

UNITED NATIONS DEVELOPMENT PROGRAMME
Global Environment Facility

PROPOSAL FOR FUNDING
PDF BLOCK B

POLAND

FULL TITLE: Polish Energy Efficient Motors Programme

ACC/UNDP SECTOR AND SUB-SECTOR: Energy/Environment

GEF THEME Climate Change

TOTAL FUNDING REQUIRED: US\$ 285,700

GEF FUNDING REQUESTED: US\$ 195,700

CO-FUNDING: *Cash:* US\$ 20,000 in 1999 and US\$ 20,000 in 2000
(Polish Copper Promotion Centre S.A.)

In-kind: US\$ 50,000
(Polish Copper Promotion Centre S.A.)

REQUESTING AGENCY: UNDP

EXECUTING AGENCY: Polish National Energy Conservation Agency S.A.
(KAPE S.A.)

IMPLEMENTING AGENCY: Polish Foundation for Energy Efficiency (FEWE)

ESTIMATED STARTING DATE: June 1999

BLOCK A GRANT AWARDED: None

DURATION: 10 months

1. Summary Project Objectives and Description

The purpose of the full scale project to be developed with the PDF resources requested here is to remove barriers to the improvement of energy efficiency of the electric motors and their operating systems. The electric motors account for some 30-40 % of the total electricity consumption in Poland. In a tentative analysis conducted in 1992-93, the economic potential to reduce the electricity consumption of the electric motors by replacing the old motors with new, correctly sized energy efficient ones and, as applicable, by connecting them with variable speed drives was estimated to be about 6.3 TWh per year (or 18 % of their total electricity consumption in Poland). In terms of capacity, the estimated energy savings would correspond to roughly 1000 MW of saved production capacity. The resulting reduction of Poland's greenhouse gas emissions was estimated to be about 6.6 million tons of CO₂ annually. Poland's total greenhouse gas emissions in 1994 were 372.3 million tons of CO₂, of which the energy and transformation industries contributed some 60 %.

Despite the apparent economic and environmental benefits of introducing new energy efficient motors and their operating systems in the Polish industry and municipalities, there are a number of barriers that still prohibit the realization of this potential. A detailed analysis of these barriers and the measures to overcome them will be undertaken during the proposed PDF B phase. Tentatively, however, the project is expected to deal with measures such as (a) raising the awareness of the local industry and municipalities of the available technologies and the associated economic and environmental benefits to reduce the electricity consumption of the electric motors; b) facilitating energy audits and advisory services for the local industry and municipalities with respect to energy efficient motors and their operating systems; c) ensuring proper standardization and quality control of the new technologies; d) developing the local capacity to formulate "bankable" investment proposals for energy efficient motors and their operating systems; and e) in co-operation with the local and international financing organizations, developing and operationalizing a proper financing mechanism to facilitate these investments.

The goal of this project preparatory phase is to clarify the technical, economic, environmental, financial and institutional aspects of the project, and to develop a full scale proposal for the next phase, including the agreement on the institutional and financial framework to facilitate the actual implementation of the project

2. Project Rationale and Justification

Based on the study "Evaluation of the Feasibility and Profitability of Implementing New Energy Conservation Technologies in Poland" conducted by the Polish Foundation for Energy Efficiency (FEWE) in 1992-93, the total economic energy saving potential of energy efficient motors and variable speed drives was estimated to about 6.3 TWh (or 18% of the total electricity consumption of electric motors in 1991). The estimated reduction of Poland's greenhouse gas emissions by realizing this potential was estimated to about 1.8 MtC per year (6.6 million tons of CO₂).

While many of the listed measures, especially the replacement of the existing motors with high energy efficient ones upon their retirement or rewind, present economically a very attractive option, there are a number of barriers that still prohibit the realization of this potential. These barriers and the envisioned activities to overcome them are presented in more detail below. The consultations with the local and international organizations have indicated that no major activities to address these barriers are currently underway in Poland. Therefore, the baseline of the project is based on the assumption that without the GEF support the realization of the indicated energy saving potential is not foreseen to take place or it will be considerable delayed.

