

Independent Terminal Evaluation

Phase out of HCFCs and promotion of HFC-free energy efficient refrigeration and air-conditioning systems in the Russian Federation through technology transfer

UNIDO Project ID.: 105324
GEF Project ID.: 3541



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

**INDEPENDENT EVALUATION DIVISION
OFFICE OF EVALUATION AND INTERNAL OVERSIGHT**

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The Evaluation team is also deeply grateful to all stakeholders who made their time available for providing information, discussing and answering questions and who have contributed with their views and experience to the present report.

The evaluation team was composed of one senior international evaluation consultant acting as the team leader, Ms. Teresa Amador, and the national evaluation consultant, Mr. Maxim Eliseev. The tasks of each team member are specified in the job descriptions annexed to the Terms of Reference.

Acronyms and Abbreviations

| | |
|---------|---|
| CIIC | UNIDO Centre for International Industrial Cooperation in the RF |
| CIS | Commonwealth of Independent States |
| FSP | Full Size Project |
| ET | Evaluation Team |
| PIF | Project Identification Form |
| GEF | Global Environment Facility |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas |
| HCFC | Hydrochlorofluorocarbons |
| HFC | Hydrofluorocarbons |
| HVAC | Heating, ventilation, and air conditioning |
| ICSTI | International Centre for Scientific and Technical Information |
| ITPO | Investment and Technology Promotion Offices (UNIDO) |
| M&E | Monitoring and Evaluation |
| MIT | Ministry of Industry and Trade |
| MMT | Million Metric Tones |
| MNRE | Ministry of Natural Resources and Environment of the RF |
| MoP | Meeting of the Parties |
| MP | Montreal Protocol on Substances that Deplete the Ozone Layer (1987) |
| MTR | Mid Term Review |
| ODG/EVA | UNIDO Office for Independent Evaluation |
| ODP | Ozone Depletion Potential |
| ODS | Ozone-depleting substances |
| PM | Project Manager |
| PMU | Project Management Unit |
| POPs | Persistent Organic Pollutants |
| PPG | Project Preparation Grant |
| ProDoc | Project Document (GEF CEO Endorsement) |
| PSC | Project Steering Committee |
| PTFE | Polytetrafluoroethylene |
| PU | Polyurethane |
| RAC | Refrigeration and Air Conditioning |
| RF | Russian Federation |
| SAP | Systems, Applications and Products in Data Processing |

Glossary of evaluation-related terms

| Term | Definition |
|---------------------------------------|--|
| Baseline | The situation, prior to an intervention, against which progress can be assessed. |
| Effect | Intended or unintended change due directly or indirectly to an intervention. |
| Effectiveness | The extent to which the development intervention's objectives were achieved, or are expected to be achieved. |
| Efficiency | A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results. |
| Impact | Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention. |
| Indicator | Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention. |
| Lesson Learned | Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations. |
| Logframe (logical framework approach) | Management tool used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcome, impact) and their causal relationships, indicators, and assumptions that may affect success or failure. Based on RBM (results-based management) principles. |
| Outcome | The likely or achieved (short-term and/or medium-term) effects of an intervention's outputs. |
| Outputs | The products, capital goods and services that result from an intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes. |
| Relevance | The extent to which the objectives of an intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies. |
| Risks | Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives. |
| Sustainability | The continuation of benefits from an intervention, after the development assistance has been completed. |
| Target groups | The specific individuals or organizations for whose benefit an intervention is undertaken. |

Executive Summary

Background

This Full-Size Project (FSP) represents the first comprehensive international effort to address a broader scope of work required to achieve HCFC phase-out and minimize climate impact taking into consideration the Montreal Protocol and the Kyoto Protocol as well as national environmental policy and targets.

The Project rationale is to take advantage of the redesign and conversions required to phase-out HCFCs and at the same provide the technical assistance and technology transfer required to enhance the energy efficiency of the equipment being manufactured.

The primary objective of the Project is the direct phase-out 600 Ozone Depletion Potential (ODP) tons of HCFCs¹ in the foam and refrigeration manufacturing sectors in the Russian Federation (RF) allowing the country to meet the 2015 MP target. The direct Greenhouse Gas (GHG) emissions reduction resulting from the phase-out of HCFCs is expected to be approximately 15.6 Million Metric Tons (MMT) CO₂.

The secondary objective of the Project is to introduce more energy efficient designs, through technology transfer, during the conversion of refrigeration and air conditioning manufacturing facilities- indirect decrease of GHG emissions through reduced electricity consumption in the commercial and industrial refrigeration sectors on estimated 10 MMT CO₂ in 5 years, contributing to the RF's ambitious CO₂ reduction targets.

This Terminal Evaluation took place between June and September 2018. It covers the whole duration of the project from its starting date in 26 January 2011 to its completion date in 31 December 2018.

The evaluation field mission took place between 15 and 27 of July and visited stakeholders and partners in Moscow and Moscow region, Saratov, Kazan and Krasnoyarsk.

Key Findings and Conclusions

Representatives of the beneficiary companies and other Project partners interviewed in this evaluation stated that cooperation with UNIDO had been excellent and that the International Centre for Scientific and Technical Information (ICSTI) had played a significant role in assisting the Project implementation. All the interviewees recognized that the financial support provided by GEF was instrumental in facilitating all activities.

The Ministry of Natural Resources and Environment of the RF was the designated national leading agency that chaired and coordinated all the meetings of the PSC

¹ This amount was calculate in accordance with the 2015 MP taret at the time of the PIF submission, in September 2009.

which was formed at the inception stage of the Project and met twice every year to ensure the overall strategic and policy guidance of the Project.

The UNIDO Centre for International Industrial Cooperation in the RF (CIIC) in Moscow provided support similar to a UNIDO field Office – it was the overall political, administrative and logistical coordinator of the Project in charge of all local support as well as networking with Project stakeholders and beneficiaries. Office representation in the country is an important UNIDO's added value that builds confidence and trust among Project stakeholders and partners and helps UNIDO HQ and donors to better understand the national context.

In 2015 the ICSTI became the executing agency responsible for the execution of the Project activities, day-to-day monitoring and financial management in accordance with GEF and UNIDO-required fiduciary standards.

The Project is highly relevant to the RF and its design very innovative, multi-focal and forward looking - it integrates requirements with regard to the reduction of GHG emissions through the phase out of HCFC production and consumption, which have only become mandatory recently with the Kigali Amendment to the MP adopted on 15 October 2016.

The private sector played a key role in the Project implementation through conversion to equipment and HCFC phase-out technology for RAC equipment. The ownership of the Project by the beneficiary facilities was evident during the field mission.

All the Project outcomes were achieved as well as the majority of the outputs. No evidence was however found that the following outputs were achieved: creation of national ODS database (outcome 1.1); agreed stakeholder needs framework (outcome 1.3); commercial sustainability model (market economy mechanism) for ODS destruction (outcome 4.1); published information on policy measures and barrier removal approaches (and published study and methodologies for conducting market assessments (outcome 5.4).

The project completion date was delayed in 3 years (from 31 December 2015 to 21 December 2018). However, by the end of 2015, 99,13% of the GEF total funding had been executed which means that the project was de facto “financially” completed by the initially foreseen date. The main expected results were achieved within the original schedule and budget- the perception from the beneficiaries is that the activities developed by the Project were timely and useful.

There is evidence of sustainability of the Project outcomes - the changes introduced by the Project are underpinned by a new legal framework and the RF's Government commitments to the Montreal and Kyoto Protocols.

Project management represented 1,3% of the total budget (815 992,40 USD). Changes of PMs have caused several challenges in the Project implementation namely with regard to its efficiency, institutional memory and engagement with stakeholders and partners.

The Project was implemented without a logframe - no logframe was used to monitor progress towards expected outputs and outcomes. The indicators used to measure outcomes under the PIR are not included in the ProDoc. The minutes of the PSC do not contain corrective actions based on the project performance and results under the M&E Plan – no evidence was found that the M&E activities were reported to the PSC.

The gender dimension and women's empowerment were not included in the formulation of the project - at the time of the Project design gender was not a requirement. However, UNIDO Gender mainstreaming policy was introduced in 2015 and no evidence was found that this Project has contributed to gender mainstream.

The total Project planned budget accounts 58 million USD, where 18 million USD is a GEF grant and 40 million USD is co-financing. The overall planned financing for the Project was expected to be 31% of GEF funding against 69% of counterparts co-financing. The distribution of the planned budget among the Project components was as follows: 70% to components 3 and 5; 15% to Component 6; and the remaining 15% were allocated to Components 1,2,4,7 and Project management.

The total effective Project cost was 62,900,484.90 USD in accordance with the Project Draft Final Report (September 2018). It should be noted, however, that in accordance with the Annual PIR Fiscal Year 2018 the total effective project cost was 63,046,783.52 USD. This lack of consistency among the data provided to the ET was also found with regard to planned budget and effective budget spending.

The total effective Project funding (co-financing) increased on 4,9 million USD (+8,45%). Reallocation of 21,2 million USD (5,9 million USD of GEF funding and 15,9 million USD of related co-financing) conducted from Component 5 to Component 3. Activities of Component 4 received additional 4,766,782.52 USD, which is 125,44% higher than the original budget which was entirely supported by equity investment from the beneficiary. Component 6 increased funding on 300,000 USD (+3,45%). Component 1 costs were reduced on 4,018.33 USD (- 0,13%) and spending on Component 7 was reduced on 78,271.69 USD (-17,39%). Project management costs were reduced on 84,007.60 USD (-9,3%).

With the purpose of assuring accountability, supporting management, and driving learning and innovation key recommendations and lessons learned are presented below.

Key Recommendations

In case of similar projects or interventions:

UNIDO (implementing agency)

- R1** UNIDO PM changes should be avoided to the extent possible, even more in case of large and complex projects like this one. For situations of unavoidable change of PM, then specific requirements and procedures should be followed for the systematic handover of projects among PMs (including data and knowledge transfer).
- R2** M&E should be made a management priority - appropriate training of the Project management team in Results-based Management and outcome-oriented reporting should be required, and PMs should share M&E tools and documents with the national counterpart to improve ownership and increase monitoring of progress and results in the field; PMs should also share M&E tools and documents with the national counterpart to improve ownership and increase monitoring of progress and results in the field.
- R3** PMs should take into consideration, in the design/inception phase, that more time and resources would be needed for planning and implementing procedures for interactions with Federal Service of RF when it relates to tax exemption, or any other uncommon procedure, as this requires specific expertise.
- R4** UNIDO should explore the potential of further involving UNIDO CIIC in RF, namely with regards to communication of the new execution arrangements to partners and stakeholders during and after completion of the Execution Agreement.

ICSTI (executing agency)

- R5** For the national follow-up of this project, or similar future projects, ICSTI engagement with project partners and stakeholders should be improved in terms of communication and reporting.

MNRE

- R6** Effective liaison of MNRE with the project execution agency and engagement with the PM throughout all phases of the project implementation should be further promoted. In particular facilitate institutional coordination and administrative procedures.

GEF

- R7** GEF should continue to improve the format of the CEO endorsement in order to accommodate useful tools for project implementation, including the logframe in the project document.
- R8** A more active role should be played with regard to M&E ensuring that sufficient resources are allocated to it and that all the M&E activities are timely and accurately undertaken.
- R9** GEF should consider financing a Phase II of the project to ensure long-term sustainability of the project results.

Key Lessons Learned

| Key lessons learned | |
|---------------------|---|
| LL 1. | <p>The scope of the Project is very wide and its approach complex – 7 components with 27 outcomes and 30 outputs. Component 6 on Technology Transfer is stand-alone although some of its outputs were also covered by components 3 and 4.</p> <p>The implementation of wide scope project benefit from streamlined project outcomes and outputs.</p> |
| LL 2. | <p>The design of a Project that is forward looking and with multi-focal areas may have higher investment costs (ex. equipment) but generates potential future savings.</p> <p><i>By avoiding interim technology companies may incur in higher initial investment costs (ex. equipment), however these may be offset by operational expenses savings, such as energy costs, reduction of environmental fees related to ODS use and CO2 emissions, and simultaneously generate greater benefits to the environment.</i></p> |
| LL 3. | <p>The Project was anchored on strong cooperation between the private sector and the RF's Government.</p> <p><i>Building trust and confidence with the stakeholders and respecting confidentiality are essential requirements for the success of any project.</i></p> |
| LL 4. | <p>Lack and inconsistency of the information provided to the ET and the limitations of the evaluation demonstrate the need to improve the M&E design and implementation and the requirements on the handover of projects among PMs.</p> <p><i>The institutional memory, data and knowledge of the project should be preserved throughout its implementation regardless of the management changes.</i></p> |

I. Evaluation objectives, methodology and process

The *GEF Monitoring and Evaluation Policy* (February 2006)² specifies that GEF partners, in addition to conducting various other evaluations, will also evaluate projects “at the end of the intervention - Terminal Evaluation (TE)”. The policy states that through monitoring and evaluation (M&E) the GEF aims to “promote accountability for the achievement of GEF objectives through the assessment of results, effectiveness, processes, and performance of the partners involved in GEF activities.” It further states, “GEF results will be monitored and evaluated for their contribution to global environmental benefits”. Similarly, according to UNIDO’s evaluation policy, Project and program evaluations are part of project cycle management. Evaluations serve three main purposes: to assure accountability, to support management, and to drive learning and innovation.

This TE provides an analysis of the attainment of the Project objective and the corresponding technical outputs and outcomes based on indicators. It has two main purposes: (i) assess project performance against the evaluation criteria: relevance, effectiveness, efficiency, sustainability and impact; and (ii) draw lessons and develop recommendations for UNIDO and the GEF that may help, upon project completion, to improve the selection and enhance the design and implementation of similar future projects and activities in the Russian Federation and on a global scale.

This independent TE was conducted in accordance with the UNIDO Evaluation Policy³ and the UNIDO Guidelines for Technical Cooperation Project and Project Cycle⁴. In addition, the evaluation followed the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation Policy and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies.

The key question of the TE is whether the Project has achieved or is likely to achieve its main objective, i.e. the direct phase-out of 600 ODP tons of HCFCs in the foam and refrigeration manufacturing sectors in the RF to meet the 2015 MP target. The direct GHG emissions reduction resulting from the phase-out of HCFCs will be approximately 15.6 MMT CO₂. This is the estimated reduction through HCFC phase-out achieved through investment and through replication to meet the MP phase-out mandatory target. In addition, the evaluation assessed the achievement of the secondary objective of the Project, i.e. to introduce more energy efficient designs, through technology transfer, during the conversion of Refrigeration and Air Conditioning (RAC) manufacturing facilities.

The evaluation questions are listed in Annex 2 of the ToR. The key evaluation questions are:

² The GEF Monitoring and Evaluation Policy, Evaluation Document No. 1 (2006) is available at http://gefco.org/uploadedFiles/Policies_and_Guidelines-me_policy-english.pdf.

³ UNIDO (2015) Director General’s Bulletin: Evaluation Policy

⁴ UNIDO (2006) Director-General’s Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGA1.17/Rev.1, 24 August 2006)

- a) What are the key drivers and assumptions to achieve the long-term objectives? To what extent has the Project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
- b) How well has the Project performed? Has the Project done the right things? Has the project done things right, with good value for money?
- c) What have been the Project's key results (outputs, outcome and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent the achieved results will sustain after the completion of the Project?
- d) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the Project?

The TE took place between June and September 2018. The TE covers the whole duration of the Project from its starting date in 26 January 2011 to its completion date in 31 December 2018.

The Evaluation Team (ET) is composed of one international evaluation consultant acting as the team leader and one national evaluation consultant. The tasks of each team member have been specified in the job descriptions annexed to the Terms of Reference (ToR) and described in the Inception Report, from 5 July 2018.

A total of 23 semi-structured and qualitative interviews were conducted with UNIDO staff and stakeholders with sufficient flexibility to allow new lines of questioning to be followed where necessary. The interviews were conducted during the briefing in UNIDO Headquarters in Vienna (HQ) (10 and 11 July) and during the field mission to the RF (15 to 27 July)- in Moscow, Saratov, Kazan and Krasnoyarsk. The list of people met and their respective contacts is provided in Annex B: List of people met.

The stakeholders were analysed and rated – those classified with moderate priority (see Annex D: List of Project stakeholders and partners) have been requested to provide written comments. From the total of 16 contacted 2 have provided comments.

The desk and literature review of documents related to the Project, included: official project documents, minutes of the Project Steering Committee (PSC), audit and evaluation documents, policy advice proposals, drafts and final versions of HCFC phase-out related legislation, workplans, managerial, financial and technical reports from UNIDO PM, Project Management Unit (PMU) and Execution Agency and contractors, procurement files, meetings, conferences news, mission reports and websites. These documents were collected by the ET and provided by UNIDO staff and Project shareholders.

The ET was also granted access to an online repository of the Project documents, the majority of which in Russian, containing information on: Key documents (including Project reports and Work Plans); Budget and expenditure; Mission Reports; Technical reports; Letters; and Documents flow, where the last two sections contain official correspondence and working documents from UNIDO Officials / PMU team and Project stakeholders in chronological order. It should be noted that access to this repository is

⁵ <http://fb.lighty.ru/>

subject to prior authorisation from the PM. The full list of documents collected and reviewed is provided in Annex C: List of documents reviewed.

Preliminary evaluation findings and conclusions were discussed in detail at face-to-face de-briefings to the key stakeholders at the Ministry of Natural Resources and Environment of the Russian Federation in Moscow (27 July 2018) and UNIDO HQ (1 October 2018). The purpose of these de-briefings was a factual verification of key findings and an in-depth discussion of evaluation results. The feedback and comments received during these presentations have been considered and reflected in this report.

The draft TE report submitted after the debriefing at UNIDO HQ was shared for comments with the UNIDO PM, UNIDO Independent Evaluation Division (ODG/EIO/IED) and all the project stakeholders and partners consulted by the ET.

The main limitations of this TE have been:

- The time lapse between the date when the operational activities of the Project were operationally completed (June 2016⁶) and the launching of the TE (May 2018⁷): this affected the institutional memory and the availability of information and relevant documents;
- The lack of UNIDO's staff involved in the implementation of the Project from the beginning to the end: three PMs have been nominated at UNIDO HQ; the UNIDO's country office representative in RF was involved since the beginning in the overall administrative and political coordination of the Project but did not have specific knowledge of the technical implementation issues.
- The limited access to information and documents: the PMU in charge of all the Project technical implementation ceased operation in December 2015; inexistence of electronic versions in English of key Project reports during the active implementation period; the involvement of the National Execution Agency in 2015 meant that not all the Project documents were centralised at UNIDO HQ as was the case prior to the Execution Agreement.

⁶ In accordance with the last Work Plan 2015-2016 the last activities were expected to take place between April and June 2016; the last Project Steering Committee agreed to "Prepare and send to UNIDO Headquarters by 1 April 2016 Final Report on Project Implementation" (see minutes from 10 December 2015).

⁷ The TE was expected to take place in April 2016 in accordance with the minutes of the last Project Steering Committee's meeting (10 December, 2010).

II. Country and Project background

2.1 Brief country context and project background

The RF is the largest country covering more than an eighth of the world's total land surface. It has a population of over 144,5 million people (2017⁸). Extending from Europe to East Asia the country spans nine time zones and a wide range of environments and landscapes. The Russian economy ranks as the eighth largest by nominal Gross Domestic Product (GDP) and the fifth largest by purchasing power parity. The economy is market based but growth since the break-up of the Soviet Union has been largely fuelled by extraction of the country's vast mineral and oil and gas reserves. RF is one of the world's top producers of oil, gas, coal, diamonds, and gold.

The RF, as the legal successor of the former Soviet Union, became a Party to the Vienna Convention and the MP in 31 December 1991. On 13 January 1992 RF ratified the London Amendment to the MP and later on 14 December 2005 ratified the Copenhagen Amendment, the Montreal Adjustment and the Beijing Amendment to the Montreal Protocol.

At the time of the Project design RF was one of the biggest HCFCs producer. It has widespread manufacturing in all key HCFC consuming sectors including RAC and an extensive variety of polyurethane foams. The Project aimed to address the additional need to develop a long-term sustainable phase-out strategy that minimizes climate impact in accordance with decision XIX/6 and in line with GEF-4 and GEF-5 strategic objectives. For this reason, the Project proposed a fully integrated multi-focal approach to the assessment of HCFC alternatives for ODS phase-out with the use of non-HFC alternatives for the investment component. HCFCs were used in manufacturing refrigeration and foam sectors and as feedstock in the manufacture of other chemicals (fluoroprenes, fluoroplastics suspensions, fluorinated liquids and lubricants) and in strategic installation, including nuclear power station cooling and military applications.

At the time of the Project design and still today energy efficiency of Russian industry is significantly below the global average. There are a number of reasons for this disadvantage: an ageing capital equipment stock, traditionally low energy prices and abundant national energy resources, in combination with implementation problems on governmental and enterprise level. This situation has been changing rapidly. Government has set an ambitious target of a 40% improvement of the energy intensity by 2020. National gas prices are increasing steadily, to the level of export prices and electricity sector reforms created a liberalized electricity market leading to market-based prices for electricity. This development raises the interest for energy efficiency significantly⁹.

⁸ <https://data.worldbank.org/indicator/SP.POP.TOTL>

⁹ For an overview of the Russian industrial energy efficiency sector see the ITE report for the UNIDO-GEF Project "Market Transformation Programme on Energy Efficiency in Greenhouse Gas Intensive Industries in the Russian Federation" https://www.unido.org/sites/default/files/files/2018-09/103056_Russia%20IETE_TE.pdf

2.2 Project summary

The Project under evaluation is a FSP which represents the first comprehensive effort to consider the entire scope of work required to achieve HCFC phase-out and minimize climate impact taking into consideration both the MP and the Protocol to the United Nations Framework Convention on Climate Change (Kyoto Protocol)¹⁰ as well as national environmental policy and targets.

The Project rationale is to take advantage of the redesign and conversions required to phase-out HCFCs and at the same provide the technical assistance and technology transfer required to enhance the energy efficiency of the equipment being manufactured. In accordance with the CEO endorsement/Project Document (ProDoc) “by combining these two activities, the programme can achieve the combined climate benefits of an ODS phase out and programme and an energy efficiency programme but without the full cost of two initiatives”.

This Project addresses two major environmental issues: the phase out of ODS and energy efficiency in the RAC sector. The phase out of HCFCs and promotion of HFC-free energy efficient RAC systems in the RF through technology transfer to help the country meet its 2015 targets under the MP. Since HCFCs are strong GHG, besides the phase-out of 600 ODP tons of HCFCs there will also be a direct reduction in GHG emissions equivalent to 15.6 million tons of CO₂.

The secondary objective of the Project is to introduce more energy efficient designs, through technology transfer, during the conversion of RAC manufacturing facilities. The Project also aims to achieve indirect GHG emissions reduction through reduced electricity consumption in the commercial and industrial refrigeration sectors, of approximately 10 MMT CO₂ in 5 years, contributing to the RF’s ambitious CO₂ reduction targets.

The table below provides the factsheet of the Project.

Table 1: Project Factsheet

| | |
|-------------------|--|
| Project title | “Phase out of HCFCs and Promotion of HFC-Free Energy Efficient Refrigeration and Air-Conditioning Systems in the Russian Federation Through Technology Transfer” |
| UNIDO Project No: | 100352 |
| GEF Project ID | 3541 |
| Region | Europe and Central Asia |
| Country | Russian Federation (RF) |
| Project donor(s) | GEF |

¹⁰ On 18 November 2004 the RF ratified the Kyoto Protocol
<https://unfccc.int/process-and-meetings/the-kyoto-protocol/what-is-the-kyoto-protocol/what-is-the-kyoto-protocol>

| | |
|-----------------------------------|---|
| Project implementation start date | 26 January 2011 |
| Expected duration | 58 months |
| Actual duration | 95 months |
| Expected implementation end date | 31 December 2015 ¹¹ |
| Actual implementation end date | 31 December 2018 |
| Project size | FSP |
| GEF Focal Areas | GEF-4: ODS; POPS-2; CC-2; CC-1 |
| Implementing agency | UNIDO |
| Executing partners | Ministry of Natural Resources and Environment of the RF |
| Executing agency | International Centre for Scientific and Technical Information |
| UNIDO RBM code | EC 31 (GB 20) |
| GEF project grant (excluding PPG) | 18,000,000 USD |
| GEF Grant Disbursement | 17,980,000 USD (as of 30 June, 2018) |
| Project GEF CEO endorsement | 08 December 2010 ¹² |
| Commitment of funds to UNIDO | 14 January 2011 ¹³ |
| UNIDO input (in kind) | 350,000 USD |
| Co-financing at CEO Endorsement | 40,000,000 USD |
| Materialized co-financing | 45,066,782.52 USD |
| Total project cost | 62,900,484.90 USD ¹⁴ |
| Mid-term review date | 12/1/2013 |
| Terminal evaluation date | June – September 2018 |

In addition to project management, the Project consists of seven technical components. The expected outputs of each project component are presented under section 4.3 below.

