Projects for Cleaner Production in Belarus

Cleaner Production Facility
Nordic Environment Finance Corporation
Peter Henningsen, April 2011

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NEFCO CP Facility - background

- The Cleaner Production Facility was created in 1996 as part of NEFCO's NMF (Nordic Environmental Development Fund) with funds amounting to EUR 60 million

- The CP is a revolving credit facility intended to promote technological investments in industrial projects by, simultaneously:
  1. Reducing emissions of harmful substances into the environment, and
  2. Increasing production profitability through efficient resource and energy utilization

- Supports the realization of projects that otherwise would not materialize or could be realized only later

- Complements and supplements other financing organizations, both bilateral and international

- 75 projects have been implemented, and another 37 new projects in the pipeline for NEFCO's consideration

Distribution by sector & country - 2009

NMF - Nordic Environmental Development Fund, incl. Cleaner Production and Energy Efficiency Credits

Distribution by sector

- Water 15%
- Agriculture 10%
- Waste 16%
- Energy 32%
- Industry 27%

Distribution by country

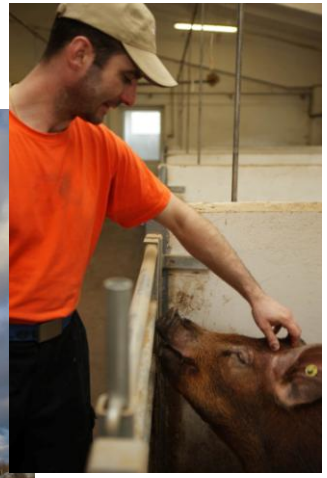
- Estonia 4%
- Latvia 12%
- Lithuania 5%
- Poland 2%
- Russia 60%
- Ukraine 17%

Critera for financing a CP project

- Projects must be implemented within NEFCO's geographic mandate, which today include:
  - Belarus, Russia and Ukraine
- Economically viable based on best available, tested environmental technology
- Projects must deliver measurable reductions of harmful emissions or discharges, with goals like:
  - Reduced emissions to the atmosphere
  - Less water pollutants
  - Reduced contamination of soil
  - Saving raw material
  - Less hazardous waste
  - Less energy used

Typical CP projects

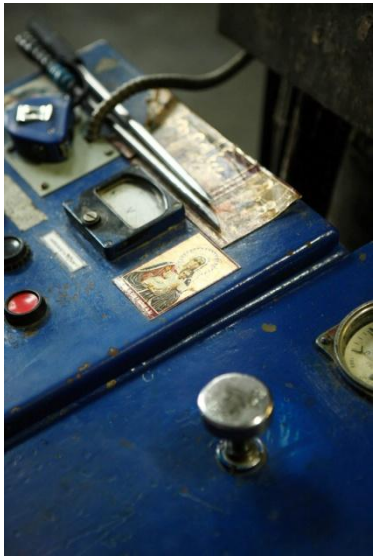
- Modernisation of industrial production processes
  - Installation of new and more efficient equipment, e.g. heating boilers, pumps
  - Installation of regulation and monitoring equipment
- Environmental services; waste management and water treatment
  - Recirculation and reuse of water
- Renewable energy investments and energy efficiency
  - biomass, wind energy, geothermal, small scale hydros
- Management of manure at animal farms
- Transfer of environmental technology, which reduce releases of harmful substances



New water heaters

Terms and conditions

- For private or municipal company with existing production
- Maximum loan amount EUR 350,000
  - NEFCO can finance up to 90% of total project cost
  - Loan paid in three tranches
- Payback period up to 4 years
- Fixed interest rate of 6% (EURO) per annum
- Security required: 125% of the loan amount
  - Guarantee (e.g. bank, parent company, municipal); Pledge in equipment
- Repayment starting after project completion
  - Tied to the savings generated by the project
  - Equal quarterly instalments
- Standard Loan Agreement documentation
- Competitive procurement of goods, works and services financed shall be open and fair



CP Project Cycle

1. Project Identification
2. Project Proposal (2 pages)
3. First Evaluation / Approval in principle (2 weeks)
4. Delivery of Business Plan
5. Final Approval by NEFCO's Investment Committee (1-2 months from BP)
6. Draft documentation (1-2 months after acceptance of loan proposal)
7. Signing of Agreement
8. Project Implementation – progress reports
9. Project Completion

CLEANER PRODUCTION CASE STUDIES

Case 1: Reconstruction of boiler house in furniture factory

Case 1: Boiler house in furniture factory

- Project: a new water heating biofuel boiler with capacity of 2,5MW was installed, replacing an old ineffective steam boiler. Heat energy is produced for own needs as well as for neighbouring companies.

- In sum, the new boiler reduced the consumption of:
  - Energy; Soft water; Wood waste; Gas and Diesel fuel

- Financing plan and profitability
  - Total investment 358 500 EUR
  - NEFCO's loan 322 650 EUR (90%)
  - Net savings 97 000 EUR/Year
  - Payback 3,7 years

Case 1: boiler house – net savings

Saving elements (unit)	Before implementation	After implementation	Saving Amounts	Savings in EUR (€)
Water (m3/year)	7 300	3 650	3 650	2 200
Natural gas (m3/year)	178 363	0	178 363	34 000
Diesel (t/year)	40	27	13	9 750
Electricity (MWh/year)	964	530	434	15 080
Sawdust (fuel) (m^3/year)	6788	4885	655	13 600
Envrionment fees (€)	4 200	0		4 200
O&M (€)	25 043	6 260		18 170
Savings, total (€)				**97 000**

Case 2: bakery project, Ukraine

Case 2: Bakery, Energy Saving Investments

- Project: replacement of baking ovens
  - Total investment 450,000 EUR
  - NEFCO's loan 350,000 EUR (82%)
  - Net savings 112,000 EUR
  - Payback 4 years

- Three projects financed by NEFCO within the same company group

- Environmental impact

	PRE-PROJECT	AFTER PROJECT
CO2 emissions	4,634 t/a	1,006 t/a
NOx emissions	4,262 t/a	1,035 t/a
Electricity consumption	336 MWh/a	123 MWh/a

Environmental savings of 213 MWh => 4,318 tonnes of CO2 per year

Cleaner Production Team

- Local representative / intermediary
- Local consultants to follow up project implementation
- Local lawyers: Sorainen Law Firm
- NEFCO team
  - Investment/Project Manager
  - Environmental analyst
  - In-house lawyer

To conclude, CP projects are good for business because:

- Investments in modern technology result in more efficient production, better quality, *better resource utilization* and *less waste*

- Investments in energy savings *reduces the general operating cost* of the business and decreases the pollution caused by the energy supplier

- **Therefore, improved modern technology and energy savings result in a *Cleaner Production that makes good business sense!***


Thank you!
Questions?
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