A detailed analysis of the barriers related to the project objectives will be undertaken during the proposed PDF B phase. However, tentatively the main barriers and the measures to overcome them are foreseen in the following areas:

- *Information barriers:* There is a need to raise the awareness of the local industries and municipalities of the available technologies and the associated economic and environmental benefits to reduce the electricity consumption of the electric motors. Also, information at the company level on the technical and economic energy saving potential by replacing the old motors with new, correctly sized energy efficient ones and, as applicable, by connecting them with variable speed drives needs to be gathered through energy audits and otherwise.
- *Financial/Institutional barriers:* Despite the significant electricity consumption of the electric motors (and the associated costs of it) at the national level, the costs of electricity in individual companies are typically relatively small compared to other production costs. Therefore, the reduction of electricity consumption is often a secondary concern for the enterprises and it is not considered as a priority measure in their investment plans. Often, they do also not have the

possibility to devote the time and the effort needed to address this relatively small part of their expenses. One possible way to overcome this barrier could be to establish ESCO-type intermediates between the enterprises and the financing sources. The ESCOs would carry the main responsibility of project preparation and financing, without additional time and financial burden to the enterprises concerned.

- *Technical:* although local availability of energy efficient electric motors exists, they are often produced for the export market and therefore meet foreign conditions/standards (e.g. NIMA); national standards for laboratory testing of the efficiency of motors are non-existent; methodologies and standards to test the motors under operational conditions are non-existing; large amounts of inefficient electric motors are still in stock;

The project is in line with the relevant legislation, strategies and action plans of the Government of Poland, including the Constitution of the Republic of Poland that has defined environmental protection, guided by the principle of sustainable development, as the right and the obligation of citizens.

Since 5 December 1997 “the Energy Law” has been enforced. This is the basic legal act defining the principles for the development of national fuel and energy policies, covering the heat and power supply enterprises. Among other provisions, the Law states that the tariffs for gaseous fuels, power and heat should ensure full cost-recovery of the production, including the environmental protection cost. Also, projects aimed at the reduction of energy consumption at the demand side should be supported and these costs can be taken into account in the tariffs, as far it can be justified economically in terms of avoiding construction of new energy production capacity.

In the second national communication of Poland to the UNFCCC (1998), improving the energy efficiency in industry and municipalities is mentioned as one of the key measures to reduce country’s greenhouse gas emissions to the atmosphere.

3. Description of Proposed PDF Activities

- a) *Updating the existing studies of the technical and economic potential for reducing the electricity consumption of the electric motors in different end-use sectors.*

This activity will build on the outcome of the activities that have already been undertaken to date. The different technical options to reduce the electricity consumption of electric motors will be identified and both their technical and economic potential to improve the efficiency of the system under current market conditions will be analyzed. In addition, the greenhouse gas reduction potential of the suggested measures and the required financial resources to realize this potential will be quantified.

- b) *Identification of all the key the barriers to the realization of the estimated economic energy saving potential.*

Through broad consultations with the relevant stakeholders (including private, semi-private and public enterprises and organizations), the key barriers to the realization of the estimated economic energy saving potential will be identified, verified and analyzed in detail, with an objective to determine possible mechanisms for their removal.

- c) *Designing activities to overcome the identified barriers*

Specific activities to remove the identified barriers will be designed and formulated. The costs and time schedule for these activities as well as the actors that will be involved in undertaking

these activities will be indicated. Specific emphasis will be in developing and operationalizing a suitable financing mechanism to facilitate the actual investments on energy efficient motors and their appliances.

d) ***Selection of the technologies and partners for the first demonstration projects***

Based on the outcomes of the activities above and through a detailed screening of the possible candidate sites, the technologies and partners for the first demonstration projects will be selected. The selection criteria will include, but is not limited to: i) economic profitability of the suggested measures; ii) replication potential within the selected end-use sector; iii) visibility; iv) learning value; and v) institutional capacity of the foreseen partner(s) to implement the project successfully.

e) ***Development of indicators and methodology for monitoring and evaluation***

The methodology and indicators for monitoring and evaluation of the GEF intervention during the full-size project will be developed.

f) ***Project preparation workshops***

In the initial phase of the implementation of the PDF B activities, a national workshop will be organized to discuss the project activities with the key stakeholders and to ensure their participation in the implementation of these activities. Another workshop will be organized at the end of the PDF B activities to present the outcomes of the PDF B phase and to discuss the proposal for the next phase. It is anticipated that representatives of the selected end use sectors, national and international banks, environmental funds, equipment suppliers and government representatives will be present at the workshops.

g) ***Finalization of the project brief and the project document for the main project***

The project brief for the main project will be finalized, including the institutional set-up and implementation arrangements as well as a draft work plan. After the approval of the proposal, a detailed project document to facilitate the actual implementation of the project will be prepared.