2.3 Project implementation arrangements and implementation modalities

The implementation arrangements of the Project consisted of a PMU in Moscow and a Project Team at UNIDO HQ under the overall strategic guidance of the PSC. The figure below presents the project management structure with some minor adjustments to the original management structure foreseen in the ProDoc.

¹¹ In accordance with ProDoc, however the information is not coherent: 31 December 2014 - Original Expected Implementation End Date (indicated in CEO Endorsement/Approval document) in accordance with [MTR 2013 report](#); 01 June 2014 - Project closed in accordance with [The GEF website](#)

¹² Approval date - date of the CEO Endorsement Letter

¹³ Date of the World Bank Letter of Commitment

¹⁴ As per Project Draft Final Report (September, 2018). It should be noted however that in accordance with the Annual PIR Fiscal Year 2018 the total project cost was 63,046,783.52 USD

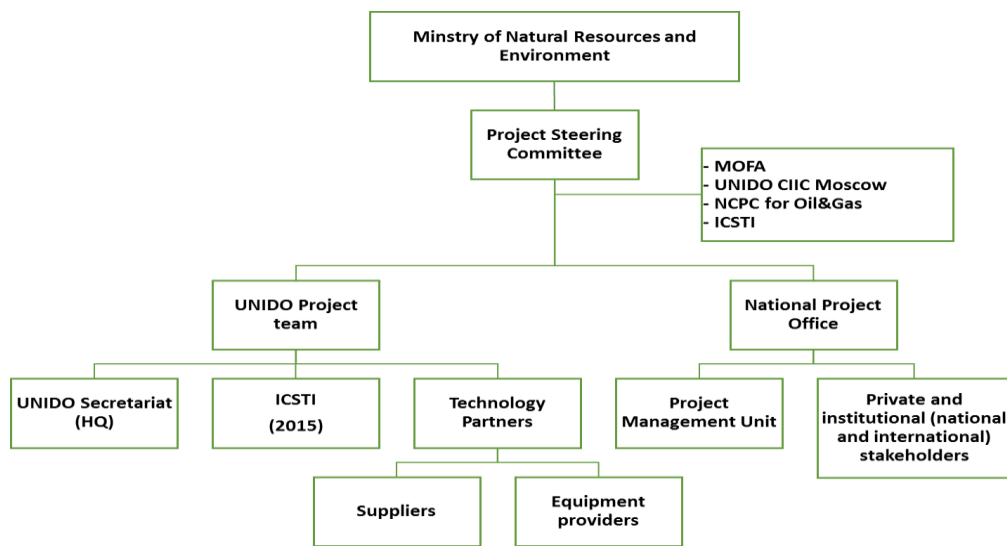


Figure 1: Project Management Structure updated from ProDoc

UNIDO is the implementing agency for the Project.

The Ministry of Natural Resources and Environment of the RF (MNRE) is the designated national leading agency and focal point of the implementation of the MP, as well as the Operational and Political focal point for the GEF. The Directorate for Environmental Monitoring and Prevention of Environmental Risks (currently restructured as Department of State Policy and Regulation in the Sphere of Environmental Protection and Ecological Safety) was in charge of the direct implementation of the Project components.

The PSC was formed at the inception stage of the Project, met twice every year (the first meeting was held in August 2011 and the last in December 2015) to ensure the overall strategic and policy guidance of the Project. The PSC was composed of representatives from:

MNRE, who was the chair and coordinator of all the meetings; Ministry of Foreign Affairs; UNIDO Centre for International Industrial Cooperation in the RF (CIIC)¹⁵; International Centre for Scientific and Technical Information (ICSTI)¹⁶; and the National Centre for Environmental Management and Cleaner Production for the Oil and Gas Industry¹⁷ -they have attended all PSC meetings except the last two.

The CIIC in Moscow provided support similar to a UNIDO field Office – it was the overall political, administrative and logistical coordinator of the Project in charge of all local support including organisation of meetings and events (issuing invitation letters, visas, etc), as well as networking with Project stakeholders and beneficiaries. The ITPO was established in 1989 through a formal agreement between the Government of the Soviet

¹⁷https://gubkin.ru/faculty/chemical_and_environmental/chairs_and_departments/industrial_ecology/ncpc/srat.php

Union and UNIDO. The CIIC in Moscow was re-established in 1992 as part of the UNIDO-Russian Federation agreement. Its mandate is to assist in the coordination and implementation of all UNIDO projects in the country, which is wider, than the mandate of a typical Investment and Technology Promotion Offices (ITPO) covering support to implementation of Technical Cooperation (TC) projects within RF. Its mandate has been further widened through several modifications of the underlying agreements, including the support to implementation of TC projects in the Commonwealth of Independent States (CIS)¹⁸. As of September 2018, ITPO-CIIC Russia related to UNIDO Directorate of Programme Development and Technical Cooperation (PTC), Investment and Technology Promotion Offices¹⁹.

The Project was launched on 3 of March 2011 with the Inception Workshop which took place at the largest specialized exhibition "World of Climate 2011" and was opened by the Deputy Minister of Natural Resources and Ecology of the Russian Federation. During the workshop the PM and National Project Coordinator presented the general concept and objectives of the Project followed by specific technical presentations from government, commercial, academia and associations representatives related to the fulfilment of the MP obligations, and strategic and technical solutions to support these obligations.²⁰

Since then and until March 2015 UNIDO HQ executed the project. The decision-making functions were solely allocated to the designated UNIDO PMs based in Vienna. The last mission of the PM to RF took place in January 2017²¹.

Following the GEF decision to segregate the implementation and execution functions in its partner agencies the ICSTI, an international intergovernmental organisation established in 27 September 1969 and registered by the UN, was contracted between March 2015 and 31 December 2015 as the Project execution agency in charge of the day-to-day management of the Project (see section 2.6 below). The financial commitment to ICSTI was 6 532 800.00 USD- these amounts was ordered on 20 December 2014.²²

The PMU, which roles and responsibilities are not defined in the ProDoc, was established in the beginning of 2011 to coordinate the technical implementation of all Project activities and liaise with stakeholders. It ceased operation in December 2015 with the last meeting of the PSC.

The table below presents the main Project's stakeholder. The ET met with all the stakeholders highlighted in bold and received written comments from those highlighted in italic. A detailed list of stakeholders and partners and the respective data collection method is provided in Annex D: List of Project stakeholders and partners.

18 See Independent UNIDO Country Evaluation – Russian Federation, UNIDO, Vienna, 2014

19 See DIRECTOR GENERAL's BULLETIN of 31 January, 2018 - UNIDO Secretariat Structure 2018

20 See Report of the Inception Workshop from 11 March 2011.

21 The mission took place between 22 and 28 of January 2017 in accordance with letter from the Director of the Department of Environment (UNIDO) from 9 February 2018 to the Department of International Cooperation of the MNRE; no mission report was however produced.

22 See purchase orders n.ºs 3000024478 and 3000024479.

Table 2: Main Stakeholder Mapping

| Stakeholder | Role |
|--|---|
| UNIDO HQ (Vienna) | Project management, supervision, reporting, evaluation |
| UNIDO Centre for International Industrial Cooperation in the RF (Moscow) | Political, administrative and logistical coordination |
| Ministry of Natural Resources and Environment (MNRE) of the RF | Designated national leading agency and focal point for the implementation of the MP |
| International Centre for Scientific and Technical Information (ICSTI) | Project Execution agency during 03/2015- 12/2015 |
| <ul style="list-style-type: none"> Ministry of Internal Affairs Federal Customs Service Ministry for Foreign Affairs Ministry of Education and Science Federal Service of Russia on Hydrometeorology and Monitoring of the Environment | Governmental bodies Project beneficiaries Steering Committee Members |
| <ul style="list-style-type: none"> POZiS SEPO-ZEM Biryusa UKO Pipe insulation plant Vladipur (replied to email) Dow-Izolan (replied to email) KPP Nord Ostrov Komplekt Orsk Refrigerator Plant Polus Tsentrtanstekhmash Shumerlya purpose-built vehicle plant Krasnogorsky van plant Ariadna-Yug | Technical Assistance recipients |
| <ul style="list-style-type: none"> Cannon Eurasia | Equipment suppliers |
| <ul style="list-style-type: none"> Vercont Service State college #19 (23) WorldSkills Russia Professional, training center Tambov Institute of educators | Training Institutions |
| <ul style="list-style-type: none"> Soyuzkholodprom (Russian union of refrigeration industry) Association of Professionals in the Industry of Climate ISZS-Montazh ISZS-Project | Information partners and Heating, ventilation, and air conditioning (HVAC) associations |

2.4 Major changes to project implementation

The following major changes have occurred during the Project implementation: (1) nomination of three PMs at UNIDO HQ; (2) segregation between the implementation

agency and the execution agency that led to the conclusion of the Execution Agreement between UNIDO and ICSTI; (3) beneficiaries of the Project.

The first PM was in charge of the project design and its implementation until the spring of 2015 when the second PM, who retired in September 2017, replaced him. Between September 2017 and May 2018, a third PM was appointed whom the first PM then replaced. These managerial changes were reportedly due to changes in portfolio and internal organization issues (namely retirement).

In November 2011, the *GEF Minimum Fiduciary Standards* were updated to require the separation of Implementation and Execution Functions in GEF Partner Agencies.²³

Due to the complex and high-value nature of the procurement UNIDO established an Evaluation Group with multi-disciplinary expertise to examine and evaluate the ICSTI's proposal²⁴. A detailed *due diligence* of ICSTI was conducted following which the Evaluation Group recommended, on 4th of December 2014, to contract the ICSTI²⁵. The Execution Agreement with ICSTI was signed by UNIDO on 25th February 2015 for the period between 4 March and 31 December 2015. UNIDO remained, as the implementing agency, in charge of the Project supervision, completion and evaluation while the management and administration of the day-to day activities of the Project were transferred to the executing agency.²⁶

The table below compares the beneficiaries identified in the ProDoc versus those that benefited from the Project during its implementation. *Mosflowline* was not included since it did not fulfil the requirement of being owned by 51% of national capital. *Ariada* independently performed conversion before the start of the Project. Others joined after the awareness raising promoted by the Project on the advantages of conversion, such as Pipe Insulation Plant.

Table 3: Planned Stakeholders versus Effective Stakeholders

| Planned Beneficiaries ²⁷ | | Effective Beneficiaries ²⁸ | |
|-------------------------------------|--|---------------------------------------|------------------------|
| POZIS | Other Project beneficiaries were not specifically recognized | POZIS | Krasnogorsky van plant |
| Mosflowline | | Orsk Refrigerator Plant | Tsentrtanstekhmash |
| ProfHolod | | Biryusa | Ariadna-Yug |
| Ariada | | Polus | Ostrov-Komplekt |
| Polus | | Vladipur | Nord |
| Sepo | | SEPO-ZEM | UKO |
| | | Pipe Insulation Plant | Vercont Service |
| | | Shumerlya Plant of | College #23 (former |
| | | Purpose-built Vehicles | College #19) |
| | | | Dow Isolan |

²³ GEF/C.41/06/Rev.01 November 3, 2011.

https://www.thegef.org/sites/default/files/council-meeting_documents/C.41.06.Rev.01_GEF_Minimum_standards_paper_1.pdf

²⁴ In accordance with Art. 12.4, paragraph 4, of UNIDO's Procurement Manual <https://www.unido.org/resources/procurement/unido-procurement-manual>

²⁵ See Evaluation Report (December 2014) and Assessment Checklist under its Annex A.

²⁶ GEF/C.41/06/Rev.01 November 3, 2011 – "Execution implies accountability for intended and appropriate use of funds, procurement and contracting of goods and services"

²⁷ In accordance with the ProDoc

²⁸ In accordance with the Project draft final report (September, 2018)

2.5 Positioning of UNIDO project

In the early 1990's an environmental programme was for the first time introduced in UNIDO when the Environment Coordination Unit was established. UNIDO is one of the MP Implementation Agencies responsible for development of MP programmes and projects worldwide.

This Project replies to the interest of the Executive Committee of the Multilateral Fund for the Implementation of the MP, that UNIDO's seeks funds to cover costs that are not eligible under the Multilateral Fund since RF is an Article 2 country, but that could generate climate benefits as the result of HCFC phase-out.

The ODS phase out aspect of this programme follows the long-established mechanism of funding developed by the Multilateral Fund and GEF, however the innovative multi-focal approach of the Project which brings the opportunity to deliver incremental energy efficiency improvements and reduction of direct and indirect emissions of GHGs requires additional resource and technology which would not be available in a standard ODS phase out project. This Project therefore uses GEF funds to leapfrog to a new generation of technology that minimizes climate impact.

The coordination with other GEF agencies as well as with the Countries with Economies in Transition was foreseen in the frame of the preparation of the GEF/WB/UNDP Regional HCFC phase out programme²⁹. Coordination with UNDP project (3216 - RUS Standards and Labels for Promoting Energy Efficiency). PMU representatives participated in the UNDP Project Steering Committee³⁰. No other evidence of cooperation was, however, observed.

2.6 Executing partner organisation

The MNRE is a federal executive authority of the RF in the fields of nature management, environmental protection, and ecological safety and was the Project national counterpart through the Climate Change and Ozone Layer Division under the Department of State Policy and Regulation in the Field of Hydrometeorology, Arctic Studies, Antarctica and the World Ocean. As of September 2018, the structure of the Ministry comprises nine departments³¹.

The MNRE is in charge of ensuring statutory regulation as well as elaborating drafts for submission to the Russian Federal Government on *inter alia* environment protection and security, air protection, improvement of environmental management and environment protection.

²⁹ https://www.thegef.org/sites/default/files/project_documents/2331_UNDP_TE_TE_HCFC_MSP_62098_-_Final_Report_0.pdf.

³⁰ On 28.03.2013 and 18.02.2014

³¹ Department of State Policy and Regulation in the Field of Geology and Subsoil Use; Department of financial and economic support; Department of State Policy and Regulation in the Field of Water Resources; Department of State Policy and Regulation in the Field of Hydrometeorology, Arctic Studies, Antarctica and the World Ocean; Department of State Policy and Regulation in the Field of Forest Resources and Hunting; Department of Management of Affairs and Personnel Policy; Department of State Policy and Regulation in the Sphere of Environmental Protection and Ecological Safety; Department of State Policy in the Sphere of Development of Protected Areas and Baikal Nature Territory; and Department of International Cooperation.

The ICSTI is a not-for-profit intergovernmental organization, set up on February 1969 under the provisions of an Intergovernmental Agreement on the Establishment of the International Centre for Scientific and Technical Information³². In 1971 ICSTI was registered with the UN Secretariat in accordance with Article 102 of the UN Charter. As of 2016 ICSTI comprises 22-member states³³.

The main objective of ICSTI is to provide information, analytical, consultative and organizational support to international cooperation in fields of science, technologies and business. In accordance with the provisions of its Statute ICSTI carries out its tasks in conjunction with interested national information bodies, scientists and experts from member states and other countries under contracts and agreements on cooperation.

³² <http://www.icsti.su/portal/regulation/index.php?module=read&id=1&lang=e>

³³ <http://www.icsti.su/portal/members/index.php>

III. Project Theory of Change and progress to impact

The evaluation developed a Theory of Change (ToC) to assess the Project's contributions to the conditions leading to the desired behavioural and technological transformations. Although the ProDoc does not contain an explicit ToC, the ProDoc and its Project Results Framework provided information to develop one indicating how the project was expected to achieve its main objectives: Phase out 600 ODP tones of HCFCs in the foam and refrigeration manufacturing sectors; Decrease GHG emissions; and Increase energy efficiency through the transfer of innovative technologies. The ToC developed for this Project is illustrated in Figure 2 below.

The analysis was conducted in terms of the 'assumptions' and 'drivers' that underpin the processes involved in the transformation of outputs to outcomes to impacts. The **drivers** are the significant external factors that are expected to contribute to the realization of the intended impacts and can be influenced by the project. The **assumptions** are external factors that are expected to contribute to the realization of the intended impacts but are generally beyond the control of the project.

The Project was designed with seven components, which, for the purpose of the ToC, have been considered **outcomes**. The outcomes under the Project design were, for the purpose of the ToC, considered **outputs**. Both the outputs and the outcomes were paraphrased slightly to more clearly illustrate the ToC and its route to impact.

The following main factors are expected to contribute to the realization of the intended impacts and **can be influenced by the project (drivers)**: active communication, Information and awareness raising among partners and stakeholders; sufficient support and consensus on the adoption of the new legal framework; the new legislation is effectively enforced through training and equipment to police and customs officers; Industry provides information on production/consumption and accepts new technologies and equipment.

Five **key assumptions** that are expected to contribute to the realization of the intended impacts are that: the commitments of stakeholders/partners is active throughout the project; availability of suitable alternative technologies and equipment; sufficient funding, expertise and Technology Transfer; the beneficiaries are able to provide the necessary co-funding; there are market drivers for environmentally friendly equipment and products.

Figure 2 illustrates how the seven Project outcomes, and some outputs in particular could contribute to the preconditions for bringing about the behavioural and technological changes needed to phase out HCFC and reduce GHG emissions. To bring about the necessary behavioural changes, the incentives for change and capacities to carry out change would need to be in place.

The learning from this analysis is expected to be useful to feed into the design of the future projects so that the management team can effectively manage them based on results.

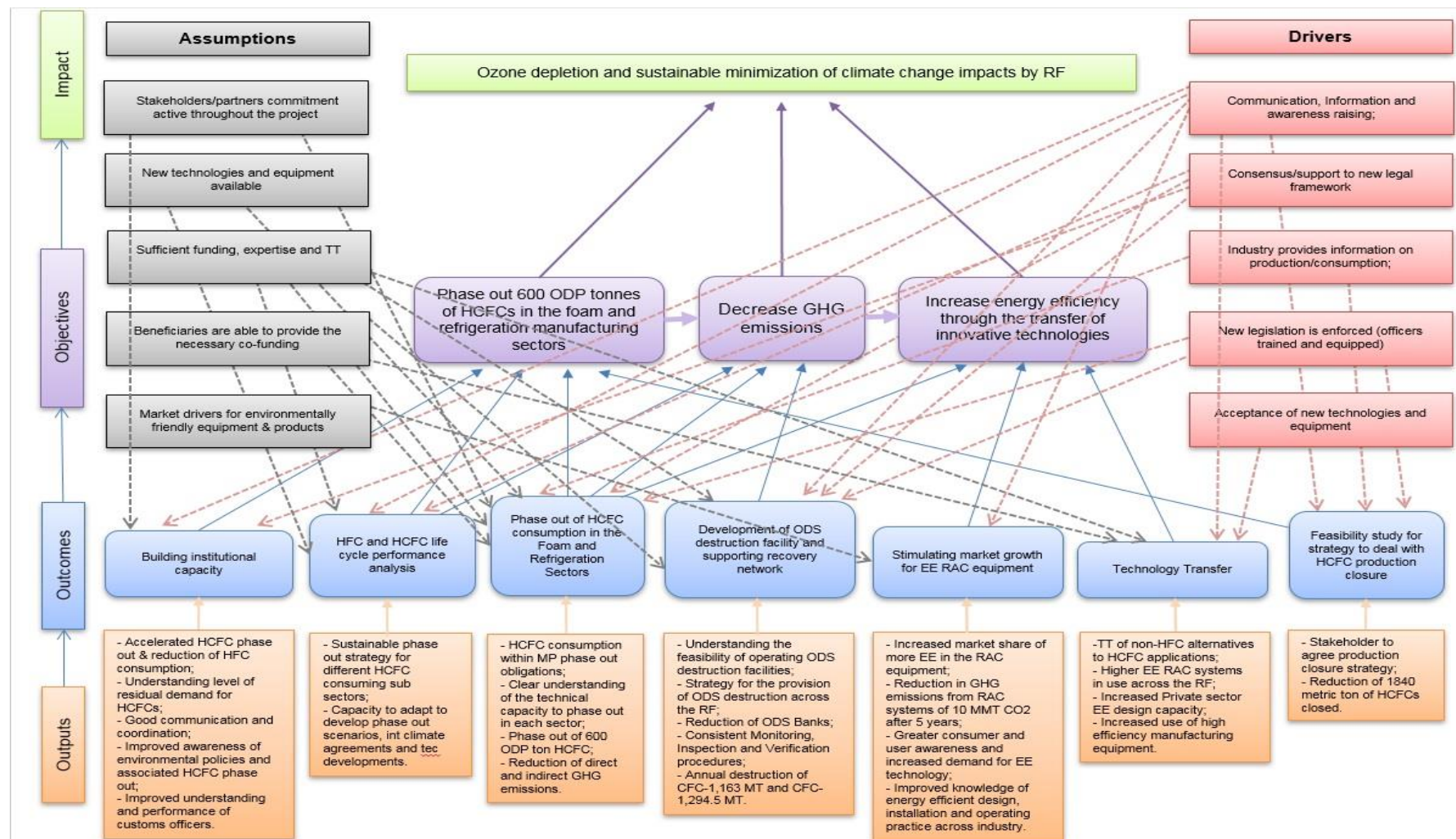


Figure 2: ToC

IV. Project assessment

This section assesses all evaluation criteria and questions outlined in the ToR. In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Division (ODG/EIO/IED) uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory).

4.1 Project design

Overall design:

The Project Identification Form (PIF) was submitted in September 2009³⁴ and the CEO endorsement is from 20 September 2010. The Project design is very innovative, multi-focal and forward looking - it integrates requirements with regard to the reduction of GHG emissions through the phase out of HCFC production and consumption, which have only become mandatory recently with the Kigali Amendment to the MP adopted on 15 October 2016³⁵. The Amendment establishes specific targets and timetables to replace HFCs/HCFs with more planet-friendly alternatives expected to avoid up to 0.5° Celsius warming by the end of the century, while continuing to protect the ozone layer.

The Project is consistent with the RF's priorities, the biggest country in the world, and commitments under the MP, one of the biggest producers of HCFCs. However, the ProDoc fails to clearly describe the consistency of the Project with the development priorities of RF, namely with regard to the sector development strategy.

The consistency of the Project with GEF strategies and programs are identified (see Section below) as well as the coordination with other GEF initiatives. It should be noted that the Project was designed before the GEF's Policy on Gender Mainstreaming.

The ProDoc informs about the expected global environmental benefits to be delivered and identifies the following three main barriers to achieving improved energy efficiency: i) insufficient institutional capacity ii) lack of suitable alternative technologies iii) insufficient market drivers for environmentally friendly equipment and products.

The project addresses two major environmental issues - the phase out of HCFCs under the MP target and energy efficiency in the RAC sector. It's scope is therefore very wide and its approach complex – 7 components with 27 outcomes and 30 outputs. Component 6 on Technology Transfer is stand-alone, as required by GEF, although some of its outputs were also covered by components 3 and 4.

³⁴ https://www.unido.org/sites/default/files/2015-02/Gender_Guide_MP_0.pdf

³⁵ The Kigali Amendment adopted by the 28th Meeting of the Parties to the Montreal Protocol in Kigali, Rwanda, is the fifth amendment to the MP. It will enter into force on 1 January 2019 after the threshold for the agreement to enter into force was met on 17 November 2017, when it was ratified by 20 parties. At the time of writing this report the ratification process by RF was pending: <https://ozone.unep.org/countries/ratifications>

The Project implementation arrangements are identified and remained valid during its implementation until 2015 with the involvement of the execution agency as a consequence of GEF's segregation (see section 2.4 above).

The ProDoc contains a very generic description of the stakeholders' engagement – no list of stakeholders is provided nor their roles and responsibilities described.

Project potential risks have been identified and described and some adequate mitigation measures have been proposed. The perceived level of risk at the time of the Project design was Low or Moderate. These mitigation measures were not included in the Project documentation nor in the M&E activities.

The total Project budget accounts to 58 million USD, where 18 million USD is a GEF grant and 40 million USD is planned co-financing. 70% of the budget is allocated to components 3 and 5. The distribution of funding among the seven components was planned as follows:

Table 4: Distribution of budget among the different components

| Project Component | | Amount (USD) | % |
|-------------------|--|--------------|------|
| 1 | Building institutional capacity | 3 100 000 | 5,3 |
| 2 | HFC and HCFC life cycle performance analysis | 350 000 | 0,6 |
| 3 | Phase out of HCFC consumption in the key consuming sectors | 18 800 000 | 32,4 |
| 4 | Development of ODS destruction facility and recovery network | 3 800 000 | 6,6 |
| 5 | Conversion of production facilities and stimulating market growth for energy efficient RAC equipment | 21 900 000 | 37,7 |
| 6 | Technology Transfer | 9 000 000 | 15% |
| 7 | Feasibility study to determine the best and most integrated strategy for HCFC production closure | 450 000 | 0,7% |
| | Project management | 900 000 | 1,6% |

Source: ProDoc (20 October 2010)

The overall planned financing for the Project was foreseen as 31% GEF funding against 69% of the RF's Government and counterparts co-financing. The breakdown is provided below:

Table 5: Planned Project finance and co-finance

| Co-financier | Classification | Type | Amount (USD) | Share |
|---------------------------|---------------------|-------------------|-------------------|-------------|
| UNIDO | Implementing Agency | In-kind | 350,000 | 1% |
| Government | National Government | In-kind | 2,150,000 | 5% |
| Counterparts | Beneficiaries | Equity Investment | 37,500,000 | 94% |
| Total Co-financing | | | 40,000,000 | 100% |

Source: ProDoc (20 October 2010)

The final version of the budget table in the ProDoc has two typos: (1) 9,000,000 USD was the total funding allocated to Component 6 against the correct value of 8,700,000 USD; (2) 58,000,300 USD was the total Project budget against the correct value of 58,000,000 USD.

