



## 1. Project Data

<b>Project ID</b> P129397	<b>Project Name</b> Montreal Protocol HCFC Phase-out Project		
<b>Country</b> Argentina	<b>Practice Area(Lead)</b> Environment & Natural Resources	<b>Additional Financing</b> P164831	
<b>L/C/TF Number(s)</b> TF-14897	<b>Closing Date (Original)</b> 30-Apr-2021	<b>Total Project Cost (USD)</b> 1,106,155.45	
<b>Bank Approval Date</b> 30-Jul-2013	<b>Closing Date (Actual)</b> 30-Jun-2018		
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>	
Original Commitment	1,914,612.00	1,914,612.00	
Revised Commitment	1,106,174.00	1,106,155.45	
Actual	1,106,155.45	1,106,155.45	
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## 2. Project Objectives and Components

### a. Objectives

According to the Grant Agreement (OTF Grant Number TF14897, page 7), the PDO is “to support the Recipient in phasing out controlled ozone-depleting substances (ODS) in accordance with the Recipient’s obligations under the Montreal Protocol”. The Recipient is the Argentine Republic. The formulation of the PDO is identical in the PAD.

This is also the Global Environmental Objective (GEO).



**b. Were the project objectives/key associated outcome targets revised during implementation?**  
No

**c. Will a split evaluation be undertaken?**  
No

**d. Components**

**Component 1: Hydrochlorofluorocarbon (HCFC) Phase-out at Mabe Argentina S.A.**

**("Mabe").** (Appraisal estimate: US \$0.84 million; Actual cost: US \$0.84 million). This component provided financing to phase-out 167.8 metric tons of HCFC-141b in the polyurethane rigid foam production of domestic refrigerators at Mabe, the largest refrigeration appliance manufacturer in the country. This subproject included, inter alia: the installation of hydrocarbon (HC) storage and blending equipment; replacement of and/or retrofitting of foaming equipment; installation of a safety control and gas monitoring system; polyurethane system development and qualification; and a comprehensive safety audit.

**Component 2: CFC Replacement in Chillers.** (Appraisal estimate: US \$0.95 million; Actual cost: US\$0.14 million). This component was approved to support the replacement of at least 20 CFC-based chillers in private enterprises, continuing a chiller replacement pilot included in a predecessor CFC project (P005920). Elimination of the residual use of CFCs in chillers in Argentina improves energy efficiency (EE) and reduces greenhouse gas (GHG) emissions in the building sector. The inclusion of this component in the project allowed the project to reach a minimum size for the Bank to continue MP collaboration in Argentina (ICR, paragraph 10). US \$0.90 million is anticipated to be used for providing 20% subsidies for purchase of new equipment, and US \$0.05 million for related technical assistance.

**Component 3: Technical Assistance.** (Appraisal estimate: US \$0.07 million; Actual cost: US \$0.07 million). This component established a monitoring system to address national HCFC-22 production, import quotas and stockpiles. It included the funding of regular verification visits to the sole Argentine producer of ozone-depleting substances (ODS), Frio Industrias Argentinas S.A. ("FIASA"). FIASA was and remains the only ODS producer in Argentina. Given the inter-relationship between production and consumption of HCFCs and the implications that it has for Argentina's HCFC compliance, the monitoring system for national HCFC production was deemed to be warranted and implemented to upgrade the management information system (MIS).

**Component 4: Project Management.** (Appraisal estimate: US \$0.05 million; Actual cost: US \$0.05 million). This component provided financing to the Project Coordination Unit (PCU) within the Ministry of Production and Labor (MoPL) to coordinate and manage the project implementation. The Project supported the PCU's operating costs with funding equivalent to 5% from Component 2 in line with MP Multilateral Fund (MLF) regulations. The PCU team was primarily funded by the national budget.



**Component 5: Foam Sector Plan for HCFC Phase-out.** (Appraisal estimate: US \$5.56 million in July 2017; Actual cost: US \$0). This component was intended to provide financing for the implementation of the Foam Sector Plan aimed at completing HCFC consumption phase-out. Although this component was included in Schedule 1 of the Grant Agreement, it was deferred as no funding was approved for it until mid-2017.