4. Expected outputs of the PDF B activities

The output of the PDF B phase will be a project brief and a draft project document for the main project demonstrating the ability to achieve the goals set for the project, including:

- a) an assessment of the size of the market, the quantity of financial resources required, and the contribution that fulfilling the full scope of the project would make in mitigating greenhouse gas emissions in Poland;
- b) a plan for involvement of all the key stakeholders, including the framework for continuing the communication with the potential national, bilateral and/or multilateral financial organizations;
- c) a description of all the key barriers to the implementation of the suggested energy efficiency measures in the sectors concerned, and a strategy and a proposed set of measures to remove these barriers;

- d) a detailed incremental cost analysis and financing plan of the project, including the agreement with the Government, private sector entities and/or financial organizations to cover the baseline costs of the project;
- e) a plan and a set of measures for monitoring and evaluating the programmatic benefits of the project;
- f) agreed institutional set-up and implementation arrangements for the full-size project as well as a draft work plan, including time and activity schedule;

As a by-product of the PDF B activities, a roster of national, regional and international experts to assist in the implementation of the project will be prepared.

5. Budget

The total budget for this PDF Block B is US\$ 285,700 with a GEF contribution in the amount of US\$ 195,700. Local co-financing is in the amount of US\$ 90,000 (Polish Copper Promotion Centre S.A.), divided between US\$ 40,000 as a cash contribution and US\$ 50,000 as an in-kind contribution.

PDF Block B activities	Cash Contribution	GEF	In-kind contribution	TOTAL (cash)	GRAND TOTAL
1. Updating the existing studies of the technical and economic potential for reducing the electricity consumption of the electric motors in different end-use sectors.		30,000	40,000	30,000	70,000
2. Identification of all the key the barriers to the realization of the estimated economic energy saving potential.		30,000		30,000	30,000
3. Designing activities to overcome the identified barriers	30,000	45,000		75,000	75,000
4. Selection of the technologies and partners for the first demonstration projects	10,000	20,000		30,000	30,000
5. Developing indicators and methodology for monitoring & evaluation.		10,000	5,000	10,000	15,000
6. Project preparation workshops.		15,000	5,000	15,000	20,000
7. Finalizing the project brief and project document for the main project		40,000		40,000	40,000
<i>Subtotal</i>	<i>40,000</i>	<i>190,000</i>	<i>50,000</i>	<i>230,000</i>	<i>280,000</i>
Executing Agency Support Costs (3%)		5,700		5,700	5,700
TOTAL	40,000	195,700	50,000	235,700	285,700

6. Institutional set-up and implementation arrangements

The executing agency for this project will be the Polish National Energy Conservation Agency S.A. (KAPE S.A.). This implies that full responsibility lies with the Executing Agency regarding the execution, monitoring and steering the implementing agency of this project. The proposed implementing agency for the project activities is the Polish Foundation for Energy Efficiency (FEWE).

Both the Political and Operational GEF Focal Points; the Ministry of Foreign Affairs and the ECOFUND respectively will follow the project closely and support the implementation of it. The local UNDP office will administer and allocate the funds of the project on behalf of the GEF Secretariat. Furthermore, it will provide assistance on the formal GEF procedures that apply to reporting (project brief format) and it will be the formal channel of correspondence between the project and the UNDP/GEF core unit in New York.

A Project Steering Committee will be set up to advise the executing and implementing agency on the direction of project development and implementation. Furthermore, the steering committee will perform as a platform for sharing information on the project's progress. At minimum, representatives of the following organizations will take seat in the committee: the executing agency, the implementing agency, the political and/or operational GEF Focal Point, KGHM/Copper Promotion Centre, representative(s) of the relevant financial institutions, representative(s) of the relevant end-use sectors and UNDP-Warsaw.