A baseline was established (see section below). M&E activities are scheduled and budgeted with responsibilities for data collection and submission identified in the ProDoc. However, it does not identify the details and the format of the M&E Plan, which is to be laid out at the start of Project with the Inception Workshop.

The Project Design is rated as **Satisfactory**.

Logframe:

No Logframe was approved with the official version of the ProDoc from 20 October 2010.

A Project Results Framework was provided under Annex A of a draft version of the ProDoc from 20 August 2010 and includes the expected outputs of the Project, its proposed objectively verifiable indicators and sources of verification. Most of the proposed indicators are smart and can be easily verified - these were however not included in the approved ProDoc.

The Project Results Framework also contains a list of assumptions and risks - at output and interventions level - which are very general and do not allow determining the level of the achieved success.

The components, expected outcomes and expected outputs are included in the Project Framework (Part A of the ProDoc) but there is no tool to measure the Project results. Even if one was to accept the Project Results Framework provided with the draft version of the ProDoc as the logframe of the approved ProDoc this was based on outputs, which do not correspond to the Project outputs approved in the ProDoc's Project Framework - example: the ProDoc foresees under component 1 the development of a national database and tracking system as well as an agreement on stakeholders needs framework 6 - none of these outputs is included in the above mentioned Project Results Framework.

The Project was implemented without a logframe. The indicators used to measure outcomes under the PIR are not included in the ProDoc.

The Project logframe is rated as **Highly unsatisfactory**.

4.2 Relevance and ownership

Relevance to the country and beneficiaries

The MP calls for a step-by-step phasing out of the consumption of HCFCs beginning in 2004 until the complete end of consumption in 2030 under the following schedule: in 2010 reduction of consumption by 75% from the baseline; in 2015 a 90% reduction; and from 2020 a complete freeze on consumption, except for 0.5% to maintain existing equipment during the period 2020-2030.

This Project is highly relevant to the RF as it assisted the country, one of the highest consumers of ODS, in meeting its 2015 target under the MP through the direct phase-out of 600 ODP tons of HCFCs in the foam and refrigeration manufacturing sectors. The MP schedule was very tight and constituted a big challenge for the country.

The Project is also in line with RF's commitment under the Kyoto Protocol to minimize the climate impact through direct reduction in GHG emissions (HCFCs are strong GHG) and enhancement of the energy efficiency during the conversion of RAC manufacturing facilities through Technical Assistance and Technology Transfer.

The Government of the RF was fully engaged in the Project implementation through the MNRE in close cooperation with other Ministries, namely the Ministry of Economic Development and Ministry of Energy, and the enactment of a new legal framework including relevant laws and directives on control of the import, movement and consumption of ODS, acceleration of the ODS phase out, limitation of the number of checkpoints through which ODS import is permitted and establishment of criminal penalties for ODS smuggling (see section 4.3 below).

The Project supported the Federal Government of the RF in achieving its energy efficiency programme by addressing the complex RAC sub-sectors and contributing to the overall objective of the RF's Energy Efficiency Policy (2013) – 40 % reduction in Russia's GDP energy intensity by 2020 compared to 2007 consumption levels.³⁶ The amount on which the project has contributed to this objective could however not be determined based on the documents reviewed by the ET.

The recommendations of the Project's technical report, from the end 2012, have been fed into Climate Policy discussions at the Federal level. Under Article 4 of the Order from the Government of the RF No. 1413-r³⁷ from 3 August 2012, the Ministry of Industry and Trade (MIT) submitted proposals to the Ministry of Health to include in the draft Federal Target Program "National System of Chemical and Biological Safety of the Russian Federation (2015-2020)" measures to develop production of a range of refrigeration equipment in ODS free design, including small ammonia filling; and State support measures aimed at encouraging a phased replacement of ODS equipment and products.

However, the existing text of the federal target program "National System of Chemical and Biological Safety of the Russian Federation (2015-2020)" is not publicly available, so this information could not be triangulated. The private sector played a key role in the Project implementation through conversion to equipment and HCFC phase-out technology for RAC equipment through an innovative life cycle analysis approach (component 2). "The project was the bridge between the Government and the facilities involved in the HCFC phase out"³⁸. The ownership of the Project by the beneficiary facilities was evident during the field mission.

³⁶ https://www.unescap.org/sites/default/files/D_Russia_NadezhdinEEPresentation_1.pdf

³⁷ <http://www.szrf.ru/szrf/doc.phtml?nb=100&issid=1002012033000&docid=78>

³⁸ Minutes of the interviews.

Relevance to GEF

The Project is based on the Strategic Program 1 in GEF-4: *Phasing out HCFCs and Strengthening Capacities and Institutions*. It represents the first comprehensive international effort to make estimates of the scope of work for HCFC phase out on a global basis and to fully integrate energy efficiency improvements.

Furthermore, two of the seven components of the Project (components 3 and 6) respond specifically to the GEF Strategic Program on *Technology Transfer and Climate Change* through the incremental energy efficiency aimed at developing, expanding, and transforming the markets for energy-efficient technologies. A number of specific activities were developed to provide immediate and direct climate change impact through technology transfer as well as supporting activities which will give access to technology transfer (equipment and know-how).

It should be noted that the additional opportunities provided by the GEF Technology Transfer funding, unlocked significant potential to make changes that resulted in energy efficiency improvements that would otherwise be locked into industry for significant period of time as a standard project would only replace for like technology in terms of energy efficiency

UNIDO's Comparative Advantages

The Project is consistent with UNIDO mandate - to promote and accelerate sustainable industrial development in developing countries and economies in transition, and work towards improving living conditions in the world's poorest countries by drawing on its combined global resources and expertise.

The interviewees have identified the following main advantage of UNIDO when compared with other UN agencies: technical know-how; experience all over the world and results oriented approach; extensive experience with the private sector; capacity to understand the local/national context, institutional arrangements and political priorities; bridge between the international commitments and the governments; transparent and clear procedures although sometimes too cumbersome.

| |
|--|
| Relevance and Ownership is rated as Highly satisfactory . |
|--|

4.3 Effectiveness

The Project consists of 7 technical components, in addition to project management. A total of 30 outputs, were expected to be delivered that would contribute to 27 outcomes. The following paragraphs assess the extent to which the development intervention's objectives, outcomes and deliverables were achieved, considering their relative importance. A summary of the main achievements is provided in Annex E: Summary of the main project achievements by outcome/output.

Component 1- Building institutional capacity (5,3% of the overall budget):

The Project has assisted in the establishment of the RF's ozone legal and regulatory framework providing technical information and rationale during the drafting of the new legislation, including best international practices and comparative analysis. The full list of relevant laws and regulations are summarized in Russian at the ozone programme website³⁹ and are provided in Annex C: List of documents reviewed.

The Project has also assisted in the preparation and introduction of amendments to technical regulations of the Customs Union (Russia, Kazakhstan and Belarus), which form the basis of the establishment of its standard package on ODS restrictions for further adaptation to national legislation. From January 2013, the import of HCFC and HCFC containing equipment in these countries is prohibited.

In order to determine the level of residual demand for HCFCs, in June 2014 the Project assisted the MNRE in establishing a procedure to calculate the annual ODS production volume necessary to ensure, namely, the operation of RAC equipment, the foam production and degreasing and cleaning operations. 30,000 companies were involved in the MNRE's distribution of ODS quotas for 2015 among market players.

The Project was very active in improving awareness of environmental policies and associated HCFC phase out legislation among users and stakeholders through *inter alia*: (i) creation and maintenance of specific websites - the www.ozoneprogram.ru (see paragraph below) the www.foamunion.ru (see section 4.4 Efficiency) and the www.hvaccenter.ru the website for training of RAC technicians including free online-courses; (ii) promotion of training centers of CO₂ demo-projects and database of latest legislation for specialists; (iii) regular newsletters sent to more than 20 000 subscribers; (iv) regular publications in mass media (*Izvestia*, *Argumenty i Fakty*), and specialized (UNIDO in Russia, Climate World, Refrigerating Equipment, Empire of Refrigeration); (v) organization of joint meetings of representatives of business circles, UNIDO, and MNRE; (vi) promotion of events on ozone layer protection events and thematic conferences (such as on natural refrigerants (ammonia) in October 2013⁴⁰).

With over 1000 visits per day and in "Top 10 off major search programme"⁴¹ the ozone programme is the first portal in Russian dedicated to ozone issues, containing complete information on *inter alia* the national ozone legislation, international HCFC phase out expertise, events, codes of practice, news, and articles addressed to various stakeholders. It has made a significant contribution to the institutional support to the progress and achievements of Project⁴². Its maintenance ceased in 2016; ICSTI has been contracted in July 2018 to update it until 15 September 2018 (see section 4.4). The

³⁹ http://www.ozoneprogram.ru/ozonovoe_zakonodatelstvo/np_dok_rf/. The laws and regulations are provided in Russian; an English summary is available in the Final Report provided by ICSTI.

⁴⁰ http://www.ozoneprogram.ru/eng/events/16102013_en/

⁴¹ See ToR for "Support of the project website of GEF ID 3541 - UNIDO GF/RUS/11/001" (Juy, 2018).

⁴² Its major sections are on the following topics: Overall Project description and Components overview; Project organizers (UNIDO, GEF, MNRE); Project participants and partners with clear indication of roles and sectors of origin; Project procurement information available for registered participants; Legal framework, international experience, legal documents of Customs Union and Russia; Professional and technical guidelines; News and events section with relevant materials available to public.

project has also promoted wider awareness raising on Montreal Protocol issues among the public in general, including through broadcasting and interviews on federal TV⁴³, YouTube⁴⁴ and press conferences⁴⁵.

In November 2013, 20 officers of the Ministry of Interior Main Office for Combating Economic and Corruption Crimes, Federal Customs Service and Russian Customs Academy attended 72-hours Tools and Methods for Detecting ODS practical training course. The training was held using tailored training materials with analysers purchased for that purpose⁴⁶. Trainings and online registration were established in the last 3rd and 4th quarter of 2015 and were successfully completed.

Furthermore, in order to promote the institutional coordination of efforts aimed at controlling and monitoring ODS six Working Groups were established with the participation of UNIDO, Governmental bodies and representatives of the business sector⁴⁷.

The national database for ODS was not created due to existing legal restrictions (output 1.1) and no evidence was found of an agreed framework of stakeholder needs (output 1.3).

Component 2- HFC and HCFC life cycle performance analysis (0,6% of the overall budget):

An analysis of HCFC/HFC life cycle using equipment installed at facilities of various scale was undertaken by the Project⁴⁸ and submitted to MNRE and MIT. Several analytical reports were produced for the following sectors: For commercial refrigeration equipment; For maintenance of AC in cars and public transport; For industrial refrigeration equipment; For sandwich panel producers; For household refrigerators producers; For aerosol propellant sector.

In 2013, the Project was involved in the *IV All-Russian Congress for Environmental Protection Supported Use of Natural Refrigerants and Establishment of the HVAC&R Certification System* where amendments to international legislation and new green technologies were presented and proposals were agreed.⁴⁹

The Project final technical report recommendations have been integrated into climate policy under Government Order no. 1413-p of 3.08.2012. MIT and Russian Space Agency

⁴³ https://www.youtube.com/watch?time_continue=13&v=kOjRinghpSA

⁴⁴ <https://www.youtube.com/channel/UC-IFlwjoi8EmSyGaK3tTbaw>

⁴⁵ <http://pressmia.ru/pressclub/20160126/950648769.html>

⁴⁶ http://www.ozoneprogram.ru/eng/events/051113_en/

Purchase contract of 40 analysers under PO00304

⁴⁷ (i) UNIDO–Business working group (HVAC&R facilities and associations + foam sector); (ii) UNIDO-FCS bilateral working group on strengthening control over ODS import and export; (iii) UNIDO– Ministry of Interior working group; (iv) UNIDO - Ministry of Interior - FCS joint working groups; (v) UNIDO–Rosstandart working group; (vi) the Union of Eco-Friendly PU Product Manufacturers and Consumers (first, it was created as a working group, then transformed into the union).

⁴⁸ http://www.ozoneprogram.ru/biblioteka/posobija/ocenka_okehp

⁴⁹ Congress resolution paper

http://www.ozoneprogram.ru/eng/news/iv_congress_for_environmental_protection/

(Roskosmos) confirmed that some recommendations were fed into the Federal Target Programme "National System of Chemical and Biological Safety of the Russian Federation (2015-2020)"⁵⁰ aimed at encouraging a phased replacement of ODS equipment and products.

Component 3- Phase out of HCFC consumption in the key consuming sectors of foam and refrigeration (32,4 % of the overall budget):

In total the Project assisted 12 HCFC consumers and 2 producers of equipment to convert to HCFC-free alternatives⁵¹.

A detailed study of the Russian market was undertaken, within the context of HCFC phase-out, as well as substances and technologies that could be used as alternatives. To prepare recommendations the Project promoted research, meetings with market players, study tours on new alternative technologies and disposal methods which resulted in a set of information and materials For commercial refrigeration equipment and for household refrigerators producers.

From the baseline to 2016 RF's decreased the consumption of HCFCs consumption from 842.69 to 312.09 ODP (see Table 6 and 7 below).

As a result of the Project implementation GHG emissions were reduced since ODS are also GHG with high GWP. Project enterprises converted obtained additional institutional support in energy efficient natural refrigerants and solutions based on its use. This was promoted by *inter alia*: adoption of the federal law and government resolutions to fulfil RF's obligations under the MP; conversion of the Project beneficiaries to non-HFC technologies; training and energy efficiency related events; implementation of measures against illegal ODS import to the RF; Implementation of institutional and investment demo projects in the refrigerating equipment sector.

Component 4 - Development of ODS destruction facility and supporting recovery network (6,6 % of the overall budget):

It should be noted that this component received additional 4,766,782.52 USD, which is 125,44% higher than the original budget- the increase was entirely supported by equity investment from the beneficiary company (see section 4.10 below).

In 2013–2014, PMU and business representatives conducted several missions to estimate technical and commercial feasibility of some ODS and ODS-containing equipment disposal mechanisms and technologies for Russian conditions. The PSC selected a beneficiary for receiving a disposal plant for ODS-containing refrigerating

⁵⁰ <http://fcp.economy.gov.ru/cgi-bin/cis/fcp.cgi/Fcp/ViewFcp/View/2015/442/>

⁵¹ 4 enterprises of the domestic and commercial refrigerating equipment sector (POZIS; SEPO-ZEM; Biryusa; Orsky plants); 1 producer of commercial refrigerating equipment to cyclopentane (Polyus Company); 2 producers of commercial and industrial refrigerating equipment (Ostrov-Komplekt and Nord); 1 producer of preinsulated pipes (Pipe Insulation Factory); 3 producers of the transport refrigerating equipment sector (Shumerlya plant of purpose-built vehicles; Krasnogorsk trailer industrial complex; Tsentrtranstekhmash); 1 producer of sandwich panels (Ariadna-Yug); 2 producers of PU insulation components (NVP Vladipur and Dow Izolan).

equipment. The installation and commissioning of equipment purchased was completed in 2015, so the first Russian ODS-containing products destruction plant became operational in the summer of 2016.

The MNRE, with the Project support, facilitated various meetings and consultations with regional executive bodies and industry stakeholders. A practical guide on management and destruction of ODS in the RF⁵² was prepared and submitted to MNRE and MIT.

In accordance with Government's Decree No. 228 dated 24.03.2014 "On measures of state regulation of consumption and circulation of substances that depleted the ozone layer" ODS banks (repositories) were created in late 2014 to secure the demand for HCFCs in strategic areas such as defence, but subject to condition of phased reduction of use.

The ODS consumption monitoring function is under the Federal Supervisory Natural Resources Management Service⁵³ (the federal executive body of RF under the jurisdiction of the MNRE, that exercises control and supervision functions in environmental protection, waste management and state ecological expertise⁵⁴). In 2015 training programs were developed and inspectors were trained on ODS basics, legislation and smuggling detection. General supervision of ODS accounting is performed by MNRE via the ODS accounting system. Currently, the ODS accounting system is digitalized.

Component 5 - Conversion of production facilities and stimulating market growth for energy efficient refrigeration and air conditioning equipment (37,3% of the overall budget):

The nature of the market has made it more challenging to get stakeholders to prioritize energy efficiency without any legal or financial imperative to change. Therefore, the Project strategy was first to create the legal imperative to phase out HCFCs, and then to demonstrate the potential energy and operating cost savings that can be achieved by efficient natural refrigerant and foaming agent designs.

The MNRE supported the joint launch of energy-efficient demo projects using natural refrigerants. New refrigerants (HFO) were procured and distributed among key HVAC&R stakeholders for purposes of demonstration and testing⁵⁵. They were also used in implementation of a demo-project based on hydrocarbons and HFO1234yf as part of phase-out of HCFC-22 and HFC 134a.

Besides the President's Decree No. 752⁵⁶ dated 30.09.2013 "On reduction of greenhouse gas emissions" the following activities have contributed to the decrease of GHG

⁵² http://fb.lighty.ru/view_tech/37/%D0%9F%D1%80%D0%BE%D0%B5%D0%BA%D1%82%20%D0%93%D0%9F%D0%A1%D0%A2%20%D0%A5%D0%BB%D0%B0%D0%B4%D0%B0%D0%B3%D0%B5%D0%BD%D1%82%D1%8B%201-%D0%B0%D1%8F%20%D1%80%D0%B5%D0%B4%D0%B0%D0%BA%D1%86%D0%B8%D1%8F%D0%92%D0%A6.pdf

⁵³ <http://rpn.gov.ru/>

⁵⁴ <http://rpn.gov.ru/node/161>

⁵⁵ http://www.ozoneprogram.ru/biblioteka/publikacii/hfo_1234yf/

⁵⁶ http://www.consultant.ru/document/cons_doc_LAW_152515/

emissions in the HVAC&R sectors: Development of professional and educational standards; Creation of two pilot plants producing HC refrigerant and CO2 equipment; Creation of two demo-projects using ODS free technologies; Creation of a demo training center, certification courses and courses on use of natural refrigerants for dissemination in the HVAC&R sectors and educational system of the RF; Development of standards of the Custom Union's member countries on regulation of the ODS use; Introduction of the ODS accounting system, and its conversion into digital format basing on international experience.

Dissemination of information and increased awareness of market participants were promoted through the presentation of energy efficient solutions, including development of training courses and organization of conferences on the use of natural refrigerants⁵⁷.

No evidence was found about the following publications on: information on policy measures and barrier removal approaches (output 5.2); studies and methodologies for conducting market assessments (output 5.3).

Component 6- Technology transfer (15% of the overall budget):

As part of the Project implementation, technology transfer of non- HFC alternatives to HCFC applications was performed. Equipment was delivered to the Project beneficiaries with energy efficiency class of products.

The dissemination of energy efficient systems in the RAC sector is supported by Federal law No. 261-FZ dated 23.11.2009 "On energy saving and energy efficiency and on Amendments to Certain Legislative Acts of the Russian Federation."

A unique training certification center "Microclimate, Energy Efficiency and Building Automation Center" (currently merged into College #23 (former College #19) was created to transfer technologies for the whole territory of the RF.

To improve energy efficiency of manufactured equipment, demo projects were developed and endorsed by MNRE. Further, supply, installation and commissioning of the process equipment for production of medical devices for blood storage and domestic refrigerating appliances (domestic fridges, cold storages for wine, cigars, fur coats) at POZIS and domestic and commercial refrigerating equipment at SEPO were completed and conversion to ODS free technologies was finalized in 2015. On 19 June 2015, contracts for equipment supply and production of foaming equipment for Insulation Pipe Plant; Orsky plants, Polus; Biryusa were concluded.

Component 7- Feasibility study to determine the best and most integrated strategy for dealing with HCFC production closure (0,8% of the overall budget):

An analytical report on "Phase-out of production of hydrochlorofluorocarbons at enterprises of the chemical sector in the RF in 2013–2014 and 2015–2020"⁵⁸ was

⁵⁷ Conference resolution "Natural refrigerant ammonia. Chemical and technical security of the Russian Federation" - 16.10.2013

⁵⁸ http://fb.lighty.ru/view_tech/35/%D0%9E%D1%82%D1%87%D0%B5%D1%82_%D0%A2_1.2.doc

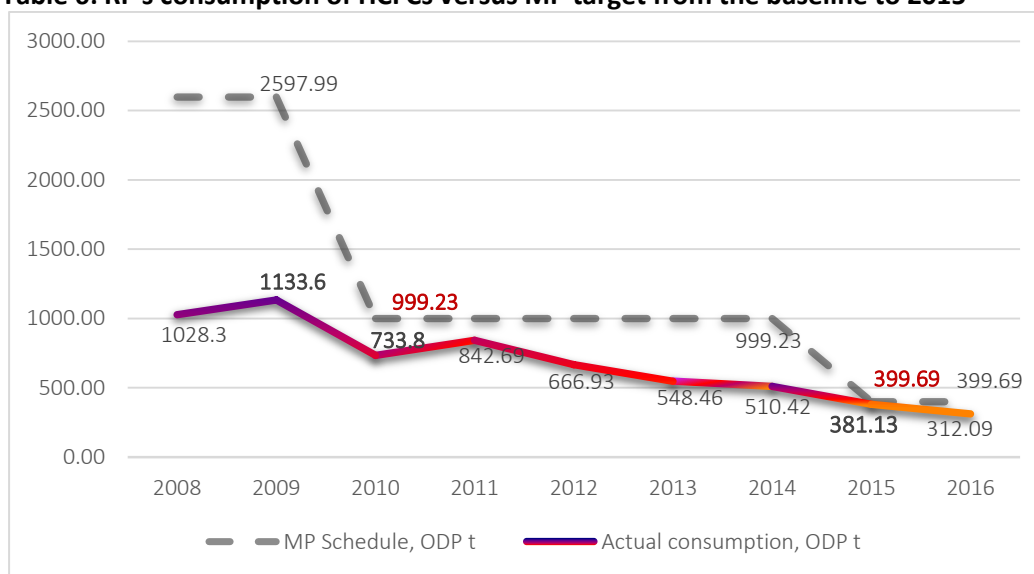
delivered to key stakeholders. The RF's Government submitted proposals for organization of production of ODS free HC and synthetic refrigerants with low GWP.

The production of ODS and products containing ODS is prohibited by Government's Decree No. 228 (on amendments to the criminal-procedural code of the RF), on design (since July 2014), and construction (since January 2015). The law requires the banning of HCFC use by 90 % by 2015. There is evidence that the HCFC production by Khimprom is closed since October 2014⁵⁹, however no evidence was found on the reduction of 1,840 metric tons of HCFC.

