

# Newsletter

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## Energy for tomorrow

**T**he International Energy Agency (IEA) is wont to argue that improved energy efficiency should be perceived as the biggest global 'energy source' that could help the world community in its efforts to slow down climate change and promote transition to ecologically sustainable energy production. IEA's latest annual report *World Energy Outlook 2011* suggests that Russia could save over 30 per cent in energy consumption by investing more heavily in energy efficiency.

**THIS NEWSLETTER TAKES** a look at various innovative ways of improving efficiency in energy use. Columnist Anne Marie Holt Christensen writes about the Danish municipality of Albertslund that snatched the Nordic Council of Minister's prize as the Energy Municipality of the Year through determined renovation of municipal buildings and adoption of a range of carbon neutral solutions. We will also get to know the Russian municipality of Gurievsk in the Kaliningrad region, where projects are being prepared to upgrade street lighting, modernise heat production and restructure water supply in an effort to save money and energy.

**THINGS ARE HAPPENING** on a broad front in Kaliningrad right now. Near the swish of the waves and the charms of the spas in Svetlogorsk, NEFCO is currently financing a local wastewater treatment project that will improve the quality of water and life, making it easier for tourists to be attracted to the beaches by the enchanting nature of the Curonian Spit. History is also being written on the shores of Onega, the second biggest lake in Europe, where the Finnish and Russian governments together with a number of other external financiers are modernising wastewater treatment facilities in Petrozavodsk. The investment will improve the state of the environment both in Onega and the Baltic Sea.

**ADDITIONALLY WE WILL** look into the possibilities of accelerating the testing of environmental innovations with credits made available by a new fund that NEFCO is planning to set up in collaboration with other financiers. The fund can serve as a springboard for Nordic environmental technology in situations where companies need institutional backing for the testing of their innovations. Senior Manager Karl-Johan Lehtinen of NEFCO's Environmental Unit sheds more light on this initiative in an interview.

**AT TIMES IT** may be hard to spot the little improvements achieved on the environmental front when sights are set on the international arenas, the macro level and the big picture. That is why it is useful to shift the focus from time to time to admire the impressive and persistent efforts made at the grassroots level for a cleaner environment.



**MIKAEL SJÖVALL**  
Communications  
Manager  
NEFCO

*"IEA's latest annual report World Energy Outlook 2011 suggests that Russia could save over 30 per cent in energy consumption."*

## NEFCO signs framework cooperation agreement with China

■ NEFCO and the Foreign Economic Cooperation Office of the Ministry of Environmental Protection of China have, together with the China Development Bank Corporation, signed a Framework Agreement to establish environmental cooperation. The initiative is called the Sino-Nordic Environmental Protection Cooperation ("SNEPCO") Programme.

SNEPCO financing shall for instance be extended to projects which promote mitigation of greenhouse gases, phase out ozone depleting substances or reduce discharges of persistent and toxic substances including heavy metals. SNEPCO may also finance projects related to resource optimisation, cleaner production and energy efficiency.

NEFCO has been engaged in China since the mid-1990s and in climate change activities since 2008. The framework agreement signed in October will enable NEFCO to substantially expand its financing operations in China.

## Nordic Climate Facility launches Third Call for Proposals

■ The Nordic Climate Facility (NCF) has launched the Third Call for Proposals. The theme for the Third Call is "Innovative low-cost climate solutions with a focus on local business development in eligible developing countries." The deadline for submitting proposals is 16 January 2012.

The aim of the Nordic Climate Facility (NCF) is to promote the transfer of technology, know-how and innovative ideas between the Nordic countries and low-income countries facing climate change challenges. The main goal is to bolster the capabilities of low-income countries to mitigate and adapt to climate change challenges and implement sustainable development measures which will lead to the reduction of poverty.

NCF is financed by the Nordic Development Fund (NDF) and implemented jointly with NEFCO. The total budget for the Third Call is EUR 6 million.



Lake Onega and the beach boulevard in Petrozavodsk.

## International financing to help clean Lake Onega

■ **THE FINNISH** Ministry of the Environment and the Russian government, together with the Petrozavodsk Communal Utilities Systems (PKS), the City of Petrozavodsk and a group of international financial institutions, will in December sign a EUR 32 million investment package, which is intended to finance the improvement of drinking water quality and the reduction of untreated wastewater being discharged into Lake Onega in Northwestern Russia.

**PKS IS CURRENTLY** implementing an investment programme, which is intended to improve drinking water quality and upgrade the wastewater treatment facilities in Petrozavodsk, a city of some 270,000 inhabitants, which is situated on the western shores of Lake Onega. The public utility process-

es around 145,000 cubic metres of wastewater per day.

**THE INVESTMENT PACKAGE** will finance recycling and dewatering of sludge generated in the drinking water plant and modernise the wastewater treatment plant by introducing a bio-chemical process. These measures are expected to result in an annual decrease of 49 tonnes of phosphorus discharges into Lake Onega.

**THE SET UP** of the investment package has been coordinated by NEFCO that provides a EUR 4 million loan for the project. The project is also financed by the Nordic Investment Bank, the Finnish Ministry of the Environment and NDEP.

