

Technical Support and Investment - Ozone Depleting Substances Phaseout

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INTRODUCTION

i. Hungary was one of the first countries eligible for Global Environment Facility (GEF) grant funds to launch a comprehensive Ozone Depleting Substances (ODS) phaseout program. In 1993, the Government of Hungary requested World Bank assistance for the preparation of a GEF funded ODS Phaseout Project. When the project closed at the end of 1998, it was one of the first successful ODS phaseout projects worldwide. GEF support provided an incentive for Hungary's early adoption of additional ODS phase-out activities, which yielded environmental and economic benefits.

PROJECT OBJECTIVES

ii. The principal objective of the Project was to assist Hungary in the phaseout of ODS consumption in a cost-effective manner by the year 1996,

as mandated by the Montreal Protocol (MP). Specific objectives included:

a) the progressive phaseout of ODS consumption in Hungary, through the adoption of new cost-effective CFC-free technologies; b) the establishment of a Hungarian network for refrigerant recovery, reclamation and recycling (3R); and c) through institutional strengthening to improve the capability of the Ministry of Environment (MOE) to manage and oversee the phaseout of ODS in Hungary. Subprojects addressed each of the project objectives (equipment manufacturing, 3R, CFC phaseout).

IMPLEMENTATION EXPERIENCE AND RESULTS

iii. The objectives of the Project and the Country Program were fully achieved. Use of primary CFCs was phased out through the implementation of sub-projects for which funding was provided by the GEF on a grant basis to cover the incremental investment and operating costs that enterprises would not have incurred had Hungary not been a party to the MP. In addition the Project enabled appropriate Western technologies to be identified and introduced into the country. The MP is based on the elimination of ODS consumption; the fate of existing stocks of ODS is not considered and signatories are free to manage these in any way they choose. Hungary's approach reflects that adopted in all Western Countries. For completeness, the evolution of CFC refrigerant and halon stocks as the Project progressed has been estimated. Sub-projects 2 and 15 were designed to conserve refrigerant and halon stocks respectively and thus minimize the need to use costly imported substitutes.

iv. Project time frame. The original project completion date was December 31, 1997. This had to be extended twice by six months to December 31, 1998 because of delays in implementation by the Hungarian Association of Refrigeration and Air Conditioning Enterprises (HRACA), 3R project and delays in commissioning hydrocarbon foaming projects at Frigolux and Metalucon due to the exceptional stringency of Hungarian flammable gas

regulations compared to those countries where the equipment was being manufactured. Disbursement was delayed for several months early in the project owing to the slow set-up of the Project Implementation Unit (PIU) and a change in Hungarian regulations in the financial and banking sector by the introduction of State Treasury.

v. Institutional Strengthening Component. MOE, with the support of the GEF funds and Bank experts, could set up an ODS Phaseout Project Implementation Unit (PIU) and a Technical Advisory Group (TAG) to provide technical advice to the PIU and the sub-project companies, and established ODS monitoring system in Hungary.

vi. The 3R and Investment Components. Major projects involving investments in equipment were carried out at the Hungarian Refrigeration and Air Conditioning Enterprises Association (HRACA) - 3R scheme -, HAJDU - insulated hot water tanks -, Metisol -insulated panels -, MMG Works - engineering component cleaning -, Frigolux - refrigerator and freezer production -, Metalucon - insulated panels -, the Hungarian Fire Protection Association (FPA) - halon recovery and reclamation - and Rutitex -dry-cleaning. Smaller investment projects were carried out at Mediroll - medical sterilizing aerosols -, Auto-Mobil Chemical - industrial aerosols -, Hitelap - circuit board cleaning Tisza - shoe sole manufacture. One project, BRG (soldering circuit boards) comprised incremental operating costs only. All of these were successfully implemented and the enterprises concerned are satisfied with both the technology chosen and the performance of the new plant. No remaining technical problems were identified. One enterprise, (Metisol), is still using transitional HCFC-141b for foaming but anticipates use of a non-ODS substance by April 1999. One enterprise originally selected (Finommechanika) was dropped since the company closed its ODS consuming production.

vii. All participants benefited from the Project and many are in a financially stronger position now than at the start of the Project. Stronger export performance at HAJDU and Frigolux helped them through the

difficulties of an economic recession following liberalization of the Hungarian economy. Metisol found the new technology strengthened its position with foreign supermarket companies operating in Hungary.

