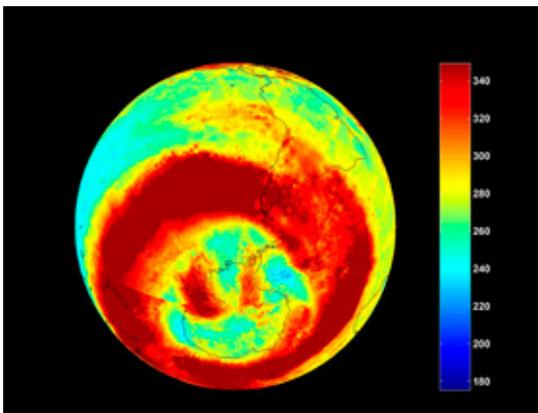


UNIDO/GEF-MNRE PROJECT FOR HCFC PHASE OUT IN THE RUSSIAN FEDERATION





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Upon the initiative of the Ministry of Natural Resources and Environment (MNRE) of the Russian Federation, late in 2008 the United Nations Industrial Development Organization (UNIDO) started preparation of project proposals for phase out of ozone-depleting sub-

stances (ODS) in the Russian Federation with gratuitous financial support of the Global Environment Foundation (GEF). The project was designed to assist the Russian Federation in implementation of its international obligations under the Montreal protocol on substances that de-

plete the ozone layer (1987) and prevent the potential breach of this international agreement in 2015.

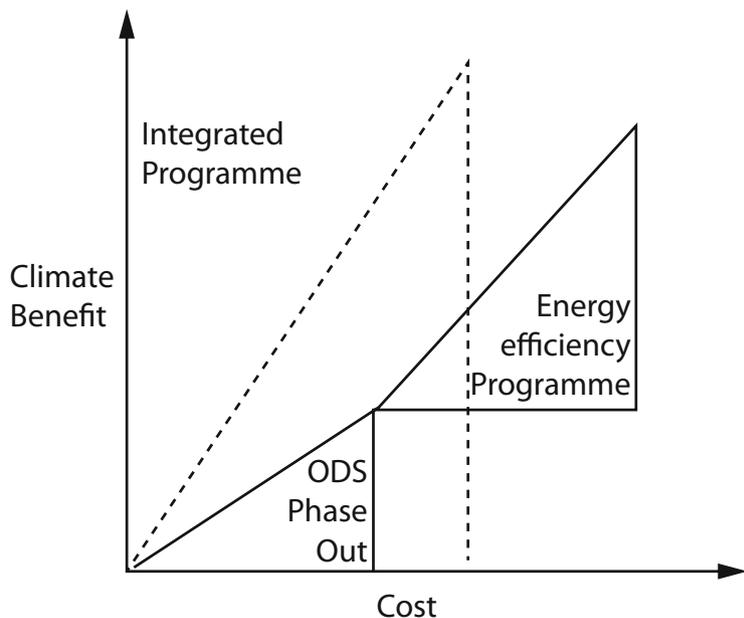
Implementation of UNIDO/GEF Project No. GF/RUS/11/001 “Phase out of HCFCs and Promotion of HFC-Free Energy Efficient Refrigeration and Air-conditioning Systems in the Russian Federation through Technology Transfer” (UNIDO/GEF-MNRE Project) commenced in March 2011 after approval by GEF Council.

The UNIDO/GEF-MNRE Project addresses phase out of hydrochloro-fluorocarbons (HCFCs), ozone-depleting substances which are still widely used in the country.

The UNIDO/GEF-MNRE Project aims primarily at the direct phase out of 600 tons of ozone-depleting potential (ODP) of HCFCs (for the most part,

HCFC Consumption Reduction Schedule for the Russian Federation (requirements of the Montreal Protocol)

1989	base year
1996	freezing
2004	reduction by 35%
2010	reduction by 75%
2015	reduction by 90%
2020	reduction by 99,5%
2030	reduction by 100%



HCFC-21, HCFC-22, HCFC-141b, and HCFC-142b) in the sectors engaged in production of foam and refrigeration equipment to achieve the 2015 target values envisaged by the Montreal protocol. As of January 1, 2015, 490 tons of ODP have been phased out.

Considering that HCFCs are strong greenhouse gases, this should reduce greenhouse gas emissions by 15,6 mln tons in carbon dioxide equivalent.