Achievement of expected objectives

Under Article 2 of the MP the RF must reduce consumption and production of HCFCs by 75% relative to its baseline consumption of 3,996.9 ODP tons by 2010⁶⁰. This equates to an allowable consumption in 2010 of 999.23 ODP tons. A further reduction of 90% relative to baseline is required by 2015 providing for a maximum consumption of 399.69 ODP tons. The consumption in 2015 reached 381.13 ODP as indicated in table 6 below having achieved the 2015 MP target. In January 2015, representatives of MNRE formally confirmed reduction of ODS consumption by 90 % against the baseline.⁶¹

Table 6: RF's consumption of HCFCs versus MP target from the baseline to 2015



Source: Ozone Secretariat⁶²

As indicated in table 7 during the period of the Project implementation the RF has phase-out 292 ODP tones of CFC and 530,6 ODP tones of HCFC, totalling 822,6 ODP tones over the period of its implementation. The reduction of ODS over this period has exceed the 600 ODP tons, however, the objective of the Project was not set on HCFC

⁵⁹ <http://www.vocco.ru/index.php>

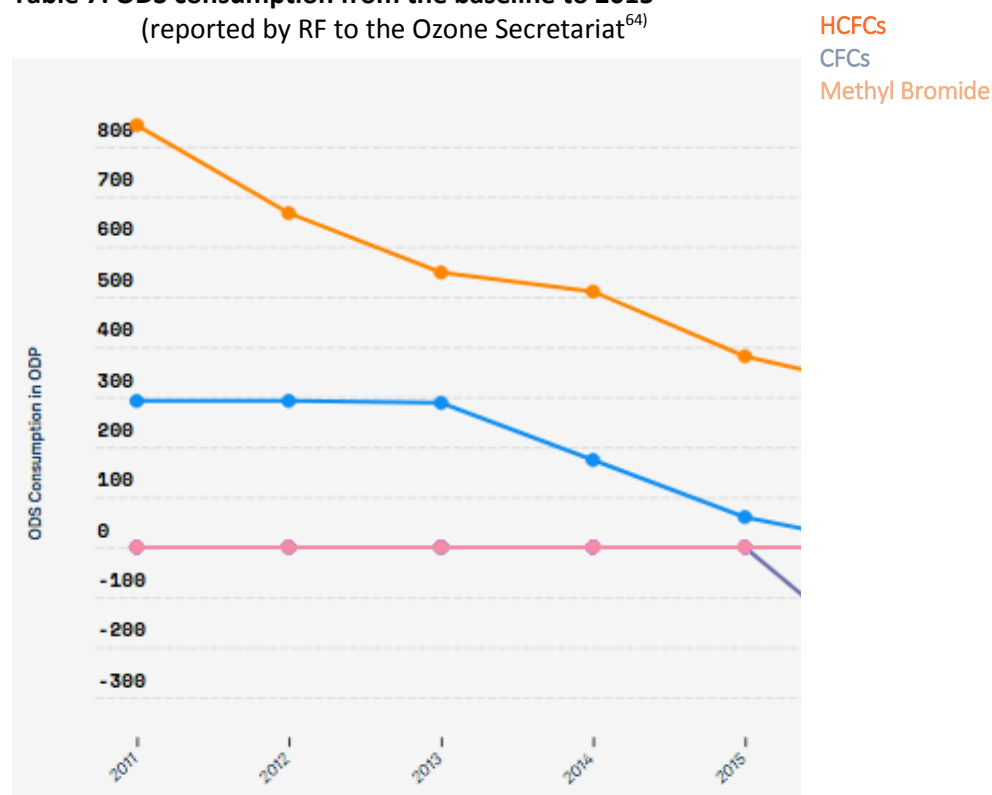
⁶⁰ For non Art. 5 Parties the baseline was calculated based on 1989 HCFC consumption + 2.8% of 1989 CFC consumption: See Handbook for the MP 12th edition (2018) http://ozone.unep.org/sites/default/files/MP_handbook-english-2018.pdf

⁶¹ <http://www.mnr.gov.ru/news/detail.php?ID=142840>

⁶² <http://ozone.unep.org/countries/data>

and CFC⁶³ but only on HCFC and for this one the reduction was slightly below the target (530,6 ODP).

Table 7: ODS consumption from the baseline to 2015
(reported by RF to the Ozone Secretariat⁶⁴)



The direct GHG emissions reduction resulting from the phase-out of HCFCs was expected to be approximately 15.6 MMT CO₂. This figure is confirmed in the Draft Final Report but no evidence supporting this calculation was found by the ET.

The secondary objective of the Project has also been achieved through the introduction of more energy efficient designs and technology transfer, during the conversion of RAC manufacturing facilities. Technologies were selected based in their energy efficiency. This included the use of Ostrov Green Technology (OGT), which is a reliable and simple system, working in the mode of household refrigerator and small installations, very high energy efficient due to high Coefficient of Performance of refrigeration equipment and use of 100% condensing heat with low charge and no leaks. Also, the introduction of CO₂ technology, which reportedly decreased the energy consumption of installations in 30%- it is more expensive from the side of Capital Expenses but the best solution for installations above 600m⁶⁵.

The ProDoc estimated level of energy efficiency was “approximately 25-30%”. The Project draft final report (September 2018) indicates between 20 to 28% of energy

⁶³ The reduction of 292 ODP tons of CFC consumption is a result of implementation of a parallel GEF project (*Phase out of CFC consumption in the manufacture of aerosol metered-dose inhalers (MDIs) in the RF- GEF Project ID 4387*).

⁶⁴ <http://ozone.unep.org/countries/data>

⁶⁵ Minutes of the interviews.

efficiency improvement, however this could not be confirmed with the sources reviewed by the ET. It should be noted that it is difficult to assess exact energy efficiency increase resulting from MP and GEF ODS reduction projects as the energy efficiency data of the old equipment is usually not recorded by the equipment owners.

Effectiveness is rated as **Satisfactory**.

4.4 Efficiency

The initial expected completion date of the Project was 31 December 2015 – a timeline of 5 years was very ambitious considering the complexity of this FSP but in accordance with the 2015 MP target. By the end of 2015, 99,13% of the GEF total funding had been executed so the project had *de facto* been “financially” completed by the initially foreseen date⁶⁶. However, the implementation end date has been delayed in 3 years to 31 December 2018.

A first extension to July 2017 (in accordance with GEF Fiscal Year) was granted due to the fact that at the last meeting of the PSC additional recommendations were made to purchase equipment for the recovery and destruction of ODS⁶⁷, which was not foreseen in the ProDoc. While the procurement of the ODS reclamation unit was successfully signed in April 2016 by UNIDO HQ⁶⁸ and completed later that year, the ODS destruction unit could not be procured due to lack of logistical support by the supplier in the RF⁶⁹.

During the Execution Agreement, in October 2015, the management of ICSTI changed and the new director reportedly informed the PM that the operational closure of the Project could not be requested since not all the equipment had been delivered to the beneficiaries - some equipment was only delivered to the beneficiaries in the 1st quarter of 2017 and installation/commissioning by the beneficiaries were scheduled for 2nd quarter of 2017. The last disbursement to ICSTI was in February 2016 (ref. end of section 4.10). There were monitoring/inspection activities conducted by UNIDO PM after the expiration of the Execution Agreement in 31 December 2015, namely with regard to the procurement for polyurethane (PU) foam sector which could not be monitored to the end (up to equipment installation) during the Execution Agreement.

⁶⁶ In accordance with two different Project financial reports from UNIDO project database (Report 1 - grants disbursement for the period of 01.01.2011 - 03.09.2018; and Report 2 - disbursement by Years / Sponsored Programme / Sponsored Class as of 20 Jan 2017) by the end of 2015 the amount of effective spending of GEF funding was Report 1: 17,843,911.43 USD / Report 2: 17,843,852.98 USD

⁶⁷ PSC's minutes from 10/12/2015:4) *Recommend that UNIDO consider the possibility of purchasing equipment for the recovery and destruction of ozone-depleting substances from the Project funds. The TWG to prepare technical requirements, a financial assessment of the cost of this equipment and data on the recipient of technical assistance and send them to UNIDO before 31.12.2015.*

⁶⁸ See purchase order n.º 3000036059 to Ekotez for the supply of refrigeration reclamation unit, in the amount of 17.600.00 USD

⁶⁹ See UNIDO GEF Annual Monitoring Report II FY 2017. Another reason that was presented during the interviews is that the project was discontinued from the manufacturer – Asada: <https://www.asada.co.jp/english/contact/index.php>

The last field mission of the UNIDO PM took place in January 2017, but no report has been submitted. It is known from further communication between UNIDO and the MNRE that the PM did not liaise with the MNRE regarding the filed mission.

The completion date was then further extended to 31 December 2018 in order to conduct the TE, which was initially foreseen to take place in the spring of 2016. The retirement and replacement of the PM has affected the undertaking of the evaluation within the initial calendar. In 5 July 2018 a contract was signed between UNIDO and ICSTI to update the ozone programme website to be completed by 15 September 2018⁷⁰. This answers to a request by RF's GEF Focal Point to use the remaining funds of the Project for website maintenance and update with recent information⁷¹. According to information provided to the ET, at the end of September implementation was on going. The updated version was not yet available at the time of writing this report.

It should be noted that these two extensions were at no cost to both the donor and the implementing agency.

Besides delays from UNIDO, due to procurement issues and replacement of PM, there were also delays from the counterpart due to customs, which took a long time to release the equipment - the Independent Mid Term Review (MTR) that was undertaken in 2013 (see section 4.8 below) expressly recommended improving the speed of Project implementation, ensuring that customs clearance and related issues are clarified. There were also delays from the funding recipients for internal security reasons and the fact that conversion was conducted during production cycle.

However, the main expected results were achieved within the original schedule and budget- the perception from the beneficiaries is that the activities developed by the Project were timely and useful. This was also highlighted in the MTR report⁷².

Human and technical resources were sufficient to achieve the expected results - Project only used technology available and testes in the market. Some interviewees argued that funding could have been higher but co-financing is a GEF requirement. The expected co-financing from RF materialized in-kind and as equity investments from beneficiaries (see section 4.10 below).

The project builds adequately on existing institutions – only worked with established institutions and in partnership with the following HVAC associations: Association of Professionals in the Industry of Climate⁷³; Soyuzkholodprom⁷⁴ (Russian union of refrigeration industry); ISZS-Montazh⁷⁵; and ISZS-Project.⁷⁶

The Project assisted in the establishment of the Foam Union - *Almira Union of manufacturers and consumers of environmentally friendly products from PU foam*. It was

⁷⁰ Contract n.º 3000061391-MD/LCF to be executed from 16/07 to 15/09 2018 in the total amount of 45 000 USD.

⁷¹ ToR to the Contract n.º 3000061391-MD/LCF (see section 4.4: Efficiency).

⁷² "Representatives of the companies and other project partners interviewed by the MTR consultants stated that cooperation with the implementing agency had been excellent and that the financial support provided by GEF was instrumental in facilitating activity" (MTR Report, December 2013).

⁷³ <https://www.apic.ru/en/>

⁷⁴ www.rshp.ru

⁷⁵ www.sro-montazh.ru

⁷⁶ www.sro-project.ru

composed by three pre-existent professional associations (pipe, coating and sandwich panels) and its mandate was to raise awareness of the market for technology transfer and assist in the conversation process. The website contains sections on the Union's activities with regard to training, development of institutional proposals and technical materials, as well as database on technological solutions in industry and ozone related topics.

It should be noted the inconsistency of Project information provided to the ET: in June 2018, the online reporting tool⁷⁷ was presented to the ET as the most up to-date source of information. According to it the effective GEF funding and respective co-financing were fully in line with the ProDoc to all components, with exception of reallocation of 21,200,000 USD (5,900,000 USD of GEF funding and 15,900,000 USD of related co-financing) from Component 5 to Component 3 with related activities. However, the Project draft final report made available to the EI in September 2018 presented different expenditures values (see Table 8 below).

In accordance with the Project draft final report (September, 2018) the Projects expenditures were in line with the budget. At the time of the evaluation a total of 166,297.62 USD were available to be returned to donor⁷⁸.

There was also an increased co-financing of 5,066,782.52 USD. The difference between planned and effective budget spending by component is provided in the table below:

Table 8: Comparative analysis planned budget and effective budget spending

| Project Component | Total Planned budget (USD) | Total Effective budget (USD) | Difference (USD) |
|--|----------------------------|------------------------------|----------------------|
| 1. Building institutional capacity | 3,100,000.00 | 3,095,981.67 | -4,018.33 |
| 2. HFC and HCFC life cycle performance analysis | 350,000.00 | 350,000.00 | 0 |
| 3. Phase out of HCFC consumption in the key sectors | 18,800,000.00 | 40,000,000.00 | +21,200,000.00 |
| 4. Development of ODS destruction facility and recovery network | 3,800,000.00 | 8,566,782.52 | +4,766,782.52 |
| 5. Stimulating market growth for energy efficient RAC equipment | 21,900,000.00 | 700,000.00 | -21,200,000.00 |
| 6. Technology Transfer | 8,700,000.00 | 9,000,000.00 | +300,000.00 |
| 7. Feasibility study to determine the best and most integrated strategy for dealing with HCFC production closure | 450,000.00 | 371,728.31 | -78,271.69 |
| 8. Project management | 900,000.00 | 815,992.40 | -84,007.60 |
| TOTAL | 58,000,000.00 | 62,900,484.90 | +4,900,484.90 |

Project Draft Final Report (September 2018)

Efficiency is rated as **Satisfactory**.

⁷⁷ <http://fb.lighty.ru/budget/>

⁷⁸ In accordance with the Project Manager.

4.5 Sustainability of project outcomes/benefits

The fact that the main Project activities have been completed by 2016 facilitated the assessment of the Project's sustainability and how the risks identified in the paragraphs below may affect the continuation of the Project results/outcomes. A six-point rating system is used for sustainability where 6 is the highest score (highly likely) and 1 is the lowest (highly unlikely).

Financial sustainability- Likely: The beneficiary companies were co-financers of the Project (see section 4.10 below) and have completed their conversion to ODS free technologies – it is highly unlikely that this process gets reverted. The sustainability will depend on the capacity of the companies to meet the market and consumers demands.

Socio-political sustainability- Likely: Ownership of the Project results by the Government has been demonstrated through the enactment of the new legal framework with the support of the Project and training of competent authorities. The beneficiary companies have also been fully engaged through equity investment co-funding of their conversion to ODS free technology (see section 4.10 below), which represents a market opportunity- upgrade and modernization of the production process, new equipment with modern features and more energy efficient, export to the EU market (POZIS). It is in the interest of the key stakeholders that the Project benefits continue to flow.

Institutional framework and governance sustainability – Moderately Likely: The new legal framework establish specific obligations and requirements to phase out ODS. Training of Customs and Police officials have facilitated the implementation and enforcement of the new legislation. The total number of 20 police and customs officers trained⁷⁹ is, however, not significant considering the dimension of the country (more than 17 million sq. km). The total number of specialists trained is not available but based on the information provided by the interviewees and project reports the sum varies between 1500 – 2000 people. Also, the Foam Union that was established with the assistance of the Project (see section 4.4 above) is no longer operational for lack of funding since members were not paying any fee.

Environmental sustainability - Likely: The Project has led to the successful conversion of companies to ODS free technology which will lead to significant benefits in terms of further reducing threats to the ozone layer and also reducing global warming-conversion has reportedly addressed 23.85% of the domestic market⁸⁰. The new equipment and technologies introduced by the Project are also more energy efficient, which will provide additional benefits at the domestic and commercial level.

The changes introduced by the Project are underpinned by a new legal framework, and the RF's Government commitments to the Montreal and Kyoto Protocols. Due to the innovative multi-focal approach of the Project's design it is likely that it will contribute the RF's commitments under the Kigali Amendment to the MP, assuming that the country will conclude its ratification process (see section 4.1 above).

⁷⁹ <http://www.ozonprogram.ru/meropriyatija/051113/>

⁸⁰ Project draft final report (September, 2018) section 5.5.1

It should be noted that the Project was initially designed with two phases. Phase II was expected to include activities on ensuring recovery of ODS (and later, f-gases) in the RF's territory for further recuperation and reclamation for recirculation (recycling) in the service sector or destruction. The fact that Phase II is now compromised, due to political constraints of the actual GEF policy in financing projects in RF, is seen by most of the interviewees as a constraint for the overall sustainability of the Project results in the future. Ensuring the complete implementation of both phases of the Project was a specific recommendation from the project⁸¹.

| |
|--|
| Sustainability of Project outcomes is rated as Likely . |
|--|

4.6 Progress to impact

The Project has contributed to the RF's meeting the 2015 MP target under the very ambitious schedule set for Article 2 Parties of the MP. Its results are incorporated into new ODS laws and regulations. At the last celebration of the *International Day of protection of the ozone layer* RF has announced that: *Currently, in the RF ODS are still widely used as refrigerants in industrial and domestic air-conditioners, in industrial and commercial refrigeration equipment, as blowing agents, in the production of sandwich panels and process solvents. Despite this, the Russian Federation fulfils all obligations under the Montreal Protocol related to the phase-out of ODS, in particular HCFCs, according to its withdrawal schedule*⁸².

Some facilities that benefited from the Project and converted to ODS free technology have reported an increase of energy efficiency of target systems. According to the Project Draft Final Report (September 2018) the energy efficiency improvement is between 20% and 28%, however, this figure could not be confirmed. They used to produce mainly for the internal market with some exports to countries from the CIS⁸³; they are now exporting to other markets, including the EU countries.

The Project has built capacities at national level. It promoted training of enforcement officials (customs and police); and sharing of experiences and know-how on the best international practices through conferences and seminars (training and awareness raising seminars for users of specific industry sectors, training sessions for officials) and attendance of exhibitions (World of Climate Conferences, Russian regional events with the support of MNRE, Celebration of "Ozone Day", etc). Moreover, the PMU members are now recognized experts at regional level – the former PMU Coordinator is involved as International expert at the regional project described in the paragraph below.

The main features of the Project, including the setting up of a new legal framework, the inter-institutional work and cooperation among and between agencies and industry, the introduction of new technology and capacity building have been scaled-up to the

⁸¹ See Lessons Learned (this document has been made available to the evaluation team without date- see section 4.8: M&E design and implementation below).

⁸² http://www.mnr.gov.ru/press/news/16_sentyabrya_2017_g_prazdnuetsya_mezhdunarodnyy_den_zashchity_ozonovogo_sloya/?sphrase_id=35294

⁸³ At present the CIS unites: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan and Uzbekistan and Ukraine.

Regional GEF project Regional Demonstration Project for Coordinated Management of ODS and POPs Disposal in Armenia, Belarus, Ukraine and Kazakhstan. This Project aims to assist the countries involved in complying with their obligations under the MP and the Stockholm Convention on Persistent Organic Pollutants (POPs).⁸⁴

Several activities developed during the Project implementation have promoted its replication to other countries and regions, including the following:

- Participation in the meeting of the contact group of representatives of RF, Republic of Belarus, and Republic of Kazakhstan, considering the opportunity of the Republics of Armenia, Kyrgyzstan and Tajikistan joining the Customs Union; and Eurasian Economic Commission⁸⁵ dedicated to coordination of national efforts to comply with MP obligations⁸⁶ (*Yerevan, Armenia, 26-28.05.2015*);
- Discussion of the Customs Union's regulations on circulation of ODS and with account of its possible expansion of Customs Union with new country members – by the time of event – Armenia and Kyrgyzstan (*Minsk, Republic of Belarus, 18–20.03.2014*);
- Annual Meeting of the Regional Ozone Network for Europe & Central Asia (*Yerevan, Armenia, 26-28.05.2015*⁸⁷);
- Multiple experience and knowledge exchange events between Project experts and Turkmenistan colleagues (*Ashgabat, Turkmenistan, 10-13.06.2013*⁸⁸; *Moscow, 24–29.10.2013*⁸⁹; *Vienna, Austria, 22-23.11.2013*⁹⁰).

Progress to impact is rated as **Satisfactory**.

4.7 Project coordination and management

Project management represented 1,3% of the total budget (815 992,40 USD) and included hiring of international and national consultants, office facilities, equipment and communications and travelling.

As mentioned above (see section 2.4 above) during the Project implementation three PMs have been nominated at UNIDO HQ. These changes have caused several challenges in the Project implementation namely with regard to its efficiency, institutional memory and engagement with stakeholders and partners⁹¹. It should be noted that none of the interviewed beneficiaries were informed of these management changes and were surprised when the second PM visited them during his missions to RF and by the fact that no report was shared with them.

⁸⁴ <http://chm.pops.int/>

⁸⁵ Which comprises the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Republic of Kyrgyzstan and the Russian Federation

⁸⁶ <http://www.ozoneprogram.ru/meropriyatija/26052015/>

⁸⁷ http://www.ozoneprogram.ru/eng/events/26052015_en/

⁸⁸ http://www.ozoneprogram.ru/eng/events/10062013_en/

⁸⁹ http://www.ozoneprogram.ru/eng/events/24102013_en/

⁹⁰ http://www.ozoneprogram.ru/eng/events/21112013_en/

⁹¹ Minutes of interviews and quality of the information provided during the various phases of the Project implementation.

The overall strategic and policy guidance of the Project was ensured by the PSC formed at the inception stage of the Project which met twice every year (see section 2.3 above).

The distinction between implementing and execution agency was introduced by GEF in November 2011 when the Project was already being implemented. The involvement of the execution agency was therefore not foreseen in the initial Project management arrangements (see section 2.4 above). The Execution Agreement with ICSTI was signed by UNIDO on 25th February 2015 for the period between 4 March and 31 December 2015. It should be noted that according to some of the interviewees UNIDO did not consult the executing partner, MNRE, with regard to the new implementation arrangements.

Under the Execution Agreement the ICSTI was responsible for the execution of the Project activities, day- to-day monitoring and financial management in accordance with GEF and UNIDO-required fiduciary standards, which allowed for the procurement of goods, services and works needed to execute the Project. However, their decision-making power was limited to procurement up to 40 000 USD - above this amount disbursement was made by UNIDO HQ⁹². This constituted a limitation in their execution powers especially considering the nature and amount of the contracts issued under this Project. In accordance with ICSTI Financial report under the Execution Agreement 5 contracts were above 40.000 USD, and 4 contracts were below that amount.

The PMU played a fundamental role in the management and coordination of the technical implementation of the Project and direct engagement with private and institutional stakeholders – however its roles and responsibilities were not identified in the ProDoc. It was established in the beginning of 2011 and ceased operation in December 2015, with the last meeting of the PSC.

The coordination roles of UNIDO HQ was perceived by the beneficiaries as more effective with the first PM who designed the Project and knew the national institutional and political context – he promoted the Project at the Government and business levels, provided technical inputs, and quality support and control. With the engagement of the executing agency the main roles and responsibilities of the PM at UNIDO HQ were to oversight and supervise the Execution Agreement, review the Progress Reports and decide about the next Work Plan⁹³.

The CIIC was the day-to-day contact point for the Project and perform day-to-day supervision on behalf of UNIDO⁹⁴. It was a member of the PSC.

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|---|
| Project Coordination & Management is rated as Satisfactory . |
|---|

⁹² UNIDO Execution Agreement with ICST between 4 March and 31 December 2015 (see paragraph 5.3).

⁹³ Minutes of interviews.

⁹⁴ UNIDO Execution Agreement with ICST between 4 March and 31 December 2015 (see paragraphs 3.3 and 3.5 to 3.10 of the Execution Agreement).

4.8 M&E design and implementation

The M&E plan in the ProDoc is consistent with UNIDO's standard procedures and allows for monitoring progress and results. Similarly, the overall approach to monitor progress and project evaluation in terms of activities and deliverables described in the ProDoc is adequate with schedule, budget and responsibilities for data collection and submission (Part I, Section H, pages 10 and 11). The total indicative cost for M&E was 405,000 USD excluding PMU and UNIDO staff.

The National PM was in charge of the Project's M&E (Annex C, draft version of the ProDoc⁹⁵) in the format to be laid out in detail at the Inception Workshop, which was held in March 2011.

However, the report of the Inception Workshop does not contain any information about M&E nor on the other requirements under the ProDoc: *a detailed annual work plan with clear indicators and corresponding means of verification for the first year of the project, fine tuning of TOR for project professionals, TOR for sub-contractual services, progress to date on project establishment and start up activities, amendments to project activities/approaches, if any*⁹⁶.

Annual Project Implementation Reports (PIR) have been timely and accurately submitted to GEF during the course of the Project and shared with the ET. The last PIR reports on the period 1 July 2016 – 30 June 2017 (GEF Fiscal Year 2017). No quarterly reports were however produced and submitted to GEF as required in the ProDoc; it should be noted that this is not a GEF requirement.

Since the Project was not closed by 30 June 2018, the final PIR (Terminal Report) is only due during the next GEF Annual Monitoring Report Exercise for GEF Fiscal Year 2019 (reporting period: 1 July 2018 – 30 June 2019). However, the PM has provided the ET with a draft of the last PIR (1 July 2017 – 30 June 2018).

Measurement of means of verification for Project Purpose Indicators expected at the start, mid and end of the project as well as *Measurement of Means of Verification for Project Progress and Performance* measured on an annual basis have been replaced by an online Work Plan with a clear identification of the activity by output, person responsible, tasks and deadlines, status of implementation and starting and ending date for 2011, 2012, 2013 and 2014. No such measurements of means of verification were found for 2015, 2016, 2017 and 2018.

Lessons learned and *Audits* were expected on a yearly basis. According to one PM the Lessons Learned were updated every year, not prepared as a stand-alone document. The updated version that was made available to the ET lists activities and general recommendations without any reference to Project components/outcomes/outputs and without a reporting period. This undated version has reportedly been produced by ICSTI in 2015 and submitted to the PSC. Only one Audit report was elaborated in 2013, reportedly by an external company covering the period 2011-2013. The audit report made available to the ET is undated, does not have the reporting period or the

⁹⁵ As stated above the final approved version of the ProDoc does not have annexes.

⁹⁶ See Report of the Inception Workshop from 11 March 2011.

identification of the author⁹⁷. After 2013 the management team decided to replace the audits by oral reports to the PSC by the PM.