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

Component 1: The Mabe enterprise carried out the required HCFC phase-out activities using its internal financial resources and was reimbursed for US \$0.84 million (as provided for in the Grant Agreement) under a Retroactive Financing. The Project cost for this component is therefore US \$0.84 million as originally anticipated.

Component 2: Just three CFC-based chillers were converted under the Project due to implementation challenges (ICR, paragraph 31). In November 2017, the Government of Argentina (GoA) requested that the remaining implementation of this component be transferred to UNIDO. The actual Project cost of this component under Bank implementation was indicated as US \$0.14 million (much lower than the originally projected US \$0.95 million).

Component 3: This TA component cost US \$0.076 million, in line with initial projections.

Component 4: This project management component cost US\$0.05 million, in line with initial projections.

Component 5: The World Bank and the GoA agreed to proceed with the preparation of this component in March 2016 under a separate MLA funding arrangement that was subsequently approved by the MLF Executive Committee (ExCom) in July 2017. However, GoA requested in November 2017 that this component be removed from the Project and transferred to UNIDO. This was reflected in the June 2018 Restructuring Paper as a Level II restructuring that formalized the changes and brought forward the final closing of the Project. Specifically, the restructuring agreement formalized the November 2017 ExCom decision to change the MP Implementation Agency to UNIDO and advanced the Closing Date from April 30, 2021 to June 30, 2018.

Due to the transfer to UNIDO of the majority of Component 2, the final cost of the Project was only US\$1.11 million, which was US \$0.80 million lower than the original budget.

**Financing.** Under the Grant Agreement (TF14897), the World Bank agreed to extend an amount not exceeding US \$1,914,612 to GoA to assist in financing the Project.

**Borrower Contribution.** None.



**Dates.** The Project was approved on 30-Jul-2013, reached effectiveness on 30-Jan-2015, and was closed on 30-Jun-2018. The original closing date was 30-Apr-2021, however it was advanced due to the transfer of Implementing Agency responsibilities to UNIDO as mentioned above.

### 3. Relevance of Objectives

#### Rationale

**Country, Sector and Institutional Context:** In 2007, the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MP) decided to accelerate the phase-out of hydrochlorofluorocarbons (HCFCs), while in tandem requiring that Parties take into account potential climate benefits associated with HCFC phase-out (per Decision XIX/6 of the MP Parties). HCFC phase-out management plans (HPMPs) approved by the Multilateral Fund of the Montreal Protocol (MLF) seek to facilitate the conversion of refrigeration and air conditioning and foam manufacturing away from the use of HCFCs to non-ozone depleting substance (non-ODS) alternatives.

Argentina's HPMP implementation was structured in two phases. The activities to be implemented under Phase I of the HPMP were agreed between GoA and the MLF Executive Committee (ExCom) and approved at the 66th ExCom meeting in April 2012. This agreement covered the period up to 2017 and required a reduction in Argentina's bulk HCFC consumption to 17.5% below the 2009-2010 baseline level which was 400.7 ODP tons. (PAD, Annex 6, paragraph 5). An interim target for the year 2015 was to reduce HCFC consumption by 10% of the baseline or 40.07 ODT tons. (ICR, paragraph 4; PAD, paragraph 26). Helping to achieve this interim target was the initial primary objective of this Project. Specifically, the Project aimed to support the implementation of 18.5 ODT tons of HCFC-141b reduction in the foam sector at the Mabe industrial enterprise. At the 66th ExCom meeting in April 2012, funding for the first tranche of Phase I of the HPMP for Argentina and the corresponding implementation plan was approved, including the amount of US \$914,612 plus agency support costs of US \$68,596 for the Bank. (This approval covered Components 1 and 3 of this Project).

The National Ozone Unit (OPROZ) provides the institutional set-up for MP operations in Argentina. It is integrated by two primary agencies: the Secretariat for Environment and Sustainable Development (SAyDS) that is the focal point and coordinating body at the national level, and the Ministry of Production and Labor (MoPL) that was formerly the Ministry of Industry. HPMP implementation in Argentina was mainly divided between UNIDO and the Bank (ICR, paragraph 2). UNIDO was the lead Implementing Agency (IA) that collaborated with SAyDS. The World Bank was a Cooperating IA with the MoPL. To put this Project in context, the total MLF funding for Phase I of the HPMP for Argentina amounted to US \$10,775,154, plus agency support costs of US \$824,637 (the vast majority going to UNIDO).