The second objective of the UNIDO/GEF-MNRE Project is to transfer innovative technologies within the framework of conversion of industrial enterprises that use HCFCs in the manufacturing process, produce polyurethane insulation (pre-insulated pipes, sandwich panels), domestic, medical,

commercial and industrial refrigerating equipment, and repair and maintain air-conditioning and refrigerating equipment. In 5 years by cutting energy consumption these activities will decrease greenhouse gas emissions by additional 10 mln tons in CO₂ equivalent.

The UNIDO/GEF-MNRE Project is directly implemented and co-financed by UNIDO and GEF. To control the Project implementation, MNRE, the Ministry of Foreign Affairs, UNIDO, and UNIDO Center for Industrial Cooperation in the Russian Federation set up a Steering Committee. Since March 4, 2015, functions of the Executing Agency of the Project under a respective agreement with UNIDO are carried out by the International Centre

for Scientific and Technical Information (ICSTI), an international, intergovernmental organization based in Moscow. ICSTI was selected in this capacity in keeping with rules and procedures of GEF and UNIDO and with account of ICSTI status and experience in implementing international and national projects.

With ICSTI coordinating and expert support, the following components of the UNIDO/GEF-MNRE Project are implemented:

- assistance in strengthening institutional capacity;
- transfer of technologies to Russian enterprises;
- HCFC phase out in the foam production sector;
- HCFC phase out in the refrigerating and air-conditioning equipment production and servicing sectors;
- strategy generation for ODS destruction and creation of the ODS recovery network;
- public awareness and promotion of market share growth for energy-efficient refrigerating and air-conditioning equipment.

The UNIDO/GEF-MNRE Project is co-financed by GEF, UNIDO and Russian business entities concerned. The overall volume of financing is USD 58 mln, including USD 18 mln provided by GEF.

The UNIDO/GEF-MNRE Project is expected to be completed by the end of 2015.

Strengthening institutional capacity

Within the framework of the UNIDO/GEF-MNRE Project, **the Russian Government and federal bodies concerned are rendered assistance in elaboration of draft legal and regulatory instruments, sectoral and federal programs and action plans, etc.** These documents contribute to resolving such issues as licensing and quoting HCFC production and import, strengthening customs control over illegal ODS import, banning import of HCFC-based equipment, organizing ODS use control, disposing HCFCs and HCFC-based equipment, promoting use of ozone-friendly refrigerants as well as training, assessment

and obligatory certification of specialists working with refrigerants.

During implementation of the UNIDO/GEF-MNRE Project, the following major changes in the legal framework covering ODS use in the Russian Federation were made:

- design and construction of business and other facilities engaged in production of ODSs and ODS-containing items were banned;
- ODS use is allowed only in refillable containers (excluding ODS in containers of less than 3 liter capacity for laboratory and analytical use);
- obligatory accounting of produced, used, transported, stored, recuperat-



- ed, reclaimed, recirculated, and destroyed ODS was introduced for legal entities and private entrepreneurs;
- landfilling of deteriorated ODS-containing products without ODS recovery was banned;
- criminal liability for illegal ODS import (smuggling) into the Russian territory was introduced;
- the number of customs check-points for ODS import into the Russian territory was limited;
- state control over production, import, export, and use of ODS was introduced.

Development of institutional proposals is carried out by UNIDO-Business working group uniting associations, self-regulating organizations, commercial companies, R&D centres and educational institutions.

In cooperation with major associations of the refrigerating and air-conditioning sector, the group is now developing professional and educational standards, as well as a certification system for professionals of the sector.



Transfer of technologies to Russian enterprises

This component of the UNIDO/GEF-MNRE Project provides for support to Russian producers of refrigerating equipment and foam in conversion to ozone-safe substances and technologies. Technologies are transferred via mechanisms of UNIDO and the Center of Excellence. UNIDO's approaches piloted in a number of countries will permit conversion of 6 foam businesses to methyl formate, a by-product of

natural and associated gas processing use of which was tried and tested in RAS, Brazil, and Mexico, without any considerable conversion investments. Technical assistance to two Russian largest system houses—LLC Dow Isolan (Vladimir) and LLC NVP Vladipur (Vladimir)— is provided in the form of development, adaptation, and introduction of ozone-safe systems for production of PU foams consumed

by hundreds of Russian businesses throughout the entire territory of the Russian Federation.

