expect the low price conditions to pre-

vail for the near term, despite some important initiatives from the European Commission. These include the so-called “back loading” of auction volumes and permanent retirement of some allowances in phase III of the ETS.

Recommendations for the reform of the CDM were made by a high-level group of experts, the so-called CDM Policy Dialogue. The CDM Executive Board, whose own mandate was extended, is required to consider these in the context of a review already planned for 2013 by the Marrakech Accords at COP 19.

Public investors

- Denmark
- IFU, Investment Fund for Developing Countries (Denmark)
- Finland
- Norway
- Nordic Environment Finance Corporation

Private sector investors

- DONG Energy (Denmark)
- Eesti Energia (Estonia)
- EPV Energy (Finland)
- Electrabel (Belgium)
- Kymppivoima (Finland)
- Vapo (Finland)

Cultivation of Acacia in Southeast Asia.



Case study

Korindo biomass project, Indonesia

The Korindo biomass project involves the construction of a biomass-based power plant at a greenfield chipping mill in Kumai, located in the province of Central Kalimantan, Indonesia. The biomass power plant will generate electricity through the combustion of biomass residues, mainly a mix of Acacia Mangium and Eucalyptus Pellita bark residues from the chipping mill. The mill will produce mainly wood chips, saw wood, veneer and wood pellets. The chipping mill and project activity will be commissioned in 2013 and use wood from the Project Developer's own plantation. This Clean Development Mechanism (CDM) project will generate Certified Emission Reductions (CERs) that will be purchased by the NEFCO Carbon Fund (NeCF) on behalf of its investors.

The renewable electricity generated from the Korindo biomass power plant will displace approximately 47,100MWh more carbon-intensive, grid-sourced electricity and result in a reduction in greenhouse gas (GHG) emissions of approximately 60,000 tonnes of carbon dioxide equivalents per annum.

The proposed project activity comprises the installation of a boiler and steam turbines with 7.3MW of installed capacity. The net power generation will be at 6.5MW, of which approximately 4.5MW

will be used by the chipping mill and the remaining power supplied to the Central Kalimantan Grid.

The implementation of this project activity will contribute towards sustainable development of the region in the following manner:

- improving biomass waste management in the Host Country
- contributing to the use of sustainable renewable energy sources in a highly efficient manner, in line with the country's development policy of renewable energy. This will lead to greater self-sufficiency for the energy sector. Currently national fuel oil is subsidised and the project will lead directly to a reduction in the subsidised fuel oil consumed, thus reducing the country's dependency on fossil fuel.
- technology transfer and knowledge transfer from Korea to Indonesia to facilitate local manufacturing of highly efficient biomass boilers
- creation of new jobs and economic activities during the construction of the biomass power plant and the operation and maintenance of the facility

Baltic Sea Region Testing Ground Facility (TGF)

The Testing Ground Facility (TGF) entered its final year of normal operation in 2012. It is a pioneering carbon fund that has its origins in multilateral energy cooperation in the Baltic Sea Region. The energy ministers of the Baltic Sea Region countries and the European Commission decided in 1999 to enhance energy cooperation in the region with the creation of BASREC (Baltic Sea Region Energy Cooperation).

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 its BASREC origins, TGF operates primarily in Russia, the Baltic States and Ukraine and prioritises energy-related projects.

The TGF is a public-private partnership with investors from six governments and nine heat and power and industrial companies. It was originally capitalised at EUR 35 million, split equally between public and private sectors.

The TGF held its final Investor Committee meeting in December 2012, and it will be wound up following final deliveries in 2013.

TGF portfolio overview

The portfolio shows a strong emphasis on renewable energy and energy efficiency projects. The projects are distributed between wind, biomass/biogas technologies and cleaner production projects.

The TGF is split between the Baltic/Ukrainian portfolio and the Russian portfolio. The former is performing well, with all projects registered/finally determined and issuing credits. In the aggregate, these projects are generating 82% of the credits expected by the end of 2012.