## NEFCO teams up with Raiffeisen Bank in Russia

■ NEFCO and Raiffeisen Bank have signed a framework agreement to provide energy saving loans to Russian municipalities. Under the terms of the agreement, Raiffeisen will operate as NEFCO's intermediary bank in Russia and will disburse funds earmarked for energy saving projects, which will be carried out by the country's municipalities. Raiffeisen Bank International (RBI) is Eastern Europe's third-biggest bank with 188 offices in Russia.

The framework agreement between NEFCO and Raiffeisen Bank does not prevent any other credit organisation from participating in similar projects with co-financing and neither does it prevent other financial institutions from offering their services to NEFCO.

NEFCO's Facility for Energy Saving Credits has, since its inception, approved some 50 loan agreements for financing energy saving measures in Russian municipalities.



Raiffeisen Bank's branch office in Kaluga, Russia.





Finland's Minister of the Environment, Mr Ville Niinistö, chaired the ministerial meeting at the Nordic Council Session in Copenhagen. Photo: NCM

## Stronger Nordic cooperation on climate mitigation

■ **THE NORDIC** Ministers of the Environment have decided to strengthen the Nordic cooperation on climate mitigation. The decision was made at the Nordic Council meeting in Copenhagen in November.

**IN PRACTICE,** the ministers decided to support upscaled mitigation programmes and pilot projects in Peru and Viet Nam. The programmes, which are still under consideration, will be implemented through the Nordic Development Fund (NDF) and NEFCO.

**THE PILOT PROJECTS** in Peru will focus at the waste sector and aim at improving Peru's readiness to benefit from international climate finance for supporting upscaled mitigation action. The pilot programme in Viet Nam will be implemented in the highly energy intensive cement production sector. NEFCO will finance the climate projects in Peru with funds from its Nordic Environment Development Fund.

"**WE ARE DELIGHTED** by the political support for our work, which will enable us to intensify our climate mitigation efforts in low-income countries", said Managing Director Magnus Rystedt from NEFCO.

**THE INITIATIVE SEEKS** to build host countries' capacity to evaluate, structure and implement Nationally Appropriate Mitigation Actions (NAMAs), making use of international funding and possible new market mechanisms.

**THE NORDIC PARTNERSHIP** Initiative for Peru and Vietnam will be marketed in the form of side events, which will take place at the UN's COP17 Climate Conference in Durban 28.11-9.12.2011.

## NDEP gets increased funding

■ **THE COFFERS** of the Northern Dimension Environmental Programme (NDEP) have been replenished by its member countries. All in all, the NDEP has managed to raise up some EUR 45.3 million in fresh capital to fund new environmental projects.

The replenishment coincides with the NDEP's 10th anniversary, which has been celebrated this year and financial pledges and contributions have been received from the EU, Finland, Norway, Russia and Sweden.

"These new funds will enable us and our business partners to prepare projects critical for improving the state of the environment in the Baltic and Barents Seas region", says NDEP Manager, Jaakko Henttonen.

At the moment there are 23 active environmental projects in NDEP's pipeline. NEFCO became a member of the NDEP in 2008 and chaired the Steering Group in 2010-2011. The Nordic Investment Bank is now chairing the NDEP Steering Group until June 2012.

## NEFCO finances Kandalaksha's energy saving efforts

■ **SOME 36** municipally owned buildings in Kandalaksha, which is situated in Northwestern Russia on the Kola Peninsula, will benefit from an energy saving scheme, which is being financed by NEFCO's Facility for Energy Saving Credits.

**THE TOTAL INVESTMENT** cost of the project is RUB 10.5 million, and NEFCO will provide a loan of RUB 9.5 million. The loan will be used to renovate five heating sub-centrals and install heat metering devices at 31 buildings, mainly schools, day-care centres and youth centres.

**THE PROJECT IS** expected to save some 2.5 million kilowatt hours of heat energy per year for the municipality and this will translate into over RUB 5 million in savings annually. NEFCO's intermediary bank in Russia, Raiffeisen, will disburse the loan to the municipality. The maturity of the loan will be 2.1 years.



Part of the newly constructed wastewater treatment facilities in Vershinino, Kenozersky. Photo: Håkon Borch

## New wastewater facilities inaugurated in Vershinino

■ **NEW WASTEWATER** treatment facilities were inaugurated in October in Vershinino, in the Archangel region of Russia. Vershinino village is the administrative centre of Kenozersky National Park in the South-western part of the Archangel region.

**APART FROM IMPROVING** ecological conditions in Lake Kenozero, which occupies some 100 square kilometres of the park, the wastewater facilities will also uplift sanitary conditions for the inhabitants of Pocha and Ust'-Pocha villages, which are situated in the northern part of Kenozersky National Park.

**AS PART OF** the project, new wastewater plants, precipitation, infiltration basins and sludge deposit designed by Bioforsk, a Norwegian environmental

consultancy, have been constructed. The Vershinino project has also improved the water supply system by constructing new water intake facilities and booster pumping stations as well as laying new pipelines to the municipally owned buildings.

