Annual Report 2015

UNIDO Centre for International Industrial Cooperation in the Russian Federation

Contents

About the UNIDO CIIC in Russia

The UNIDO Centre for International Industrial Cooperation (CIIC) was established in 1989 within a framework of the Agreement between UNIDO and the Government of the Russian Federation. The UNIDO CIIC is an integral part of the UNIDO ITPO Network.

The main purpose of the UNIDO CIIC, defined by the Agreement, is to promote international cooperation in the economic, technological, industrial and scientific spheres between Russian enterprises, associations and organizations and firms from developed and developing countries.

The UNIDO Centre acts as a catalyst and source of technical expertise in the design, organization and implementation of key events related to investment promotion and technology transfer in the Russian Federation.

The UNIDO Centre gives special attention to environmental considerations, development of SMEs and employment generation in line with UNIDO strategies and policies in these fields.

In the implementation of its activities, the Centre uses the programs, methodology, tools and software developed by UNIDO to promote investment and technology.

Major target beneficiaries of the Centre

- enterprises and organizations in the Russian Federation including industrial SMEs interested in cooperation with foreign partners;
- private enterprises, institutions and governments in developing countries and countries with economies in transition, which have increased possibilities to enter into different forms of partnerships with industrial enterprises in the Russian Federation;
- institutions that are involved in technology promotion.

PRIORITY ACTIVITIES OF THE CIIC:

- **Facilitate the flow of investments and other resources from the country's industry in order to implement various projects in Russia;**
- **Mobilize investment resources In order to implement industrial investments projects in developing countries and countries in transition;**
- **Assist in professional development of capable leaders, government employees involved in the implementation of projects in the field concerning UNIDO activities;**
- **Control the UNIDO projects in Russia;**
- **Select, design, analyze and promote industrial investment projects carried out jointly by Russian and foreign entrepreneurs;**
- **Communicate information on legal regulation of business;**
- **Assist in establishing contact with the Russian state institutions, local authorities, The Chamber of Commerce and Industry and specialized consulting companies;**
- **Select Russian partners interested in investment cooperation with foreign companies;**
- **Support the Russian and foreign partners in the preparation of preliminary feasibility study of investment projects;**
- **Assist in providing financial Investment for cooperation projects:**
- **Assist local and foreign companies in organizing investment associations, symposiums and conferences.**

HIGHLIGHTS IN 2015

INTERNATIONAL CONFERENCE "PARTICIPATION OF THE RUSSIAN FEDERATION IN DEVELOPMENT OF THE NEW UNITED NATIONS AGREEMENT ON CLIMATE CHANGE (PARIS 2015)"

On April 15, 2015, the UNIDO Centre for International Industrial Cooperation in the Russian Federation took part in the International Conference, which was held in the framework of the development of the new UN agreement on climate change.

The event was organized by the Russian ecological party „The Greens" and the Constructive Ecological Party „KEDR".

At the Conference, the CIIC Director Sergey Korotkov reported on «UNIDO assistance to the state bodies of the Russian Federation in its efforts to comply with the conventions and protocols related to climate change». Special attention was paid to skills development and capacity building, UNIDO projects in Russia and the Strategy for Inclusive and Sustainable Industrial Development (ISID).

The Conference was attended by representatives of Russian non-governmental environmental organizations, public authorities, representatives of science and business from several countries – Australia, Azerbaijan, Belarus, Denmark, France, Germany, Great Britain and Ukraine.

The Conference participants discussed a wide range of issues concerning climate change and its consequences for the world economy, agreed on a common position on the need to improve energy efficiency in Russia and came to an understanding of Russia's interest in the agreement.

We remind that the Paris climate change conference (COP 21) that will take place in December 2015 is expected to sign an international agreement on climate change mitigation that would replace the Kyoto Protocol to address one of the main global problems on carbon dioxide emissions restriction.

