



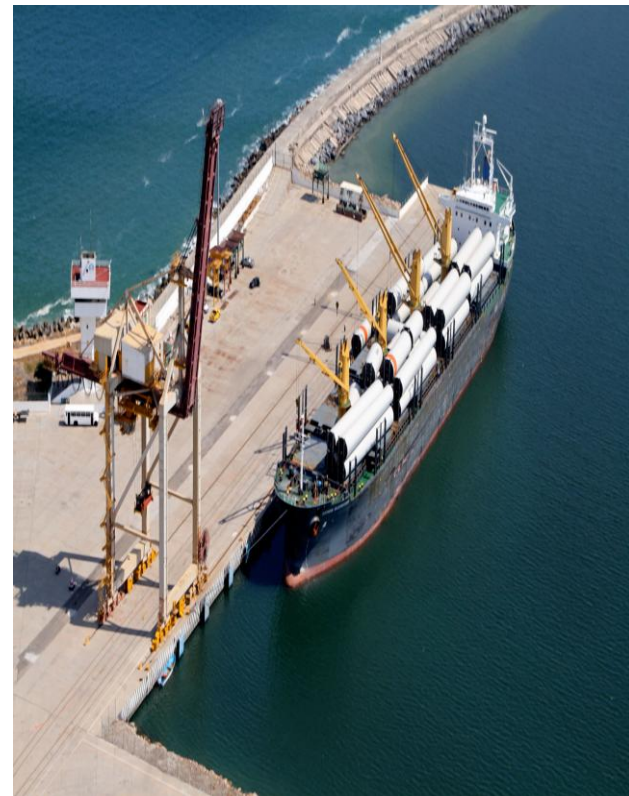
Cleantech Opportunities in Baltic Sea Region

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NEFCO in brief

- International financial institution established by the Nordic countries
- Loans and equity investments for environmental projects in Eastern Europe
- Funds to a total value of EUR 450 million
- Headquartered in Helsinki with 31 employees
- Locally contracted consultants in Russia and Ukraine

 Geographic mandate



NEFCO in brief

- International Financial Institution established in 1990 by Denmark, Finland, Iceland, Norway and Sweden
- Approx 450 million euro and >400 projects under management
- Financing for projects that generate positive environmental effects
- Priority on projects that reduce greenhouse gas emissions or toxic pollution or improve the environmental state of the Baltic Sea
- Acts as Fund Manager for various environmental funds including the Baltic Sea Action Plan, Cleaner Production and Energy Savings Credits
- Climate change mitigation has been a core activity since early 1990s, NEFCO now manages a range of carbon finance products and facilities

Key Elements of Green Growth



- OECD has identified the following key elements for green growth:
 - Productivity – incentives for greater efficiency in use of resources and natural assets, reducing waste & energy consumption
 - Opportunities for innovation – driven by economic policies that incentivise new ways of addressing environmental problems
 - Creation of new markets by stimulating demand for green technologies, goods and services
 - Boosting investor confidence through greater predictability and stability around how the state deals with environmental problems
 - Stability in terms of macroeconomic conditions, reduced price volatility, e.g. reviewing public spending priorities and pricing pollution