7. Expected dates of PDF Block B beginning and completion

It is anticipated that PDF Block B activities will commence in July, 1999 and they will be completed by April 2000; i.e. a duration of 10 calendar months.

8. Eligibility

The Government of Poland ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 24 July 1994. The proposed project is consistent with the GEF Climate Change Operational Programme 5 '*Removal of Barriers to Energy Efficiency and Energy Conservation*'.

9. National Level Support

As a result of the agreement of the "Paris Club" in 1991, a part of the Polish foreign dept has been converted to provide financing for environmental projects (so called eco-conversion). Till the end of 1995, agreements with five countries: the USA, Switzerland, France, Sweden and Finland has been signed. The ECOFUND Foundation was established to manage these resources (with the exception of the Finnish funds) and between 1992 and 1995, 139 environmental projects for the total amount of 146.9 million PLN (ca. 60 million USD) was approved for financing by the Management Board of the ECOFUND. The largest share (34%) of the funds were allocated to co-finance projects dealing with the reduction of greenhouse gas emissions. The supported activities include: promotion of energy savings in the heating systems, waste-heat utilization and liquidation of inefficient energy sources, promotion of renewable energy sources and the economic utilization of methane from mines and municipal landfills. The funds are provided in the form of grants to support the investment costs of environmentally friendly technologies. The maximum share of the grant depends on the applicant institution and can run up to 20% for private sector entities; up to 30% for local governments; up to 50% for the hospitals, schools and similar public institutions; and up to 80% for NGOs.

Under the bilateral and multilateral co-operation, several projects to support the rational energy use in different sectors have been supported. The projects have focused on the coal to gas conversion, methane utilization and improving the energy efficiency of the heat and hot water supply. Two projects promoting energy-efficient lighting have been successfully completed: GEF project (PELP) of the total amount of 5 million USD resulted in selling of 1.28 million energy saving light bulbs; the second project conducted by WWF (total amount of 150 thousand DM) resulted in energy consumption reduction (20- 40%) in selected schools. The lessons learned in the implementation of both projects will be duly taken into account in the design of proposed energy efficient motors project.

Concerning the energy efficient motors, the USAID provided support in 1992-93 to undertake a national assessment of the potential of demand-side management in Poland. A part of this analysis was to estimate the energy saving potential of energy efficient motors and variable speed drives. The

Copper Promotion Center S.A. has provided support to FEWE, and this support has facilitated, e.g., the development of specific software for cost-efficiency analysis of energy efficient motors.

The *Cleaner Production Programme* has been promoted since 1991, in co-operation with the Ministry of Environmental Protection, Natural Resources and Forestry, National Fund for Environmental Protection and Water Management, enterprises and various national and international institutions, with an objective to encourage the enterprises to follow cleaner and ecologically sound production principles. Under the programme, two national and eight regional Cleaner Production Centres have been established with the objective to train the companies in the field of cleaner production, minimizing the use of raw materials, water and energy resources, and reducing the emissions of environmentally harmful substances. Investors in cleaner production have also had an access to preferential financial credits.



**Ministry of Foreign Affairs
of the Republic of Poland**

Department for United Nations
Economic and Social Affairs

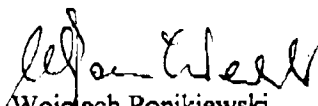
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DESONZ/4448-5/99

Warsaw, 10 May 1999

Dear Mr. El-Ashry,

In my capacity as GEF Political Focal Point I would like to endorse project proposal entitled „Polish Efficient Motors Programme”. Since electric motors are widely used, the improvement in their efficiency will contribute to more efficient use of electricity in the Polish economy and the reduction of the air pollution. The project aims at changing electric motors market, thus enabling better functioning of the sustainable energy policy which is currently under elaboration. The project will contribute to meeting Poland's commitments under the United Nations Framework Convention on Climate Change. Therefore, the project enjoys full support of the Polish authorities.

Yours sincerely,


Wojciech Ponikiewski
Director of the Department
GEF Political Focal Point

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