ST. PETERSBURG INTERNATIONAL ECONOMIC FORUM

18-20 June, 2015 the 19th International Economic Forum ended in St. Petersburg. The Forum is considered to be one of the leading and important international events for business and the global economy.

The Forum was attended by the UNIDO delegation headed by the Director-General Li Yong. Within the visit, the Delegation held a series of meetings with Minister of Natural Resources and Environment of Russia Sergey Donskoy, Minister of Trade and Industry of Russia Denis Manturov, President of JSC „Russian Railways“ Vladimir Yakunin and Deputy Chairman of VEB Sergey Vasiliev.

On June 19 Mr. Li Yong made a speech at the panel session „Green growth and the Economics of climate change“, stressing the need to pay more attention to the factors of „green“ and sustainable growth and the adoption of more specific measures aimed at reducing emissions and improving resource efficiency.

In VEB Business area the CIIC Director Sergey Korotkov made a presentation of the UNIDO project «BRICS & UNIDO: Technology and Innovation for SMEs Development» for the participants of the BRICS Business Forum.

Each year the number of participants of the Forum exceeds 7000 people who come from more than 70 countries. The forum brings together leading politicians and businessmen, who meet to identify and discuss key challenges that face the Russian Federation and global community and to attract the necessary instruments for dealing with it.

THE UN INFORMATION CENTRE IN MOSCOW HOSTED A LECTURE FOR THE MGIMO-UNIVERSITY STUDENTS ABOUT UNIDO PROJECTS IMPLEMENTED IN RUSSIA

On June 26, 2015, the UN Information Centre in Moscow, located on the Leontiefski lane, hosted a lecture for the MGIMO-University students about UNIDO projects implemented in Russia. UNIDO National expert of the UNIDO Centre in the Russian Federation Maxim Eliseev was invited as a lecturer.

He described main activities of UNIDO, its current projects and the experience achieved in the field of industrial development by now. Presentation showed a complex structure of the United Nations with the existing subsidiary bodies, committees, funds and specialized agencies, among which UNIDO is positioned.

During the conversation, members of the audience asked various questions about the UNIDO activities — for example, about the possible existence of the preferred geographical areas of cooperation, about difficulties and challenges faced by UNIDO in the process of implementing certain projects and so on.

Also students were highly interested in the extension of the UNIDO scope, the arrangements for foreign student internships and future employment prospects.

We hope that students became even more enthusiastic about learning different activities of the organizations involved in the UN system, the concept of sustainable development and environmental management, and maybe in the future will fulfill themselves in this field.

THE CEREMONY OF OFFICIAL OPENING OF THE COMPLEX FOR THE THERMAL TREATMENT OF HAZARDOUS WASTES WITHIN THE JOINT PROJECT OF UNIDO AND JSC "RUSSIAN RAILWAYS"

On July 28, 2015, the ceremony of official opening of the complex for thermal treatment of hazardous wastes took place in c. Yaroslavl. The construction of the complex was made by JSC "Russian Railways" within the co-financing of UNIDO project "Environmentally sound management and final disposal of PCBs at the Russian Railroad Network and other PCB owners".

The President of the JSC "Russian Railways" Mr. Yakunin, the Managing Director of UNIDO Mr. Philippe Scholtes, the Governor of Yaroslavsky region Mr. Yastrebov, the representatives of the executive authorities of the Russian Federation, Republic of Belarus and Armenia took part in the event.

Mr. Philippe Sholtes stressed that PCBs are one of the most dangerous POPs, recycling and prevention of which is one of the priority tasks facing the international community. The Managing Director of UNIDO praised the company's efforts to create the Complex for thermal treatment of hazardous wastes and expressed the hope that this experience will be extended to railway enterprises in Armenia, Belarus and Kazakhstan. A hope for the development and implementation of other existing projects in the field of environmental protection and implementation of energy efficient solutions was also expressed by the President of JSC "Russian Railways" V. Yakunin.