The Bank accepted the MoPL request to assist in the preparation of a HCFC project in the foam sector as a continuation of an earlier Bank project, the *Reduction of Ozone Project (Montreal Protocol)*, P005920, that focused on CFC phase-out. It was decided to continue with residual CFC phase-out activities under Component 2 of this Project in order to make the Project big enough to justify Bank participation. US \$1,000,000 from the MLF-funded *Global Chiller Replacement Program* was assigned to provide 20% subsidies for new and cleaner chiller equipment along with related TA and overall project management. (ICR, paragraph 10). Given that CFCs are more dangerous pollutants than HCFCs, the inclusion of a residual CFC phase-out component in this Project appears to be well justified on environmental grounds. It allowed the GoA to subsidize CHC-based chiller conversions and increased the overall Bank engagement with MoPL. (ICR, paragraph 43).

**Alignment with National Priorities/Policies:** MP compliance is a national priority of Argentina, and Argentina has been rigorous in meeting its MP obligations over time. The Project is strongly aligned with national priorities and policies.

**Alignment with Strategy:** The Project contributed to the Bank's CPS for Argentina (FY2015-2018) as it addressed reduction of environmental risks - CPS objective number 8 (ICR, paragraph 25).

## Rating

Substantial

## 4. Achievement of Objectives (Efficacy)

### Objective 1

#### Objective

To reduce foam sector HCFC consumption.

#### Rationale

#### Theory of Change

The PDO was to support Argentina in phasing out controlled ODS in accordance with its obligations under the MP.

#### Activities/inputs related to achievement of the PDO:

- Component 1: Support to Mabe Argentina S.A. to phase out HCFCs in its production process. This activity directly phased out 168.7 tons of HCFCs, and directly supported the PDO. There is a clear, simple and robust logical connection between inputs, outputs and outcomes.



- Component 3: TA for monitoring and compliance reporting on HCFC-22 production phaseout. This activity indirectly supported the PDO through establishing a monitoring system within MoPL which would improve the enabling environment for MP compliance.
- Component 4: Provision of financing to the PCU to coordinate and manage the project implementation. This activity indirectly supported the PDO through strengthening the management of the Project which would improve the enabling environment for MP compliance.
- Component 5: Utilize a sector approach to achieve HCFC phase-out in smaller enterprises under Phase II of the HPMP, through the preparation of a Foam Sector Plan. This activity indirectly supported the PDO by establishing a plan which would improve the enabling environment for MP compliance.

The key PDO-level results indicator (Objective 1) was the initial foam sector HCFC consumption reduction per Phase I of the HPMP, to be carried out at the Mabe industrial enterprise, per Component 1. No funding was provided at the outset of the Project to carry out Component 5, and no results indicator was provided for this.

Other activities/inputs:

Component 2 was designed to support the replacement of at least 20 CHC-based chillers, primarily in industrial enterprises. New production and consumption of CFCs had already been phased out. The phase-out of residual CFCs in existing chillers is not mandated by the MP or national regulations. Component 2 did as such not directly support the PDO, since the PDO refers explicitly to obligations under the MP. Component 2 was added in order to make the Project big enough for Bank participation, and it sourced another \$1 million of MLP grant money for the benefit of Argentina. Component 2 lead to GHG emission reductions, which are important co-benefits strongly encouraged by the MP. It would have been beneficial to broaden the PDO to include GHG emission reductions, in order to incorporate Component 2.

