Report Number : ICR00004120

1. Project Data

Project ID P115762	**Project Name** VN-HCFC Phase-out Project (Stage I)
Country Vietnam	**Practice Area(Lead)** Environment & Natural Resources

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
TF-12705	30-Jun-2017	9,763,820.00
Bank Approval Date	**Closing Date (Actual)**	
13-Nov-2012	30-Jun-2017	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	9,763,820.00	9,763,820.00
Revised Commitment	8,205,601.65	8,205,601.65
Actual	8,205,601.65	8,205,601.65

Prepared by	Reviewed by	ICR Review Coordinator	Group
Aida Tapalova	April B. Connelly	Christopher David Nelson	IEGSD (Unit 4)

2. Project Objectives and Components

a. Objectives

The project development objectives in both the Project Appraisal Document (PAD) (p.6) and Grant Agreement (p. 4) were to "Reduce hyrdoflorocarbon (HCFC) consumption in order to contribute to the Government of Vietnam's efforts to comply with its Montreal Protocol (MP) phase-out obligations for HCFCs to be met between January 1, 2013 and January 1, 2015. The HCFC phase-out will be done in a manner that maximizes the climate co-benefits through the introduction of no to very low global warming potential (GWP) alternatives".

b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

No

d. Components

This Project is one of a series of projects that make up Vietnam's long-term MP compliance strategy. The project covered Stage I of Vietnam's HCFC Phase-Out Management Plan, which targets foam sector consumption of HCFC-14b.

The project's components are:

Component 1: Investment in HCFC-141b consumption phase-out (US$8.88 million at appraisal, US$7.37 million at project closure). This component supported select foam sector producers with the conversion from HCFC-based foam production to non-HCFC technology, through a series of investment activities (mainly procurement of equipment). It was originally designed to support twelve foam producers but after appraisal) one enterprise (Glory) exited the foam business, reducing the total number of enterprises supported to eleven.

Component 2: Supporting policies and regulations and technical assistance activities (US$0.36 million at appraisal, US$0.32 million at project closure). This component provided technical assistance to the government agencies and related beneficiaries and stakeholders to (a) implement an import quota system to curb the supply of HCFCs, (b) recommend the government authorities not to issue licenses for establishing new facilities and expanding existing facilities using HCFCs, (c) ban the import of bulk HCFC-141b by January 1, 2015 through the HCFC quota system, and (d) support workshops and training, awareness campaigns, and consultants' services (including studies) on the need to phase out HCFCs and on future regulatory measures.

Component 3: Project management (US$0.53 million at appraisal, US$0.52 million at project closure). This component established and supported a project management unit (PMU) under the Ministry of Natural Resources and Environment (MONRE) to implement and coordinate project implementation and assist MONRE to put in place regulations and sector-specific policies.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project Cost: At appraisal, the total cost of the project was estimated at US$ 9,763,820 million (PAD, p. 6), and actual cost at completion was 8,205,602 million. The main reason for the lower than expected disbursements was the unused conversion subproject allocations for one of the targeted enterprises that had exited the business following project appraisal and no longer required conversion. This accounted for $914,700 of the $1,558,218 in undisbursed proceeds. An additional $593,224 in financing allocated for incremental capital (ICC) and operating costs (IOC) of the remaining foam companies was returned to the donor due to lower costs relative to both the appraisal estimates and the revised allocations in the approved subprojects agreements, which shifted most of the unneeded IOC allocations to cover higher ICC requirements. Together these two factors account for 98% of the undisbursed funds. The ICR does not provide an explanation on the remaining 2%.

Financing: The project was financed by a US$ $ 9,763,820 million grant from the Multilateral Fund for the Implementation of the Montreal Protocol (MLF). As noted above, only US $ 8,205,602 was disbursed.
Borrower Contribution: A contribution from the recipient was not planned.
Dates: The project was approved on 13-Nov-2012 and became effective on 16-Nov-2012. The project closed on its original closing date on 30-Jun-2017.