The Complex with a capacity of 12 tons per day is constructed on the basis of the Inter-state Centre for Environmental railway safety and the Scientific and Production Centre for environmental protection. The complex is built in accordance with Russian and international standards for thermal treatment plants. In the framework of the UNIDO project, PCB-containing wastes and materials will be disposed at the Complex facilities. The control of air and soil pollution, as well as monitoring the status of incoming waste will be carried out by the accredited laboratory of the Scientific and Production Centre for environmental protection. This plant will benefit not only the enterprises of JSC "Russian Railways", but also third-party organizations based in the city of Yaroslavl and the Yaroslavl region.

ESTABLISHMENT OF BRICS FOUNDRY ASSOCIATION

On 10 September, 2015, the signing of the Constitution for establishment of interregional BRICS Foundry Association took place in Nizhny Novgorod at the V BRICS Foundry Forum.

BRICS Foundry Association is the project of multilateral, interregional, industrial cooperation and the first industrial association of BRICS countries.

Establishment of BRICS Foundry Association was initiated by national Foundry associations of BRICS countries: Brazilian Foundry Association (ABIFA), Russian Association of Foundrymen (RAF), The Institute of Indian Foundrymen (IIF), China Foundry Association (CFA), South African Institute of Foundrymen (SAIF), which have experience of cooperation in the frame of yearly Foundry Forums since 2011.

The aim of the Association is consolidation of national foundry enterprises and organizations of BRICS countries for international industrial cooperation development and assisting to implementation of national development plans for providing BRICS economies sustainability as integral part of global economy. Assisting to BRICS SMEs access to comprehensive, modern technologies and innovations for foundry industry is also one of the key tasks of BRICS Foundry Association.

Foundry industry is a basic pillar of machine building and machine tool industry: 30 – 50 % of mass of tools, machines, equipment, tools etc. consists of foundry products. At the same time foundry enterprises closely connected with metallurgy production and technology by providing foundries with metal raw materials. Thus, Foundry industry is a vital technology chain in production cluster “Metallurgy– Foundry–Machine building” which defines rate of industrial development of real economy national sector and which is considered as one of priority, key factors of country sustainable economy.

Establishment of transnational industrial association is a new stage of cooperation between BRICS countries. On the initiative of UNIDO Centre in the Russian Federation a comprehensive proposal for the development of industrial clusters “Metallurgy– Foundry–Machine building” was included in BRICS Roadmap where BRICS Foundry Association is an important consolidating technology chain.

Consolidation of industrial efforts of BRICS countries in particular branches and concrete projects is aimed to solution of key tasks of sustainable economic growth: development of real sector of economy, industrial development, development of technology and innovation,

development of SMEs business.

The role of the industry Associations was emphasized at the BRICS Summit 2015 in Ufa at the discussions of BRICS Roadmap accepted by BRICS leaders for further development:
"Russia has also drafted a Roadmap for BRICS investment cooperation. We expect our partners to contribute to it so that we could finalize the documents before the end of this year. We had consultations with our business representatives and have already placed some 50 projects and business initiatives on this roadmap. These include proposals to set up an Energy association, create an International Centre for energy studies and a Foundry Union." (From the speech of President of Russia Vladimir Putin at BRICS Leaders' meeting in expanded format. July 9, 2015, Ufa http://en.kremlin.ru/events/president/transcripts/49895).

IPLA GLOBAL FORUM 2015

On October 6-8, 2015, IPLA Global Forum 2015 “Science-Policy-Business-Community Interface. Towards a Resource Efficient Nation: Minimum Landfilling and Maximum Resource Recovery” was held in Moscow Congress Center of World Trade Center.

The Forum serves as an annual meeting of the International Partnership for Expanding Waste Management Services of Local Authorities (IPLA), which aims to promote the cooperation between private sector, local authorities and public stakeholders in order to reinforce Public-Private Partnership (PPP) initiatives for waste management worldwide. Previous to Moscow the Forum was hosted in the Republic of Korea, Sweden and Brazil.