The Russian portfolio has been subject to regulatory and contractual delays and un-

Public investors

- Denmark
- Finland
- Germany
- Iceland
- Norway
- Sweden

Private Sector investors

- DONG Energy (Denmark)
- Fortum (Finland)
- Gasum (Finland)
- Keravan Energia (Finland)
- Kymppivoima (Finland)
- Outokumpu (Finland)
- Vapo (Finland)
- Vattenfall Europe Wärme and Vattenfall Europe Generation (Germany)

certainties. However, there has been some progress, with the first Transfer Agreement signed with Sberbank and credits at the stage of issuance for one energy efficiency project.

In total, the Facility has cumulatively generated 1.47million ERUs so far and a small volume of project-specific AAUs.

JI regulatory and market overview

The JI mechanism showed a record level of issuances at the end of 2012, depressing prices in an already subdued market to near zero levels. JISC reported in November that 432 million ERUs had been issued, a volume more than 130 million greater than previously shown by publicly available data, prompting Parties to call for great transparency in issuance data. By year end, over half a billion ERUs had been issued.

JI credits face possible restrictions in the short term. The European Commission has proposed an amendment to the EU Registry Regulation to have some limitations on ERU issuance on non-EU projects. Projects within the EU with linkages to the EU Emissions Trading System (EU ETS), accounting for the majority of projects by number in the TGF portfolio, required issuance by 31st December 2012 under existing EU provisions.

More generally, both CDM and JI mechanisms are undergoing reviews in 2013. Unlike CDM, JI will not become operational until its review has been concluded and proposed reforms to the mechanism are approved by the Subsidiary Body for Implementation. Current indications are that the two-track approval process will be streamlined into one and the determination process will look more like that of CDM.

Incineration of
coke in Russia.



Case study

Coke oven gas utilisation at OOO PO Khimprom, Kemerovo, Russia

Coke oven gas is generated in coke production when coal is converted into coke. Coke is a key ingredient in the steel-making process, itself an important part of the manufacturing economy of the Kemerovo region. The objective of the Khimprom JI project is to use coke oven gas that would otherwise be wasted as a fuel from a nearby coke facility at two new boilers at the Khimprom site for its own consumption.

Khimprom is the biggest producer of industrial and consumer chemicals in the Kemerovskaya oblast, located over 3,400 km east of Moscow. The Khimprom facility produces more than 20 types of different chemicals. The project will contribute to enhanced efficiency-economic savings and improved reliability of energy (steam) supply to the production facilities of Khimprom as well as to reduced greenhouse gas emissions. Without the project, excess coke-oven gas would be flared. Furthermore, less steam is needed from the Novo-Kemerovo Combined Heat and Power Plant, which burns coal and natural gas.

Coke oven gas will also substitute some steam produced by three existing natural gas boilers at Khimprom.

The investments at the Khimprom site include two new boilers, a 1.7km long coke oven gas pipeline as well as some additional instrumentation for gas consumption monitoring and automation devices.

The coke oven gas utilisation project was the first ERPA signed by the TGF in the Russian Federation, back in 2007. The total verified emission reductions are 245,000 ERUs during the monitoring period 1.1.2008-30.6.2012. Sberbank, Russia, Khimprom and NEFCO have signed a Transfer Agreement on ERU transfer with the aim to transfer the first ever Russian ERUs for the TGF in spring 2013.

5 — Short-lived climate pollutants

Black carbon, tropospheric ozone and methane have increasingly been recognised as contributing to Arctic warming to a degree comparable to the impacts of carbon dioxide, and despite considerable uncertainty regarding the magnitude of their effects, financing climate action to reduce such short-lived climate pollutants. In 2009, eight member states belonging to the Arctic Council signed a declaration in Tromsø that stated that black carbon and other short-lived climate forcers (or pollutants), including methane and tropospheric ozone, may pose a particular threat to the Arctic and that reducing these forcers has the potential to slow the rate of Arctic snow, sea ice and sheet ice melting in the near term.

The Swedish Government has decided to allocate additional funds to NEFCO's and Sweden's joint trust fund on mitigation of short-lived climate forcers (SLCF). The SLCF Fund was established in 2010 by the Swedish Environmental Protection Agency and NEFCO. The Trust Fund, which is administered by NEFCO, gives priority to projects identified by the Arctic Council's Steering Group on SLCF. The fund currently has access to SEK 2.55 million for environmental projects in the Russian Arctic.