Two demo projects—a working model of a CO₂ refrigerating unit for a retail food store, and a working model of a standard mini-hotel with a shop and laundry using hydrocarbon refrigerants—will be implemented by the end of 2015 as part of the UNIDO/GEF-MNRE Project.





HCFC phase out in the foam production, refrigerating and air-conditioning equipment production and maintenance service sectors

As part of this component, the following activities have been performed:

OJSC PO Zavod Imeni Sergo (Sergo Plant Manufacturing Group), Zelenodolsk, Tatarstan

Supply, installation, and commissioning of the process equipment for production of medical devices and domestic refrigerating appliances with ozone-safe foam agents (cyclopentane), purchased under the UNIDO/GEF-MNRE Project, were completed.

LLC SEPO-ZEM

Zavod Elektroagregatnogo Mashinostroeniya (SEPO-ZEM Machine-Building Plant) of OJSC Saratovskoe Elektroagregatnoe Proizvodstvennoe Ob'edinenie (Saratov Electric Generating Unit Production Association), Saratov

Supply, installation, and commissioning of the process equipment for production of domestic refrigerating appliances with ozone-safe foam agents (cyclopentane)





tane), purchased under the UNIDO/GEF-MNRE Project, have been completed.

By the end of 2015, conversion of the following businesses to ozone-safe technologies will be performed:

LLC Izolyatsiony Trubny Zavod (Pipe-Insulation Plant), Peresvet, Moscow region

Conversion of the pre-insulated pipe production to methyl formate.

OJSC KZKh Biryusa, Krasnoyarsk (producer of domestic refrigerating appliances)

Improvement of energy efficiency of the production through replacement of obsolete equipment.

LLC Polyus Company, Yoshkar-Ola, Mary-El Republic (producer of commercial refrigerating equipment)

Purchase of processing equipment for conversion to cyclopentane.

LLC TPK Orskie Zavody (Orsk Plants), Orsk, Orenburg region (producer of domestic refrigerating appliances)

Purchase of processing equipment for conversion to cyclopentane.

LLC Ostrov-Komplekt, Moscow region (producer of commercial and industrial refrigerating equipment)

Organization of manufacture of refrigerating equipment based on hydrocarbon refrigerants.

LLC KPP NORD, Moscow region (producer of commercial refrigerating equipment)

Organization of manufacture of CO₂-based refrigerating equipment.

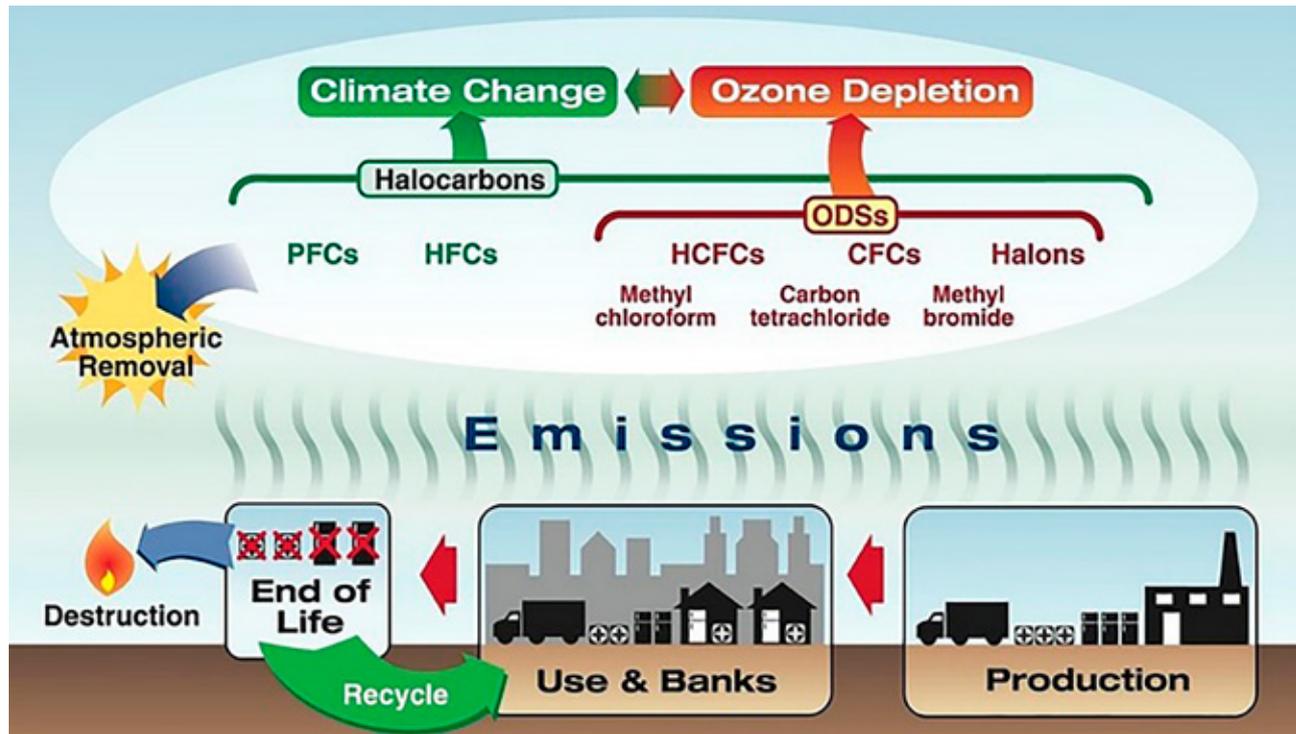
Strategy generation for ODS destruction and creation of the ODS recovery network

