

CASE STUDY OF A SUCCESSFUL NATIONAL INDUSTRIAL DEVELOPMENT PROGRAMME/STRATEGY (3)

1. The problem or issue addressed:

Development and implementation of integrated methodology for application of sustainable industrial development measures

2. Name of the programme:

Environmental Management and Reporting in Lithuania

3. Timeframe: 3 years Year started: **2002**

4. Status: ? Ongoing **X** Completed in year **2004**

5. Main objectives:

- Integration of environmental management programs in industrial companies and in local communities on regional basis;
- Development of eco-efficiency indicators and reporting mechanisms and benchmarking for industrial companies/organisations/regions;
- Improvement of environmental conditions in Klaipeda region, Lithuania;
- Capacity building for enabling Lithuanian industry for meeting EU regulations.

6. Lead institution: **Institute of Environmental Engineering (APINI)/ Kaunas University of Technology (Lithuania) and National Institute of Technology (Norway)**

7. Other implementation arrangements and stakeholders involved (public, private, NGOs, CBOs, international support, etc.):

10 Lithuanian industrial companies, Klaipeda city municipality. The project has been financed by the Ministry of Foreign Affairs, Norway.

8. The results achieved (if possible, please address the social, economic and environmental impacts of the programme):

- The project achieved its objective to integrate environmental management programmes in industrial companies and in local community in Klaipeda region through development of a system of environmental performance/ eco-efficiency indicators for the region and development of a master environmental report for the municipality. It creates preconditions for more effective decision-making at both the community administration and industrial companies aimed at more effective management of significant environmental aspects in the region. This experience could be easily replicated in other regions of the country to enable benchmarking for industrial companies/ organisations/ regions in Lithuania. In turn, this will enable more effective application of different economically feasible and profitable measures aimed at improvement of environmental performance of industry, i.e. reduction of impact to the environment from industrial activities.

- The methodology used in the project enabled step-by-step and integrated implementation of environmental management system based on preventive approach proved as well as application of environmental performance evaluation/ sustainability reporting. The methodology proved to be an effective way for ensuring continuous improvement of environmental performance. This methodology could be easily replicated and applied both in sector-specific EMS implementation programmes for industry or for a mixed group of companies from different industry sectors. Norwegian and Lithuanian project partners are also determined to continue development of this methodology with the overall objective to increase its quality and applicability.
- Cleaner production assessments have been conducted in all companies that participated in the project. A number of cleaner production measures have been implemented in the companies during the project period. Implementation of these measures enabled companies to reduce the impact to the environment and gain positive economic results due to savings related to energy, water, raw material consumption and reduce waste management/ pollution treatment costs.
- The project activities contributed to building capacity for Lithuanian authorities on how to utilise preventive approaches in their legislative practices through training of Environmental protection department at Klaipeda municipality that is involved in issuing environmental permits for industrial companies. On national level, the project impact is indirect through capacity built at the institute of Environmental Engineering as this institute is involved in development of legal environmental documents (e.g. in the area of waste management) and strategic policy documents for the Ministry of Environment and Ministry of Economy (e.g. National Programme on Sustainable Industrial Development, National Strategy on Sustainable development).
- The project increased capacity of the main project partner from Lithuania, the Institute of Environmental Engineering. This institute is main centre in the country providing training/ consultations for Lithuanian industry and authorities in the area of preventive environmental management. Additionally, the institute is responsible for M.Sc. Programme in Environmental Management and Cleaner Production at Kaunas University for Technology, therefore, capacity built during the project will contribute to long-term education of future experts in authorities and industry.

9. The relationship of the programme to internationally agreed goals and targets:

The project contributed significantly to capacity building in Lithuania enabling industry for meeting EU regulations, particularly implementation of Integrated Pollution Prevention and Control (IPPC), Eco-management and Audit Scheme (EMAS) and regulations related to water, air and soil pollution as well as waste management.

There are 2 concrete cases of the Programme:

1. JSC “Klaipedos baldai” ("Klaipeda Furniture")

Air Cleaning System with Clean Warm Air Returning to the Working Area

Implemented in December, 2000

Equipment: Dust extraction plant AS AAGAARD (Denmark)

Project Investment 237000 EUR

NEFCO loan 200 000 EUR

APINI experts participated in:

- **CP project development phase** - JSC “Klaipėdos baldai” CP assessment and options identification, CP project development;
- **CP investment phase** – CP investment project development, preparation of loan application on behalf of the company, monitoring of procurement, project implementation and results.

Results

Cost savings:

El. energy savings
Heat energy savings
Environmental taxes reduction

335 236 Lt (90 514 EUR):

203 213.62 Lt/year (54 868 EUR/year);
130 875 Lt/year (35 336 EUR/year)
1 147 Lt/year (310 EUR/year).

Environmental improvements

El. energy consumption reduced by
Heat energy consumption reduced by
Atmosphere pollution reduced by
Wood dust
Ashes
SO_x
CO
NO_x
CO₂

1 098 452 kWh;
1 377 600 kWh
1047.54 t/year
6.24 t/year;
1.072 t/year;
9.22 t/year;
6.15 t/year;
0.856 t/year,
1024 t/year.

Payback period

2.6 years.

2. JSC “Ekranas” (Panevezys city, Lithuania)

Implementation of Refrigerating Machines to Ensure Technological Parameters of Assembling Shop

Implemented in April, 2000

Equipment: Refrigerating machines YORK INTERNATIONAL (G. Britain)

Project investment: 441 000 EUR

NEFCO Loan: 200 000 EUR

APINI experts participated in:

- **CP project development phase** - JSC “Ekranas” CP assessment and options identification, CP project development;
- **CP investment phase** – CP investment project development, preparation of loan application on behalf of the company, monitoring of procurement, project implementation and results.

Results

Cost savings:

	518 989 Lt/year (144 044 EUR):
El. energy savings	376 842 Lt/year (104 591 EUR);
Reduction of additives consumption:	
Phreon	53 233 Lt/ year (14 775 EUR);
Lubricants	10 914 Lt/year (3 029 EUR);
Staff decreasing saving	78 000 Lt/year (21 649 EUR).

Environmental improvements

Decrease of electrical energy consumption by	2 355 264 kWh/year;
Decrease of waste amount:	
Phreon by	1 620 kg/year;
Lubricant by	0.64 t/year;
Air emissions reduction	2725.08 t/year.
Ashes	1 t/year;
SO ₂	34 t/year;
CO	11 t/year;
NO _x	3 t/year,
CO ₂	1200 t/year.

Decrease of noise level by 50 – 55 dB.

Instead of ODS R22, the Phreon R134 A will be used which was developed to cope with ozone issue and its ODS value = 0. While HFC has a GWP of 1200, the machine has a low leakage and there is an overall reduction in the emission of CO₂ (by 1200 t CO₂ per year).

Payback period

3.1 year.