Mission reports were produced and available at the Project repository of documents on line until 2013 and only some for the period 2013-2015.⁹⁸ After the introduction of the Systems Applications Products (SAP) in 2013, back to office mission reports become a very straightforward exercise with a limited number of characters, which only allowed a general indication of objectives and status. The ET did not have access to SAP.

Under the period of the Execution Agreement at least three supervision missions were foreseen “to monitor project progress, technical quality of project outputs, and supervise the activities carried out by the Executing Agency”⁹⁹. UNIDO procurement undertook two missions to monitor project progress¹⁰⁰. No evidence was found that the third supervision mission took place.

The MTR was undertaken in October-December 2013.¹⁰¹ It provided specific recommendations to UNIDO PM¹⁰². It should be noted that the executing partner was unaware of the audit and the MTR – the reports and recommendations were not presented or discussed at the PSC¹⁰³.

No logframe was used for M&E purposes to monitor progress towards expected outputs and outcomes. The minutes of the PSC do not contain corrective actions based on the Project performance and results reported from the management team.

Risks were reviewed and updated on a yearly basis as part of the PIR process to GEF.

To maintain stakeholder engagement and stimulate take-up of higher energy efficiency designs and proactive support for final HCFC phase out the ProDoc highlights the importance of effective communication of the Project results *by making certain that ongoing M&E results are included on the agendas of planned workshops and also posted in a regular basis on a project website*. No evidence was found that this has been performed in a systematic way. The recipients of funding expressed their dissatisfaction for the fact that they did not receive any report from the visits undertaken by the Project team and the impact of their performance in the Project implementation.

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| M&E design and implementation is rated as Unsatisfactory . |
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⁹⁷ See Audit Report- the report provided to the evaluation team is undated, does not have the reporting period nor the name of the author.

⁹⁸ <http://fb.lighty.ru/mission/>

⁹⁹ UNIDO Execution Agreement with ICST between 4 March and 31 December 2015 (see paragraphs 3.3)

¹⁰⁰ See Back-to-Office Mission Reports: 21-25 January 2015; 25-29 May 2015.

¹⁰¹ See Mid Term Review Report by Dewpoint Consultants Lda, from December 2013.

¹⁰² : (1) safety issues relating to natural refrigerants and the needs to address the over-regulation of R-717 (ammonia) and Hydrocarbons such as R-290 (Propane) which inhibited their adoption as a non-ODS energy efficient alternative in the commercial RAC sectors; (2) identify (under component 6) potential energy efficiency demonstration projects in the commercial and air conditioning sector, and potential technology partners; (3) make progress on destruction and recycling building upon the reclamation and recycling canters set up by the 2002 World Bank project¹⁰²; (4) clarify why the Federal Customs Service want to develop their own gas analysers; (5) improve the stakeholders knowledge of the foaming sector; and (6) improving speed of Project implementation ensuring that customs clearance and related issues are clarified in a document to assist future funding recipients in receiving their equipment in a timely fashion.

¹⁰³ Minutes of the interviews.

4.9 Gender mainstreaming

UNIDO's *Policy on Gender Equality and the Empowerment of Women* issued in 2009 and updated in 2015¹⁰⁴, sets out the Organization's gender equality commitments. In addition, the *Gender Equality and Empowerment of Women Strategy for 2016-2019* that was presented to the General Conference in 2015¹⁰⁵ provides a clear result- oriented framework and plan of action.

The GEF Council, at its 40th meeting in May 2011, approved the *Policy on Gender Mainstreaming*¹⁰⁶ with the intent for it to be reviewed in 2015. In October 2014 the Council welcomed the *Gender Equality Action Plan*¹⁰⁷ and approved its implementation¹⁰⁸. The Action Plan includes a review and, as necessary, update of the 2011 Policy on Gender Mainstreaming during GEF-6 (by June 2018).

The Constitution of the RF from 12 December 1993¹⁰⁹ expressly provides for the protection of women's labour rights, equality of rights and freedoms with men and equal opportunities (Article 19.3). Also, the Labour Code from 30 December 2001¹¹⁰ establishes the equal opportunities principle (Article 3), restricts the employment of women in heavy work and work with harmful and/or dangerous working conditions and prohibits the employment of women in work requiring lifting and moving by hand weights exceeding the maximum permissible standards for them (Article 253, Part 1 and 2).

At the time of the Project design gender was not a GEF requirement. As such the gender dimension and women's empowerment was not included in the Project formulation.

It should be noted that there was gender balance in the initial composition of the PMU (2 female and 2 men), then only one female who was the National PM. Some female experts were also hired during the Project implementation. Regarding the composition of the PSC (8 men/2 women at the beginning of the Project in 2011 and 7 men/3 women in 2015). Most of the stakeholders interviewed were male.

It should be highlighted that the concept of gender was strange for most of the interviewees during the field mission for whom man and women have always been seen as having the same opportunities and for whom the issue is about capacity not gender. No figures on gender were provided by respondents or found in the Project reports.

¹⁰⁴ https://www.unido.org/sites/default/files/2015-12/DGB110Rev2_gender_policy_0.pdf

¹⁰⁵ https://www.unido.org/sites/default/files/2015-10/GC.16_8_E_Gender_Equality_and_Empowerment_of_Women_Strategy__2016-2019_0.pdf

¹⁰⁶ SD/PL/02: http://www.thegef.org/sites/default/files/documents/Gender_Mainstreaming_Policy-2012_0.pdf

¹⁰⁷ GEF/C.47/09/Rev.01: http://www.thegef.org/sites/default/files/council-meeting-documents/25_EN_GEF.C.47.09.Rev_01_Gender_Equality_Action_Plan_1.pdf

¹⁰⁸ Joint Summary of the Chairs, 47th GEF Council Meeting, October 28–30, 2014: http://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.47_Joint_Summary_of_the_Chairs_1.pdf

¹⁰⁹ <http://www.constitution.ru/official/pdf/constitution.pdf>

¹¹⁰ As amended in 2018 <http://www.trudkod.ru/chast-1/razdel-1/glava-1/st-3-tk-rf>

No evidence was found that target beneficiaries were identified and disaggregated by sex, age, race, ethnicity and socio-economic group. The ratio between women and men employed in the beneficiary companies did not increase as a consequence of the equipment or technologies introduced by the Project¹¹¹. With only one exception, where the women represent 55% of the work-force¹¹², in all the other companies visited they are usually in the financial, administrative and quality control departments and represent on average 40% of the workforce. There is also no evidence of gender related data gathering or analysis in the M&E activities.

This finding is in line with the Independent UNIDO RF's evaluation (March 2014)¹¹³, which concluded that UNIDO had missed opportunities to integrate gender perspectives into the majority of projects.

| |
|--|
| Gender mainstream is rated as Highly unsatisfactory . |
|--|

4.10 Performance of partners

The MTR conducted in the end of 2013 concluded that *the programme has started effectively and both public and private stakeholders are actively engaged in both the technical and institutional activities and objectives of the programme*.

The Inception Workshop was held on 3 of March 2011 within two months of the Project start up as foreseen in the ProDoc.

The PMU was established in the beginning of 2011 and ceased operation in December 2015 with the last meeting of the PSC. The contracts of the PMU's experts with UNIDO terminated in April 2015, for the remaining period they were contracted by ICSTI.

The ET was provided, on its request, with a list of actions undertaken by the PMU to integrate the MTR's recommendation (see section 4.8) above). As reported above the MTR and audit reports were not submitted to the PSC. It is therefore unclear their impact in the Project implementation.

The important technical coordination role played by the PM at UNIDO HQ was recognised by the stakeholders up until 2015. With the engagement of the executing agency the roles and responsibilities had a more administrative oversight nature - review Progress Reports and decide about the next Work Plan.

Some beneficiaries complained about the complexity of UNIDO procurement system and the time required to take decisions. The financial commitments were closed by December 2015 but some equipment was only installed in 2016. During the Execution Agreement two supervision missions were undertaken by UNIDO procurement to monitor project progress, technical quality of the project outputs, and supervise the

¹¹¹ Minutes of the interviews.

¹¹² <http://www.pozis.ru/smi/show/POZIS-nazval-imena-luchshih-rabotnic/2436>

¹¹³ Independent UNIDO country evaluation RF (March 2014).

https://www.unido.org/sites/default/files/2014-05/CE_RUS_E-book-2013_0.pdf

activities carried out by the ICSTI. The centralised procurement system was perceived, by some interviewees, as a limiting factor in the ownership of the process by the executing agency.

As seen above UNIDO country presence (CIIC) acted mainly as an overall political, administrative and logistical coordinator of the Project in charge of all local support including organisation of meetings and events. Engagement with stakeholders was mainly ensured through the PMU.

There is high ownership of the Project by the national counterparts. The important role played by the PSC in the Project implementation and the active involvement of the MNRE throughout the Project have been demonstrated above. Furthermore, the effective in-kind co-finance from the RF's Government was 9,070,976.52 USD, which is 322% above the original planned co-finance. It should also be noted that the assistance provided by the Project have indirectly contributed to RF's restarting paying its contributions in 2013 to the Multilateral Fund of the MP.¹¹⁴

The clearance of the equipment from customs was rather complex and time consuming- customs wanted a financial guarantee in spite of the fact that the Project had a tax-free authorization from the Government (this measure is common in tax exemption procedures to ensure the equipment supplied will be used as declared throughout its lifetime and on intended purpose to secure the Technical Assistance Commission procedures will not be used in corruption and tax avoidance schemes).

The RF's Government and the beneficiary companies were fully engaged through in kind and equity investment co-financing¹¹⁵ of the Project activities, as demonstrated in the table below. A detailed breakdown of the contributions from the Government and beneficiaries is provided in Annex F: Summary on Project Identification and Financial Data.

Table 9: Project co-finance

| Co-financier | Classification | Type | Planned co-financing (USD) | Effective co-financing (USD) | Increase |
|--------------------|---------------------|-------------------|----------------------------|------------------------------|----------|
| UNIDO | Implementing Agency | In-kind | 350,000.00 | 350,000.00 | 0% |
| Government | Nat'l Gov't | In-kind | 2,150,000.00 | 9,070,976.52 | +322% |
| Counterparts | Beneficiaries | Equity Investment | 37,500,000.00 | 35,995,806.00 | -4% |
| Total Co-financing | | | 40,000,000.00 | 45,066,782.52 | +13% |

Source: Project Draft Final Report (September 2018)

¹¹⁴ <http://www.multilateralfund.org/81/English/1/8103.pdf>

¹¹⁵ "This is relevant in projects that deal with private sector entities which benefit from the GEF grant. In such cases the GEF expects that, in addition to benefitting from the GEF grant which covers various pilot technology demonstrations, private sector entities can also co-finance such demonstrations by contributing their companies' resources that are invested in their enterprises by their owner(s) and/or shareholder(s). In financial terms equity is invested money that, in contrast to debt capital, is not repaid to the investors in the normal course of business". UNIDO-GEF Project Operating Manual Part II – Project Development: required policies and procedures (17 February, 2017)

It should be noted that it is not possible to triangulate the co-financing data, since the Project reports in USD, and co-financing originates in Russian Roubles in various periods of the Project implementation. The USD/RUS exchange rate fluctuated from 30 to 40 RUB/USD from the period of 2011-2014 and fluctuated dramatically from 40 to 86 RUB/USD from the period of 2014-2018, as of September 2018 averaging at the level of 68 RUB/USD.

In the beginning of the Project the PMU approached potential beneficiary enterprises proposing to provide gratuitous technical assistance for the purpose of converting to ODS free substances and technologies, indicating a 1:4 co-financing ratio and other requirements. For transparency purpose these letters and the replies received were officially published¹¹⁶. In accordance with the MTR the reason for the withdrawn was due to the co-financing ratio stipulated in the Project¹¹⁷. This information could not, however, be confirmed since the rejection motivation were not documented.

The expected co-financing materialized in-kind from Government in the amount of 9,070,976.52 USD (20%) and equity investment from beneficiaries in the amount of 35,995,806.00 USD (80%) – 45,066,782.52 USD representing 71,6% of the total budget slightly above the planned 69%. Co-financing was administrated directly by the PMU not by the UNIDO financial system – UNIDO only received the commitment letters from the co-financers.

Over the period of March-December 2015 ICSTI produced the following reports as required under the Execution Agreement: Inception Report; three progress and financial reports; and a final report covering project achievements to date, lessons learnt and any recommendations to ensure the sustainability of achieved outcomes and to improve the efficiency of similar activities in the future. The final report should also include independently audited financial statements (covering Project and financial status, which should be segregated in respect of the GEF grant portion and the co-financing portion), and enclose a complete inventory list of the property acquired under the Execution Agreement- this was however not found over the 5 volumes of the Final Report (over 2800 pages with annexes). Inventory is mentioned as a part of ICSTI report, but is absent of the Project document database. No systematic UNIDO inventory was observed.

In accordance with the Execution Agreement ICSTI developed a Project-specific information disclosure system, which allowed the engagement with stakeholders including: technical reports and technical assistance recipient's selection documents¹¹⁸.

The full amount paid to ICSTI was USD 6, 532.800.00 USD – the first disbursement was in March 2015 and the last in February 2016¹¹⁹. The overall assessment of having a national execution agency was very positive – it strengthens the country ownership,

¹¹⁶ http://www.ozoneprogram.ru/o_proekte/peredacha_tehnologii/.

¹¹⁷ MTR 2013 Report. p. 13

¹¹⁸ Available at www.fb.lighty.ru.

¹¹⁹ 1st disbursement: USD 689,100.00 in March 2015; 2nd disbursement USD 918,600.00 in May 2015; 3rd disbursement USD 4,335,000.00 in June 2015; 4th disbursement USD 409,700.00 in September 2015; 5th disbursement USD 180,400.00 in February 2016.

builds national capacity and is more cost effective (direct contact, same language and knowledge of the country context).¹²⁰

The GEF CEO endorsement took place in 8th December 2010 and the funds were committed to UNIDO on 14th January 2011. The Project started on 26th January 2011- according to GEF this is the date when UNIDO Finance makes the funds available in the ERP system, i.e. the PM can commence with actual implementation.

GEF has confirmed that all the PIR were submitted. It is not clear if GEF has provided any feedback to them. No evidence was found of any feedback from GEF to the MTR.

Performance of partners is rated as **Satisfactory**.

4.11 Overall project achievement

Table 10 below provides a summary assessment and ratings by evaluation criteria for the Project¹²¹.

Table 10: Overall assessment of project achievements

| Evaluation Criteria | Comments | Rating |
|----------------------------|--|-----------|
| Project design | | MU |
| Overall design | The project design is very innovative and forward-looking, formulated adequately to address the problems, and consistent with the country and donors' priorities. It established a baseline and included M&E activities. Since the scope of the Project is very wide its approach is complex with too many outcomes and outputs some of them overlapping. Stakeholder analysis and risks had some limitations. | S |
| Logframe | No logframe was approved with the ProDoc. The Project was implemented with a project framework (expected outcomes and outputs) but without a results framework (verifiable indicators and means of verification). | HU |
| Project performance | | S |

¹²⁰ Minutes of interviews.

¹²¹ 6- **Highly satisfactory (HS)** Level of achievement clearly exceeds expectations and there is no shortcoming; 5- **Satisfactory (S)** Level of achievement meets expectations (indicatively, over 80-95 per cent) and there is no or minor shortcoming; 4- **Moderately satisfactory (MS)** Level of achievement more or less meets expectations (indicatively, 60 to 80 per cent) and there are some shortcomings; 3- **Moderately unsatisfactory (MU)** Level of achievement is somewhat lower than expected (indicatively, less than 60 per cent) and there are significant shortcomings; 2- **Unsatisfactory (U)** Level of achievement is substantially lower than expected and there are major shortcomings; 1- **Highly unsatisfactory (HU)** Level of achievement is negligible and there are severe shortcomings.

| Evaluation Criteria | Comments | Rating |
|---|--|---------------|
| Relevance and ownership | The Project primary objective, <i>the direct phase-out 600 ODP tons of HCFCs in the foam and refrigeration manufacturing sectors in the RF</i> , is strategically relevant to the RF since it allows the country to meet the 2015 MP target. It further contributes to RF's commitment under the Kyoto Protocol. The Project responds to GEF's Strategic Programs and is consistent with UNIDO priorities. There was strong country and stakeholder's ownership. | HS |
| Effectiveness | All the Project outcomes were achieved as well as the majority of the outputs. | S |
| Efficiency | The completion of the Project was delayed in 3 years. However, the main expected results were achieved within the original schedule - by the end of 2015 99,13% of the GEF total funding had been executed. There are activities still on-going (TE and update of the ozone programme website). The financial resources were sufficient to implement all Project activities. | S |
| Sustainability | The new legal framework ensures the sustainability of the Project results. The new equipment and technologies are installed and in operation. There is stakeholders & partners' ownership of the Project results. Due to the innovative and multi-focal nature of the Project's design it is likely that it will contribute the RF's commitments under the Kigali Amendment to the MP, assuming that the country will conclude its ratification process. | Likely |
| Progress to impact | The project has contributed to the RF's meeting the 2015 MP target. Its results are incorporated into new ODS laws and regulations. There is evidence of the Project replication and scaling-up to other countries in the region. | S |
| Cross-cutting performance criteria | | MU |
| Project coordination and management | Roles and responsibilities are clear. National management and overall coordination mechanisms have been effective. UNIDO HQ management and coordination roles have changed with the Execution Agreement; its quality control and technical inputs has varied with the nomination of different Project managers. | S |
| M&E design and implementation | The M&E design is adequate with schedule, budget and responsibilities for data collection and submission. However, the M&E implementation had significant shortcomings, including lack of an M&E system and development of all M&E activities foreseen in the ProDoc. The Project was approved and implemented without a logframe. No evidence was found that the M&E results had been included in the Project communication with stakeholders. | U |
| Gender | No evidence was found that the Project has contributed to | HU |

| Evaluation Criteria | Comments | Rating |
|--------------------------------|--|---------------|
| mainstreaming | gender mainstream. Gender was not considered in the Project design since at that time it was not a GEF requirement; no resources were allocated to address gender concerns. | |
| Performance of partners | | S |
| UNIDO | Technical expertise was timely recruited and UNIDO PM provided adequate and timely supervision and backstopping to the Project implementation until 2015. | S |
| National counterparts | High country ownership: active involvement of the MNRE; the RF's Government and beneficiary companies were fully engaged in the Project as in-kind/equity investment co-funders. | S |
| Donor | Funds were timely disbursed. PIR were received but no evidence of feedback provided by GEF to them nor to the MTR. | S |
| Overall assessment | | MS |

V. Conclusions, recommendations and lessons learned

5.1 Conclusions

Representatives of the beneficiary companies and other Project partners interviewed by the ET stated that cooperation with the implementing agency had been excellent and that the execution agency had played a significant role in assisting the Project implementation. All the interviewees recognized that the financial support provided by GEF was instrumental in facilitating all activities.

The MNRE was the designated national leading agency that chaired and coordinated all the meetings of the PSC which was formed at the inception stage of the Project and met twice every year to ensure the overall strategic and policy guidance of the Project.

The CIIC in Moscow provided support similar to a UNIDO field Office – it was the overall political, administrative and logistical coordinator of the Project in charge of all local support as well as networking with Project stakeholders and beneficiaries. Office representation in the country is an important UNIDO's added value that builds confidence and trust among Project stakeholders and partners and helps UNIDO HQ and donors to better understand the national context.

In 2015 the ICST became the executing agency responsible for the execution of the Project activities, day-to-day monitoring and financial management in accordance with GEF and UNIDO-required fiduciary standards.

The Project is highly relevant to the RF and its design very innovative, multi-focal and forward looking - it integrates requirements with regard to the reduction of GHG emissions through the phase out of HCFC production and consumption, which have only become mandatory recently with the Kigali Amendment to the MP adopted on 15 October 2016 (see section 4.1 above).

The private sector played a key role in the Project implementation through conversion to equipment and HCFC phase-out technology for RAC equipment. The ownership of the Project by the beneficiary facilities was evident during the field mission (see section 4.2 above). All the Project outcomes were achieved as well as the majority of the outputs (see section 4.4 above). No evidence was however found that the following outputs were achieved: creation of national ODS database (outcome 1.1); agreed stakeholder needs framework (outcome 1.3); commercial sustainability model (market economy mechanism) for ODS destruction (outcome 4.1); published information on policy measures and barrier removal approaches (and published study and methodologies for conducting market assessments (outcome 5.4).

The project completion date was delayed in 3 years (from 31 December 2015 to 21 December 2018). However, by the end of 2015, 99,13% of the GEF total funding had been executed which means that the project was *de facto* "operationally" completed by the initially foreseen date. The main expected results were achieved within the original schedule and budget- the perception from the beneficiaries is that the activities developed by the Project were timely and useful (see section 4.4 above).

There is evidence of sustainability of the Project outcomes - the changes introduced by the Project are underpinned by a new legal framework, and the RF's Government commitments to the Montreal and Kyoto Protocols (see section 4.5 above).

Project management represented 1,3% of the total budget (815 992,40 USD). Changes of PMs have caused several challenges in the Project implementation namely with regard to its efficiency, institutional memory and engagement with stakeholders and partners (see section 4.7 above).

The Project was implemented without logframe - no logframe was used to monitor progress towards expected outputs and outcomes. The indicators used to measure outcomes under the PIR are not included in the ProDoc (see section 4.1 above). The minutes of the PSC do not contain corrective actions based on the project performance and results under the M&E Plan – no evidence was found that the M&E activities were reported to the PSC (see section 4.8 above).

The gender dimension and women's empowerment were not included in the formulation of the project - at the time of the Project design gender was not a GEF requirement. No evidence was found that the Project has contributed to gender mainstream (see section 4.9 above).

The total Project planned budget accounts 58 million USD, where 18 million USD is a GEF grant and 40 million USD is co-financing. The overall planned financing for the Project was expected to be 31% of GEF funding against 69% of counterparts co-financing. The distribution of the planned budget among the Project components was as follows: 70% to components 3 and 5; 15% to Component 6; and the remaining 15% were allocated to Components 1,2,4,7 and Project management.

The total effective Project cost was 62,900,484.90 USD in accordance with the Project Draft Final Report (September 2018). It should be noted, however, that in accordance with the Annual PIR Fiscal Year 2018 the total effective project cost was 63,046,783.52 USD. This lack of consistency among the data provided to the ET was also found with regard to planned budget and effective budget spending. The effective total spending of GEF grant by the end of 2015 was 17,833,702.38 USD, which represents 99,1% of the planned budget.

The effective co-financing materialized slightly above the estimate– it was 45,066,782.52 USD representing 71,6% of counterparts funding (20% in kind from the RF's Government and 80% equity investment from the beneficiaries) and 28,4% GEF funding. Co-financing was administrated by the PMU, not by the UNIDO financial system – UNIDO only received the commitment letters from the co-financers (see section 4.10 above).

The total effective Project funding (GEF and co-financing) increased on 4,9 million USD (+8,45%). Reallocation of 21,2 million USD (5,9 million USD of GEF funding and 15,9 million USD of related co-financing) conducted from Component 5 to Component 3. Activities of Component 4 received additional 4,766,782.52 USD, which is 125,44% higher than the original budget which was entirely supported by equity investment from the beneficiary. Component 6 increased funding on 300,000 USD (+3,45%). Component 1 costs were reduced on 4,018.33 USD (- 0,13%) and spending on Component 7 was

reduced on 78,271.69 USD (-17,39%). Project management costs were reduced on 84,007.60 USD (-9,3%).

The overall Project achievement was rated as Moderately Satisfactory.¹²²

With the purpose of assuring accountability, supporting management, and driving learning and innovation key recommendations and lessons learned are presented below.

5.2 Recommendations

As this project is being now finalized, the following recommendations might be taken in for similar projects or interventions:

| UNIDO (implementing agency) | |
|-----------------------------|--|
| R1 | UNIDO PM changes should be avoided to the extent possible, even more in case of large and complex projects like this one. For situations of unavoidable change of PM, then specific requirements and procedures should be followed for the systematic handover of projects among PMs (including data and knowledge transfer). |
| R2 | M&E should be made a management priority - appropriate training of the Project management team in Results-based Management and outcome-oriented reporting should be required, and PMs should share M&E tools and documents with the national counterpart to improve ownership and increase monitoring of progress and results in the field; PMs should also share M&E tools and documents with the national counterpart to improve ownership and increase monitoring of progress and results in the field. |
| R3 | PMs should take into consideration, in the design/inception phase, that more time and resources would be needed for planning and implementing procedures for interactions with Federal Service of RF when it relates to tax exemption, or any other uncommon procedure, as this require specific expertise. |
| R4 | UNIDO should explore the potential of further involving UNIDO CIIC in RF, namely with regards to communication of the new execution arrangements to partners and stakeholders during and after completion of the Execution Agreement. |

| ICSTI (executing agency) | |
|--------------------------|---|
| R1 | For the national follow-up of this project, or similar future projects, ICSTI engagement with project partners and stakeholders should be improved in terms of communication and reporting. |

¹²² Level of achievement more or less meets expectations (indicatively, 60 to 80 per cent) and there are some shortcomings

MNRE

- R1** Effective liaison of MNRE with the project execution agency and engagement with the PM throughout all phases of the project implementation should be further promoted. In particular facilitate institutional coordination and administrative procedures.