Source : Towards Green Growth, OECD 2011

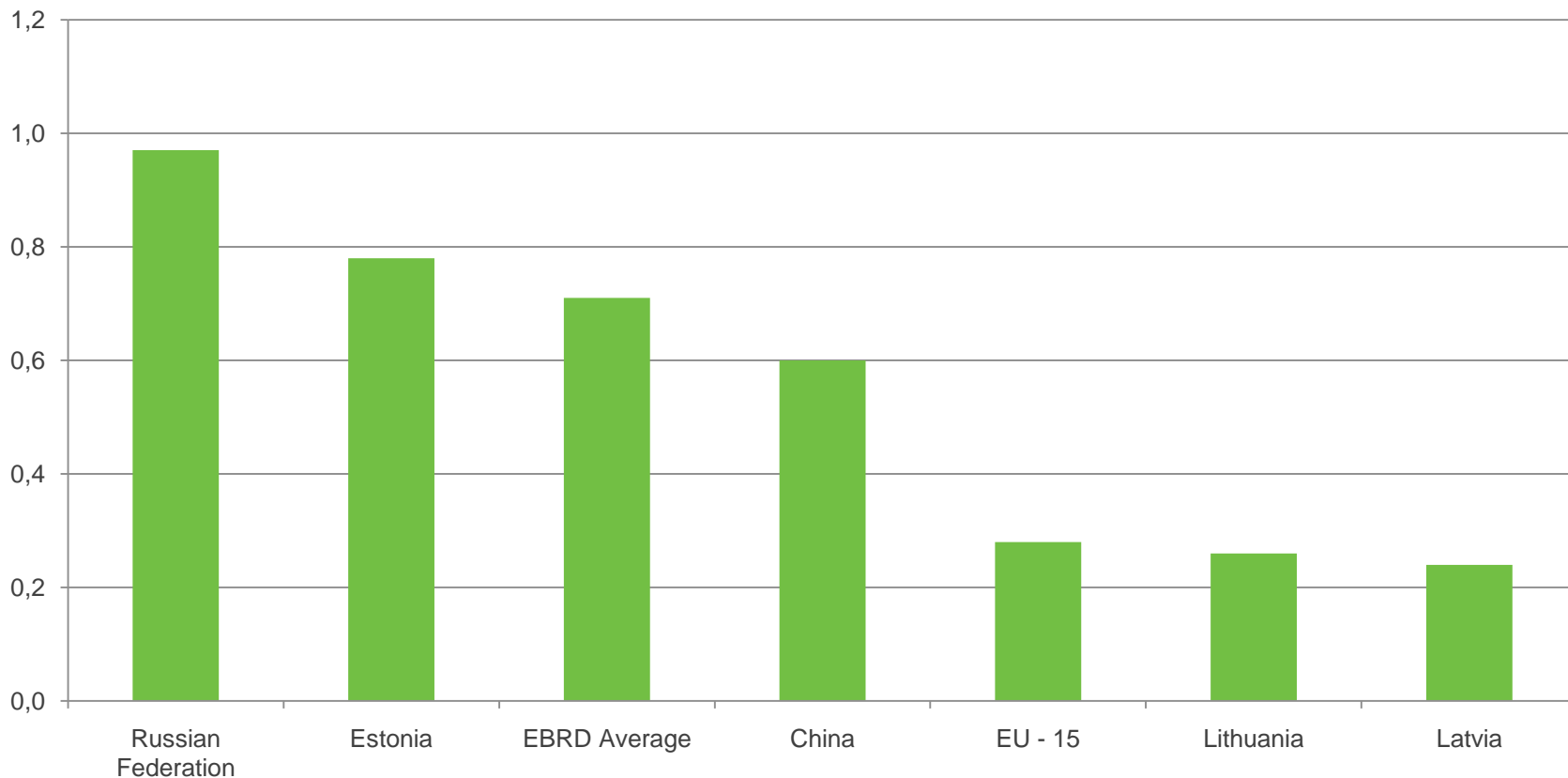
Context



- Global change already underway in the energy-industrial complex, with wholesale changes in economic activity from what society demands and consumes and the way goods are produced
- A green growth strategy must take into account the full value of natural capital as a factor of production, reducing wastage and pollution
- Baltic countries, with small, flexible & open economies with relatively limited resource endowment need to be at the forefront of this shift, promoting innovation and higher productivity to remain competitive
- E.g. in terms of carbon performance, Baltic countries LT and LV have caught up with the EU-15 according to EBRD
 - However impressive the performance, the benchmark is no longer the FSU but the Nordic countries and the EU
 - new business opportunities are therefore evident in clean energy, sustainable transport and carbon efficient production