The reduction of GHG emissions is also shown in the PAD and the ICR as a PDO-level results indicator. However, as stated above, the PDO does not mention the reduction of GHG emissions. The MP does recommend (but does not require) that ODS phase-out is accomplished in a manner that also results in GHG benefits. The reduction of HCFC and the replacement of CFC-based chillers are two separate activities under the Project that will directly lead to a reduction of GHG emissions. The relevant PDO-level results indicator is the total CO<sub>2</sub>e emission reduction from Component 1 and 2, with a target of 216,655 tCO<sub>2</sub>e per year by 2017. For the purpose of this ICRR, the reduction of GHG emissions will be shown as a separate Objective 2, given that it is an important co-benefit of the Project and the fact that Component 2 comprises roughly half of the expected cost of the Project.

**Objective 1: To reduce foam sector HCFC consumption.**

(1). The reduction of foam sector HCFC consumption by a target of 167.8 metric tons (18.5 ODP tons) at the Mabe industrial enterprise under Phase I of the HPMP. This target was fully achieved.



(2). The preparation of a Foam Sector Plan under Phase II of the HPMP. This target was not achieved, as no funding was provided for it until mid-2017. However, substantial work was done in order to secure the additional MLP funding needed to carry out this activity.

**Outcome**

This objective to reduce foam sector HCFC consumption by 167.8 metric tons (18.5 ODP tons) was fully met through the purchase and installation of ODS-free equipment and the destruction of critical parts of the old equipment at the Mabe industrial enterprise. This was verified by a technical visit by the Bank (ICR, Annex 1). Despite a delay in the Project effectiveness to 30-Jan-2015, the result was achieved in a timely manner at the end of 2014. Mabe carried out the works with its own financial resources and was later reimbursed by the Project through a retroactive financing. This result allowed Argentina to remain in compliance with its MP obligations related to HCFC phase-out under Phase I of its HPMP. Given that Mabe carried out the works before the Project became effective, the attribution of this result to the Project appears to be indirect at best. The Bank did participate in the design of this component prior to Project effectiveness, and this enabled Bank safeguards requirements to be met during the planning and execution of the works at the Mabe enterprise. The Bank subsequently visited Mabe to verify that the result was properly achieved.

**Rating**

Substantial

**Objective 2**  
**Objective**

To reduce GHG emissions.

**Rationale**  
**Outputs**

(1). The target for GHG reduction at Mabe Argentina S.A. was fully met (as a co-benefit of the HCFC reduction). However, the exact target for this activity alone was not quantified, rather the two activities together were targeted to achieve a GHG reduction of 216,655 tCO<sub>2</sub>e per year by 2017. The achieved output for this activity alone was indicated in the ICR as 121,655 tCo<sub>2</sub>e per year.

(2). Compared to the target of replacing at least 20 CFC-based chillers, only 3 chillers were replaced. This resulted in a shortfall of GHG reduction compared to the target. The combined GHG reduction from the two Project activities was indicated in the ICR as 135,903 tCO<sub>2</sub>e per year, which corresponds to 63% of the target of 216,655 tCO<sub>2</sub>e per year.

**Outcome**





The vast majority of the GHG reductions was associated with the HCFC reduction component that was completed at the Mabe enterprise. The HCFC-141b that was formerly used at the Mabe industrial enterprise had a very high global warming potential (GWP), and it was replaced by cyclopentane that has a GWP of only 3% of that of HCFC-141b. (ICR, paragraph 52). The remaining target was related to the planned conversion of at least 20 chillers in various industrial enterprises by providing a partial financial subsidy for the purchase of new chillers. However only 3 chillers were converted through the Project. Reasons cited for this included mild climatic conditions, low energy prices, restrictive import regulations and adverse macroeconomic conditions. (ICR, paragraph 26). During the Project mid-term review in August 2016, the Bank agreed to changes in the subsidy regime for CFC-based chiller conversions that the Project Coordination Unit (PCU) had requested, increasing the subsidy level to 33% for new chillers with energy efficient converter technology. (ICR, paragraph 14). Key changes in the Project resulted from a change in the GoA administration in December 2015 which led to a significant shift in the PCU implementation approach from a mere administrative/supervisory role to a more strategic role in the global MP and wider chemicals agenda. (ICR, paragraph 23). The PCU was converted from a team of consultants to an integral part of a National Directorate of Sustainable Industrial Development within MoPL. It started to participate in MP meetings in 2016, and initiated collaboration with UNIDO. (ICR, paragraph 23). Following a request by GoA, undisbursed proceeds under Component 2 were transferred to UNIDO in November 2017 due to the highly adverse macroeconomic situation and the MoPL standstill in project execution. (ICR, paragraph 19). It is expected that 9 additional chillers will be converted under UNIDO implementation using the funds transferred to it from the Project, with an expected overall achievement of 83% of the GHG target. (ICR, paragraph 31).