GEF

- R1** GEF should continue to improve the format of the CEO endorsement in order to accommodate useful tools for project implementation, including the logframe in the project document.
- R2** A more active role should be played with regard to M&E ensuring that sufficient resources are allocated to it and that all the M&E activities are timely and accurately undertaken.
- R3** GEF should consider financing a Phase II of the project to ensure long-term sustainability of the project results.

5.3 Lessons Learned

Lessons learned

- LL 1.** The scope of the Project is very wide and its approach complex – 7 components with 27 outcomes and 30 outputs. Component 6 on Technology Transfer is stand-alone although some of its outputs were also covered by components 3 and 4.
The implementation of wide scope project benefit from streamlined project outcomes and outputs.
- LL 2.** The design of a Project that is forward looking and with multi-focal areas may have higher investment costs (ex. equipment) but generates potential future savings.
By avoiding interim technology companies may incur in higher initial investment costs (ex. equipment), however these may be offset by operational expenses savings, such as energy costs, reduction of environmental fees related to ODS use and CO2 emissions, and simultaneously generate greater benefits to the environment.
- LL 3.** The Project was anchored on strong cooperation between the private sector and the RF's Government.
Building trust and confidence with the stakeholders and respecting confidentiality are essential requirements for the success of any project.
- LL 4.** Lack and inconsistency of the information provided to the ET and the limitations of the evaluation demonstrate the need to improve the M&E design and implementation and the requirements on the handover of projects among PMs.
The institutional memory, data and knowledge of the project should be preserved throughout its implementation regardless of the management changes.

ANNEXES:

Annex A Terms of Reference

DRAFT

TERMS OF REFERENCE

Independent terminal evaluation of

[Title]

UNIDO Project ID: [Status]

GEF Project ID: 3541

January 2018

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I. PROJECT BACKGROUND AND CONTEXT

1. Project factsheet¹²³

| | |
|--|---|
| Project title | [Title] |
| UNIDO Project ID | [Status] |
| GEF Project ID | 3541 |
| Region | Europe and Central Asia |
| Country(ies) | [Keywords] |
| Project donor(s) | GEF |
| Project implementation start date | [Publish Date] |
| Expected duration | 60 months |
| Expected implementation end date | 31 December, 2018 |
| GEF Focal Areas and Operational Project | GEF-4: ODS; POPS-2; CC-2; CC-1 |
| Implementing agency(ies) | UNIDO |
| Executing partners | Ministry of Natural Resources and Environment of the Russian Federation |
| UNIDO RBM code | EC 31 (GB 20 |
| GEF project grant (excluding PPG, in USD) | 18,000,000 |
| Project GEF CEO endorsement / approval date | 11/11/2013 |
| UNIDO input (in kind, USD) | 350,000 (in kind) |
| Co-financing at CEO Endorsement, as applicable | 40,000,000 USD (cash + in-kind) |
| Total project cost (USD) | 58,180,000 |
| Mid-term review date | 12/13/2013 |
| Planned terminal evaluation date | May – July 2018 |

(Source: Project document)

2. Project context

The Russian Federation is the biggest country in the world and one of the biggest producers of hydrochlorofluorocarbons (HCFCs). It has established widespread manufacturing in all key HCFC sectors such as refrigeration, air-conditioning and the manufacture of wide variety polyurethane foams.

In 2008, the Russian Federation produced 31,600 metric tonnes of HCFCs (HCFC 21, 22 and 142b), imported further 12,100 metric tonnes of HCFCs (HCFC 22, 141b) and used 26,600 tonnes as feedstock for polytetrafluoroethylene (PTFE). The consumption in metric tonnes is 17,100 metric tonnes as refrigerants and foam blowing agent. This corresponds with the officially reported consumption in 2008 of 1,133 ODP tonnes.

Decision XIX/6 of the nineteenth meeting of the Parties to the Montreal Protocol initiated a more holistic approach to HCFC phase out by stipulating a requirement for implementing agencies to take account of the full climate impact of HCFC phase out and not just the Ozone Depletion impact.

Between 2010 and 2015, the Russian Federation must phase out 9,550 metric tonnes of HCFCs to meet its compliance targets under the Montreal Protocol, equivalent to

¹²³ Data to be validated by the Consultant

approximately 9,550 MT of HCFCs based on the current usage mix. Under article 2 of the Montreal Protocol, the Russian Federation had to reduce consumption and production of HCFCs by 75% relative to its baseline consumption of 3,996.9 ODP tonnes by 2010. A further reduction of 90% relative to baseline was required by 2015 providing for a maximum consumption of 399.69 ODP tonnes.

In response to this the Russian Federation has committed to phasing out HCFCs without using HFCs (which have high global warming potential) and UNIDO has developed an innovative approach to support the Federation's strategy.

As well as addressing the Federations non-hydrofluorocarbons (HFC) strategy, the project approach goes further in looking at additional climate benefits that could be achieved through the introduction of more energy efficient designs of refrigeration and air-conditioning systems.

The project represents the first comprehensive effort to consider the entire scope of work required to achieve HCFC phase-out and minimise climate impact taking into consideration both Montreal and Kyoto Protocols as well as national environmental policy and targets. The rationale for this project is to take advantage of the redesign and conversions required to phase-out HCFCs and at the same provide the technical assistance and technology transfer required to enhance the energy efficiency of the equipment being manufactured. By combining these two activities, the programme can achieve the combined climate benefits of an ODS phase out and programme and an energy efficiency programme but without the full cost of two initiatives.

3. Project objective

The primary objective is the direct phase-out 600 ODP tonnes of HCFCs in the foam and refrigeration manufacturing sectors in the Russian Federation to meet the 2015 Montreal Protocol target. The direct GHG emissions reduction resulting from the phase-out of HCFCs will be approximately 15.6 MMT CO₂. This is the estimated reduction through HCFC phase-out achieved through investment and through replication to meet the obligatory Montreal Protocol phase-out target.

The secondary objective of the project is to introduce more energy efficient designs, through technology transfer, during the conversion of refrigeration and air conditioning manufacturing facilities.

The project also aims to achieve indirect GHG emissions reduction through reduced electricity consumption in the commercial and industrial refrigeration sectors, of approximately 10 MMT CO₂ in 5 years, contributing to the Russian Federation's aggressive CO₂ reduction targets.

The project consists of 7 technical components, in addition to project management; including some project outcomes respectively, these are as follows:

Project Component 1: Building institutional capacity

Expected outcomes:

- a) Accelerated HCFC phase out and reduction of HFC consumption;
- b) Understanding of the level of residual demand for HCFCs;
- c) Good communication between and coordination of cross-functional Stakeholders;
- d) Improved awareness of environmental policies and associated HCFC phase out legislation amongst users and stakeholders;
- e) Improved understanding and performance.

Project Component 2: HFC and HCFC life cycle performance analysis

Expected outcomes:

- a) Implementation of a sustainable phase out strategy for different HCFC consuming sub sectors; 2. Capacity to adapt to developing phase out scenarios, international climate agreements and technology developments;
- b) Implementation of a sustainable phase out strategy for different HCFC consuming subsectors; Capacity to adapt to developing phase out scenarios, international climate agreements and technology developments.

Project Component 3: Phase out of HCFC consumption in the key consuming sectors of Foam and Refrigeration

Expected outcomes:

- a) HCFC consumption within Montreal Protocol phase out obligations;
- b) Clear understanding of the technical capacity to phase out within each sector;
- c) Phase out of 600 ODP tons HCFC (22,141b,142b) (Direct phase out 60% and 40% by replication);
- d) Reduction of direct and indirect GHG emissions through HCFC phase out and improved energy efficiency of replacement technology.

Project component 4: Development of ODS destruction facility and supporting recovery network

Expected outcomes:

- a) Technical and commercial understanding of the feasibility of operating ODS destruction Facilities;
- b) Strategy for the provision of ODS destruction across the Russian Federation;
- c) Reduction of ODS Banks;
- d) Consistent Monitoring, Inspection and Verification procedures applied across federation;
- e) Annual destruction of CFC-1,163 MT and CFC-1,294.5 MT which are equivalent to 157.5 ODP tons;
- f) The total impact is equal to 1,062,009 t CO₂e.

Project Component 5: Stimulating market growth for energy efficient refrigeration and air conditioning equipment

Expected outcomes:

- a) Increased market share of more energy efficient refrigeration and air conditioning equipment;
- b) Greater consumer and user awareness and increased demand for energy efficient technology

Project Component 6: Technology Transfer

Expected outcomes:

- a) Technology Transfer of non-HFC alternatives to HCFC applications;
- b) Higher efficiency refrigeration and air-conditioning (RAC) systems in use across the Russian Federation;
- c) Increased Private sector energy efficient design capacity;
- d) Increased use of high efficiency manufacturing equipment.

Project Component 7: Feasibility study to determine the best and most integrated strategy for dealing with HCFC production closure

- a) Stakeholder facilitation to agree production closure strategy;
- b) Reduction of 1840 metric tons of HCFCs closed.

The Project is further structured into a total of 17 substantive outputs. The full logical framework is included as Annex 1.

4. Project implementation arrangements

- UNIDO: is the implementing agency for the project. A project focal point was to be established within UNIDO to assist in the project execution.
- Ministry of Natural Resources and Environment (MNRE): of the Russian Federation is the designated national leading agency and focal point of the implementation of the Montreal Protocol
- Directorate for Environmental Monitoring and Prevention of Environmental Risks (DSPR): would directly implement the project components
- Project Steering Committee (PSC): was to be formed at the inception stage of the project, meet at least once annually, and be responsible for the overall strategic and policy guidance of the Project

The project management structure is illustrated in Figure 3.

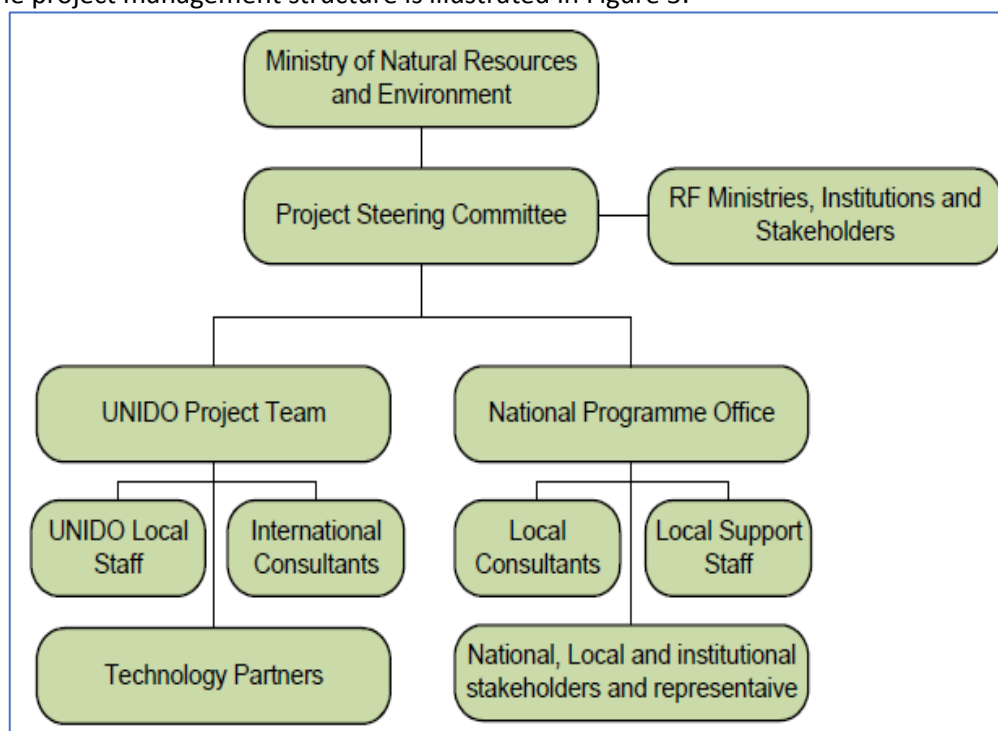


Figure 3. Project Organization Chart

5. Main findings of the Mid-term review (MTR)

The mid-term review (MTR) was carried out by an independent consulting firm, Dewpoint Consultants Ltd., between October and December 2013.

The programme has started effectively and both public and private stakeholders were actively engaged in both the technical and institutional activities and objectives of the

programme. Some of the main achievements of the project up to the time of the MTR were as follows:

- Changes to the Russian legislation, including ban on import of equipment containing ozone-depleting substances (ODS); criminal liability for ODS smuggling; limitation of the number of checkpoints through which ODS import is permitted.
- With the assistance of private sector and manufacturer representatives, UNIDO prepared proposals for detailed regulations (by-laws) designed for the implementation of that Federal Law. These are due to come into force on 1 January 2014.
- Government sponsored Federal level communications and public awareness activities included a diverse range of mechanisms from stakeholders' meetings to a national art competition to encapsulate the objectives of the project in pictures with the title "Protect the Ozone Layer and the Earth's Climate".
- Conversion of foam manufacturing to cyclopentane at the Pozis refrigerator factory in Zelenodolsk, Tatarstan.
- Development and adoption of improved energy efficiency designs based on R600a at the Pozis refrigerator factory in Zelenodolsk. Products are now the equivalent of the European A+ energy rating.
- Conversion activities were underway to replace HCFC-141b with cyclopentane in the manufacture of foam and to introduce high efficiency R600a technology at Sepo in Saratov and Polus in Yoshkara Ola in the manufacture of domestic and commercial refrigeration equipment.
- Trials and feasibility were underway for the conversion of production of blended polyol foam systems using methyl formate blowing agent at Vladipur and Dow Isolan, Vladimir.
- HCFCs had been specifically excluded from the range of goods that can be freely traded within the Eurasian Customs Union, to allow control of HCFC trade with Kazakhstan, which has not ratified the Beijing Amendment.

Further details can be obtained from the MTR report (December 2013).

6. Budget information

Table 1. Financing plan summary

| USD | <i>Project Preparation</i> | <i>Project</i> | <i>Total (USD)</i> |
|---------------------------------|----------------------------|-------------------|--------------------|
| Financing (GEF / others) | 180,000 | 18,000,000 | 18,180,000 |
| Co-financing (Cash and In-kind) | Click here to enter text. | 40,000,000 | 40,000,000 |
| Total (USD) | 180,000 | 58,000,000 | 58,180,000 |

Source : Project document

Table 2. Financing plan summary – project component breakdown¹²⁴

| Project components | GEF grant amount (excl. PPG) (USD) | Co-financing (USD) | Total (USD) |
|--|------------------------------------|--------------------|-------------------|
| 1. Building institutional capacity | 1,500,000 | 1,600,000 | 3,100,000 |
| 2. HFC and HCFC life cycle performance analysis | 250,000 | 100,000 | 350,000 |
| 3. Phase out of HCFC consumption in the key consuming sectors of Foam and Refrigeration | 4,700,000 | 14,100,000 | 18,800,000 |
| 4. Development of ODS destruction facility and supporting recovery network | 2,300,000 | 1,500,000 | 3,800,000 |
| 5. Stimulating market growth for energy efficient refrigeration and air conditioning equipment | 5,800,000 | 16,100,000 | 21,900,000 |
| 6. Technology Transfer | 2,700,000 | 6,000,000 | 8,700,000 |
| 7. Feasibility study to determine the best and most integrated strategy for dealing with HCFC production closure | 250,000 | 200,000 | 450,000 |
| Project management | 500,000 | 400,000 | 900,000 |
| Total (in USD) | 18,000,000 | 40,000,000 | 58,000,000 |

¹²⁴ Source: CEO endorsement document.

Table 3. Co-Financing source breakdown

| Name of co-financier (source) | Classification | Type | Total amount (USD) |
|---------------------------------|---------------------|--------------|--------------------|
| UNIDO | Implementing agency | In-kind | 350,000 |
| Government | | In-kind | 2,150,000 |
| Counterparts | | Cash/In-kind | 37,500,000 |
| Total co-financing (USD) | | | 40,000,000 |

Source : CEO endorsement document

Table 4. UNIDO budget execution (Grant 200000308)

| Items of Expenditure | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total Exp. |
|----------------------------|------------------|------------------|------------------|------------------|---------------|---------------|-------------------|
| Contractual Services | 1,102,696 | 548,755 | 4,079,291 | 2,533,159 | 2,957 | -2,957 | 8,263,901 |
| Equipment | 1,775,865 | 1,585,331 | 2,601,992 | 2,071,195 | 19,376 | | 8,053,758 |
| International Meetings | | 1,254 | | | | | 1,254 |
| Local travel | 42,967 | 46,355 | 66,919 | 25,105 | 91 | -760 | 180,678 |
| Nat. Consult./Staff | 362,262 | 210,412 | 216,861 | 35,058 | 9,380 | -5,105 | 828,869 |
| Other Direct Costs | 91,851 | 30,053 | 27,656 | 24,548 | 608 | 55 | 174,771 |
| Premises | | | 38,127 | 37,395 | -6,274 | | 69,248 |
| Staff & Intern Consultants | 61,067 | 51,415 | 67,603 | 26,151 | 4,323 | 7,909 | 218,469 |
| Staff Travel | | | | | | | |
| Train/Fellowship/Study | 40,565 | 36,848 | 9,662 | -4,567 | | -305 | 82,204 |
| Grand Total | 3,477,275 | 2,510,423 | 7,108,111 | 4,748,045 | 30,461 | -1,163 | 17,873,151 |

Source: UNIDO. ERP database as of 23 January 2018

II. Scope and purpose of the evaluation

The terminal evaluation (TE) will cover the whole duration of the project from its starting date (...) to the estimated completion date in 12/31/2018. It will assess project performance against the evaluation criteria: relevance, effectiveness, efficiency, sustainability and impact.

The TE has an additional purpose of drawing lessons and developing recommendations for UNIDO and the GEF that may help for improving the selection, enhancing the design and implementation of similar future projects and activities in the countries and on a global scale upon project completion. The TE report should include examples of good practices for other projects in the focal area, country, or region.

The TE should provide an analysis of the attainment of the project objective and the corresponding technical outputs and outcomes. Through its assessments, the Evaluation Team (ET) should enable the Government, counterparts, UNIDO and the GEF and other stakeholders and donors to verify prospects for development impact and sustainability, providing an analysis of the attainment of global environmental objectives, project objectives, delivery and completion of project outputs/activities, and outcomes/impacts based on indicators. The assessment shall include re-examination of the relevance of the objectives and other elements of project design according to the project evaluation parameters defined in Chapter 0.

The key question of the TE is whether the project has achieved or is likely to achieve its main objective.

The evaluation has three specific objectives:

- (i) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability and progress to impact;
- (ii) Identify key learning to feed into the design and implementation of the forthcoming projects; and
- (iii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

III. Evaluation approach and methodology

The TE will be conducted in accordance with the UNIDO Evaluation Policy¹²⁵ and the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle¹²⁶. In addition, the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation Policy and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies.

The evaluation will be carried out as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the evaluation. The evaluation team leader will liaise with the UNIDO Independent Evaluation Division on the conduct of the evaluation and methodological issues.

In line with its objectives, the evaluation will have two main components. The first component focuses on an overall **assessment of performance** of the project, whereas

¹²⁵ UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)

¹²⁶ UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

the second one focuses on the **learning** from the successful and unsuccessful practices in project design and implementation.

The evaluation will use a theory of change approach and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning. The theory of change will identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, and drivers as well as barriers to achieve them. The learning from this analysis will be useful to feed into the design of the future projects so that the management team can effectively manage them based on results.

1. Data collection methods

Following are the main instruments for data collection:

- (a) **Desk and literature review** of documents related to the project, including but not limited to:
 - The original project document, monitoring reports (such as progress and financial reports, mid-term review report, output reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
 - Notes from the meetings of committees involved in the project.
- (b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussion. Key stakeholders to be interviewed include:
 - UNIDO Management and staff involved in the project; and
 - Representatives of donors and counterparts.
- (c) **Field visits** to the Russian Federation.

2. Evaluation key questions and criteria

The key evaluation questions are the following:

- (a) What are the key drivers and barriers to achieve the long-term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
- (b) How well has the project performed? Has the project done the right things? Has the project done things right, with good value for money?
- (c) What have been the project's key results (outputs, outcome and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent the achieved results will sustain after the completion of the project?
- (d) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?

The evaluation will assess the likelihood of sustainability of the project results after the project completion. The assessment will identify key risks (e.g. in terms of financial, socio-political, institutional and environmental risks) and explain how these risks may affect the continuation of results after the project ends. Table 5 below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2.

Table 5. Project evaluation criteria

| # | Evaluation criteria | Mandatory rating |
|----------|--|------------------|
| A | Impact | Yes |
| B | Project design | Yes |
| 1 | • Overall design | Yes |
| 2 | • Logframe | Yes |
| C | Project performance | Yes |
| 1 | • Relevance | Yes |
| 2 | • Effectiveness | Yes |
| 3 | • Efficiency | Yes |
| 4 | • Sustainability of benefits | Yes |
| D | Cross-cutting performance criteria | |
| 1 | • Gender mainstreaming | Yes |
| 2 | • M&E: ✓ M&E design ✓ M&E implementation | Yes |
| 3 | • Results-based Management (RBM) | Yes |
| E | Performance of partners | |
| 1 | • UNIDO | Yes |
| 2 | • National counterparts | Yes |
| 3 | • Donor | Yes |
| F | Overall assessment | Yes |

3. Rating system

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Division uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per Table 6.

Table 6. Project rating criteria

| Score | | Definition | Category |
|-------|---------------------------|--|----------------|
| 6 | Highly satisfactory | Level of achievement clearly exceeds expectations and there is no shortcoming. | SATISFACTORY |
| 5 | Satisfactory | Level of achievement meets expectations (indicatively, over 80-95 per cent) and there is no or minor shortcoming. | |
| 4 | Moderately satisfactory | Level of achievement more or less meets expectations (indicatively, 60 to 80 per cent) and there are some shortcomings. | |
| 3 | Moderately unsatisfactory | Level of achievement is somewhat lower than expected (indicatively, less than 60 per cent) and there are significant shortcomings. | UNSATISFACTORY |
| 2 | Unsatisfactory | Level of achievement is substantially lower than | |

| Score | | Definition | Category |
|-------|-----------------------|---|----------|
| | | expected and there are major shortcomings. | |
| 1 | Highly unsatisfactory | Level of achievement is negligible and there are severe shortcomings. | |

IV. Evaluation process

The evaluation will be conducted from May to July 2018. The evaluation will be implemented in five phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

- i. Inception phase: The evaluation team will prepare the inception report providing details on the methodology for the evaluation and include an evaluation matrix with specific issues for the evaluation; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term review.
- ii. Desk review and data analysis;
- iii. Interviews, survey and literature review;
- iv. Country visits;
- v. Data analysis and report writing.

V. Time schedule and deliverables

The evaluation is scheduled to take place from May to July 2018. The evaluation field mission is tentatively planned for June at the end of the field mission, there will be a presentation of the preliminary findings for all stakeholders involved in this project in the Russian Federation. Major timelines are provided in Table 7.

After the evaluation field mission, the evaluation team leader will visit UNIDO HQ for debriefing and presentation of the preliminary findings of the terminal evaluation. The draft TE report will be submitted 4 to 6 weeks after the end of the mission. The draft TE report is to be shared with the UNIDO PM, UNIDO Independent Evaluation Division, the UNIDO GEF Coordinator and GEF OFP and other stakeholders for receipt of comments. The ET leader is expected to revise the draft TE report based on the comments received, edit the language and form and submit the final version of the TE report in accordance with UNIDO Independent Evaluation Division standards.

Table 7. Major timelines

| Timelines | Tasks |
|-----------|---|
| May 2018 | Desk review and writing of inception report |
| May 2018 | Vienna: briefing with HQ |
| June 2018 | Field visit |
| June 2018 | Debriefing in Vienna Preparation of first draft evaluation report |
| July 2018 | Internal peer review of the report by the UNIDO Independent Evaluation Division and other stakeholder comments to draft evaluation report |
| July 2018 | Final evaluation report |

VI. Evaluation team composition

The evaluation team will be composed of one international evaluation consultant acting as the team leader and one national consultant. The evaluation team members will possess relevant strong experience and skills on evaluation management and conduct together with expertise and experience in POPs chemicals and technical and regulatory issues related to Stockholm Convention implementation. Both consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions in annex 3 to these terms of reference. The ET is required to provide information relevant for follow-up studies, including terminal evaluation verification on request to the GEF partnership up to three years after completion of the terminal evaluation.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.