3. Relevance of Objectives

Rationale

The project objectives were and remain highly relevant to several national and global environmental priorities. Vietnam is a party to the Montreal Protocol and the project objectives are consistent with Vietnam′s commitment to meeting MP Phase-out obligations. Vietnam′s long-term MP strategy is a staged process supported by a series of projects in which initial projects targeted the most widespread and highest impact substances that could most readily and efficiency be phases out, with subsequent projects progressively phasing out less prevalent, lower-impact or lower-priority substances. In 2007 the Parties to the protocol accelerated the HCFC consumption and production phase-out schedule. The project objectives are consistent with the implementation of Vietnam′s HCFC Phase-out management plan (HPMP). The objectives of the project are consistent with meeting another key MP goal of using alternative technologies with very low or not global warming potential. Vietnam is also Party to the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement. The project objectives of maximizing climate co-benefits through the introduction of no to very low global warming potential alternatives are relevant to meeting the goals of these agreements. Finally, by improving the competitiveness of its industry through the transfer of the most current, zero ODP and low GWP alternative technologies, the objectives are also aligned to Vietnam′s national policy on industrialization and modernization.
Alignment with WBG Country Partnership Strategy: The objectives were in line with the Bank′s most recent Country Partnership Strategy (CPS) FY18-22, which includes “to promote low carbon energy generation, including renewables and energy efficiency, and reduce Greenhouse gas (GHG) emissions, indicates that WBG support will seek to expand the co-benefits of lowered GHG emissions in key sectors-transport, agriculture and industry, the latter especially in HCFC phase-out” as one of its focus area. (CPS, pp. 32, 146). The objectives were also highly relevant to the Bank′s CPS FY12-16, in place at project preparation, as the country's Infrastructure Strategy addressed a reduction of the carbon footprint of Vietnam′s economy by supporting renewable energy, energy efficiency, and cleaner technology options for urban transport. (CPS, p. 22, 24).

Rating

High

4. Achievement of Objectives (Efficacy)

Objective 1

Objective

Reduce HCFC consumption to help achieve Vietnam's Montreal Protocol phase-out obligations for HCFCs in 2013 and 2015.

Rationale

As described in the Theory of Change of the ICR section (p. 8), the activities and related outputs directly linked to achievement of this objective are the policy, TA, and capacity building activities that enabled Vietnam to monitor and effectively control its consumption, as well as to establish non-tradable quotas to completely phase out consumption of bulk HCFC-141b, which is used in the foam sector and to limit and level off the increase in consumption of HCFC-22 used in the refrigeration and air-conditioning sectors at a quota of 198 ODP tons.

The activities and expected outputs were achieved as planned. The 2013 outcome target (freezing consumption at the 2009-2010 baseline level) was met and the 2015 target was exceeded. HCFC consumption was phases out from baseline of 221.20 ozone depleting potential (ODP) tons to 192.70 (target 199.10 ODP tons). Reported results shows the reduction of ODP was 28.5 tons from the baseline. According to data provided in the ICR (p. 15), Vietnam is in compliance with its HCFC consumption obligations.

Outputs

- The Customs Office implemented an import quota system to limit the supply of HCFCs, which was banned by January 1, 2015.
- The Ministry of Natural Resources and Environment (MONRE) issued recommendations to line ministries asking them not to issue licenses for establishing new facilities or expansion of existing facilities using HCFCs.
- An import quota was introduced for all HCFCs on January 1,2012, in tandem with the government's policy on imposing an environmental tax on HCFC-141b.
- The HCFC quota and import licensing system was established providing guidance on the management of import, export and temporary import and re-export of ODS, ensuring compliance with the MP provisions in Vietnam.
- A veto was issued on new registrations for bulk HCFC-141b and HCFC-22 importers. No new registration is allowed for importers of other HCFCs.
- A total of 487 government officials were trained on the HCFCs import and export control system and how to identify mislabeled HCFC.
- A total of 962 government officials were trained on HCFC-22 reduction and energy savings measures. More than 1,200 technicians in servicing shops also received training on good practices in handling HCFC- containing RAC.
- HC safety workshops were organized to make sure that each participating enterprise is fully compliant with local and national environmental and firefighting rules, directly benefiting 532 people.
- The investments in the foam sector supported the quota phase-out of bulk HCFC-141b and mitigated its economic impact by helping HCFC-141b users to convert to alternates substances.