Although the Project fell short of achieving its target in respect to GHG reduction, the Project restructuring allows for this effort to continue towards full implementation with the assistance of UNIDO (which has been and is the primary IA for MP implementation support in Argentina). Had this target been fully achieved, there would have been modest benefits for GHG reduction and energy efficiency in Argentina from the replacement of 20 CHC-based chillers instead of the 3 chillers that were replaced during the Project. To help put this Project outcome in context, the CO<sub>2</sub>e emissions in Argentina were 4.75 metric tons per capita in 2014 and the population was 42.98 million, giving a CO<sub>2</sub>e emissions level of 204 million metric tons. This Project outcome, if fully achieved, would have been a 0.1% reduction of Argentina's CO<sub>2</sub>e emissions. A 2005 survey financed by the Bank showed that there were more than 300 CHC-based chillers operational in Argentina, of which 65% were housed in buildings and 35% were being used in various industries. (PAD, paragraph 14).

**Rating**  
Modest

## Rationale





The first of the objectives was Substantially achieved, but there were shortcomings with the second Objective which was rated Modest. However, on balance, the overall rating is Substantial.

## **Overall Efficacy Rating**

Substantial

### **5. Efficiency**

The Project efficiency was assessed using cost-effectiveness (CE) and cost-benefit analysis and was found to be very cost-effective and have large economic benefits greatly outweighing the costs. (ICR, paragraph 33 and Annex 5).

For the HCFC phase-out objective, the CE was measured as the amount of MLF grant per weight of HCFC phased out. With a conversion cost of US \$0.84 million, the Project phased out 167.8 metric tons of HCFC-141b, resulting in a CE of US \$5/kg, which was lower (i.e. better) than the average CE of US \$6.96/kg for the Project at appraisal (ICR, paragraph 33). It also generally compared well to international benchmarks quoted in the same ICR paragraph (US \$3.81/kg for China, US \$6.05/kg for Jordan, US \$6.99/kg for Indonesia, and US \$7.65/kg for Thailand). However as already noted, the Mabe enterprise carried out the relevant work to achieve this result before the Project became effective, and the efficiency benefit might therefore be attributable to Mabe's own efforts rather than the Project. Of course it was not the purpose of the Project to directly implement the HCFC reduction activities, and one can argue that a more efficient implementation would not have been achieved if the Project had achieved effectiveness in a more timely manner.

For the GHG reduction objective, a CBA was presented in Annex 5 of the ICR. It showed that the investment cost of the GHG reductions achieved was US \$7.79 per tCO<sub>e</sub> (US \$1.01 million / 135,905 tons of CO<sub>2</sub>e). This is very attractive when compared to the Bank's "2017 Updated Guidance Note on Shadow Price of Carbon in Economic Analysis", which established a valuation range of US \$38-77/tCO<sub>2</sub>e for 2018. Again, the bulk of the work to achieve these reductions was performed by the Mabe enterprise before the Project became effective.

The Project was marred by recurrent delays both for internal and external factors. Component 2 on chiller conversions suffered the worst implementation delays that strongly correlated with the unfavorable macroeconomic environment in Argentina (ICR, paragraph 34). However there was no delay to the achievement of the major Project objective which was initial HCFC reduction in the foam sector. This is because the Mabe industrial enterprise went ahead and carried out the required works before the Project reached effectiveness, and reimbursement was made retroactively by the Project.

Given the high economic returns to this small grant and the timely achievement of the major objective albeit through retroactive financing, the overall efficiency is rated as "Substantial".



**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 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	141.00	91.00 <input type="checkbox"/> Not Applicable

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

**6. Outcome**

The PDO is substantially relevant to the Government and Bank strategy and is rated as Substantial. Efficacy is rated as Substantial overall, as the outcomes were realized to a substantial degree, but there were shortcomings in the achievement against the second objective which was rated Modest. Efficiency is rated as Substantial in view of the project's cost-effectiveness. The Outcome rating is therefore Moderately Satisfactory.