The main aim of the Fund is to finance Russian projects that reduce SLCF emissions, including black carbon. Black carbon is a potent climate-forcing aerosol that remains in the atmosphere for only a few days or weeks. Black carbon is a component of soot and is a product of incomplete combustion of fuels such as oil, diesel, coals, wood, crop waste and other biomass. Estimates of the radiative black carbon of forcing indicate that it may be the second or third leading cause of global warming after CO₂ and methane.



Soot at the glacier Vatnajökull in Iceland.

SVENLOUF KARLSSON

Nordic Climate Facility

Highlights

- First call projects successfully concluded in Ethiopia and Kenya
- All second call projects under implementation
- New, third call on innovative climate solutions has 13 projects under negotiations with the first project signed

On-going and completed NCF projects

Region	Host Country for Project	Name of the project
Sub-saharan Africa	Kenya	Mount Elgon integrated watershed management project, Kenya
	Kenya	Community based adaptation to climate change through environmentally sustainable water resource management in Isiolo District in Kenya
	Kenya	Providing assistance for design and management of appropriate water harvesting technologies in arid lands of Kenya
	Kenya	Building adaptive capacity to climate change in Kenya
	Kenya	Enhancing capacity for adaptation to, and mitigation of, climate change in Kibera, Nairobi
	Kenya, Tanzania, Rwanda, Uganda	Fuel efficient stoves in East Africa: Reducing emissions and improving livelihoods
	Ethiopia	GHG Mitigation and sustainable development through the promotion of energy efficient cooking in social institutions in Ethiopia
	Ethiopia	Demonstrating the feasibility of locally produced ethanol for household cooking
	Ethiopia	Demand side management for climate change adaptation for the Ethiopian power sector
	Benin	Scaling the Solar Market Garden
	Malawi	Strengthening the resilience of people living in high risk urban and semi urban areas to weather-related disasters.
	Mozambique	GIS tool for urban adaptation to climate change and flood risk
	Uganda	The Bukaleba charcoal project

The Nordic Climate Facility (NCF) is a EUR 18 million contestable partial grant facility. The Facility is implemented jointly with the Nordic Development Fund (NDF), a Nordic institution co-located with NEFCO in Helsinki providing the funding for NCF. The NCF encourages and promotes technological innovation in areas susceptible to climate change such as: energy, transport, water and sanitation, health, agriculture, forestry and natural resource man-

agement. In 2011, a third call for proposals was launched, and evaluation of the proposals was completed in 2012. This tranche of the fund sought proposals on “Innovative low-cost climate solutions with a focus on local business development”, encouraging business development that provides goods and services that will help reduce greenhouse gas emissions and facilitate climate change adaptation.

On-going and completed NCF projects (continued)

Region	Host Country for Project	Name of the project
Sub-saharan Africa	Uganda	Sustainable renewable energy businesses in Uganda
	Ghana	Energy efficient recycling of electric and electronic scrap, e-scrap
	Ghana	Rain water harvesting (RWH) for resilience to climate change impact on water availability in Ghana
	Rwanda and Uganda	Enhancing sustainable energy supply for tea factories in Rwanda and Uganda
	Rwanda	Karisimbi geothermal project
Latin America	Bolivia	Adapting to climate change in Bolivian Andean communities depending on tropical glaciers
	Bolivia	Financing sustainable energy through remittances flows
	Bolivia	Urban and industrial waste to energy - promoting sustainable development in Bolivia
	Nicaragua	Strengthening national capacities on energy efficiency
Asia	Viet Nam	Building technology in urban flood & inundation forecasting to be applied for operational early warning system in Ha Noi City, Viet Nam
	Viet Nam	Adapting urban construction plans to climate change in Viet Nam by the use of strategic environmental assessment
	Sri Lanka	Climate resilient action plans for coastal urban areas, Sri Lanka
	Nepal	Promoting renewable energy technologies for enhanced rural livelihoods

Case study

Energy-efficient recycling of electronic scrap in Ghana

KEREN CHERNIZON / DEMOTIX / CORBIS / SHOY



Sorting of electronic waste in Accra, Ghana.

The electronics industry is the world's largest and fastest growing manufacturing industry. The volumes of end-of-life waste electronic and electrical equipment (WEEE) are increasing dramatically, even exponentially, all over the world. In developing countries, this is partly due to the efforts to bridge the digital divide and partly due to the often illegal import of electronic scrap (e-scrap) as used and second-hand equipment. Inappropriate handling of e-scrap can cause serious environmental damage while large volumes of valuable and strategic materials are not recovered.