Outcomes

The project aimed to ban bulk HCFC-141b consumption in the foam sector by completion.
Although reduced consumption is the means for achieving both PDO objectives, the project used two different types or definitions of consumption. The first objective, measures "consumption" as defined by the MP for technical purposes. Under the MP, "consumption" is defined as production plus imports minus exports of controlled substances. Since Vietnam wasn't HCFD producer, the "consumption" here only includes imports of several types of HCFCs for various industrial applications in domestic use for refrigeration and air-conditioning (RAC) manufacturing, for foam production and servicing cooling equipment. The indicator is for imports of all bulk HCFC.
The targets for this objective were set in accordance with Vietnam's national HCFC import phase-out targets. The target for 2013 was to freeze HCFC consumption at a baseline level set at 221.2 ODP tons, the average consumption for 2009-2010.
The target for 2015 was HCFC consumption of 199.1 ODP tons (a phase out of 22.1 ODP tons, or 10% from the baseline).
Both targets were achieved. In 2013, a baseline of 221.2 ODP tons was set (freezing the average consumption for 2009-2010. In 2015, HCFC consumption was 192.70 ODP tons, which represents and actual phase-out of 28.5 ODP, 13 percent below the baseline. The project achievements for 2015 exceed the target consumption of 199.1 ODP tons and phase out of 22.1 ODP tons from the baseline.
According to ICR (pp. 14-15), Vietnam's total HCFC consumption in 2015 was 6.4 ODP tons below the Montreal Protocol (MP) obligation, which is set at 90 percent of the MP baseline. The ICR also notes (pp. 32-33) that Vietnam's import quota limit of 198 ODP tons for 2016-19 ensures that consumption will remain below the MP target.

Rating
Substantial

Objective 2
Objective
The HCFC phase-out will be done in a manner that maximizes the climate co-benefits through the introduction of no to very low global warming potential (GWP) alternatives.

Rationale
According to ICR (p. 16), the project activities and outputs most directly related to this outcome are the conversion financing and technical support provided to the 11 foam enterprises completed conversion subprojects. This included destruction of the pre-conversion equipment, installation of new equipment with alternative technologies (HC and water blown), and resumption of normal production (in some cases at new sites due to the safety issues of HC-based production).
The project supported the conversion of 11 enterprises to lower GWP technologies, resulting in 849,609 tons/year of avoided CO2 emission (equivalent to a reduction of 122.06 ODP tons). The actual achievement represents a slight shortfall in the project target of 975,069 tons of avoided emissions (equivalent to a reduction of 140.1 ODP tons). The shortfall is due to the fact that one of the enterprises that the project

planned to support exited the foam sector. The exit of this enterprise resulted in an additional reduction of 18 ODP tons but this amount was not included in the project final achievement because technically they were not the direct result of project conversion investments.

Outputs

11 foam enterprises were supported in HCFC conversions instead of the 12 that were included in the project design at appraisal. The twelfth enterprise (Glory) exited the foam business. The ICR (p. 33) indicates that the HCFC-based foaming equipment was demolished, and non-HCFC based foam production started through direct inspection by the Project management unit (PMU) of the converted foam production facility. According to the ICR (p. 25), the independent third party conducted verification of imports and subproject agreements and completion of required conversion actions.

The ICR reports (pg. 16) that the success of the conversion investment component and achievement of GHG reduction targets was also indirectly (but fundamentally) due to the policy, regulatory, and import quota/phase-out activities and outputs listed under the first objective. Without the prospect of, and actual restriction of bulk HCFC-141b supply, as well as quota controls of pre-blended polyol, restriction of new licenses, application of environmental taxes, etc., conversion grants alone might have been insufficient incentive for all the targeted users to convert their production.

Outcomes

The project objectives measured different but closely interrelated and overlapping methods of the strategy for achieving the overall objectives of the MP. These differences explain why the ODP equivalent of the GHG reduction in the 2d objective is greater than the ODP reduction reflected in the target for the 1st objective.

The outcome indicator for this objective (climate co-benefits) measures GHG emissions reduced by phasing out, through conversion, the use of HCFC-141b including both in Bulk form and as a component of pre-blended polyol. The target measured three major aspects related to reducing GHG emissions: 1) measures reduction of consumption achieved through conversion of foam production from HCFC-141b to lower GWP technologies, 2) counts reduction in use of HCFC-141b in both bulk form and in polyol, and 3) only counts GHG emissions related to HCFC-141b.

Target: 975,069 tons CO2e emission avoided, which is equivalent to an ODP reduction of 140.1 tons.

Actual Achievement: The ICR (p. 33) reported that 849,609 tons/year of avoided CO2 emission from change to low Global warming potential (GWP) alternatives was achieved by the project completion.

A total of 122.06 ODP tons were phased out through the project's conversion investments, including 48.7 ODP tons of bulk HCFC-141b and 73.5 ODP tons of HCFC pre-blended polyol.