**THE ARKHANGELSK OBLAST** Energy Efficiency Center has assisted with planning and co-ordinating the project. NEFCO and the Norwegian government, together with the Archangel Region and the local Plesetsk Municipality, have supported the project. NEFCO's EUR 240,000 input into the project has been drawn from its Barents Hot Spots Facility.

## Danosha and NEFCO to sign loan agreement for biogas production

■ The Ukrainian agricultural company, Danosha Ltd, and NEFCO will sign a loan agreement to finance the production of biogas from pig farms in the Kalush region of Western Ukraine.

Danosha Ltd. is owned by the Danish company, Axzon A/S, which farms 20,000 hectares and produces 650,000 pigs a year.

Under the terms of the agreement, NEFCO will grant a loan of EUR 1.8 million for the construction of a biogas plant in Kopanki, which is expected to reduce carbon dioxide emissions by some 27,300 tonnes per year when the biogas reactor becomes operational. The 1 megawatt reactor will consume some 100,000 cubic metres of pig slurry annually.

The total investment cost for the project is EUR 8 million, and there are plans for similar facilities at three other Danosha-managed sites in Western Ukraine.



The biogas reactor in Kopanki is expected to reduce CO<sub>2</sub>-emissions by some 27,300 tonner per year.





The Ascension Cathedral in Gurievsk.



Infantile energy at a playground in Gurievsk.



Obsolete technology. The new street lighting system in Gurievsk is expected to save the municipality some 1,267,000 roubles per year.

The road to Gurievsk (formerly Neuhausen) in Russia is flanked by long rows of white-washed tree trunks and barren tree tops. Similar park lanes planted during the German era are typical for countless main roads in the Kaliningrad Province. A town with a population of 12,000, Gurievsk is a mere 10 kilometres away from Kaliningrad centre. The rural environment and reasonable distance to Kaliningrad have encouraged a lot of families with children and commuters to settle down in the community.

# Low-energy solutions in Gurievsk



Mr Yury Rudi, Deputy Head of Gurievsk Municipality Administration has the overall responsibility for Gurievsk's newly established energy programme.

**R**ECENTLY, THE TOWN OF GURIEVSK joined forces with NEFCO to upgrade the street lighting system. The idea of the pilot project is to replace the existing obsolete street lamps with low-energy light-emitting diode, LED lights, which is expected to reduce electricity consumption by 270,000 kWh per year. In economic terms, this means an annual saving of 1,267,000 roubles. The money will be used, among other things, to build and extend the infrastructure in new residential districts.

**AT THE SAME** time, the project yields an added bonus in the form of environmental benefits. Reduced energy consumption will decrease carbon dioxide emissions by about 122 tonnes per year and additionally decrease substantial amounts of sulphur oxide.

**ON TOP OF** everything else, the municipality will be able to remove environmentally-hazardous mercury from the old lamps at the end of their service life.

**PREPARATIONS FOR THE** project are already under way when we arrive in Gurievsk for a meeting with the municipal decision makers. Competitive bidding for the purchase of new lamps was already finished and the contract had been awarded to the Intecco Group, based in the Moscow region. The company has delivered the new street lights in November and is scheduled to complete the installation by the end of the year.

"We recently assumed ownership of the street lighting from the Gurievsk District Administration. Because this part of the infrastructure eats up a lot of energy, we came soon to the conclu-

sion that the obsolete lamps should be replaced. We were quick to pick up on NEFCO's offer to upgrade the street lighting and cut down our energy consumption," says Yury Rudi, First Deputy Head of Gurievsk Municipality Administration.

## **NEW LAW ON ENERGY EFFICIENCY**

**IN 2009,** THE Russian Duma passed a new law requiring all Russian municipalities to draw up action plans to improve their energy efficiency. Among other things, the law stipulates that municipalities should install technical systems that allow metering of energy consumption by municipality-owned properties. The goal established by the Russian government is to reduce electricity consumption by 40 per cent by 2020. These objectives encourage municipalities like Gurievsk to take a hard look at their energy consumption.



Mr Vitaly Bezrukov and Ms Ludmila Ivochkina are in charge of preparing energy efficiency projects in Gurievsk municipal district.



The Gurievsk District's administration centre.

**"AN IMPORTANT PART** of our municipal energy programme relates to heat generation in the municipality. We'll invest in an extensive modernisation of several heating plants and boilers in order to reduce the cost of municipality-owned properties," says Yury Rudi.

**ASIDE FROM THIS**, plans are in place to upgrade the municipal water supply system. Automation of the municipality-owned water pumps could control water supply, using less energy and reducing the consumption of drinking water. But Rudi underlines that the order of priority for the contemplated investments will be dictated by current cost levels. After all, it is the heating of properties that swallows the most money. Therefore the municipality's next energy project will address heat generation.

### **STRONG WILL TO PROMOTE ENERGY EFFICIENCY IN THE DISTRICT**

**"WE HOPE TO** be able to finance a major part of these investments with the assistance of external financiers. We're looking to secure economic support from the federal and regional authorities primarily, and secondarily apply to international financial institutions for loans," says Olga Trachkovskaya,

Deputy Head of Gurievsk Municipality Administration.