Carbon Intensity of Baltic Countries

Carbon intensity expressed as kgCO₂ per USD GDP in 2000 prices at PPP



Source : *the Low Carbon Transition*, EBRD, April 2011

Advantages of Baltic Countries in moving towards greener growth



- The Baltic countries have several advantages :
 - Integration into one of the most competitive regions globally, the BSR, and close access to Nordic cleantech sectors can foster innovation and speed deployment of green technologies
 - Putting a price on pollution or over exploitation of scarce natural resources is key driver of cleantech
 - experience of the emission reduction imperative through the pricing of carbon e.g. participation in the EU ETS and the JI mechanism
 - moves towards cost reflective energy pricing & renewables are essential for the policy mix
 - small, nimble and innovative companies and resourceful human capital are critical to a green growth strategy
 - access to markets East as well as West, where some natural advantages exist

Opportunities in Cleantech in BSR

- Network infrastructure is essential for green growth, especially in energy, water, transport and communications
- Specific examples include :
 - Housing – energy efficiency, heat controls (low cost)
 - Energy supply – insulation of heat networks (low cost), renewable energy (high cost)
 - Clean Transport – efficient trams & buses, electric/hybrid vehicles





Examples of NEFCO Financed Projects in Baltic countries



Viru Nigula Wind Park, Estonia

Project: Wind park of 8*3 MW wind turbines

Category: Renewable energy - wind

Baseline: Electricity generation with fuel oil and gas

Emission reductions: 185,000 tCO₂e (2008-12)

Technology: WinWinD (FI)

Financing: Loan from JV partly owned by NEFCO

Carbon finance: ~10% of total, ~50% advance payment

Project status: Operational since 2008

Jl cycle status: Track 1 registration; Issuing
host country approval received; monitoring ongoing.

Sustainable development benefits:

- ∞ Health benefits via reduced local air pollution
- ∞ Local employment opportunities
- ∞ Contribution to national energy security



Source : www.4energia.ee



Saaremaa Biogas Combined Heat and Power Plant, Estonia



Project: Biogas plant for combined heat and power production based on pig waste

Category: Waste-to-energy

Baseline: Methane emissions from manure tanks and electricity generation with oil shale

Emission reductions: 60,000 tCO₂e (2008-12)

Technology: Ecomac (Belgium)

Financing: EU grants and commercial loans

Carbon finance: ~15% of total, 40% advance payment

Project status: Operational

Jl cycle status: Final determination completed

Sustainable development benefits:

- ⌘ Reduced local odour nuisance
- ⌘ Generation of fertilizing/soil improvement material



Baltic Pork - Biogas, Latvia

Project: 0,5 MW Biogas plant at Pig farms

Category: Biogas

Baseline: Methane and nutrient emission

Emission reductions: 14271 tCO₂e/y, 20 % reduction in N&P

Financing: equity, NEFCO's subordinated loan

Project status: Under construction, Operational 3Q 2011



Sustainable development benefits:

- ♻️ less local pollution
- ♻️ reduced nutrient load to the Baltic sea
- ♻️ Energy security and demonstration of technology





Benaičiai Wind Park, Lithuania

Project: Wind park of 6 x 2,75 MW wind turbines

Category: Renewable energy - wind

Baseline: Electricity generation with fuel oil and gas

Emission reductions: 131,000 tCO₂e (2007-12)

Technology: Vestas (DK)

Financing: Lease financing from local institution

Carbon finance: ~5% of total; 40% advance payment

Project status: Operational since 2007

Jl cycle status: ERUs issuing

Sustainable development benefits:

- ⌘ Health benefits via reduced local air pollution
- ⌘ Local employment opportunities
- ⌘ Contribution to national energy security



Source : www.vestas.com





Lapes Landfill Gas Utilisation, Lithuania

Project: Landfill gas collection and utilisation for heat (1.4 MW) and power (1.1 MW) generation

Category: Waste-to-energy

Baseline: Methane emissions from landfill until 1.1.2012, and heat and power generation with natural gas and mazut

Emission reductions: 152,000 tCO₂e (2008-12)

Financing: Own equity, NEFCO's subordinated loan

Carbon finance: >25% of total, 40% advance payment

Project status: Operational

JI status: ERUs issued

Sustainable development benefits:

- ⌘ Increased safety and less local pollution
- ⌘ Energy security and demonstration of technology
- ⌘ Local employment opportunities



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