

NEFCO Carbon Finance and Funds - Joint Implementation Opportunities in the Russian Heat and Power Sector

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Scope of Today's Discussion

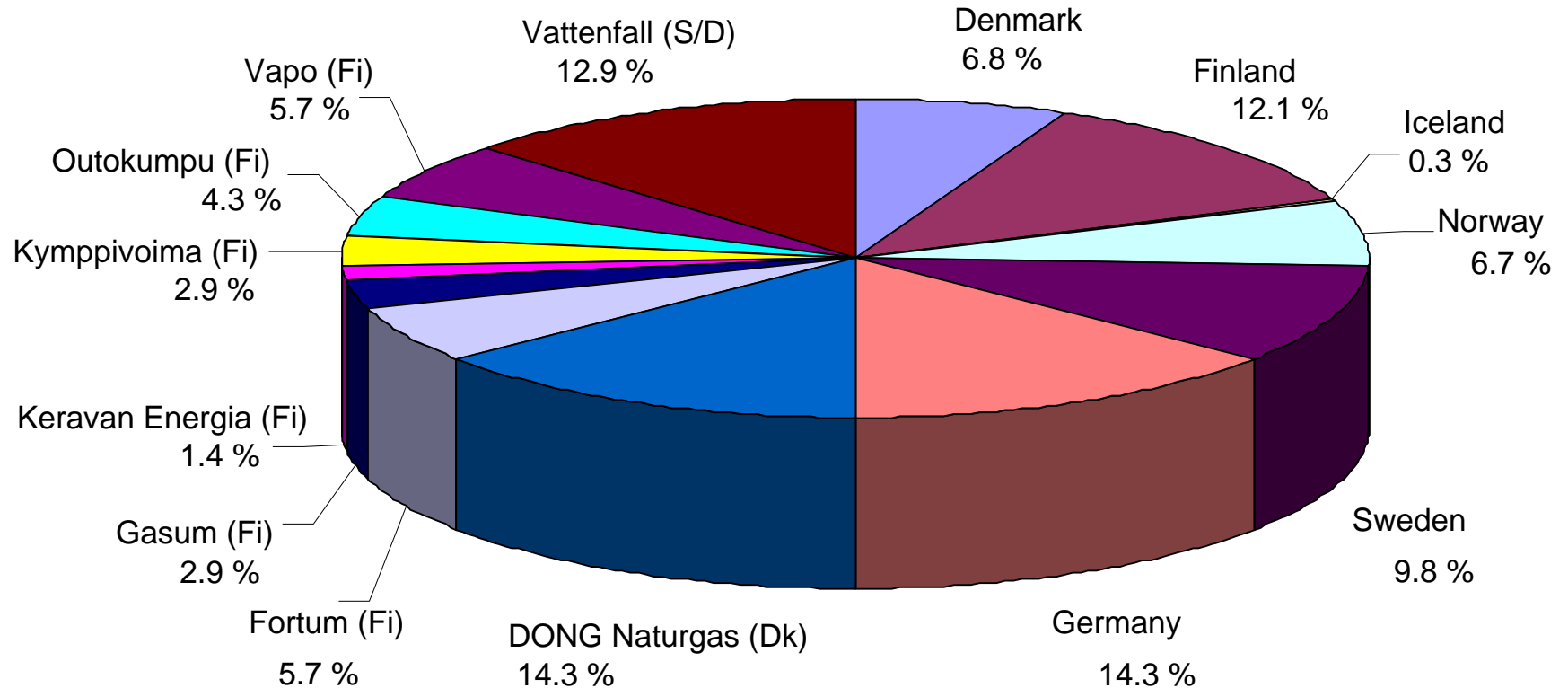
- Overview of the NEFCO Carbon Funds
- Overview of TGF Investment Portfolio
- Energy Sector Investment Projects in Russian Federation
- NEFCO / TGF Possibilities in Russia
- Concluding Comments

Overview of the Testing Ground Facility

- A regionally focused carbon purchase fund, acquiring AAUs & ERUs on behalf of its public/private investors
- Established under auspices of BASREC
 - Own governance structure: TGF Investors Committee
 - Includes Nordic countries, Germany and private companies
- Countries of operation: Russia, Ukraine, Baltic States
- Focus on energy related climate change projects
 - Emphasis on renewable energy technologies, energy efficiency
 - Others include fuel switching, waste (biogas), wastewater treatment
- A “reasonable balance” of project size, technologies & host countries across the portfolio is sought

TGF Investor Base: a Public Private Partnership

Baltic Sea Region Testing Ground Facility Subscriptions
Total Fund €35 million



Key Features of TGF in Russia

- Further development of TGF investment portfolio in 2007
 - 10 projects at various stages of contracting in Russia (main market for TGF)
 - TGF early mover and active in Track 2 JI (14 out of first 110 projects)
- Work in Russia through own staff, intermediaries, Energy Efficiency Centres and consultants
- Increased cooperation with Nordic partners including Danish Energy Authority
- Increased levels of awareness, and good positioning in JI marketplace in NW Russia through many years of successful cooperation in the region
- Ability to contribute additional financing through concessional loans, including public sector organisations

NEFCO Carbon Fund (NeCF)

- New fund launched in March 2008, as a successor to TGF
- Focus on JI /CDM in Russia, Ukraine and China
- Target capitalisation of €50m (currently €35m) based on similar Public Private Partnership structure of TGF
- No limitations on project types (so long as eligible under Kyoto and ETS), with preference for larger projects