The handling of e-scrap in Ghana, like in many other developing countries, is done by poor people working in the informal sector using simple manual methods. This includes open burning of the flammable components of the e-scrap, at backyard sites, notably at the Agbogbloshie e-scrap site close to downtown Accra. Handling will expose them to hazardous and toxic substances and pollute the surrounding land, water and air.

The growing volumes of end-of-life e-scrap and the problems this causes in developing countries to the environment and among the poorest of the poor have attracted concern in recent years. Much of this concern has focused on health issues for workers and those directly involved in the collection, sorting and dismantling of the e-scrap at a number of infamous dumpsites in the developing world. Another focus has been on the enforcement of the Basel Convention and the EU Waste Electronic and Electrical Equipment Directive and the strengthening of the legislative frameworks in developing countries.

Little focus has yet been given to the fact that e-scrap is a valuable source of

raw materials that can reduce and complement the need to mine virgin ore deposits, and there is huge potential for a reduced climate footprint by increased recovery of metals from scrap compared with conventional mining. Based on literature, recycling of metals can reduce CO₂ emissions from 58% (iron) up to 99% (lead and tin). The reduction in CO₂ emissions is particularly high for precious and rare earth metals, which are a necessary component of the functionality of today's smartphones and other IT equipment.

For NCF, the energy efficient recycling of e-scrap project in Ghana is primarily a climate change capacity building project that also addresses development, environmental and working condition issues. The main focus is support for a reduction of the climate footprint through increased recycling of e-scrap, resulting in improved recovery of valuable base and strategic materials.

The Swedish company Raw Material Group (RMG) in co-operation with Ericsson, Boliden, Datec Technologies, Dell, Hewlett Packard, Nokia and Sony Mobile is implementing the challenging project. The local partners are GreenAd and the Environmental Protection Agency. In addition to capacity building and policy dialogue activities, an interactive website will be constructed with the objective of informing the public in Ghana about the need for better recycling procedures. Furthermore, RMG is considering establishing a mobile training centre with local stakeholders for training sessions and working spaces for simple, improved dismantling operations.

Governance of the carbon funds

The governance of the carbon funds is based on a set of Operating Guidelines or a Participation Agreement and overseen by an Investors' Committee, which met four times in 2012 for NeCF and twice for TGF. The Chair of the Committee was held in 2012 by Vapo (NeCF and TGF for final meeting) and Germany (TGF for first meeting).

At the end of 2012, the NeCF Investors' Committee had the following composition:

Erik Nieminen Vapo (Finland, Chair)
Inge Gerhardt-Pedersen Danish Energy Agency (Denmark)
Gavin Green DONG Energy (Denmark)
Tauno Sild Eesti Energia (Estonia)
Daniel Rossi Electrabel (Belgium)
Timo Mäki EPV Energy (Finland)
Natalia Svejgaard IFU, Investment Fund for Developing Countries (Denmark)
Jani Vesanto Kymppivoima (Finland)
Anne Smeby Evjen Ministry of Finance (Norway)
Marko Berglund Ministry of Foreign Affairs (Finland)
Magnus Rystedt NEFCO (as Investor)

At the end of 2012 the TGF Investors' Committee had the following composition

Uwe Schröder-Selbach Federal Ministry for Economics and Technology (Germany, Chair)
Inge Gerhardt-Pedersen Danish Energy Agency (Denmark)
Gavin Green DONG Energy (Denmark)
Mats Persson Fortum (Finland)
Barbara Appel Ministry of Environment (Finland)
Helga Barðadóttir Ministry of Industry and Commerce (Iceland)
Anne Smeby Evjen Ministry of Petroleum and Energy (Norway) represented by Ministry of Finance (Norway)
Bengt Boström Swedish Energy Agency (Sweden)
Erik Nieminen Vapo (Finland, Chair for the final meeting)
Jan Gerit Otterpohl Vattenfall Europe Wärme (Germany) and Vattenfall Europe Generation (Germany)

The TGF IC met for the final time in December 2012.