**LUDMILA IVOCHKINA, CHIEF** of the Complex Development Department at the Gurievsk District Administration, confirms that there is a strong political will to promote energy efficiency across the district because it provides the opportunity to achieve savings for the District Administration.

"We're interested in supporting similar investments in a range of municipalities in the Gurievsk District," says Ludmila Ivochkina.

**GURIEVSK EXPECTS TO** finance around 15 per cent of the costs of the planned projects with local tax revenues. In the instance of the NEFCO-funded project to upgrade street lighting, the municipality will take a loan of 5.4 million roubles from NEFCO's Facility for Energy Saving Credits, which will be due for repayment in four years. The loan covers 90 per cent of the cost of the investment.

**MODERNISATION OF THE** street lighting in Gurievsk arouses no strong emotions among the local residents, whereas the plan to increase efficiency in heat supply is a sensitive issue that calls for political backing because the municipi-

pality currently subsidises the price of heat by around 20 per cent.

"Because of the high cost of the investment in heat production we're compelled to raise the tariffs and this will no doubt stir up strong reactions as the increased prices will be felt in everybody's wallets," says Yury Rudi.

**FOR A RETIRED** person, the heating bill in winter may account for up to 40 per cent of the monthly income and so a potential increase in price will have an emotional impact. But without higher tariffs it is difficult to come up with the funding required from the municipality for these important projects. And without local municipal financing it is hard to obtain loan capital from international financial institutions. But as long as much of the heat goes to waste, everybody loses.

"Those with a low income can always receive financial support from the authorities to pay the higher tariffs. And once the energy projects have been completed, we'll be able to offer cost-effective heat to local residents. The savings achieved by the municipality will also make more money available for social services to distribute to those who find it hard to make ends meet," Rudi points out. **N**



# Nordic energy city - local action

The climate challenge we are facing today is extensive and complex. The consequences of lack of action may seem overwhelming. We are sharing the challenge, and local solutions may show the pathway.

**A**LBERTSLUND IS A DANISH municipality west of Copenhagen with around 29,000 residents. The major part of the city was established over a period of 15 years starting in 1960. From the outset, Albertslund has had a number of focal issues that still put their mark on the policy pursued in the city today.

**IN ALBERTSLUND CLIMATE** and energy are part of the overall environmental effort and have a large impact on the development of the city and the way in which we tackle the present challenges.

**ALL CITIES SHARE** the challenge of constantly attracting new residents and businesses. We believe that in being an exemplary city we can launch a development that will turn Albertslund into a modern, sustainable, and attractive city.

**AMONG 44 NORDIC** cities Albertslund was nominated as the Nordic Energy Municipality 2011. The Nordic Council of Ministers recognizes with this initiative cities making a special effort to reduce energy consumption and CO<sub>2</sub> emissions with solutions serving as an inspiration for other cities and stakeholders involved in finding and applying new, optimal energy solutions.

**THE CITY OF** Albertslund is facing a major urban challenge needing extensive renovation. This is on the other hand a unique opportunity for developing the city in a new and climate-friendly direction. For this task examples and concrete experience are needed to be used when more than 1,500 homes will be thoroughly renovated in the coming years.

**ALBERTSLUND WAS ELECTED** Nordic Energy Municipality with the project 'the Albertslund Concept' a significant energy solution with a potential reaching beyond the city in question. The Albertslund Concept develops and demonstrates new and efficient energy solutions for renovation of existing buildings. Nine pilot projects show how it is possible to renovate industrialized buildings into different efficient energy standards.



**COLUMNIST**  
**ANNE MARIE**  
**HOLT CHRISTENSEN**  
Project Manager on  
the Climate Plan in  
the Municipality of  
Albertslund,  
Denmark.

**RIGHT NOW SIX** homes have been renovated demonstrating in full scale the solutions called for to arrive at future-oriented energy efficient homes and showing the investments needed. One of the homes has a new developed solar prism and is today CO<sub>2</sub> neutral during use. The solar prism is a solution for buildings with flat roofs that is particularly suitable for renovation of prefabricated buildings and gives a substantial improvement of the home.



*"Local authorities can play a decisive role as co-developers of green solutions"*

**ENERGY RENOVATION OF** homes is about much more than efficient energy solutions. More benefits must be gained if the solutions are to be used. Both for residents and the city as a whole. More daylight, better indoor climate, and new architecture for the city.

**LOCAL AUTHORITIES CAN** play a decisive role as co-developers of green solutions. For it is beyond any doubt that energy solutions must serve many purposes in order to be applied in large scale. Focus is on green and market-oriented solutions. And the key word is cooperation, without which the Albertslund Concept would not have been a success.

**THE ALBERTSLUND CONCEPT** has emerged in close cooperation between the local authority, housing associations, energy technology, energy consultancy, architects, and the building industry. In this way we are tackling the climate challenge jointly and each party is expanding its professional expertise. **N**

The year 2011 has seen an unprecedented level of project related activity at the EUR 165 million carbon procurement vehicle, NEFCO Carbon Fund (NeCF). This can be attributed to the closing window of opportunity for projects to be registered by a 31st December 2012 deadline imposed by the European Union. Vice President Ash Sharma summarises activity at NEFCO's flagship carbon finance instrument.