Overview of TGF Investment Portfolio in the Russian Federation

Country Overview: Russian Federation

Key Issues in Russia

- Bulk of TGF activity & pipeline, large and diverse technical potential
- Increasingly focus on large scale projects
- Awaiting final domestic approval procedures - no LoAs issued
- More interest from project owners
- NEFCO well established in NW Russia, working here since 1991

Project Potential in Russia

- Biomass fuel switch
- Industrial energy efficiency
- Power and heat supply
- Fugitive emissions

TGF Projects

- 10 diverse projects currently under negotiation
- District heating, coke gas utilisation, wastewater treatment, biomass and natural gas fuel switch, landfill gas utilisation

TGF Investment Projects in the Russian Federation

Waste Coke Gas Utilisation, Western Siberia

- Type : Waste coke utilisation at chemical works to displace natural gas consumption
- Financing: Own equity, short term loans, carbon finance
- Supplier: Local chemical manufacturer, OOO Khimprom
- Emission reductions: 332,000 tCO₂e over commitment period
- PDD; determination by DNV, ERPA signed, will make application to MEDT when possible



Existing Gas Boilers



Old Natural Gas Pipeline

District Heating Rehabilitation, Murmansk

- Type : Replacement of heat exchangers, VSP pumps, new burners improved controls etc
- Financing : NDEP, SIDA grants, IFIs NIB & NEFCO
- Supplier : MUE TEKOS
Municipal owned heat utility
- Emission reductions :
~300,000 tCO₂e over CP
(co-purchase with STEM)
- PDD; determination by TÜV SÜD ; Draft ERPA prepared, no approvals



Severnaya
Heat Plant



Existing Heat Connection Point

Vodokanal Wastewater Projects, St. Petersburg

- Type : Methane reduction from displacement of anaerobic digestion at sludge pits/lagoons to state of art incinerators (SW and northern)
- Financing: Own equity, IFIs (EBRD, EIB and NEFCO), grants (NDEP, TACIS) carbon finance (TGF/EBRD)
- Supplier: SUE Vodokanal of St. Petersburg
- Emission reductions : 467,000 tCO₂e over commitment period (CP) using AM0013
- PDD; determination by TÜV SÜD, draft ERPA prepared, no approvals yet



Existing Sludge Lagoon for SW WWTP



Sedimentation Tanks at SW WWTP

Zheshart Plywood Factory, Komi Republic

- Type : Biomass fuel switch of heat only boilers (natural gas to sawdust) at industrial manufacturing facility
- Financing : Own equity (22%), NEFCO loan, carbon finance
- Supplier : Local plywood manufacturer, CJSC Zheshart Plywood Factory
- Emission reductions : 63,000 tCO₂e over commitment period (CP) - v.small
- PDD; determination by TÜV SÜD , draft ERPA prepared, no approvals yet
- Full details available at www.nefco.org



Zheshart Plywood Factory

Priozersk Integrated Fuel Switch, Leningrad Oblast

- Type :Fuel switch from mazut to biomass and natural gas by replacing outmoded CHP plant, and associated energy efficiency actions
- Financing : Own equity, NEFCO loan, carbon finance (TGF/DEA)
- Supplier : OJSC TeploService
- Emission reductions : 199,000 tCO₂e over commitment period using ACM009 (gas) & ACM0036 (biomass)
- PDD prepared by Force Technology; determination ongoing by DNV, draft ERPA prepared, no approvals yet

Old Boiler House, Priozersk



Biomass Resources, Priozersk

Strezhevoi Heat Supply Station Reconstruction

- Type : System rehabilitation to reduce energy losses and fuel use, by installing improved control equipment and new heat exchangers at sub-centrals
- Financing : Own equity, local bank loans, carbon finance (TGF)
- Supplier : OOO Strezhevoi Teploenergosnabzhenie
- Emission reductions : 89,000 tCO₂e over 2008-12 using AMS IIA
- PDD prepared; determination by DNV, draft ERPA agreed, no approvals yet

New Sub Central Equipment



Network Reconstruction Works, Strezhevoi

Energy Sector Investment Projects in Russian Federation

- Significant opportunity for introduction of efficient steam turbines
- Fuel switching from heavy fuel oil/coal to natural gas
- Development of renewable energies (especially small and medium hydro (new & rehab), biomass, geothermal and wind)
- Improvements in combined heat and power (CHP) and district heating systems
- Energy savings (control, instrumentation and automation, variable speed motor drives, fuel efficient burners etc)

INDICATORS

Reductions of CO₂, NO_x and SO₂

More renewable energy

Efficient use of energy

Saving of energy

Security of supply

NEFCO / TGF Possibilities in Russia

- What do we offer:
 - good commercial conditions and possibilities for advance payment with appropriate security
 - potential for co-financing through NEFCO and NIB (larger projects with environmental mandate only within NW Russia)
 - technical assistance with procedures and cost coverage of technical studies (PDDs) and determination studies
 - over 15 years of experience in the region, and good political support
- What are we looking for:
 - biomass fuel switching, CHP, biogas and energy efficiency projects in public or private sector, energy or industry preferred
 - advanced stage projects, with feasibility studies and financing plan in place, with some own equity contribution. Starting 2009.

Concluding Comments

- JI is significant opportunity for project owners & developers
 - to add to project cashflow and improve project economics
 - to co-finance with other NEFCO finance products
 - to work with creditworthy international partners and neighbours with a long term interest in NW Russia
- Regulatory uncertainty for JI is reducing
 - International JI framework in place (Track 2 JI) but slow
 - Domestic approval procedures are ready window for applications open
 - Better awareness generally of the possibilities for Russian enterprises and public companies, high growth in recent number of projects
- Good local technical capacity in Russia for development of JI documentation and auditing

For further information

Nordic Environment Finance
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For general information visit
www.nefco.org

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