The UNIDO Project Manager and the project team in the Russian Federation will support the evaluation team. The UNIDO GEF Coordinator and GEF OFP(s) will be briefed on the evaluation and provide support to its conduct. GEF OFP(s) will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission.

An evaluation manager from UNIDO Independent Evaluation Division will provide technical backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Manager and national project teams will act as resourced persons and provide support to the evaluation team and the evaluation manager.

VII. Reporting

Inception report

This Terms of Reference (ToR) provides some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the International Evaluation Consultant will prepare, in collaboration with the national consultant, a short inception report that will operationalize the ToR relating to the evaluation questions and provide information on what type of and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible UNIDO Evaluation Manager.

The Inception Report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework (“evaluation matrix”); division of work between the International Evaluation Consultant and the national consultant; mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable¹²⁷.

Evaluation report format and review procedures

The draft report will be delivered to UNIDO Independent Evaluation Division (the suggested report outline is in Annex 4) and circulated to UNIDO staff and national stakeholders associated with the project for factual validation and comments. Any

¹²⁷ The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by the UNIDO Office for Independent Evaluation.

comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to UNIDO Independent Evaluation Division for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The ET will present its preliminary findings to the local stakeholders at the end of the field visit and consider their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ after the field mission.

The TE report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in Annex 4.

VIII. Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO Independent Evaluation Division. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO Independent Evaluation Division, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality, attached as Annex 5. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO's Independent Evaluation Division should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO Independent Evaluation Division, which will submit the final report to the GEF Evaluation Office and circulate it within UNIDO together with a management response sheet.

Annex B List of people met

| Name | Organization | Position |
|--------------------------|----------------------------|---|
| Jurgen Hierold | UNIDO | Chief and GEF Coordinator Partnership Coordination Division Department of Programmes Partnership and Field Integration |
| Yury Sorokin | UNIDO | PM 2009-2015 and 2017-2018 Industrial Development Officer Montreal Protocol Division Environmental Department |
| Michael Dethlefsen | UNIDO | Chief Procurement Services Division |
| Leadro Chaar Ferreira | UNIDO | Procurement Consultant |
| Marina Ploutakhina | UNIDO | Chief Quality Division Office of Independent Evaluation and Quality Monitoring Office of the DG |
| Ole Nielsen | UNIDO | Chief MP Unit Environmental Branch |
| Sergey Korotkov | UNIDO | Director Centre for International Industrial Cooperation in the Russian Federation |
| Artem Kushnerev | UNIDO | National Project Coordinator Project Management Unit |
| Alexander Lyubeshkin | UNIDO | National Project Expert Project Management Unit |
| Vasily Tselikov | UNIDO | National Project Expert Project Management Unit |
| Evgeny Ugrinovich | ICSTI | Director |
| Larisa Luchkina | UNIDO / "ChimTechHouse" | Foam expert / Development Director |
| Nuritdin Inamov | MNRE | GEF Political Focal Point Director Department of International Cooperation |
| Sergey Vasiliev | MNRE | Focal Point Montreal Protocol |
| Ivan Ruban | Vercont Service | Director |

| Name | Organization | Position |
|---------------------|--------------------------------------|--|
| Evgeny Antonov | Vercont Service | Project manager |
| Alexander Antipov | State Engineering College No. 19(23) | Senior teacher |
| Evgeny Urazov | Ostrov-Komplekt | Director |
| Egor Korovin | Ostrov-Komplekt | Food retail direction manager |
| Alexander Chukhchin | Ostrov training center | Deputy director |
| Artem Ermolin | UKO | Director |
| Dmitry Soloviev | freelance | Expert on identification of ODS import |
| Igor Palchik | Nord factory | Technical director |
| Faiz Kuzhbaev | Pipe insulation plant | Deputy director general for production |
| Andrea Castellan | Cannon Eurasia | General Manager |
| Alessandro Mensago | Cannon Eurasia | Commercial Manager |
| Aleksander Babkov | Cannon Eurasia | Development Director |
| Nikolay Plokhov | SEPO | Deputy Technical Manager in Production |
| Mikhail Blinov | SEPO | Deputy Chief of Technology |
| Radik Khasanov | POZIS | General Director |
| Igor Dragunskikh | POZIS | Chief engineer |
| Dalibor Kysela | UNIDO | PM 2015-2017 ¹²⁸ |
| Alexander Shurinov | BIRYUSA | Technical director |
| Dmitry Yasinskiy | BIRYUSA | Chief for technology |

¹²⁸ This interview was undertaken over Skype.

Annex C List of documents reviewed

Note: Documents located at <http://fb.lighty.ru> domain could only be accessed upon the authorization of UNIDO PM

| Project documents and reports | |
|---|---|
| Name | Access |
| Project document | https://open.unido.org/api/documents/10066518/download/ODS-SP1,%20CC-SP6,%20TT-PILOT-%20Russian Federation CEO%20Endorsement%20-%2020Oct10.doc |
| Contracts and procurement files | Only available in paper format |
| Job Descriptions of personnel | Only available in paper format |
| Mission reports | http://fb.lighty.ru/mission/ |
| Communication with stakeholders | http://fb.lighty.ru/letters/ |
| Incentive (Inception) Workshop Report | http://fb.lighty.ru/view_keydoc/28/Incentive%20Workshop%20Report.pdf |
| Progress report 01.03.2011 - 01.03.2012 (RUS) | http://fb.lighty.ru/view_keydoc/3/%D0%9E%D1%82%D1%87%D0%B5%D1%82%D0%B7%D0%B0%D0%BF%D0%B5%D1%80%D0%B8%D0%BE%D0%B4%2001.03.2011%20%D0%BF%D0%BE%2001.03.2012.pdf |
| Progress report 01.03.2012 - 31.10.2012 (RUS) | http://fb.lighty.ru/view_keydoc/4/%D0%9E%D1%82%D1%87%D0%B5%D1%82%D0%B7%D0%B0%D0%BF%D0%B5%D1%80%D0%B8%D0%BE%D0%B4%2001.03.2012%20%D0%BF%D0%BE%2031.10.2012.pdf |
| Progress report 01.03.2013 - 01.03.2014 (RUS) | http://fb.lighty.ru/view_keydoc/8/%D0%9E%D1%82%D1%87%D0%B5%D1%82%D0%B7%D0%B0%D0%BF%D0%B5%D1%80%D0%B8%D0%BE%D0%B4%2001.03.2012%20%D0%BF%D0%BE%2001.03.2013.pdf |
| Progress report 01.01.2014 - 31.12.2014 (RUS) | http://fb.lighty.ru/view_keydoc/9/%D0%9E%D1%82%D1%87%D0%B5%D1%82%D0%B7%D0%B0%D0%BF%D0%B5%D1%80%D0%B8%D0%BE%D0%B4%2001.03.2013%20%D0%BF%D0%BE%2001.03.2014.pdf |
| Progress report 01.03.2014 - 01.03.2015 (RUS) | http://fb.lighty.ru/view_keydoc/7/%D0%9E%D1%82%D1%87%D0%B5%D1%82%D0%B7%D0%B0%D0%BF%D0%B5%D1%80%D0%B8%D0%BE%D0%B4%2001.01.2014%20%D0%BF%D0%BE%2031.12.2014.pdf |
| Progress report 01.03.2015 - 31.12.2015 (RUS) | http://fb.lighty.ru/view_keydoc/10/%D0%9E%D1%82%D1%87%D0%B5%D1%82%D0%B7%D0%B0%D0%BF%D0%B5%D1%80%D0%B8%D0%BE%D0%B4%2001.03.2014%20%D0%BF%D0%BE%2001.03.2015.pdf |
| Project Work plan 2011 | http://fb.lighty.ru/view_keydoc/103/2011 Work Plan IW%20-%20Copy.xls |
| Project Work plan | http://fb.lighty.ru/view_keydoc/104/2012-03- |

| Project documents and reports | |
|---|---|
| 2012 | 05 Work Plan final VTS.xls |
| Project Work plan 2013 | http://fb.lighty.ru/view_keydoc/106/2013.07.17 Work Plan final %D0%9C%D0%A4 %D0%90%D1%80%D1%82 %D0%92%D0%A6.xls |
| Project Work plan 2014 | http://fb.lighty.ru/view_keydoc/107/2014.04.01 UNIDO Project Work Plan.xls |
| ICSTI Inception report and workplan (2015) | http://fb.lighty.ru/view_keydoc/52/04%2003%2015%20-%20Inception%20Report.doc |
| Project Work plan 2017 | http://fb.lighty.ru/view_keydoc/66/3541 2017 workplan.pdf |
| UNIDO ICSTI Execution Agreement | http://fb.lighty.ru/view_keydoc/53/04%2003%202015%20UNIDO%20EXECUTION%20AGREEMENT.pdf |
| Lessons learned | http://fb.lighty.ru/view_keydoc/51/LessonLearned.pdf |
| UNIDO Project Mid-Term Review Report (2013) | http://fb.lighty.ru/view_keydoc/59/UNIDO Mid-Term Report (MTR GEF%20ID%203541) Final submitted 24 10 2013-1.doc |
| UNIDO Annual Project Implementation Report (PIR) Fiscal Year 2015 | Provided to the ET in electronic format |
| UNIDO Annual Project Implementation Report (PIR) Fiscal Year 2015 | http://fb.lighty.ru/view_keydoc/63/3541 2015 UNIDO Russia Kysela 8Oct2015 Annex.pdf |
| UNIDO Annual Project Implementation Report (PIR) Fiscal Year 2016 | http://fb.lighty.ru/view_keydoc/64/3541 2016 PIR UNIDO Russia Kysela.pdf |
| UNIDO Annual Project Implementation Report (PIR) Fiscal Year 2017 | http://fb.lighty.ru/view_keydoc/65/3541 2017 PIR UNIDO Russia .pdf |
| UNIDO Annual Project Implementation Report (PIR) Fiscal Year 2018 | Provided to the ET in electronic format |
| Project Draft final report, September 2018 | Provided to the ET in electronic format |

| PSC and Working Groups Minutes | |
|--|---|
| Name | Access |
| PSC Assembly protocol | http://fb.lighty.ru/view_keydoc/12/%D0%9F%D0%BE%D0%BB%D0%BE%D0%B6%D0%B5%D0%BD%D0%B8%D0%B5%20%D0%BE%20%D0%BA%D0%BE%D0%BE%D1%80%D0%B4.%D0%BA%D0%BE%D0%BC%D0%B8%D1%82%D0%B5%D1%82%D0%B5%20%D0%BF%D0%BE%20%D1%80%D0%B5%D0%B0%D0%BB%D0%B8%D0%B7.%20%D0%BF%D1%80%D0%BE%D0%B5%D0%BA%D1%82%D0%B0%20%D0%AE%D0%9D%D0%98%D0%94%D0%9E-%D0%93%D0%AD%D0%A4.pdf |
| Minutes PSC 1 of 02/08/2011 (RUS) | http://fb.lighty.ru/view_keydoc/13/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%201.pdf |
| Minutes PSC 2 of 14/03/2012 (RUS) | http://fb.lighty.ru/view_keydoc/14/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%202.pdf |
| Minutes PSC 3 of 01/11/2012 (RUS) | http://fb.lighty.ru/view_keydoc/15/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%203.pdf |
| Minutes PSC 4 of 25/03/2013 (RUS) | http://fb.lighty.ru/view_keydoc/16/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%204.pdf |
| Minutes PSC 5 of 07/04/2014 (RUS) | http://fb.lighty.ru/view_keydoc/17/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%205.pdf |
| Minutes PSC 6 of 18/12/2014 (RUS) | http://fb.lighty.ru/view_keydoc/18/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%206.pdf |
| Minutes PSC 7 of 10/04/2015 (RUS) | http://fb.lighty.ru/view_keydoc/19/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%207.pdf |
| Minutes Final PSC 8 of 10/12/2015 (RUS) | http://fb.lighty.ru/view_keydoc/20/%D0%9F%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%208.pdf |
| Meeting of WG"UNIDO - Representatives of Business" | http://www.ozoneprogram.ru/meroprijatija/22102014/ |
| Minutes of the meeting to discuss the draft resolution "On strengthening measures of state regulation of consumption and circulation of ozone-depleting substances in the RF" with representatives of business | http://fb.lighty.ru/view_keydoc/58/%D0%BF%D1%80%D0%BE%D1%82%D0%BE%D0%BA%D0%BE%D0%BB%20%D1%81%D0%BE%D0%B2%D0%B5%D1%89%D0%B0%D0%BD%D0%B8%D1%8F.pdf |
| Minutes of the meeting of the | http://fb.lighty.ru/view_keydoc/97/protocol_22102014.pdf |

| PSC and Working Groups Minutes | |
|---|--|
| UNIDO Business Representatives section on the issues of recycling, regeneration, recycling (recycling) and destruction of ozone-depleting substances and products containing them | |

| Evaluation and Audit reports | |
|---|---|
| Name | Access |
| Audit of the Russia Country Office by UNIDO IOS (2013) | Provided to the ET in electronic format |
| Independent mid-term evaluation. Phase out of HCFCs and promotion of HFC-free energy efficient refrigeration and air-conditioning systems through technology transfer in the Russian Federation (GF/RUS/11/001) (2013) | https://www.unido.org/sites/default/files/2014-05/RUS_GFRUS11001_MTR_Dewpoint_0.pdf |
| Audit Report of the UNIDO/GEF Project Phase-out of HCFCs and Promotion of HFC-Free Energy Efficient Refrigeration and Air-Conditioning Systems in the Russian Federation Through Technology Transfer (2013) | Provided to the ET in electronic format |
| Independent UNIDO Country Evaluation, Russian Federation (2014) | https://www.unido.org/sites/default/files/2014-05/CE_RUS_E-book-2013_0.pdf |
| Independent thematic review. UNIDO ozone depleting substances projects under the Montreal Protocol with emphasis on countries in the European and in the Latin American and Caribbean regions (October 2016) | https://www.unido.org/sites/default/files/2017-01/THEM_MP_review_2015-16_E-book_0.pdf |
| Independent terminal evaluation. Market transformation programme on energy efficiency in greenhouse gas intensive industries in the Russian Federation (UNIDO project No. GF/RUS/10/004 - 103056; GEF ID: 3593). (September 2018) | https://www.unido.org/sites/default/files/files/2018-09/103056_Russia%20IETE_TE.pdf |

| ICSTI (Executing Agency) reports |
|----------------------------------|
|----------------------------------|

| ICSTI (Executing Agency) reports | |
|---|---|
| Name | Access |
| ICSTI Inception report and workplan (2015) | http://fb.lighty.ru/view_keydoc/52/04%2003%2015%20-%20Inception%20Report.doc |
| ICSTI 1 st Progress Report Report as of 28.02.2015 | http://fb.lighty.ru/view_keydoc/24/2015.03.04_FirstProgressReport.pdf |
| ICSTI 1 st financial report | http://fb.lighty.ru/view_keydoc/29/2015.03.04_FirstFinancialReport.pdf |
| ICSTI 2 nd Progress Reporting period: March-May 2015 | http://fb.lighty.ru/view_keydoc/25/2015.06.01_SecondProgressReport.pdf |
| ICSTI 2 nd Financial Report | http://fb.lighty.ru/view_keydoc/30/2nd%20Financial%20Report.pdf |
| ICSTI 3 rd Progress Report Reporting period: June–September 2015 | http://fb.lighty.ru/view_keydoc/23/Report%203.pdf |
| ICSTI 3 rd Financial Report | http://fb.lighty.ru/view_keydoc/32/3rd%20Financial%20Report.pdf |
| ICSTI 4 th Report Reporting period: March–December 2015 | http://fb.lighty.ru/view_keydoc/26/FinalReport.pdf |
| ICSTI 4 th Financial Report | http://fb.lighty.ru/view_keydoc/34/4th%20Financial%20Report.pdf |
| ICSTI Final Report on implementation of Project No. GF/RUS/11/001 in the Russian Federation Volumes 1 - 5 | http://fb.lighty.ru/view_keydoc/37/Volume%201.pdf http://fb.lighty.ru/view_keydoc/38/Volume%202.pdf http://fb.lighty.ru/view_keydoc/39/Volume%203.pdf http://fb.lighty.ru/view_keydoc/40/Volume%204.pdf http://fb.lighty.ru/view_keydoc/41/Volume%205.pdf |

| Technical reports and literature review | |
|---|---|
| Name | Access link |
| A phased reduction in the production of hydrochlorofluorocarbons at the enterprises of the chemical industry of the Russian Federation in 2013-2014 and in 2015-2020. Analytical report | http://fb.lighty.ru/view_tech/35/%D0%9E%D1%82%D1%87%D0%B5%D1%82_%D0%A2_1.2.doc |
| Design and selection of equipment considering the minimization of the impact on the climate. Estimate of the total coefficient of | http://fb.lighty.ru/tech/20/ |

| Technical reports and literature review | |
|--|---|
| equivalent warming | |
| Design and Selection of Equipment for Minimizing Climate Impact | http://fb.lighty.ru/view_tech/36/Final%20Report%20_16002423_03_11_12_2.pdf |
| Information and analytical note on the transfer of domestic refrigeration equipment sector to ozone-friendly substances and technologies | http://fb.lighty.ru/view_tech/15/perevod_sektora_bytovoy_kholodilnoy_tekhniki.pdf |
| Information and analytical note on the transfer of enterprises of the aerosol propellant sector to ozone-friendly substances and technologies | http://fb.lighty.ru/view_tech/14/perevod_sektora_aerozolnykh_propellentov.pdf |
| Information and analytical note on the transfer of the commercial refrigeration equipment sector to ozone-friendly substances and technologies | http://fb.lighty.ru/view_tech/19/perevod_sektora_torgovogo_kholodilnogo_oborudovaniya.pdf |
| Information and analytical note on the transfer of the production of sandwich panels to ozone-friendly substances and technologies | http://fb.lighty.ru/view_tech/16/perevod_sektora_proizvodstva_sendvich_paneley.pdf |
| Information and analytical note on the transfer of the sector of industrial refrigeration equipment to ozone-friendly substances and technologies | http://fb.lighty.ru/view_tech/17/perevod_sektora_promyshlennogo_kholodilnogo_oborudovaniya.pdf |
| Information and analytical note on the transfer of the service sector of air conditioners in cars and public transport to ozone-friendly substances and technologies | http://fb.lighty.ru/view_tech/18/perevod_sektora_servisnogo_obslyzhivaniya_avtokonditsionerov.pdf |
| Means and methods of detecting ozone-destroying substances | http://fb.lighty.ru/view_tech/3/%D0%A4%D0%A2%D0%A1.pdf |
| Ozone-Depleting Substance Destruction Programme in Article 5 countries | http://fb.lighty.ru/view_tech/2/06_utilizaciya.pdf |

| Technical reports and literature review | |
|---|---|
| Pilot production of the foam polyurethane systems containing methyl formate as a foaming agent. Dissemination of the project results to the main stakeholders | http://fb.lighty.ru/tech/4/ |
| Preparations for reducing HCFC consumption: key provisions related to use, alternatives, impacts and financing for countries operating under Article 5 of the Montreal Protocol | http://fb.lighty.ru/view_tech/1/screen_RU_130128_UNIDO_Inhalt_hw.pdf |
| Refrigeration equipment. Refrigerants. Requirements for application and recovery | http://fb.lighty.ru/view_tech/37/%D0%9F%D1%80%D0%BE%D0%B5%D0%BA%D1%82%20%D0%93%D0%9E%D0%A1%D0%A2%20%D0%A5%D0%BB%D0%B0%D0%B4%D0%B0%D0%B3%D0%B5%D0%BD%D1%82%D1%8B%201-%D0%B0%D1%8F%20%D1%80%D0%B5%D0%B4%D0%B0%D0%BA%D1%86%D0%B8%D1%8F%D0%92%D0%A6.pdf |
| Handbook for the MP 12th edition (2018) | http://ozone.unep.org/sites/default/files/MP_handbook-english-2018.pdf |
| Guide on Gender mainstreaming - Montreal Protocol projects (2015) | https://www.unido.org/sites/default/files/2015-02/Gender_Guide_MP_0.pdf |
| GEF co-financing policy | GEF/C.20/6/Rev.1 April 7 GEF/C.46/09 May 6, 2014 |
| UNIDO-GEF Project Operating Manual Part II – Project Development: required policies and procedures (17 February, 2017) | |

| Laws, decrees, resolutions and other official documents | |
|---|---|
| Name | Access link |
| Constitution of the Russian Federation from 12 December 1993 | http://www.constitution.ru/official/pdf/constitution.pdf |
| Labour Code (Part 1, Article 3) of the Russian Federation from December 30, 2001 N 197-FZ (with amendments of 05.02.2018) | http://www.trudkod.ru/chast-1/razdel-1/glava-1/st-3-tk-rf |

| Laws, decrees, resolutions and other official documents | |
|---|---|
| National Action Strategy for Women For 2017 – 2022 | https://rosmintrud.ru/uploads/magic/ru-RU/6fbee78a-1500964810.pdf |
| Federal Law No. 96 of 04/05/1999 “On Protection of the Atmospheric Air” | http://www.consultant.ru/document/cons_doc_LAW_22971/ |
| Government Resolution No. 1000 of 19.12.2000 “On Updating the Term for Implementing the Measures of State Regulation of The Manufacture Of Ozone-Depleting Substances in the Russian Federation” | http://pravo.gov.ru/proxy/ips/?docbody=&nd=102059515&rdk=&backlink=1 |
| Federal Law No.7 of 10/01/2002 “On Environmental Protection” | http://www.consultant.ru/document/cons_doc_LAW_34823/ |
| Government Resolution No. 539 of 27/08/2005 “On the Acceptance by the Russian Federation of the Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer” | http://base.garant.ru/10106595/ |
| Government Resolution No. 678 of 20/08/2009 “On the Measures of the State Regulation For Importation Into and Exportation From the Russian Federation of Ozone-Depleting Substances” | http://www.consultant.ru/document/cons_doc_LAW_91159/ |
| Federal Law No. 304 of 28/11/2009 “On the Ratification of the Agreement on the Procedure of Introduction and Application of Measures Pertaining to Foreign Trade for Commodities on the Single Customs Territory for Third Countries” | https://rg.ru/2014/08/15/minprirody-dok.html |
| Government Resolution No. 820 of 12/10/2010 “On Amending the Government Resolution No. 400 of July 30, 2004” | http://www.consultant.ru/document/cons_doc_LAW_105809/ |
| Government Resolution No. 687 of 06/07/2012 “On Determining Border Checkpoints of the Russian Federation Through which the Arrival of Ozone-Depleting Substances into the | https://rg.ru/2012/07/11/ozon-dok.html |

| Laws, decrees, resolutions and other official documents | |
|--|---|
| Territory of The Russian Federation is Permitted" | |
| Government's Executive Order No. 723-p of 30.04.2013 «On Conducting the All-Russian Competition "Protect the Ozone Layer and Earth Climate". | http://static.government.ru/media/2013/5/7/56194/file/723r.pdf |
| Federal Law No 226 of 23/07/2013 "On amending Federal Law "On Environment Protection" and Certain Legislative Acts of the Russian Federation". | http://www.consultant.ru/document/cons_doc_LAW_149679/ |
| Government Resolution No.935 of 13/08/2018 "On introduction of temporary quantitative limitation on the import of ozone-destroying substances in the Russian Federation in 2018" | http://www.garant.ru/hotlaw/federal/1214058/ |

| Websites (alphabetic order) | |
|--|--|
| Name | Access link |
| Biryusa | http://www.biryusa.ru/ |
| Cannon Eurasia | www.cannoneurasia.com |
| College no. 19 | http://pk19.ru/ |
| Danfoss | http://products.danfoss.ru/home/#/ |
| GEF | www.thegef.org |
| HVAC Center | http://hvaccenter.ru/ |
| ICSTI | http://www.icsti.su/ |
| MNRE Ministry of Natural Resources and Environment | http://www.mnr.gov.ru/ |
| Nord | http://www.nord-sm.ru/ |
| Ostrov Komplekt | http://ostrovcomplete.com |
| POZIS | http://www.pozis.ru/ |
| Project reporting database | http://fb.lighty.ru |
| Project website | http://www.ozoneprogram.ru |
| SEPO | http://www.sepo.ru |
| TopClimat.ru | http://www.topclimat.ru/ |
| UKO | http://testuko.u-ko.ru/ http://www.u-ko.ru/ |
| UNIDO CIIC Russia | www.unido.ru |
| UNIDO Open Data Platform | https://open.unido.org |
| UNIDO Secretariat | www.unido.org |

| Websites (alphabetic order) | |
|--|---|
| Union of manufacturers and consumers of environmentally pure products from polyurethane foam | http://www.foamunion.ru/ |
| Vercont Service | http://vercont.ru/ |

Annex D List of Project Stakeholders and Partners

Note: The list presented in alphabetic order with the identification of the stakeholder's name, scope of business and role played in the project implementation. The data collection methods are also identified together with the priority – only those rated with high priority were visited during the field mission.