The most relevant environmental issues, including resolving of the current environmental challenges, prevention of the different pollution-types both in Russia and the neighboring countries, the implementation of new technologies for waste management as well as the possible ways for the regional and interregional cooperation and eco-educational campaigns were discussed during the two-days Forum.

More than 300 representatives from the governmental and local authorities, public and academic institutions, Russian and international private companies, as well as more than 20 international environmental consultants participated in the event. There were discussed highly relevant points, such as extended producer responsibility, implementation of the 3R principle in Russia (Reduce, Reuse and Recycle) and PPP-strategies for waste management in Russia and worldwide.

The Forum was supported by UNIDO ITPO in the Russian Federation. The Head of the Office, Mr. Sergey Korotkov, made an opening speech emphasizing the significance of the issues discussed during the Forum and pointing out their connection to the principles of inclusive and sustainable industrial development and environmental preservation. Mr. Korotkov also voiced approval towards IPLA initiatives from the side of UNIDO.

The main outcome of the Forum was the Declaration on interregional cooperation for waste management and natural resources’ restoration as a step towards economic growth based on the “closed-loop cycle”. It is planned that the Declaration will be signed by the representatives of the local authorities, private sector and industrial companies as well as by any other counterpart within waste management sector.

UNIDO Projects in Russia

In 2015 UNIDO Centre for International Industrial Cooperation in the Russian Federation continued implementation of the following projects:

1. Phase Out HCFCs and Promotion of HFC-free Energy Efficient Refrigeration and Air-Conditioning Systems in the Russian Federation Through Technology Transfer;
2. Market Transformation Programme on Energy Efficiency in GHG-Intensive Industries in Russia;
3. Partnership between Russia and Brazil in technology and innovation for development of SMEs with expansion to other BRICS countries;
4. BAT/BEP Center For Environmentally Safe Disposal Of Potentially Hazardous Consumer Products And Industrial Wastes;
5. Environmentally Sound Management and Final Disposal of PCBs at the Russian Railroad Network and Other PCB Owners.

More information on each of the projects is set out below.

PHASE OUT OF AND PROMOTION OF HFC-FREE ENERGY EFFICIENT REFRIGERATION AND AIR-CONDITIONING SYSTEMS IN THE RUSSIAN FEDERATION THROUGH TECHNOLOGY TRANSFER

DESCRIPTION OF THE PROJECT. PROJECT ADVANCEMENT

The Project aims at fulfilling Russia's obligations under the Montreal Protocol on substances that deplete the ozone layer. It was initiated by the Ministry of Natural Resources and Environment, and organized by UNIDO and GEF that directly implement and co-finance the Project.

The Project aims primarily at the direct phase out of 600 tons of ozone-depleting potential (ODP) of HCFCs (for the most part, 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 were phased out. Considering that HCFCs are strong greenhouse gases, this would reduce greenhouse gas emissions by 15,6 mln tons of carbon dioxide equivalent.

The second objective of the 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 service air-conditioning and refrigerating equipment. In 5 years these activities will decrease greenhouse gas emissions by about 10 mln tons of CO2 equivalent at the account of reduced energy consumption.

Within the project it is prescribed to implement the following activities:

1) Assistance in institutional capacity strengthening;
2) Transfer of technologies to Russian enterprises;
3) HCFC phase out in the foam production sector;
4) HCFC phase out in refrigerating and air-conditioning equipment production and servicing sectors;
5) Strategy generation for ODS destruction and creation of the ODS recovery network;
6) Information of the public, and promotion of the market share growth for energy-efficient refrigerating and air-conditioning equipment.