The ICR (p.14) explains that the shortfall in meeting the projects GHG reduction target is due to Glory enterprise's exit from the foam business and its non-participation in the project. Glory's cease in foam production resulted in an additional 18 tons in ODP reduction. While this contributed to Vietnam reducing its remaining eligible consumption to 79.7 tons per its HPMP agreement, it was not counted in the ICR toward the project achievements because it was not the direct result of the project's conversion investments.

100% of the original target for GHG reduction in Vietnam was achieved but only 87% was directly attributable to the project's support. The ICR (pg. 33) also points out that the completed conversions of the 11 enterprises that were financed by the project achieved 100% of their individual intended GHG reductions.

Rating

Substantial

Rationale
Both of the objectives are rated as Substantial.

Overall Efficacy Rating
Substantial

5. Efficiency

Economic and Financial Efficiency
At appraisal a financial estimation was carried out to assess the impact of the proposed activities supporting HCFC-141b and HCFC-22 phase-out. This analysis showed that the project impact (under the project scenario) on the net incremental cost is approximately US$3.8 million higher than the "without-project scenario."
The PAD (pp. 10-11) provided a financial analysis to assess the impact of the proposed project activities supporting HCFC-141b and HCFC-22 phase-out on the economic sectors in Vietnam. The conducted analysis estimated the net incremental costs to the foam industry (incremental capital costs (ICC) + incremental operating costs (IOC) – grants) under the project and without-project scenarios. The estimation concluded that under the project scenario the net incremental cost, is approximately US$3.8 million higher than under the without-project scenario.
Administrative efficiency
There were no cost overruns.
The method of analysis used as described in the ICR (p. 18) to assess project efficiency was to compare the cost of per kg HCFC phased out (US$/kg HCFC) with the project cost at approval and MLF's respective thresholds. Project modality used a multi-year, performance-based funding model, under which disbursement of funds was made against verifiable sustained reduction of ODS phase-out targets. The ICR (p.18) finds the method to be consistent with how efficiency is assessed based on the cost-effectiveness (CE) of phase-out activities.
Under the Executive Committee of the MLF (ExCom), Cost-Effectiveness (CE) is defined as the amount of MLF grant per unit weight of HCFC phased out in kg. The project phased out 1,110.6 metric tons of HCFC-141b (equivalent to 122.06 ODP tons), resulting in a CE of US$6.64/kg of HCFC-141b, which is lower than the average CE of US$6.96/kg for the project at approval by the MLF. Although incremental capital costs (excluding Glory) were about 12% higher than at appraisal, the increase was covered by the intended allocations for incremental operating costs, which were nearly zero (compared to about US$1.78 million at appraisal). Since the MLF's CE was based on total conversion costs, the reallocation between IOC and ICC does not affect the overall CE.The ICR (p. 45) indicates that since the project also contributed to the reduction of nearly 1 million CO2e tons of GHG, the provided CE only reflects one measure of efficiency (conversion costs) without covering external environmental and social benefits of both ozone layer protection and climate

change mitigation.
If the efficiency analysis had factored in the hidden costs and benefits of environmental and social impacts from reduced exposure to ODS depletion and climate risks (for which viable data are missing), project efficiency is likely to be even higher.

Efficiency Rating
Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	0	0 ☑Not Applicable
ICR Estimate	✓	0	0 ☑Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

Relevance of the PDO for the government and the Bank strategy is rated as **High**. Outcome indicators had either been exceeded or about achieved. The project reported achievement of its objectives through a combination of HCFC conversions at 11 foam enterprises, policy and regulatory actions, and technical assistance. The results were measured and verified both in terms of ODS phase-out and GHG reduction, through which Vietnam achieved compliance with its obligations under the Montreal Protocol generally and its HPMP Agreement. Overall efficacy is **Substantial.** Efficiency is rated as **Substantial**. The project's CE was lower than the average CE.

a. Outcome Rating
Satisfactory

7. Risk to Development Outcome

After destruction of HCFC-consuming production facilities, new alternative technologies such as hydrocarbon and water at lower price were introduced. Thus, the reverse of HCFC consumption is highly unlikely given more profitable alternatives and the cost of re-conversion. The requirement in annually verifying and making public HCFC import data through MIS, made the assessment of country's attainment of its commitments under the

MP. As ICR (p.30) states, introduction of alternative technologies eliminated demand for HCFC-141b in the country.
Risk to Development Outcome Rating: Negligible to Low