# Intense project activity for NEFCO Carbon Fund

**P**ROJECT ACTIVITY IN NEFCO's Carbon Finance and Fund Unit during the last six months has been at its highest levels since the Fund inception in 2008.

This has occurred despite a collapse in market prices to their lowest ever levels in the third quarter of the year mirroring general macroeconomic factors, extra supply and uncertain climate policy signals. The driving force has been the EU's eligibility deadline for using credits in the third phase of the bloc's Emission Trading Scheme 2013-2020. To date, 23 final contracts (Emission reduction purchase agreements, or ERPAs) have been signed in 2011 alone. This has included emission reduction projects for the first time in India and Ukraine (where the sister fund, the TGF has been active for five years).

**THE BULK OF** the projects relate to renewable energy and energy efficiency, in keeping with the Fund's project se-

lection criteria. 2011 has seen the first biomass projects in the portfolio, located in India, Viet Nam and Indonesia.

**IN TOTAL,** the amount of installed renewable energy capacity from the portfolio exceeds 1GW, two thirds of which is wind energy. The amount of clean electricity generation from these plants is expected to be a formidable 3,623 GWh/year, equivalent to the electricity consumption of some 450,000 people in Northern Europe.

**IN ADDITION TO** the climate benefits, renewable energy offers local air pollution and energy security advantages compared to fossil fuels. In terms of efficiency, small hydro (NEFCO only contracts project below 20MW) and wind have high issuance records i.e. they produce in aggregate around 90% of the expected credits and are therefore attractive candidates for carbon offsetting.

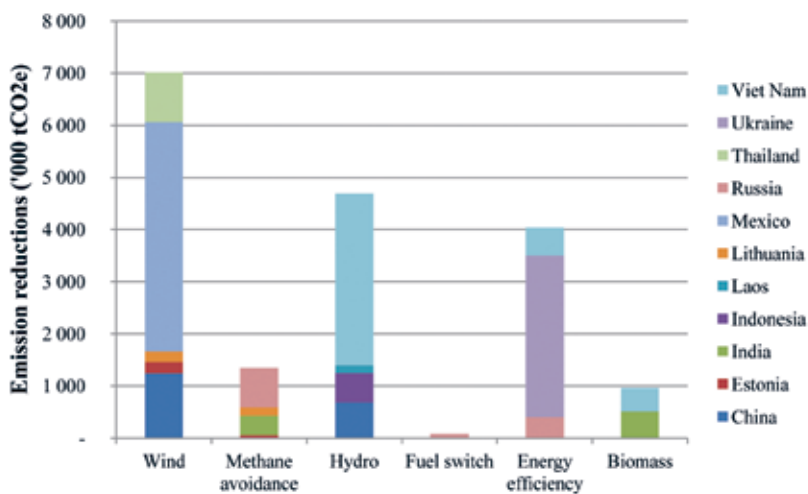
"The carbon market is in the doldrums. With prices for credits dipping below EUR 6 at one stage, this does not give a strong incentive to project developers to undertake clean energy or other emission reduction investments." However, NEFCO has persevered in the primary market, sourcing new projects by engaging directly with project owners and expending its resources in taking contracted projects through the UN's demanding project cycle. NEFCO continues to focus on securing and delivering high quality projects for its compliance investors.

**THESE EFFORTS HAVE** started bearing fruit: there have been a record volume of deliveries from the two carbon funds managed by NEFCO. During 2011, a record number of credits, 2.82 million, comprising CERs, ERUs and project specific AAUs have been issued to the Baltic Sea Region TGF and the NeCF.



Two thirds of NEFCO's carbon portfolio comprise wind energy.

The diagram below illustrates the diversity of the portfolio in terms of geography and technology.



## CLIMATE FINANCING IN THE POST KYOTO WORLD

NEFCO IS ALSO monitoring developments in new financing instruments at a global level through its membership of the Climate Change Working Group for Bilateral Financial Institutions, which is publishing reports on climate finance for the Durban conference in South Africa, December 2011. In addition, NEFCO is working to establish programmes for so-called Nationally Appropriate Mitigation Action (NAMA) market readiness in Peru and Viet Nam, together with the Nordic group for global climate negotiations. NAMAs may be a future market mechanism, and NEFCO is supporting practical “learning by doing” efforts to build preparedness before financial instruments can be employed. **N**





Sheltering from the drizzle at the Svetlogorsk sea front.

Imagine a yellowed photograph depicting moustached gentlemen in straw hats and light summer suits holding a walking stick by its silver-clad handle with urbane elegance. A group of ladies in fancy dress and flamboyant headwear bring to mind tea salons, while in the background well-dressed holiday makers can be seen strolling along the promenade admiring the gentle waves of the Baltic Sea. This is more or less what life looked like in the numerous spa resorts built on the shores of the Baltic Sea at the end of the 19th century.