| Organization name Location | Scope of business | Role in the Project | Data Collection Method | Priority | Focal point |
|---|--|--|---------------------------|-----------|------------------------------|
| Ariada Volzhsk city, Russia | Polyurethane foam panel and refrigeration equipment producer | Initial beneficiary of components 3 and 5 Recipient of consultancy | Letter/ Email | Moderate | Ms. Aleya Aziziova |
| Ariadna-Yug Leningradskaya, Russia | Polyurethane foam – panel producer | Recipient of consultancy | Letter/ Email | Moderate | Mr. Radik Shakirov |
| Association of Electronics and Computer Hardware Commercial and Manufacturing Companies (RATEK) Moscow, Russia | Professional association | Information partner | Letter/ Email | Moderate | Mr. Alexander Onyschuk |
| Association of Preinsulated Pipe Manufacturers and Consumers (APPTIPI) Moscow, Russia | Professional association | Information partner | Letter/ Email | Moderate | Ms. Larisa Luchkina |
| Belarus Ministry of Natural Resources Belarus | Belarus governmental body | Information partner | Letter/ Email | Moderate | Ms. Lyudmila Trastevskaya |
| Cannon Eurasia Moscow, Russia | Russian vendor in refrigeration | Project beneficiary | Personal interview | Desirable | Mr. Alexander Babkov |
| Daikin, Moscow, Russia | Large Russian vendor in | Information partner | Letter/ | Moderate | Ms. Natalia |

| Organization name Location | Scope of business | Role in the Project | Data Collection Method | Priority | Focal point |
|---|---------------------------------------|---|---------------------------|-----------|--|
| | refrigeration | | Email | | Shestakova |
| Dow Izolan Vladimir, Russia | Polyurethane foam – panel producer | Key Project beneficiary of component 3 TA recipient | Letter/ Email | Desirable | Mr. Mikhail Tsarfin |
| Federal Customs Service Moscow, Russia | Russian governmental body | Project beneficiary | Phone call | Desirable | Mr. Sergey Kovalenko |
| Federal Service of Russia on Hydrometeorology and Monitoring of the Environment of the Russian Federation, Moscow, Russia | Russian governmental body | Information partner | Letter/ Email | Desirable | Mr. Igor Shumakov |
| GAOU UTs Professional Moscow, Russia | Professional association | Information partner | Letter/ Email | Moderate | Mr. Denis Ukrainsky |
| Institute of Refrigeration and Biotechnologies (IKhBT) of the Saint- Petersburg National Research University of Information, Saint Petersburg, Russia | Educational institution | Information partner | Letter/ Email | Desirable | Mr. Oleg Tsvetkov |
| International Center for Scientific and Technical Information Moscow, Russia | Intergovernmental Organization | Execution Agency | Personal interview | Mandatory | Mr. Evgeny UGRINOVICH - Director |
| International Refrigeration Academy Saint Petersburg, Russia | Educational institution | Information partner | Letter/ Email | Desirable | Mr. Vasily Tselikov |
| ISZS–Montazh (self-regulating organization), Moscow, Russia | Professional association | Information partner | Letter/ Email | Moderate | Mr. Felix Tokarev |
| ISZS-Project (self-regulating | Professional association | Information partner | Letter/ | Moderate | Mr. Andrey Galusha |

| Organization name Location | Scope of business | Role in the Project | Data Collection Method | Priority | Focal point |
|--|---|--|--------------------------------------|---------------------|--|
| organization) Moscow, Russia | | | Email | | |
| Kontakt Yoshkar-Ola city, Russia | Russian vendor in refrigeration | Information partner | Letter/ Email | Moderate | Mr. Andrey Korobeynikov |
| KPP Nord Moscow area, Russia | Large Russian vendor in refrigeration + Commercial facility using CO2 Refrigeration | Key Project beneficiary TA recipient Major contributor to sustainability evaluation | Personal interview | Highly desirable | Mr. Igor Palchik |
| Krasnogorsky van plant Krasnogorsky, Russia | Purpose-built vehicle plant | Key Project beneficiary TA recipient | Letter/ Email | Desirable | Mr. Rafail Shageev |
| KZKh Biryusa Krasnoyarsk, Russia | Domestic and commercial refrigeration TA recipient | Key Project beneficiary of component 3 TA recipient | Personal interview | Highly desirable | Mr. Alexander Shurinov |
| Ministry for Foreign Affairs Moscow, Russia | Russian governmental body | Project beneficiary | Personal interview/ Phone call | Desirable | Ms. Elena Melnik |
| Ministry of Education and Science Moscow, Russia | Russian governmental body | Information partner | Letter/ Email | Moderate | Mr. Evgeny Ugrinovich |
| Ministry of Internal Affairs Moscow, Russia | Russian governmental body | Project beneficiary | Phone call | Desirable | Mr. Yuri Tuzkov |
| Ministry of Natural Resources and Environment of the Russian Federation Moscow, Russia | Russian governmental body | Governmental Focal Point | Personal interview | Mandatory | Mr. Nuritdin Inamov Mr. Sergey Vasiliev |
| National Association of PU Panel | Professional association | Information partner | Personal | Moderate | Ms. Larisa Luchkina |

| Organization name Location | Scope of business | Role in the Project | Data Collection Method | Priority | Focal point |
|---|---|--|---------------------------|---------------------|------------------------------|
| Manufacturers (NAPPAN)/ Union of manufacturers and consumers of environmentally pure products from polyurethane foam Moscow, Russia | | | interview | | |
| National Center for Environmental Management and Cleaner Production for the Oil and Gas Industry Gubkin Russian State University of Oil and Gas, Moscow, Russia | Educational institution | Project partner | Letter/ Email | Moderate | Mr. Stanislav Mesheryakov |
| NVP Vladipur Vladimir, Russia | Polyurethane foam – panel producer | Key Project beneficiary TA recipient | Letter/ Email | Desirable | Ms. Olga Krasnova |
| Ostrov-Komplekt Moscow area, Russia | Large Russian vendor in refrigeration | Key Project beneficiary TA recipient | Personal interview | Highly desirable | Mr. Evgany Urazov |
| Pipe insulation plant Peresvet, Moscow area, Russia | Polyurethane foam - pipe insulation | Key Project beneficiary TA recipient | Personal interview | Highly desirable | Mr. Faiz Kuzhbaev |
| Polyus Company Yoshkar-Ola, Russia | Refrigeration equipment producer | Key Project beneficiary TA recipient | Letter/ Email | Desirable | Mr. Evgeny Denisov |
| POZIS plant Zelenodolsk, Republic of Tatarstan | Domestic and commercial refrigeration | Key Project beneficiary of component 3 TA recipient | Personal interview | Highly desirable | Mr. Radik Khasanov |
| Professional, training centre Moscow, Russia | Educational institution HVAC training Centre | Project beneficiary Contributor to sustainability evaluation | Letter/ Email | Moderate | Ms. O.Labazova |
| Russian Union of the Refrigeration | Professional association | Information partner | Letter/ | Moderate | Mr. Yuri Dubrovin |

| Organization name Location | Scope of business | Role in the Project | Data Collection Method | Priority | Focal point |
|---|--|---|-----------------------------------|---------------------|-----------------------------------|
| Industry Enterprises Moscow, Russia | | | Email | | |
| SEPO-ZEM Saratov, Russia | Domestic and commercial refrigeration | Key Project beneficiary of component 5 TA recipient | Personal interview | Desirable | Mr. Igor Nefedov |
| Shumerlya purpose-built vehicle plant Shumerlya, Russia | Purpose-built vehicle plant | Key Project beneficiary TA recipient | Letter/ Email | Desirable | Ms. Valentina Samyкова |
| State Engineering College No. 23 (later renamed to State Engineering College No. 19) Moscow, Russia | Educational institution | Project beneficiary | Personal interview | Desirable | Mr. Alexander Antipov |
| Tambov Institute of educators Tambov, Russia | Educational institution | Information partner | Letter/ Email | Moderate | Ms. Galina Shesherina |
| TPK Orsk plants Orsk, Russia | Refrigeration equipment producer | Key Project beneficiary TA recipient | Letter/ Email | Desirable | Mr. Alexander Pisarev |
| Tsentrtanstekhmash Ryazan, Russia | Purpose-built vehicle plant | Key Project beneficiary TA recipient | Letter/ Email | Desirable | Mr. Boris Dudin |
| UKO Dedenevo, Moscow area, Russia | ODS destruction facility | Key Project beneficiary of component 3 TA recipient | Personal interview | Highly desirable | Mr. Artem Ermolin |
| UNIDO Center for International Industrial Cooperation in the Russian Federation Moscow, Russia | UNIDO representative office to the Russian Federation | UNIDO Project team | Personal interview | Mandatory | Mr. Sergey KOROTKOV - Director |

| Organization name Location | Scope of business | Role in the Project | Data Collection Method | Priority | Focal point |
|---------------------------------------|---|--|-----------------------------------|---------------------|---------------------------|
| UNIDO HQ VIC, Vienna, Austria | Project Management | UNIDO Project Manager 2015-2018 | Personal interview | Highly desirable | Mr. Fukuya Iino |
| UNIDO HQ VIC, Vienna, Austria | Project Management | UNIDO Project Manager 2010-2014, 2018 | Personal interview | Mandatory | Mr. Yuri Sorokin |
| UNIDO HQ VIC, Vienna, Austria | Project Management | UNIDO Project Manager 2014-2015 | Skype Interview | Mandatory | Mr. Dalibor Kysela |
| UNIDO HQ VIC, Vienna, Austria | Project Management | GEF Coordinator | Personal interview | Mandatory | Mr. Juergen Hierold |
| UNIDO HQ VIC, Vienna, Austria | Project Management | Chief Independent Evaluation Division | Personal interview | Mandatory | Mr. Javier Guarnizo |
| UNIDO HQ VIC, Vienna, Austria | Project Management | Chief Procurement Division | Personal interview | Mandatory | Mr. Michael Dethlefsen |
| UNIDO HQ VIC, Vienna, Austria | Project Management | Quality Monitoring Division | Personal interview | Mandatory | Ms. Marina Ploutakhina |
| UNIDO HQ VIC, Vienna, Austria | Project Management | Chief MP-Division | Personal interview | Mandatory | Mr. Ole Nielsen |
| Vercont Service Moscow, Russia | Educational institution HVAC training Centre | Project beneficiary Contributor to sustainability evaluation | Personal interview | Desirable | Mr. Ivan Ruban |
| WorldSkills Russia Moscow, Russia | International Organization | Project partner | Letter/ Email | Desirable | Mr. Alexey Tymchikov |

Annex E Summary of the main project achievements by outcome/output

| Component 1: Building institutional capacity | |
|---|--|
| Expected Outcomes | Main Achievements |
| 1.1 Accelerated HCFC phase out and reduction of HFC consumption | New/amended legal framework for the monitoring and control of import, export and use of HCFCs and HFCs in the RF was successfully developed. The national database for ODS was not created due to existing legal restrictions. |
| 1.2 Understanding of the level of residual demand for HCFCs | An ODS recording system for the RF was established and exchange of information about ODS use and interaction between public authorities and law enforcement agencies of countries of the Customs Union was arranged. In cooperation with the MNRE, business community and experts analysed consumption scenarios and developed consumption models which led to the Government regulation No. 228 dated 24.03.2014 (as amended 03.06.2016) "On measures of the state regulation of consumption and circulation of ozone-depleting substances". |
| 1.3 Good communication between and coordination of cross-functional Stakeholders | No evidence was found of an agreed stakeholder needs framework. |
| 1.4 Improved awareness of environmental policies and associated HCFC phase out legislation amongst users and stakeholders; | Information and environmental management systems were significantly improved by development of several thematic websites, online training materials, development of professional training courses, participation of project experts in exhibition, conferences, and thematic working groups. |
| 1.5 Improved understanding and performance of Customs officers | Training materials were developed and training sessions for customs officers were conducted. |
| Component 2: HFC and HCFC life cycle performance analysis | |
| Expected Outcomes | Main Achievements |
| 2.1 Implementation of a sustainable phase out strategy for different HCFC consuming sub sectors | Project final technical report recommendations have been fed into climate policy discussions at the state programme under Government order no. 1413-p of 3.08.2012 |

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| | |
| 2.2 Capacity to adapt to developing phase out scenarios, international climate agreements and technology developments | <p>Climate impact benchmark data for the RF collection and analysis conducted and utilized in “Design and selection of equipment to minimize the climate impact”.</p> <p>Following to the analysis conducted, a report on the “Design and selection of equipment to minimize the climate impact”, was prepared and submitted to MNRE and the MIT</p> |
| Component 3: Phase out of HCFC consumption in the key consuming sectors of Foam and Refrigeration | |
| Expected Outcomes | Main Achievements |
| 3.1 HCFC consumption within Montreal Protocol phase out obligations | <p>In total the project assisted 12 HCFC consumers to convert to HCFC-free alternatives: 4 enterprises of the domestic and commercial refrigerating equipment sector (POZIS; SEPO-ZEM; Biryusa; Orsky plants); 1 producer of commercial refrigerating equipment to cyclopentane (Polyus Company); 2 producers of commercial and industrial refrigerating equipment (Ostrov-Komplekt and Nord); 1 producer of preinsulated pipes (Pipe Insulation Factory); 3 producers of the transport refrigerating equipment sector (Shumerlya plant of purpose-built vehicles; Krasnogorsk trailer industrial complex; Tsentrtranstekhmash); 1 producer of sandwich panels (Ariadna-Yug).</p> |
| 3.2 Clear understanding of the technical capacity to phase out within each sector | <p>Project developed 6 analytical papers to support conversion per each target sector, and 3 technical report of HCFC conversion with cross-cutting issues http://www.ozoneprogram.ru/biblioteka/posobija/</p> |
| 3.3 Phase out of 600 ODP tons HCFC (22,141b,142b) (Direct phase out 60% and 40% by replication) | <p>From 2011 to 2016 Russia has decreased HCFCs consumption by 530,6 ODP tons from 842.69 to 312.09 (Ozone Secretariat)</p> |
| 3.4 Reduction of direct and indirect GHG emissions through HCFC phase out and improved energy efficiency of replacement technology | <p>The project contributed to the systems house engagement in production of PU insulation components (NVP Vladipur); contributed to the systems house engagement in production of PU insulation components (Dow Izolan); development and adoption of premixed ODS free polyol systems at Dow Isolan and Vladipur as part of system houses conversions.</p> |

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| | A pilot CO2 refrigerant based facility (“Working model of a CO2 refrigerating unit for a retail food store”) was established. |
| Component 4: Development of ODS destruction facility and supporting recovery network | |
| Expected Outcomes | Main Achievements |
| 4.1 Technical and commercial understanding of the feasibility of operating ODS destruction facilities | <p>Project developed brief article on development of commercial sustainability model for ODS destruction¹²⁹.</p> <p>Proposals on alternative funding mechanisms for cutting GHG emissions were formulated at UNIDO-Business group meetings and submitted to MNRE. Laws that have entered into force— No. 458-FZ “On amending Federal law “On production and consumption waste” dated 29.12.2014 and No. 226-FZ “On amending Federal Law ‘On Environment Protection’ and certain legislative acts of the Russian Federation” dated 23.07.2013</p> |
| 4.2 Strategy for the provision of ODS destruction across the RF | International Expert prepared recommendations on creation of the ODS-containing equipment disposal network, which were improved and adapted by national experts after translation into Russian. |
| 4.3 Reduction of ODS Banks | UKO company fully received and commissioned the ODS destruction plant, fully operational to date. |
| 4.4 Consistent Monitoring, Inspection and Verification procedures applied across RF | Laws No. 458-FZ “On amending Federal law “On production and consumption waste” dated 29.12.2014 and No. 226-FZ “On amending Federal Law ‘On Environment Protection’ and certain legislative acts of the Russian Federation” dated 23.07.2013 created environment when a producer or an importer are obliged to either pay very big environmental fee or organize a corporate collection and disposal system with possible involvement of specialized disposal company as provided for by regulations and which is much more attractive in terms of commerce. Disposal company may also make profit from selling secondary resources obtained from processing of ODS and ODS-containing equipment. |

¹²⁹ http://www.unido-russia.ru/archive/num4/art4_8/

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| 4.5 Annual destruction of CFC-1,163 MT and CFC-1,294.5 MT which are equivalent to 157.5 ODP tons | Federal Law 226-FZ “On amending Federal Law “On Environment Protection” and certain legislative acts of the Russian Federation” dated 23.07.2013 were adopted and made ODS equipment destruction obligatory. |
| 4.6 The total impact is equal to 1,062,009 t CO₂e. | The federal law on creation of commercially attractive waste treatment measures, Federal law No. 458 “On amending Federal law “On production and consumption waste” dated 29.12.2014, entered into force on 01.01.2015 and by-laws are being improved to ensure its efficiency. |
| Component 5: Stimulating market growth for EE refrigeration and air conditioning equipment | |
| Expected Outcomes | Main Achievements |
| 5.1 Increased market share of more energy efficient refrigeration and air conditioning equipment; | At least one manufacturing company from the domestic and commercial refrigerating equipment sector; commercial and industrial refrigerating equipment; producer of preinsulated pipes; producers of the transport refrigerating equipment sector; and producer of sandwich panels has switched to new equipment with high energy efficiency design. |
| 5.2 Reduction in GHG emissions form refrigeration and air-conditioning systems of 10 MMT CO₂ after 5 years | No evidence provided of GHG reduction calculations |
| 5.3 Greater consumer and user awareness and increased demand for energy efficient technology | Marketing campaign consisted of creation and demonstration of demo-projects, delivering of trainings separately and within training canter, promotion of case and feasibility studies, study tours. |
| 5.4 Improved knowledge of energy efficient design, installation and operating practice across industry | No evidence was found on the publication of information on policy measures and barrier removal approaches No evidence was found on the publication of studies and methodologies for conducting market assessments. |
| Component 6: Technology Transfer | |
| Expected Outcomes | Main Achievements |
| 6.1 Technology Transfer of non-HFC alternatives to | Conversion performed at (1) the systems house to ODS free methyl formate, developed |

| | |
|---|--|
| HCFC applications | technology of using methyl formate in PU systems; (2) production of Hydrocarbon refrigeration and air-conditioning equipment; (3) demo project “Hydrocarbon heat and refrigeration supply systems for a mini-hotel with a shop and laundry”. |
| 6.2 Higher efficiency RAC systems in use across the Russian Federation | No evidence provided |
| 6.3 Increased Private sector energy efficient design capacity; | Production of CO2 refrigeration equipment and demo-project “Organization of manufacture of CO2 refrigerating equipment and presentation of a working model of a CO2 refrigerating unit for a retail food store was organized. |
| 6.4 Increased use of high efficiency manufacturing equipment | New equipment supplied was more energy efficient, then the old one. No other evidences of specific standards applied during the selection process found. New equipment supplied was using more energy efficient devices (motors, VSDs, etc.). |
| Component 7: Feasibility study to determine the best and most integrated strategy for dealing with HCFC production closure | |
| Expected Outcomes | Main Achievements |
| 7.1 Stakeholder facilitation to agree production closure strategy; | Report “Phase out of hydrochlorofluorocarbons production at chemical enterprises of the Russian Federation in 2013-2014 and 2015-2020” was developed and submitted to all key stakeholders. |
| 7.2 Reduction of 1840 metric tons of HCFCs closed. | No evidence provided |

Annex F Summary on Project Identification and Financial Data

The data corresponds to the effective expenditure to date as of Project draft final report (September 2018).

General data

| | |
|--|-----------------------|
| GEF Grant Amount at Project start | USD 18 000 000 |
| GEF Disbursement as of Project operational completion (03.09.2018) | USD 17 980 000 |
| Confirmed Co-finance at CEO Endorsement | USD 40 000 000 |
| Materialized Co-finance at project Mid-term | USD 12 300 000 |
| Materialized Co-finance at Project Completion | USD 45 066 783 |

Source: Project draft final report (September 2018)

Financial data per project components

| Project Component | | Type | GEF Financing, USD | Share, % | Co-financing, USD | Share, % |
|-------------------|---|---------|--------------------|----------|-------------------|-----------|
| 1 | Building institutional capacity | TA | 1,495,981.67 | 48 | 1,600,000 | 52 |
| 2 | HFC and HCFC life cycle performance analysis | STA | 250,000 | 71 | 100,000 | 29 |
| 3 | Phase out of HCFC consumption in the key consuming sectors of Foam and Refrigeration | INV | 10,000,000 | 25 | 30,000,000 | 75 |
| 4 | Development of ODS destruction facility and supporting recovery network | INV | 2,300,000 | 27 | 6,266,782.52 | 73 |
| 5 | Stimulating market growth for energy efficient refrigeration and air conditioning equipment | TA/ INV | 500,000 | 71 | 200,000 | 29 |
| 6 | Technology Transfer | TA/INV | 2,700,000 | 30 | 6,300,000 | 70 |

| | Project Component | Type | GEF Financing, USD | Share, % | Co-financing, USD | Share, % |
|----------|---|------|--------------------|-----------|-------------------|-----------|
| 7 | Feasibility study to determine the best and most integrated strategy for dealing with HCFC production closure | TA | 171,728.31 | 46 | 200,000 | 54 |
| | Project management | | 415,992.40 | 51 | 400,000 | 49 |

Source: Project draft final report (September 2018)

TA – Technical Assistance STA – Scientific and technical analysis INV - Investments

GEF Grant disbursement

| Sponsored Class | Amount GEF Grant Disbursed (USD) |
|--|----------------------------------|
| 1100 – Staff & International Consultants | 233 111,52 |
| 1500 - Local Travel | 181 434,34 |
| 1700 - National Consultants /Staff | 833 973,88 |
| 2100 - Contractual Services | 8 349 995,56 |
| 3000 - Training/Fellowship/Study | 82 508,97 |
| 3500 - International Meetings | 1 253,89 |
| 4300 - Premises | 69 247,53 |
| 4500 - Equipment | 8 053 758,23 |
| 5100 - Other direct cost | 174 716,08 |
| TOTAL: | 17 980 000,00 |

Source: UNIDO Annual Project Implementation Report (PIR). Fiscal Year (FY) 2018 (1 July 2017 – 30 June 2018)

Effective project co-finance from Government and Beneficiaries

| | Organization/Company | Co-financing (USD) |
|-------|---|--------------------|
| 1 | MNRE | 176,465.44 |
| 2 | MIT and Roskosmos (including 1,861,111 USD for Khimprom) ¹³⁰ | 8,894,511.08 |
| 3 | Daikin and Dupont sponsorship | 11,378.00 |
| 4 | Vercont LLC Training Center | 250,000.00 |
| 5 | College #23 (former College #19). Microclimate, Energy Efficiency and Building Automation Center | 100,000.00 |
| 6 | Samsung Electronics, Daikin, Clivet, Remak, Euroclimate, Informtech, Mitsubishi Electric, Testo for College #23 | 180,000.00 |
| 7 | OAP PO Sergo Plant Pozis, Zelenodolsk, Tatarstan | 6,000,000.00 |
| 8 | SEPO-ZEM LLC, Saratov | 5,000,000.00 |
| 9 | OAo Polus Company, Yoshkar-Ola | 2,928,000.00 |
| 10 | NVP Vladipur LLC, Vladimir | 2,500,000.00 |
| 11 | Dow Isolan, Vladimir | 85,000.00 |
| 12 | Pipe Plant LLC, Peresvet, Sergievo-Posad district, Moscow region | 1,552,000.00 |
| 13 | KZKh Biryusa JSC, Krasnoyarsk | 4,212,000.00 |
| 14 | TPK Orsky plants, Orsk | 3,646,000.00 |
| 15 | Shumerlya plant of purpose-built vehicles JSC, Shumerlya, Chuvash republic | 245,000.00 |
| 16 | Krasnogorsk trailer industrial complex JSC, Krasnogorsk, Moscow region | 235,000.00 |
| 17 | Tsentrtanstekhmash LLC, Ryzan | 460,000.00 |
| 18 | Ariadna-Yug LLC, Leningradskaya, Krasnodar region | 105,000.00 |
| 19 | Ostrov-Komplekt LLC, Moscow region | 1,000,000.00 |
| 20 | KPP Nord LLC, Moscow region | 478,299.00 |
| 21 | UKO | 6,315,000.00 |
| 22 | Center of new technologies in production of pre-insulated pipes using ozone and climate safe foaming agents | 693,129.00 |
| Total | | 45,066,782.52 |

Source: Project Draft Final Report (September 2018)

¹³⁰ The indicated co-financing amount was allocated to MIT and Roskosmos under the Governmental Federal Target Programme "National System of Chemical and Biological Safety of the Russian Federation (2015 - 2020)". Since the Programme mainly related to safety issues, it has restricted access. The co-financing was confirmed by several letters from MIT and Roskosmos highlighting co-financing under the specific request of MNRE for Project purpose <http://fb.lighty.ru/budget/evidence/61/roskosmos.TIF>