After introduction of the ban on landfilling of deteriorated ODS-containing products without ODS recovery for further disposal or destruction, the issue of creating a pilot plant for ODS destruction and processing of ODS-containing equipment became sharp.

UNIDO has accumulated substantial experience in creating national dis-

posal systems for electronic waste, rubber goods, ODSs and ODS-containing products. As part of the UNIDO/GEF-MNRE Project a disposal plant for domestic and commercial refrigerators and freezers, and air-conditioners was purchased. By the end of 2015 the plant will be installed, commissioned and put into operation, including personnel training. In cooperation with the

disposal sector representatives, active development of the legal framework for creation of an ODS disposal and reclamation mechanism, and introduction of measures to develop logistic schemes for ODS collection, train in environmentally-safe approaches to ODS disposal and reclamation, and stimulate consumers to stop using ODS are carried out.





Public awareness and promotion of the market share growth for energy-efficient refrigerating and air-conditioning equipment

Stopping ODS use and stimulating market growth for energy efficient refrigerating and air-conditioning equipment were performed through participation of the UNIDO/GEF-MNRE Project in financing of information support of the transition of the Russian economy to the use of ozone-safe substances and technologies as well as provision of access to information resources of the existing Centre of Excellence.

In 2011–2015:

- UNIDO-Business working group was created, with its activities having made a considerable impact on the development of the Russian legal framework covering protection of the ozone layer.
- A number of conferences and workshops dedicated to ozone-safe technologies, natural refrigerants, and sector standards were held in cooperation with MNRE.
- The annual celebration of the International Day for the Preservation of the Ozone Layer was organized, in 2013 all-Russian competition “Protect the Ozone Layer and Earth Climate”, drawing competitions for schoolchildren, and trainings in use of natural refrigerants for college and university students were held in cooperation with MNRE.



- Sector standards, draft certification and natural refrigerant courses were developed in cooperation with major associations and self-regulating organizations of the air-conditioning and refrigerating sectors.
- www.ozonprogram.ru, the largest information website presenting information about international and Russian legislation on protection of the ozone layer and ozone-safe technologies, description of





implemented projects, and free online training courses, was created. 2 specialized websites for the refrigerating and foam sectors with databases of ozone-safe solutions and online training courses will be created by the end of 2015.

- 6 training facilities for the air-conditioning and refrigerating sectors were created in Moscow and Russian regions in cooperation with representatives of business and educational institutions. These facilities are used for training of college and university students, and advanced training

of technical specialists, officers of federal executive bodies and law-enforcement organizations.



- Regular master classes and training in handling natural refrigerants for the refrigerating sector were organized.
- Analytical equipment for the Ministry of Internal Affairs and rapid-response analyzers for officials of law-enforcement organizations and specialists of educational institutions and businesses of the refrigeration sector were supplied. Training courses for officials of the Federal Customs Service, Ministry of Internal Affairs, and Federal Service for Supervision in the Sphere of Natural Resources Use were developed, and respective training delivered.
- The Union of Eco-Friendly PU Product Manufacturers and Consumers was created, training courses developed, technical support center organized, and provision and promotion of ozone-safe systems of PU components facilitated.
- Support in promotion of WorldSkills competition in the Russian Federation was provided.



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