A restructured operation to complete Components 2 and 5 under implementation by UNIDO will continue towards meeting the long-term outcomes, in particular the HPMP to meet Argentina’s international treaty obligations.

a. **Outcome Rating**  
 Moderately Satisfactory

**7. Risk to Development Outcome**

Technical risk is assessed as low. The conversion process at the Mabe enterprise has been successfully completed. The conversion of 20 CHC-based chillers is largely incomplete but poses a low technical risk.

Financial risk is assessed as significant, since the MLF subsidies on their own are not sufficient to compensate for the cost of replacing old CFC-based chillers. Other pressures, particularly the declining availability of replacement CFC, may induce private enterprises to undertake chiller conversions.



Political and economic risk is assessed as moderate, despite the recent macroeconomic instability evident in Argentina. The transfer of IA to UNIDO was done in response to constraints imposed by the recent crisis, and these new arrangements appear to be robust.

Institutional support from Argentine ministries and project entities was very important for this Project, and ongoing risks here are assessed as moderate. There is a clear mechanism in place to continue the progress that was put in place by the Project.

## **8. Assessment of Bank Performance**

### **a. Quality-at-Entry**

The design of the Project was generally well conceived with regard to the phase-out of HCFCs through a two-phase HPMP implementation. Although MLF funding was available only for Phase I of the HPMP at the outset of the Project, MLF funding was approved for Phase II (the Foam Sector Plan per Component 5 of the Project) in July 2017.

The initial design of Component 2 appears in retrospect to have been over-ambitious, although there was limited leverage to improve it since the chiller conversion subsidy was funded entirely by MLF grant funding which places caps on the level of subsidy eligibility. The projected Project output of “at least” 20 chiller conversions was arrived at by assuming that a 20% conversion subsidy would be needed and applying this unit costing against the normative price of a new chiller (US \$500/TR for a normative 350 TR chiller, equivalent to US \$175,000 per chiller or US \$35,000 of Project subsidy per chiller) and the available Project funding of US \$900,000. (PAD, paragraph 55). However, chiller conversions usually require an additional investment for supporting works that is almost the same as the chiller purchase cost. (ICR, paragraph 46). The Bank MTR mission identified that the climatic conditions in Argentina do not require maximum performance of chillers, many old chillers still had a useful life up to 10 years, and macroeconomic challenges and low energy prices up to early 2016 did not favor investments in non-essential imported goods. (ICR, paragraph 46). However, evidence was provided in the ICR that the higher chiller conversion subsidy percentage up to 33%, combined with an increasing scarcity of CFC for servicing old chillers and a 2016 increase in the electricity prices in Argentina, is proving more successful under direct execution by UNIDO, and has resulted in nine expressions of interest by December 2018. (ICR, paragraph 21). Eight of the nine new chillers are planned to include energy efficient inverter technology that qualifies for the maximum 33% subsidy. (ICR, paragraph 31).

### **Quality-at-Entry Rating**

Moderately Satisfactory

### **b. Quality of supervision**

Supervision was hampered by the serious delay in achieving Project effectiveness. The Bank signed the original Grant Agreement in July 2013, but the Project did not become effective until January 30, 2015



due to a transition of Ministerial responsibilities within GoA. (ICR, paragraph 45). The Bank carried out six formal supervision missions. The Bank TTL moved to Argentina in mid-2016. A macroeconomic crisis resulted in the transfer of remaining Project responsibilities to UNIDO in November 2017 and the early closing of the Project in June 2018. Under challenging circumstances, the Bank facilitated an orderly supervision of the Project until the handover to UNIDO.

### **Quality of Supervision Rating**

Moderately Satisfactory

### **Overall Bank Performance Rating**

Moderately Satisfactory

## **9. M&E Design, Implementation, & Utilization**

### **a. M&E Design**

The main PDO-level results indicator is the initial foam sector HCFC consumption reduction, which was to be achieved through HCFC reduction activities at the Mabe industrial enterprise. This is appropriate for the design of the Project. A specific target was set that was straightforward and easy to monitor. This is fully appropriate for monitoring the implementation and results of Component 1 of the Project.