CFF staff

The Carbon Finance and Funds Unit currently operates with nine full time staff and, in addition, draws significantly on the resources of NEFCO in terms of environmental and technical due diligence and financial administration. Locally based climate change experts in Singapore, Kyiv, Ukraine and St. Petersburg, Russia, originate and manage projects.

CFF staff during 2012 (based in Helsinki, unless otherwise indicated) were:

Ash Sharma
Vice President, Head of Department (coordination, investor relations)
Janika Blom
Legal Counsel (legal, contractual and institutional issues)
Aliona Fomenco
Project Officer
Kari Hämekoski
Manager (TGF, Nordic Climate Facility)
Helle Lindegaard
Senior Legal Counsel (legal, contractual and institutional issues)
Tina Nyberg
Assistant (administration matters)
Anja Nysten
Senior Adviser (environment, energy and climate)
Maija Sajjonmaa
Project Manager (NeCF)
Emilie Yliheljo
Legal Counsel (legal, contractual and institutional issues) until 30th September 2012
Kimmo Siira
Senior Representative (origination & project management in Asia), based in Singapore
Vitaly Artyshchenko
(project management in Russia), based in St. Petersburg
Vasyl Vasychenko
(project management in Ukraine), based in Kyiv, until 31st December 2012

Further information

For additional information on NEFCO CFF, please visit

→ www.nefco.org/cff

or contact:

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Abbreviations

AAU Assigned Amount Unit
AFD Agence Française de Développement, a public development finance institution
BASREC Baltic Sea Region Energy Cooperation
CO₂ Carbon dioxide
CO_{2e} Carbon dioxide equivalent
CDM Clean Development Mechanism
CER Certified Emission Reduction issued in return for a reduction of emissions through projects under the Kyoto Protocol's Clean Development Mechanism (CDM).
CFF Carbon Finance and Funds at NEFCO
COP Conference of the Parties, The United Nations Framework on Climate Change (see UNFCCC) meetings held each year.
COP 18 the 18th session of the Conference of the Parties
EB CDM Executive Board
ERPA Emission Reductions Purchase Agreement
ERU Emission Reduction Unit generated via Joint Implementation. See also CER.
EU ETS European Union Emissions Trading Scheme
GW Gigawatt
GWh Gigawatt hours
JI Joint Implementation, one of the flexibility mechanisms set forth in the Kyoto Protocol to help countries with binding greenhouse gas emissions targets
KfW a German government-owned development bank
Kyoto Protocol An international agreement, negotiated in 1997, that set binding targets for

industrialised countries to reduce their greenhouse gas emissions.
LDC Least Developed Countries
LOI Letter of Intent
MW Megawatt
NAMAs Nationally Appropriate Mitigation Actions
NCF Nordic Climate Facility
NDF Nordic Development Fund
NeCF NEFCO Carbon Fund
NEFCO Nordic Environment Finance Corporation
NGO non-governmental organization
NOAK The Nordic Working Group for Global Climate. Negotiations under the Nordic Council of Ministers.
NPI Nordic Partnership Initiative on up-scaled climate mitigation actions
P.A. Per annum
PDD Project Design Document
PIN Project Idea Note
Post-2012 Period after year 2012. See also Kyoto protocol.
TGF Testing Ground Facility
UNFCCC United Nations Framework Convention on Climate Change. Adopted in 1992 aiming at stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.



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The Carbon Finance and Funds department of the Nordic Environment Finance Corporation (NEFCO) broadened its climate financing activities during 2012. Further progress is reported with its technical assistance and market readiness activities, notably with the Nordic Climate Facility (NCF) and in the area of financing Nationally Appropriate Mitigation Actions. The NCF is now active across Sub-Saharan Africa, the Andean region and poorest regions of Asia, and is currently working on innovative low cost climate solutions which promote the development of local businesses.

The core carbon market activity delivered good results, notwithstanding collapsed demand and market price, with over 2 million emission reductions delivered to public and private sector participants in its carbon funds. The portfolios were de-risked and consolidated during the year, and a record number of Clean Development Mechanism projects were registered. The main areas of project focus remain renewable energy and energy efficiency, principally in eastern Europe and developing Asia.

NEFCO continues to undertake developmental activities to promote the concept of market-based mechanisms as an important means of mobilising international finance for climate action.