# Svetlogorsk spa resort attracts new tourists

**S**VETLOGORSK (formerly Rauschen), some 30 kilometres west of Kaliningrad near the Curonian Spit, has looked after its local heritage with due care. In summer, the number of people multiplies when Russian middle-class pilgrims flock to Svetlogorsk's snow-white beaches and picturesque sea-front boulevard. Although straw hats have long since been replaced by baseball caps and loud Bermuda shorts, the past is still evident. The new hotels in the resort are built in German style with mock battlements, towers and trusses. On our visit to Svetlogorsk on a rainy autumn day the beaches are full of strollers who have come to the sea to relax.

**NEFCO HAS ALSO** landed in Svetlogorsk in the form of a project to modernise wastewater treatment systems in the region. As part of the project, the local sewer network will be upgraded, the treatment plant's compressors automated and new sedimentation basins built. Aside from NEFCO, funding for the project is provided by the local water company OKOS, the EU and Sweden. In addition, the Russian federal and regional governments are investing in wastewater treatment in neighbouring communities.





The sandy beaches in Svetlogorsk attract some 1 million tourists each year.

**THE 35-YEAR OLD** plant in Svetlogorsk processes the wastewaters of 56,000 people living in the towns of Svetlogorsk, Zelenogradsk and Pionersk. The total volume of wastewater produced by the towns is around 12,000 cubic metres per day. When the project due for completion in 2013 is finished, the plant will handle wastewater from 67,000 people as a number of suburbs will be connected to the network. As a result of the upgrade, the plant's capacity will be tripled to 35,000 cubic metres.

**THE PROJECT PLAN** also foresees the installation of frequency converters, the modernisation of pumping stations and measures designed to stop leakages from broken and rusty pipelines disrupting the water flow. Hence, the investment will contribute to the state

of the Baltic Sea and the climate by reducing phosphorus and carbon dioxide emissions. The modernisation of the pumping stations and the installation of frequency converters are expected to reduce energy consumption by the wastewater treatment plant by at least 30 per cent.

"We pay around six million roubles for electricity per year so it's no trivial matter. In the long run, the investment will yield considerable savings," says Sergey Tomilov, General Director of the local water company OKOS.

**GENERAL DIRECTOR TOMILOV** was hand-picked for the project in June 2011 thanks to his 20-years' experience in the field. His extensive contact network and solid experience is evident when we tour the wastewater treatment plant. Tomilov peppers his



Sergey Tomilov, General Director of the local water company OKOS.





*"When the project due for completion in 2013 is finished, the plant will handle wastewater from 67,000 people as a number of suburbs will be connected to the network."*

Svetlogorsk has some 11,000 inhabitants.

presentation with references to statistics related to his previous duties in St. Petersburg and other national and international assignments.

“The technical systems are at the end of their service life and worn out, which means that practically everything must be replaced here,” says Tomilov who rushes on to show us the facilities where the mechanical cleaning of the wastewater takes place.

**FOR EXAMPLE, SLUDGE** handling is carried out manually meaning that there are people shovelling sludge into buckets that are then emptied into a container before being transported to a landfill near the plant.

**ACCORDING TO PRELIMINARY** calculations, the project will reduce phosphorus emissions by around 9 tonnes per year, which is equivalent to unprocessed emissions from a population of 14,000 persons.

“It’s a highly cost-effective way of reducing eutrophication discharges to the Baltic Sea because in this project the per-tonne price of removing phosphorus is a fraction of the equivalent cost in the Nordic market,” says Senior Investment Manager Ulf Bojö of NEFCO.

## FEDERAL INTEREST IN KALININGRAD’S WATER QUALITY

**AS THE WASTEWATER** treatment plant in Svetlogorsk is located a few kilometres away from the Russian government’s summer residence, local wastewater treatment is of interest even in Moscow. However, the government’s involvement runs deeper than this. At the Baltic Sea Action Summit in Helsinki in 2010, Prime Minister Vladimir Putin pledged to speed up wastewater treatment in Kaliningrad. Subsequently, the promise has been translated into cash, which means that there is federal money available for the type of water projects currently being implemented in the Kaliningrad region. The funding provided by the Russian government is of decisive importance for the economic puzzle being worked out by project owners and a range of financiers involved in the efforts to save the Baltic Sea.

**THE SVETLOGORSK PROJECT** is part of an extensive programme covering several



**The technical systems at the 35-year old plant in Svetlogorsk are at the end of their service life.**

small towns and villages in the Kaliningrad region. The EU and NEFCO have identified 20 locations in urgent need of improvements to wastewater treatment systems. The first in line is Svetlogorsk and its surroundings, partly because of their exposed location on the coast and partly because of the proactive efforts of the local water company OKOS.

**ACCORDING TO LOCAL** media, the Svetlogorsk region attracts around one million tourists a year. This imposes

additional requirements on wastewater treatment during the hot summer months. And if the water quality is not up to the required standard, the water company OKOS takes the blame.