IN BRIEF

- **Project number:** IT3541
- **Implementation dates:** 2011 – 2015
- **Sponsor**: GEF
- **Main partners:** 14 Russian enterprises
- **Objective:** HCFC phase out and transfer of innovative technologies as part of conversion of production facilities using HCFC
- **For more information please contact:**
  Marina Tumanova, Deputy director of the International Centre for Scientific and Technical Information (ICSTI),
  info@icsti.su
- **Website:** www.ozoneprogram.ru, www.foamunion.ru,www.hvaccenter.ru

As part of component **"Institutional capacity strengthening"**, the Russian Government and federal executive bodies concerned are rendered assistance in elaboration of draft legal and regulatory instruments, sectoral and federal programs and action plans, etc. In this regard, UNIDO–Business working group of associations, self-regulating organizations, commercial companies, research institutes, and educational institutions was established.

As part of components **“Transfer of technologies to Russian enterprises”**, **“HCFC phase out in the foam production sector”**, and “**HCFC phase out in refrigerating and air-conditioning equipment production and servicing sectors”**, Russian producers and manufacturers of refrigerating equipment and foam are provided with support in conversion to ozone-safe substances and technologies.

Component **“Strategy generation for ODS destruction and creation of the ODS recovery network”** provides for creation of a pilot facility on ODS destruction and ODS-containing equipment processing.

Component **“Information of the public, and promotion of the market share growth for energy-efficient refrigerating and air-conditioning equipment”** is aimed at dissemination of information about transition of the Russian economy to ozone-safe substances and technologies as well as provision of access to information resources created in this regard.

The project has been started in March 2011 and is currently implemented on 99%.

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.

Project beneficiaries

«Dow Izolan» LLC, Vladimir
«NVP Vladipur» LLC, Vladimir
«PO Sergo plant» JSC Zelenodolsk, Republic of Tatarstan
«SEPO-ZEM Machine-Building Plant of Saratov Electric Generating Unit Production Association» LLC, Saratov
«Pipe insulation plant» LLC , Peresvet, Moscow region
«KZKh Biryusa» JSC , Krasnoyarsk
«Polyus Company» LLC, Yoshkar-Ola, Republic of Mary El
«TPK Orsk plants» LLC, Orsk, Orenburg region
«Ostrov-Komplekt» LLC, Moscow region
«KPP Nord» LLC, Moscow region
«Tsentrtranstekhmash»LLC, Ryazan
«Shumerlya purpose-built vehicle plant» JSC, Shumerlya, Chuvash Republic
«Krasnogorsky van plant» JSC, Krasnogorsky, Republic of Mary El
«Ariadna-Yug» LLC, Leningradskaya, Krasnodar region

Other participants and partners

Ministry of Internal Affairs, Ministry of Education and Science, Federal Customs Service, Federal Service of Russia on Hydrometeorology and Monitoring of the Environment of the Russian Federation, Russian Union of the Refrigeration Industry Enterprises, Belarus Ministry of Natural Resources, self-regulating organization NP ISZS–Montazh, Association of Electronics and Computer Hardware Commercial and Manufacturing Companies (RATEK), Daikin, Elastokam, Kontakt, Podolsktorgtekhnika, Kholodbyt association, State Engineering College No. 23, International

Refrigeration Academy, International Higher Education Academy of Sciences, Institute of Refrigeration and Biotechnologies (IKhBT) of the Saint-Petersburg National Research University of Information, Mechanics and Optics (SPbNIU ITMO), D. Mendeleev University of Chemical Technology of Russia, Gubkin Russian State University of Oil and Gas, WorldSkills, GAOU UTs Professional, National Association of PU Panel Manufacturers (NAPPAN) and Association of Preinsulated Pipe Manufacturers and Consumers (APPTIPI).