The second PDO-level results indicator is the reduction in GHG (CO<sub>2</sub>e) emissions. As stated earlier in Section 4 of this ICRR, the PDO did not encompass the reduction in GHG emissions, so calling this a PDO-level results indicator is a misnomer. This indicator is relevant for both Component 1 and Component 2 of the Project. For Component 1, this is basically a co-benefit of the HCFC reduction and is also straightforward and easy to monitor. However, the relevant target was combined with Component 2. It would have been clearer to have separate targets for GHG reduction from Component 1 and Component 2, however this is a very minor issue. The GHG emissions indicator is shown as cumulative target CO<sub>2</sub>e reduction values over the Project implementation period, as more chillers are replaced over time. The number of chillers to be replaced was also an intermediate result indicator, with target values increasing over time. Again, this is appropriate for the design of the Project. However, the assumption that 5 chillers will be replaced during each year of the Project implementation was overly ambitious.

Component 2 addressed residual CFC use for servicing of chillers. A question could be asked as to why there is no results indicator for the reduction of CFC use in chillers, since CFCs are dangerous ODS, even more so than HCFCs. Again, since residual CFC reduction is not mandated under the MP, the scope of the PDO could have been broadened to encompass this activity.



It was stated that the results indicators could have been better linked to Component 5, the Foam Sector Plan. (ICR, paragraph 51). However, no MLF funding was provided for this component at the outset of the Project. Some preparation work ahead of the separate MLF funding approval for the Foam Sector Plan was done as part of the Project (led by MoPL and supported by the Bank), however all of the MLF funding for this component was transferred to UNIDO for implementation after it was finally approved in 2017.

The Project M&E system includes: (a) a consolidated Project progress report every 6 months provided by the PCU to the bank; (b) regular progress reports provided by the foam enterprises to the PCU as requested by the MLF upon approval of Component 5; (c) on-site inspection and verification visits by PCU staff; (d) semi-annual unaudited Interim Financial Reports (IFRs) on use of funds provided by PCU to the Bank; (e) sub-project completion reports; (f) progress reporting to the Secretariat of the MLF by the Bank along with final project completion reports on each component through Project implementation; and (g) annual financial audits of the Project account. (PAD, paragraph 45).

Overall, the M&E design can be considered to be reasonably appropriate for this small grant-funded Project, given that HCFC phase-out is the primary rationale for the Project in accordance with the PDO.

## **b. M&E Implementation**

The MoPL had responsibility for coordinating and managing the Project implementation including its M&E systems and hosted the PCU, initially comprised of external consultants. Following a GoA administration change, the PCU was embedded in the National Directorate for Sustainable Industrial Development within MoPL in December 2015. The PCU operated and maintained the project-related data without issues except for some delays in semi-annual reporting. (ICR, paragraph 49).

## **c. M&E Utilization**

The M&E data was utilized at the international, national and project level. (ICR, paragraph 50). Component 3 strengthened the MP management information system (MIS) at the national level and delivered digitalization of the full MP files of MoPL and SAYDS.

### **M&E Quality Rating**

Substantial

## **10. Other Issues**

### **a. Safeguards**



The Project triggered OP/BP 4.01 on Environmental Assessment and was categorized as B for partial assessment. An Environmental and Social Management Framework (ESMF) was prepared for Component 1 - the HCFC phase-down at the Mabe enterprise, and Component 5 - the Foam Sector Plan. Mabe completed a socio-environmental auto-evaluation and complied with the respective requirements in a satisfactory manner in line with Argentine regulations and good industry practice. Under Component 2, the chiller conversions were executed in compliance with the necessary occupational and community health and safety measures and applicable waste regulations. (ICR, paragraph 53). Accordingly, the relevant safeguard policies were complied with. This was also confirmed in IEG's meeting with the project TTL on February 25th, 2019.