“Bathwater must look clean to those who come here on holiday. That’s why it’s important that we modernise the wastewater treatment systems to make it possible for tourists to enjoy a clean Baltic Sea,” concludes Tomilov. **N**



# Nikel – the mother of all Barents hot spots



COLUMNIST

Thomas Nilsen

Editor

Barents Observer

The Russian industrial giant Norilsk Nickel is a world-leading producer of metals needed for the development of clean energy technologies and renewable energy sources. So why hasn't the company, after 20 years of negotiations with its Nordic neighbors, improved its environmental image by solving the large-scale emissions from its smelter in Nikel?

**A**T THE PUBLIC PRESS CONFERENCE held by the Foreign Ministers following the signing of the Kirkenes Declaration establishing the Barents Cooperation in 1993, more than half of the hall was occupied by members of the environmental ad-hoc group 'Stop the Death Clouds' who showed the ministers with probing questions. At the same time, people with banners outside the Foreign Ministers' hotel in Kirkenes town square were protesting against the large-scale sulphur-dioxide emissions from the smelter in the Russian town of Nikel on the Kola Peninsula. The smelter is located a few kilometers from the Norwegian border and is considered to be one of the worst hot spots of environmental problems in the entire Barents Region. Although this ad-hoc environmental group had thousands of supporters and managed to put the Nikel problem on the national agendas of both the Nordic countries and Russia, sadly they didn't manage to solve the pollution issue itself.

**SINCE THEN, THE** pollution of sulphur dioxide and heavy metals from Nikel has been at the top of the environmental agenda of the Barents Cooperation. Norway granted NOK 300 million in the early 1990s to help reduce the emissions.

**IN 2003, A** list of environmental hot spots in the Russian part of the Barents Region was defined by NEFCO and the Arctic Monitoring and Assessment Programme (AMAP). Nikel is one of the most severe spots on the list and can still get financial loans and support from Nordic financial mechanisms to solve the problems there.

**UNLIKE IN THE** early 1990s when Norilsk Nickel was a Soviet state-owned company, the key to clean technology in the production of metals is not financial grants from friendly Nordic neighbors. Today, Norilsk Nickel is one of the most profitable non-petroleum companies in Russia. Its 2010 revenue was USD 15 billion. In October this year, the company presented a strategy development program that aims to boost net revenue to USD 30 billion; net income to USD 10 billion; and market value to a range of USD 140 billion to USD 250 billion by 2025.

**TO PUT THIS** into some kind of perspective, the Board of Directors in Norilsk Nickel can meet in downtown Moscow tomorrow morning and decide to invest in clean smelting technology at its plant in Nikel. For the shareholders, such investment is pocket money – the profits from a few weeks' production should more than cover the costs.

*"Today, Norilsk Nickel is one of the most profitable non-petroleum companies in Russia."*

**IT IS INTERESTING** to note that Norilsk Nickel's skyrocketing profits are partly driven by the world's increasing demand for environmental friendly technology. Nickel is a key metal in batteries for non-emission vehicles while platinum, palladium and copper are widely used in catalytic converters. If Norilsk Nickel plays its cards right, the company can easily change its image from being the worst-on-dirt to becoming a world leading supplier of metals for environmental technology produced with best available smelting processes.

**DISAGREEMENTS ON ENVIRONMENTAL** investments have impacted Norilsk Nickel's shares before. In 2008, Russian billionaire Mikhail Prokhorov sold his 25% stake in Norilsk Nickel and invested the proceeds in the development of nanotechnology, LED lamps and electric cars. Hopefully, today's shareholders in the company will see the market trends and modernize its smelters in Nikel and Monchegorsk on the Kola Peninsula. In doing so, they will grow into a leading environmental friendly mining and metallurgical lighthouse for the up-coming natural resources investment boom in the Barents Region. **N**





The Nordic countries are at the forefront of environmental technology innovation. Increased R&D spending in all the Nordic countries generates new inventions and technologies, but it often takes time before these innovations are adopted and realize their business potential. Senior Manager Karl-Johan Lehtinen, who heads NEFCO's environmental unit, talks about what NEFCO is doing to address this challenge.



"Adopting new technologies can solve environmental problems and generate export revenues for Nordic companies", says Senior Manager Karl-Johan Lehtinen.

## Plans to establish new fund for environmental technology

**NEFCO'S BOARD OF DIRECTORS HAS AUTHORISED THE ADMINISTRATION TO STUDY THE POSSIBILITIES OF INVESTING IN A NEW PILOT FUND AIMED AT FINANCING NORDIC ENVIRONMENTAL INNOVATIONS. WHY?**

Existing technologies have not been able to solve pressing environmental problems. This means that new technologies have to be devised. They will help partner countries to solve common environmental problems and generate export revenues for the Nordic countries. It's a win-win situation. That's why we are carrying out this study.

**DOES THIS MEAN THAT NEFCO WILL SHIFT ITS FOCUS AND START FINANCING RESEARCH AND DEVELOPMENT EFFORTS ON A LARGER SCALE?**

Not really. NEFCO's traditional role won't change that much, but this kind of fund will enable the corporation and other players to finance projects where the technological use risk is included and economical as well as environmental gains are favourable to both parties. NEFCO is not planning to be the lead financier of the fund. The main challenge is now to find the anchor investors and fund operators for this initiative.