EVENTS

The seventh steering Committee meeting; 09 – 10 April 2015	9-10 April 2015, the 7th meeting of the steering Committee of UNIDO/GEF-MNRE Project "Phase out of HCFCs and Promotion of HFC-Free Energy Efficient Refrigeration and Air-conditioning Systems in the Russian Federation through Technology Transfer" took place in Vienna, Austria. The report 2014 of the Project implementation group and work plan for the Project in 2015 were reviewed during the meeting. Members of the steering Committee acknowledged the work of the Group for the period 1 March 2014 to 1 March 2015 as satisfactory and approved the overall work plan 2015 on project implementation by the National contractor.
The discussion of the initial version of the professional standard draft "Klimatechnik air-conditioning and refrigeration equipment"; 28 April 2015	28 April 2015, the discussion of the initial version of the professional standard draft "Klimatechnik air-conditioning and refrigeration equipment", prepared by the working group, made of representatives of NP SRO "ESBC-Project", NP SRO "Iszs-MONTAZH", "the Association of professional companies in industry of climate" (APIC), a non-Profit organization "Russian Union of refrigeration industry enterprises" and other relevant organizations, Centre for international industrial cooperation UNIDO in the Russian Federation, as well as the SAEI "Professional" was organized. Professional aspects of Klimatechnik refrigeration, heat pump equipment and equipment for air conditioning, as well as its generalized employment functions were discussed. Following the event, it was decided to send the draft of professional standards to the members of the relevant associations and unions for evaluation, to place its text on the developers websites and organize a forum to ensure openness of discussion.
Seminar on non-ODS technologies in the foam sector; 16 September 2015	A joint seminar of the MNRE, UNIDO and the International centre for scientific and technical information (ICSTI) "Non-ODS technologies in the foam sector" dedicated to the International day of ozone layer protection was held in Moscow on September 16. The seminar was attended by representatives of the MNRE, experts of ICSTI, heads of industry unions, associations and major enterprises of the sector. During the seminar the possibility of the use of ozone-safe foamers such as

	cyclopentane, methyl formate, hydrofluoroolefins, methylal and water in the Russian Federation were presented, as well as training programs for their use were announced. Many of these technologies were tested at the Russian enterprises in the framework of the UNIDO/GEF – MNRE Project.
Seminar "Scientific and technical information, statistics and information: national experience and international cooperation"; 02 October, 2015	2 October 2015, the UNIDO/GEF - MNRE Project was presented at the International seminar "Scientific and technical information, statistics and information: national experience and international cooperation" held within the exhibition "International Techmart Vietnam 2015" (Hanoi, Vietnam). The seminar was attended by over 90 representatives of ministries, departments and agencies in the field of education, science and technology from Bulgaria, Egypt, Georgia, Hungary, India, Kazakhstan, Korea, Moldova, Mongolia, Russia, Romania, South Africa, Vietnam, and also representatives of embassies of several countries accredited in Vietnam. As part of the seminar, the ICSTI experience in implementing the Project as a National implementing Agency was presented. Special interest of participants was received through information on the implementation of the Project components associated with the transfer of ozone-safe technologies, provision of technical assistance to Russian enterprises in refrigeration and foam sectors, development of professional standards and establishment of a training programmes for ozone-safe refrigerants and foamers Given the fact that many of the workshop participants represent countries, operating under the 5th Article of the Montreal Protocol (developing countries), this information can be used to develop and implement their own national phase out programmes for ozone-depleting substances.
Training workshop "Demonstration model of a standard mini-hotel with integrated store and Laundry facilities on natural refrigerants" 16,20,25 November 2015 	16, 20, 25 November 2015, the training workshops "Demonstration model of a standard mini-hotel with integrated store and Laundry facilities on natural refrigerants" were held at the training center «Ostrov-Komplekt» LLC located in Mytischi. The entire training program, organized within the framework of the UNIDO/GEF-MNRE Project, meant the training of three teams of specialists. Employees of the SC "Ostrov" were the first who passed the training. The event was attended by representatives of the United Nations industrial development organization (UNIDO), the Ministry of natural resources and environment (MNRE), International centre for scientific and technical information (ICSTI), the Russian Union of refrigeration industry enterprises (ROSSOYUZHOLODPROM), companies operating on the Russian market of refrigeration equipment. The workshops highlighted the advantages of hydrocarbon refrigerants and their use. After reviewing the work of fully functioning model of the heating and cooling system, the