8. Assessment of Bank Performance

a. Quality-at-Entry

The project design was sound in identifying objectives, and the sectors appropriately targeted. Bank staff worked closely with Project management unit (PMU) to ensure that all HCFC-consuming sectors were reviewed before project proceeds. According to ICR (p. 28), the Bank team's experts along with PMU visited the 12 foam enterprises to verify their foam production and baseline HCFC-141b consumption in 2009. The Bank also provided valuable support to the GoV during its negotiations at the ExCom meetings.
The project design intended to build on the implementation arrangements and capacity established under the previous project, with the goal of issuing regulations and helping beneficiaries and stakeholders in new sectors. The project design benefited from the lessons and experience in the previous Vietnam Chlorofluorocarbon (CFC) and Halons project and already had an import and quota system that could be a platform for the HCFC Stage 1 project purposes.
One drawback in the project's design was that it employed a "group project" approach to approve enterprises eligible for conversion investments. This approach has the advantage of accelerating implementation progress at the initial phase of the process but limits the flexibility to make changes at the enterprise level. . When one of the targeted enterprises left the foam business after project appraisal, a replacement company was identified but the MLF procedures viewed this as a major change that required approval of the Ex Com, rather than allowing for a simple reallocation of funds. By the time Ex Com approval was obtained there was not enough time to complete the investment.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

The World Bank Team carried out six supervision missions annually, six mission aide-memoires and nine ISRs were timely completed and filed over the project implementation period. The Bank team was working closely with the implementing agency and the GoV. The team took the lead in negotiating with the MLF ExCom on behalf of the GoV and in the preparation and submission of the project's annual implementation plans to the ExCom for approval.
According to the ICR (p. 29), during implementation period, the Bank's team conducted technical visits for launch, completion, provided specific Financial Management (FM) and procurement training and workshops for the PMU staff and enterprises. The team provided the PMU with adequate technical support regarding financial management, fiduciary, procurement and disbursement procedures, environmental and social safeguard issues.
The Bank team conducted a thorough analysis of HCFC import and consumption to confirm project results and projected sustainability and positive future possible trends in the sector.

As the ICR (p. 29) pointed, a core MP policy and technical team was maintained during project supervision. Project implementation slowed down temporarily due to an Integrity (INT) investigation. But the Bank team adequately supported the PMU and enterprises, during the INT investigation period, to keep subproject implementation moving forward.

Quality of Supervision Rating
Satisfactory

Overall Bank Performance Rating
Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design
The results framework designed for the project was appropriate. The M&E framework had two key outcome indicators measuring achievement of objectives. The indicators of two main objectives measure different but closely interrelated metrics of the strategy for achieving the overall objectives of the MP.
The ExCom initiated a specific Project Completion Report (PCR) template to collect information regarding the ODS-based equipment, procurement, payments from grants, ODS and substitutes consumed, actual production after conversion, cost effectiveness and ODS equipment disposal certification. The PMU was responsible for collecting the data and preparing progress reports towards achieving the PDO. The national Management Information System (MIS) maintained all data concerning ODS imports and uses in Vietnam and quantified.

b. M&E Implementation
During project implementation data was collected and reported in timely manner. The M&E framework made it possible to track the progress of the project. Reports on the consumption of HCFCs were carefully monitored and verified on an annual basis. The ICR reports (p.25) that the PMU submitted third party verified results on national HCFC consumption to the Bank and the ExCom twice a year.

c. M&E Utilization
The ICR (p. 25) noted, the MIS role was important as it contributed to the tracking results on progress. M&E data were incorporated in the Bank's Implementation Status and Results Report (ISR). An Aide-Memoire was prepared after each implementation support and supervision mission by the Bank.
The submitted reports offered details on project implementation progress and disbursement status, which was helpful for Bank’s team and PMU to stay updated and could operate in timely manner.