SUMMARY OF FINDINGS, FUTURE OPERATION, AND KEY LESSONS LEARNED

viii. The Project is the third of its kind to be completed after the Czech Project. The PIU was fortunate that the Bank's Regional Office could provide continuous procurement and project implementation management support. Grant recipients had the opportunity to exchange lessons, good practices and experience with the Czech and the Slovenian PIUs and companies through the international workshops initiated by the Bank. These contributed to the efficient management of the Project. The Hungarian experience is being shared with the neighboring countries and is expected to prove invaluable for ongoing GEF funded ODS phaseout projects in Poland and the Commonwealth of Independent States (CIS).

ix. Legal and Regulatory Framework. ODS phaseout took place within the framework of Hungary's obligations under the MP as amended in London and Copenhagen, whose provisions have the force of law in the country through a ministerial decree approved in 1993 (22/1993). This covers the need for recovery and recycling of refrigerants and halon fire extinguisher gases, the licensing of refrigeration technicians, as well as banning the use and imports of ODS in new products in advance of MP requirements. This legislation is very comprehensive and will not require modification until Hungary harmonizes her legislation with European legal codes during the EU accession process. The legislation covers Hungary's obligations under the MP, which do not include management of the existing stocks of CFC refrigerant, which amounts to now about 3280 tons of CFC-12, 3 tons of R-502 contained in existing refrigeration systems throughout the country. No stocks of CFC-11 refrigerant exist.

x. Major Factors Affecting the Project The most significant factors that affected the Project were the delays in disbursement resulting from the changes as a result of the introduction of the State Treasury in 1997; the delays in the 3R scheme, due to slow decision making at HRACA; and in the implementation of foaming sub-projects using flammable gases owing to the stringent nature of Hungarian regulations.

xi. The regional workshops, launched by the Bank and organized by the PIU, were particularly useful in designing the recovery, reclamation and recycling (3R) scheme. Hungary was able to avoid the mistakes made in the Czech scheme. The close partnership developed through the Bank workshops will help the Czechs modify their scheme by studying the operation of the Hungarian scheme.

xii. Recipient Participation. The PIU carried out its duties in an exemplary fashion which can be used as a model for ODS Project implementation elsewhere. The Hungarian PIU enjoyed the advantage of being set up within the Ministry of Environment and having the Bank's local office in the same city. This allowed informal solutions to be found to some problems, which could have proved intractable if their solution relied on inter-ministerial communication. Overall the Project progressed smoothly and provides an example for other countries involved in ODS phaseout. The PIU provided a high level of management co-ordination that was matched by the level of efficiency and co-operation displayed by the Sub-project enterprises.

xiii. Bank Performance. The Bank's performance in preparation, appraisal and implementation was satisfactory, despite two changes in task manager over the life of the Project. The Bank's missions were staffed with highly qualified professionals in environmental, procurement, technical and financial fields. The priorities of both Hungary and the GEF were appropriately addressed as were those of the MP and its related amendments

and adjustments. The decision in 1996 to move supervision responsibility for the Project to the Bank's Regional Office in Hungary was highly welcomed by the Recipients as it overcame problems arising from distance and time and proved to be the most cost efficient project management for the Bank. Also, project supervision from the field greatly facilitated the launching and managing of a series of regional workshops with the involvement of the grant recipient countries.

xiv. Implementation Structure. The arrangements for coordinating implementation of the Project worked well. The enterprises and, in turn, the PIU submitted the progress reports to the Bank in a timely fashion. All participating entities eventually welcomed the discipline of Bank reporting requirements and procurement procedures. All found Bank's requirements rigorous, but appreciated the transparency afforded by them and admitted that acquiring financing commercially would have been very difficult. All enterprises gradually became familiar with tendering processes, which they normally employed for their own procurement. Several enterprises reported they would have closed with the loss of jobs (Frigolux, Metalucon) had GEF grant funding not been available. All would have been seriously stretched financially.