	attendees were able to verify the high energy efficiency of this solution using a hydrocarbon refrigerant propane. Moreover, the technical and economic aspects of working with hydrocarbon refrigerants, features of the production modernization in order to produce refrigeration equipment on these refrigerants were marked.
Seminar "Organization of production of CO2 refrigeration equipment. The current layout of CO2 refrigeration unit for food retail store"; 24 November 2015 	24 November 2015, the final seminar "Organization of production of CO2 refrigeration equipment. The current layout of CO2 refrigeration unit for food retail store " was held at the facility of the Russian manufacturer «KPP Nord» LLC. The seminar was attended by more than 20 representatives of UNIDO, the ICSTI, Rossoyusholodprom and refrigeration companies of the Russian Federation. The seminar addressed the issues of changes in international and national legislation in the sphere of protection of the ozone layer, the economic aspects of carbon dioxide use for food retail stores. The seminar participants got acquainted with the current layout of the CO2 refrigeration unit for food retail store and features of production modernization of CO2 refrigeration equipment.

MAJOR ACHIEVEMENTS IN 2015

Component 1. Designing management mechanisms and control over implementation of the Project

1. 04.03.2015, the agreement between UNIDO and the International centre for scientific and technical information (ICSTI) was signed (UNIDO Execution Agreement);
2. 09.04.2015-10.04.2015, the seventh meeting of the steering Committee of the Project was held;
3. The Project office at the address: the ICSTI, Moscow, Kuusinen st., 21B was formed: necessary office equipment and supplies were procured, an inventory was conducted;
4. The Project Temporary team of ICSTI was formed;
5. A report on the beginning of works, including work plans, procurement, monitoring and evaluation was prepared;
6. 3 report on the progress of work and 3 financial report for each reporting period were prepared and sent to the UNIDO CIIC office;
7. The Project implementation reports were prepared for the GEF.

Component 2. Institutional capacity strengthening

1. **Institutional support to the Ministry of Natural Resources and Environment to fulfillinternational commitments of the Russian Federation in the field of protection of the ozonelayer.**

- During reporting period, the following changes took place in legal regulation in the field of

ozone-depleting substances(ODS) in the Russian Federation and on the territory of the EEU Member states:

- the Decree of the Ministry of Russia No. 200 dated 05.05.2015 "On amendments to the Decree No. 319 dated 09.07.2014 "On approval of the procedure of calculation of annual allowable production of ozone-depleting substances in the Russian Federation and the annual calculation of the number of specific ozone-depleting substances in an acceptable amount of consumption of ozone-depleting substances in the Russian Federation" was signed;
- 29.05.2015, the Agreement on the movement of ozone-depleting substances and products containing them and calculation of ozone-depleting substances in mutual trade of the EEU member states was signed in the framework of the second meeting of the Eurasian intergovernmental Council at the level of heads of governments in Burabay (Republic of Kazakhstan).