## **b. Fiduciary Compliance**

### **Procurement:**

The Project showed adequate maintenance of procurement arrangements. The PCU had limited procurement experience implementing Bank-financed projects, but the procurement activities were low-value and low-risk. (ICR, paragraph 54).

### **Financial Management:**

Financial management performance of the Project generally complied with the Bank requirements, and no critical accountability issues were identified. Between September 2016 and April 2018, the Project faced an operational challenge with lack of sufficient signatories for the Designated Account. Minor challenges with auditing of expenditures were satisfactorily resolved. External Auditors qualified a 2016 Statement of Expenditures due to an amount justified twice to the Bank, a situation that was regularized by the PCU in 2017 (ICR, paragraph 55).

## **c. Unintended impacts (Positive or Negative)**

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## **d. Other**

The change of the IA to UNIDO was necessitated due to the Argentine macroeconomic crisis that imposed severe restrictions on public spending even in the case of international grants. UNIDO executes the MLF funds without participation of the Ministry of Finance and does not require a national budget line. (ICR, paragraph 64).

## **11. Ratings**



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

## 12. Lessons

The lessons are taken from the ICR (paragraphs 66-69) with some modification of language.

**A sector-plan approach rather than an enterprise-level approach may provide a clear and effective strategy for achieving full ODS phase-out.** The project was based on an overall sector evaluation rather than on an enterprise-level basis. An individual enterprise approach would not give a clear picture on how the country could completely phase out the remaining ODS consumption. The sector plan approach developed under the project provided the necessary overall picture and helped to determine the appropriate strategy on how to address the remaining consumption with a differentiated approach to major enterprises and SMEs.

**The use of retroactive financing (RF) arrangements as part of a project design can prove critical to achieve timely results and resolve effectiveness delay.** As indicated in paragraph 67 of the ICR, the flexible approach to retroactive financing was beneficial, since due to the delay in reaching effectiveness, major works needed to be carried out in advance of payment by the Project. Given the Bank’s participation in the design of this component of the Project, it was possible to apply all the Bank requirements to the planning and execution of the relevant activities. While not a normal situation, including the additional flexibility for retroactive financing in the design of this component allowed the works to be carried out in a manner that ensured that Bank safeguards and other requirements were met.

**Subsidies aimed at cleaning industries might have a better uptake if complementary measures are also put in place, including addressing the needs of the targeted enterprises.** As indicated in paragraph 68 of the ICR, the targets for chiller replacements were not met. The upfront financial subsidy covered only 20-33% of the equipment cost of chiller replacements. Substantial additional upfront subsidies, clear financial benefits such as reduced operating costs that have a real impact on the business, and/or enforceable regulations requiring compliance by private sector entities would potentially have been necessary to reach the target. It is suggested in the ICR that fuller financial models of the conversion at the targeted enterprises were needed, which would have been beneficial, however the specific enterprises were not known at the outset of the Project when the targets were being set. It would have been beneficial to undertake reviews and recalibrations of relevant targets over time as the serious obstacles to meeting them became evident.

**Promotion of project teams that are integral parts of line ministries rather than separate units may improve the Bank’s ability to add value and institutional strengthening.** Working with national line ministries and existing government structures may prove effective in strengthening national institutions rather





than creating parallel structures with separate PIUs/PCUs. The cost of this may however be less effective and efficient project execution due to a potential lack of capacity within national bureaucracies compared to professional PIUs/PCUs. Which approach to take may need to be addressed on a project by project basis, taking account of specific country or counterpart capacities and circumstances.

### **13. Assessment Recommended?**

No

### **14. Comments on Quality of ICR**

The ICR provides a detailed overview of the Project. There is a clear link between the narrative, the ratings and the evidence for the most part. The challenges encountered in reaching effectiveness and subsequently during implementation were candidly reported. The Theory of Change was well constructed. IEG considers that results may have been attributed to the Project when the reality might have been more accidental, particularly the apparent good fortune that the Mabe enterprise was very proactive in proceeding expeditiously with the HCFC phase-down works prior to Project effectiveness. However, the ICR provides an excellent picture of the country and Project context and a detailed and candid account of what happened in a challenging country context during the launch, implementation and restructuring of the Project.

#### **a. Quality of ICR Rating** Substantial