M&E Quality Rating
Substantial

10. Other Issues

a. Safeguards
The project was classified as an Environmental Category B (partial assessment) and environmental and social risk was considered moderate. According to the PAD (p.14) the project was expected to have a positive impact on the global environment by reducing the use of HCFCs. However, the Environmental Assessment (OP/BP 4.01) policy was triggered because of safety requirements associated with hydrocarbons due to flammability that may still present operational challenges for smaller foam enterprises. The ICR (pp. 26-27) indicates that an Environmental Management Plan (EMP) was prepared under the project for use by the foam enterprises during implementation. While HCFCs have an impact on the global environment, they have no adverse local impact as these chemicals are stable and not considered toxic or otherwise dangerous. Hydrocarbon technology (cyclo-pentane) was selected as a blowing agent for 10 out of 11 foam enterprises to replace HCFC-141b. Cyclo-pentane is classified as a volatile organic compound (VOC), but its use only results in a Global warming potential (GWP) of less than 25 (about 3% of GWP of the original foam blowing agent, HCFC-141b). Therefore, there is no significant environmental impact from the substance itself.
The ICR (p. 14) reports on some safety compliance issues, identified in mid-2015, were mostly resolved by late 2015 and fully resolved by mid-2016. No actual safety incidents occurred in the interim, and these were the only safeguards compliance shortcomings identified during implementation. The ICR (p. 27) reports that an environmental review was carried out at the existing sites of the enterprises that relocated to industrial zones and no potential environmental contamination (resulting from existing PU rigid foam production in these enterprises) was identified.

b. Fiduciary Compliance
The ICR (pp.27-28) reports that during implementation, expenditure and post procurement reviews raised issues on substantiated fraud and shortcomings in the documentation of HCFC purchase records that were clarified and remedial measures were implemented. As result, the Bank's anti-corruption clauses and auditing requirement were added to subcontracts between foam enterprises and suppliers. The ICR team explained to IEG that no actual cases of corruption were detected but there were some cases in which fraudulent invoices that were submitted for the reimbursement of conversion expenses for which they did not have receipts. The expenses were found to be legitimate and due to the submitting enterprise's lack of awareness that the PIU had alternative processes for reimbursing expenses from suppliers that did not issue receipts.
Financial Management. According to ICR (p. 28), the project is considered to have complied with the Bank's policies and guidelines. The Bank provided specialized trainings for the PMU's FM staff and the foam

enterprises. The PMU submitted detailed accounts twice a year for the Bank's review throughout the project implementation period. Audit reports confirmed that financial and accounting management were well organized and that accounting documents were well maintained and accessible. None of the audits were qualified. The project is considered to have complied with the Bank's policies and guidelines.

c. Unintended impacts (Positive or Negative)

N/A

d. Other

---

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	---
Bank Performance	Satisfactory	Satisfactory	---
Quality of M&E	Substantial	Substantial	---
Quality of ICR		Substantial	---

12. Lessons

The ICR (pp 30-31) includes lessons learned adapted by IEG:

Effective policy action - licensing HCFC-based polyols. The licensing and quota system as a regulatory measure to control and eliminate ODSs remains the most effective tool for ensuring compliance with the MP. The implementation of a licensing requirement for imported HCFC based pre-blended polyol is next most effective mechanism for identifying and uncovering private sector users of the substances.

Effective project management tools. The MIS, as main tool for implementation and monitoring should be used as a model to establish a system that identifies and tracks all ODS users in the country. Given the future phasedown of HFCs, which many of these enterprises may be using the development of a large-to-day activities and interactions with the beneficiaries.

Adaptive management - a delicate balancing art. It's important to maintain balance between ensuring project activities' consistency to Bank procedures, while giving due consideration to client technical and financial capacity. Financing requirements of the enterprises proved to be substantial as they were obligated to finance new equipment upfront, and then be compensated after contract signing with suppliers based on a payment schedule While the upfront payment was challenging for some enterprises, a results-based disbursement mechanism would be more effective during implementation.

The "Sector approach" provides more flexibility in project implementation than the "group project"

approach. While group approach accelerates implementation progress at the initial phase it lacks flexibility to accommodate likely changes at the enterprise level. A "Sector approach", can help better manage HCFC verification at the enterprise level. Under a "sector approach", project proposals are approved at the sector/sub-sector level based on the size/type of all identified eligible enterprises and the HCFC consumption in the sector/subsector. A full sector approach can help better manage HCFC verification at the enterprise level as validation of HCFC consumption is carried out on site during project implementation by reviewing consumption figures.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR provides a good overview of project preparation and implementation and is concise. The ICR is clearly written and consistent with Bank guidelines. The ICR is candid in the assessment of factors that influenced project implementation. Lessons are based on the experience.
There are couple of discrepancies in reporting such as: 1. In efficiency part between statement given on page 18: "Given that the project also contributed to the reduction of nearly 850,000 CO2e tons of GHG..." and statement on efficiency provided on page 45:" Given that the project also contributed to the reduction almost 1 million CO2e tons of GHG ...".

a. Quality of ICR Rating
Substantial