xv. Sustainability and Future Operations. All enterprises are financially sound and have successfully implemented their respective sub-projects based on state-of-the-art non-ODS technologies. They are, therefore, likely to remain in business and the equipment provided under the Project will be used until the end of its useful life. The Project addressed every area of CFCs use, and included schemes for refrigerant and halon recovery - the latter being the largest of its kind in Central and Eastern Europe. Figures provided by HRACA show the existing stocks of ODS refrigerant (Table 5.1.). The suspected illegal imports of CFCs might make it difficult to predict the future performance of the 3R scheme and the length of time it will supply recycled CFCs for service needs, however

stricter border and customs control could enhance the sustainability of the 3R scheme.

xvi. The Bank's completion mission recommended that the operators of the 3R-reclaim center should proceed with plans to increase the buy price of recovered refrigerants to improved throughput. The center is financially viable, but has a great deal of spare capacity. The enforcement of regulations banning the import of CFCs and the export of halons will improve the fortunes of both refrigeration and halon recycling schemes.

xvii. Demonstration Value and Replicability. Apart from Mediroll who have made a technical innovation which is potentially interesting to a small number of users outside Hungary, manufacturing sub-projects consisted of implementation of state-of-the-art foreign technologies. Several other smaller technological innovations were made in the course of implementation. Some have significant demonstration value within Hungary (MMG Works- solvents in engineering firms; Metalucon/Metisol - insulated building panels); all can serve as a model to other countries implementing ODS phaseout projects.

xviii. Cost Effectiveness. The cost effectiveness of some sub-projects was lower than the MP's thresholds. This is due to the fall in production that many experienced after 1990. The cost effectiveness ratios were provided in the original Sub-project documents approved by GEF in 1995. Actual cost effectiveness ratios are comparable to those predicted in 1995. These are presented in Statistical Table 5.G.

xviii. Global significance. Several projects reported significant health benefits to workers. Use of completely hermetic cycles (Metisol, Frigolux, Rutitex) and replacement of CFC solvents with aqueous based systems (MMG Works, Tisza, Hitelap) meant that workers were no longer exposed to solvent vapors. The operation of the halon recovery scheme improved the

quality of halon fire fighting gases and revealed dangerous scams operated by companies servicing fire- fighting equipment. Public safety has thus been improved in locations where halon is used.

xix. Key lessons learned. The most important lessons in the areas of project design, the Public Awareness Raising Campaign (PARC) and procurement are as follows:

Some equipment were not included in the original sub-projects and thus had to be procured with remaining unallocated funds (e.g. wastewater treatment facility at aqueous cleaning projects). During the implementation of the 3R scheme, HRACA felt that their high Incremental Operating Costs (IOC) should have been fully compensated - this was almost met by Project completion, since HRACA received altogether 69,000 USD IOC, about 80 percent of their justifiable IOC request. Better planning could have ensured these were included in their original funding requests.

The PARC management by the multi-national public relations (PR) company was disappointing. The fault is generally conceded to be the use of a large multinational PR company with little interest in the Environment.

The HRACA and the PIU learned that environmental nongovernmental organizations NGOs should have already been involved at the preparation stage of the PARC.

Consultants "hungry" to get the job, but not committed to true environmental improvements are now considered an inappropriate choice for such a campaign. In the future, PR firms well experienced in environment together with NGOs may be used as the lead contractors, with resources to incorporate the services of PR firms where these may be appropriate'. One reason that the Consultants won the contract was the fact that evidence of previous success in organizing an environmental campaign countered for only five percent of the evaluation criteria points.

HRACA, managing the 3R scheme, found that one U.S. supplier of recovery

machines was unreliable. This supplier seemed to have disappeared from the map, and is not available to deal with the exceptional level of mechanical failures experienced by his equipment. In fact HRACA had misgivings about the US supplier at the tendering stage, and endeavored to nullify their declaration of this Bidder as the winner of the International Shopping bid shortly after it was made.

HRACA complained that Bank procurement procedures did not allow them to examine and p test goods from different suppliers, unaware that this could have been made a condition of prior participation in the tender. This suggests that training of sub-project enterprises themselves in procurement procedures in the start-up phase is needed. All activities of the implementation and budget items should be carefully planned at the project preparation. The projects animating a large number of participants as the case of 3R, can have enormous high administrative costs. Plant level planning involves the environmental accessory equipment, like the effluent water treatment in solvent sub-sector.

Knowing what they know now, the PIU would eliminate small disbursement packages, and leave small projects for counterpart funding. The complication of Bank procedures makes small elements unworkable.

1/ E.g.: making TV shorts