**WHAT KIND OF BUSINESS PARTNERS ARE YOU HOPING TO ATTRACT THROUGH THIS INITIATIVE?**

There are a number of potential investors and business partners in the agricultural, energy as well as the industrial sector in general. Geographically speaking we are focusing on projects, which will mainly be carried out in Russia, Ukraine and Belarus.

**CAN YOU MENTION A CONCRETE EXAMPLE OF A PROJECT, WHICH WOULD BENEFIT FROM AN ADDITIONAL PUSH FROM THIS PROPOSED FUND?**

The volume of poultry manure from chicken farms in the Leningrad Region in the vicinity of St. Petersburg and the Karelian Isthmus, in Russia, which is currently about 1.5 million tonnes per year, is increasing at an annual rate of 20 per cent. This effluent, like all run-off nutrients from various sources in the region, is responsible for the eutrophication of the Baltic Sea.

Instead of treating this manure as waste, it could be transformed into valuable raw material for the energy and agriculture sectors. We have found a Swedish technology company that can solve this environmental problem by producing gas, oil and biochar out of the manure. If all goes well, the volume of manure would decrease by 90 per cent from 1.5 million to 150,000 tonnes per year.

*"Instead of treating this manure as waste, it could be transformed into valuable raw material for the energy and agriculture sectors."*

**WHAT IS NEEDED BEFORE THE PROPOSED FUND BECOMES OPERATIONAL?**

We are currently looking for partners and various actors in the cleantech and venture capital sectors as well as governmental agencies that are interested in these kinds of ventures. For its part, NEFCO has to attract these players and gain the full support of its owners before it can proceed.

**HOW WOULD YOU DESCRIBE THE INVESTMENT PROFILE OF THE PROPOSED FUND?**

The details are not fully worked out yet because we are not sure about what partners will join the fund. The geographic mandate will, of course, remain unchanged. The higher risk of technological innovation will obviously increase NEFCO's current risk taking capacity. **N**

## New staff at NEFCO



■ **MR JOHAN** Willert has been appointed as Senior Adviser at NEFCO. Mr Willert is by profession an Environmental Engineer with 17 years of working experience in the areas of municipal services and environment from more than ten countries. Since August 2009 Mr Willert is placed at the Swedish Embassy in Dhaka responsible for programming and preparation of new Swedish development assistance to Bangladesh in Urban Environment and Climate Change.



■ **MR ALEXANDER BOLDYREV** has joined NEFCO's team in St. Petersburg as Technical Adviser since last spring. Before joining NEFCO he worked as Technical Project Manager for the Climate and Energy Department of the Danish company FORCE Technology in St. Petersburg.

## NEFCO's 2010 Annual Report clinches third prize

**NEFCO'S 2010 ANNUAL** Report has clinched the third prize in an Annual Reports Competition in Finland. The jury, which comprised independent graphic designers, photographers and visual art experts from media agencies, was impressed by the report's "simple elegance, relevant and appropriate graphic solutions and its vivid visual appearance."

"The text is easy to read and the visual solutions reflect the contents of NEFCO's Annual Report", said the jury's chairperson, Esa Ojala.

**NEFCO'S 2010 ANNUAL** Report was designed by Mikko Luotonen from Nimiö Design Studio and Patrik Rastenberger provided the photographic material. The Annual Reports Competition was organized by Lönnberg Printing Company, which currently prints NEFCO's publications materials.

The first prize in the national competition was won by Fiskars, whose report was designed by Dog Design. Sanoma Oy clinched the second prize and its report was designed by Dynamo Advertising.



## Follow us on

**NEFCO HAS ESTABLISHED** a Twitter account in order to strengthen its presence in the social media and reach out to new clients. Subscribers to our Twitter feeds will, among other things, receive tweets related to energy efficiency, renewable energy, cleantech, environmental innovations, finance, the ecological state of the Baltic Sea, and news from the Barents and the Arctic Regions. Join the conversation by signing up at <https://twitter.com/#!/NefcoNordic>.

## Watch our latest video on

**NEFCO HAS PUBLISHED** a video clip on two recent cleantech investments in Odesa, Ukraine and Kaluga in Russia. The video had, by 30 November 2011, generated some 3,000 clicks. The video can be accessed at YouTube or at [http://www.nefco.org/en/newsroom/video\\_clips](http://www.nefco.org/en/newsroom/video_clips).

## This is NEFCO

The Nordic Environment Finance Corporation, NEFCO, is an international financial institution established in 1990 by the Nordic countries – Denmark, Iceland, Norway, Sweden and Finland. Its primary objective is to finance cost-efficient environmental projects in its neighbouring areas in Eastern Europe. NEFCO provides financing for projects which aim at reducing environmentally harmful emissions and discharges.

### NEFCO NEWSLETTER 2/2011

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#### PHOTOGRAPHS

Patrik Rastenberger, Håkon Borch (page 5), Nordic Council of Ministers (page 4)

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The sea front at Svetlogorsk. Photo: Patrik Rastenberger



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