- The following events were attended::
  - 14.04.2015-15.04.2015 – Field meeting of the Ministry of Natural Resources and Environment (MNRE) and the Ministry of Industry and Trade (Minpromtorg) on the problem of chemical and technological security of the Russian Federation in Perm;
  - 26.05.2015-28.05.2015 – Annual meeting of the Regional ozone network for Eastern Europe, Caucasus and Central Asia in Yerevan, Republic of Armenia;
  - 20.07.2015-24.07.2015 – 36-th meeting of the open-ended Working group of the Parties to the Montreal Protocol in Paris, French Republic;;
  - 01.11.2015-05.11.2015 – 27-fourth meeting of the Parties to the Montreal Protocol in Dubai, United Arab Emirates.
- Draft of the report on production, consumption, export and import of ODS in the Russian Federation in 2014 was prepared and submitted to MNRE (to be sent to the Secretariat for the Vienna Convention and the Montreal Protocol).
- The necessary measures for the establishment and adoption in the prescribed manner of professional standard "Klimatechnik refrigeration, heat pump equipment and equipment for air conditioning" were Initiated and implemented.
- The necessary measures for the establishment and adoption in the prescribed manner of international standard "Refrigerating systems and heat pumps. The competence of personnel" were initiated and implemented.
- Counseling on monitoring the treatment of ODS was provided to the Rosprirodnadzor employees.
- Counseling of the ozone office representatives and the Executive authorities of the Republic of Belarus on the use of ozone-friendly technologies during the training of professionals of the refrigeration sector.
- The following documents were prepared and sent to the Ministry of natural resources:
  - the analytical review "Foreign legal base regulating the handling of alternative refrigerants";

– the resolution of the workshop "Disposal of ozone-depleting substances and products containing them. Changes in legislation".

2. **Institutional support to the Ministry of internal Affairs and the Federal Customs Service of Russia on fulfillment of international obligations of the Russian Federation in the field of protection of the ozone layer .**

- Assistance in recruitment of expert and hardware selection for the FCS was provided.
- Counselling on the issues of illegal trafficking of ODS was provided to the FCS employees.
- The ICSTI received a letter from the Central operational customs of the FCS Central customs directorate on encouragement of employees of the Temporary Project group for their assistance in conducting joint events aimed at the detection of illegal movements of ODS in the territory of the Customs Union.

Component 3. HCFC phase-out in foam production sector and refrigeration sector

1. Supply, installation and commissioning of technological equipment purchased through the Project funds to equip the manufacturer of household refrigeration equipment «SEPO-ZEM» LLC (Saratov) were completed;
2. Supply, installation and commissioning of technological equipment for «ECOPUR» LLC, Moscow (conversion to ozone-safe technologies «Dow Izolan» LLC and «Vladipur» LLC, Vladimir, Russia) were completed;
3. Contests were held , the contracts were signed and technological equipment for the following enterprises in foam sector was supplied:
   - «Pipe insulation plant» LLC , Peresvet, Moscow region;
   - «KZKh Biryusa» JSC , Krasnoyarsk;
   - «Polyus Company» LLC, Yoshkar-Ola, Republic of Mary El;
   - «TPK Orsk plants» LLC, Orsk, Orenburg region;
   - «Tsentrtranstekhmash»LLC, Ryazan;
   - «Shumerlya purpose-built vehicle plant» JSC, Shumerlya, Chuvash Republic;
   - «Krasnogorsky van plant» JSC, Krasnogorsky, Republic of Mary El;
   - «Ariadna-Yug» LLC, Leningradskaya, Krasnodar region;
   - «Dow Izolan» LLC, Vladimir.
4. Contests were held , the contracts were signed and technological equipment for the following enterprises in refrigeration sector:
   - «Ostrov-Komplekt» LLC, Moscow region;
   - «KPP Nord» LLC, Moscow region.
5. The demo project "Heating and cooling system of the mini - hotel with integrated shop and a laundry on the hydrocarbon refrigerants" was implemented;
6. The demo project "A working model of refrigeration unit using carbon dioxide to food retail

store was implemented";

7. The Union of manufacturers and consumers of environmentally friendly polyurethane foam products (official website – www.foamunion.ru), composed of two industry associations and the largest companies in the sector of foamed materials, was formed;
8. Testing of components for the production of polyurethane foam insulation with the use of non-ODS alternative blowing agents (methyl formate, hydrofluoroolefins) was carried out at « NVP « Vladipur »LLC and« Dow Izolan» LLC (Vladimir);
9. 15.07.2015 a meeting of representatives of manufacturers and consumers of polyurethane foam products, dedicated to the creation of the Union of manufacturers and consumers of environmentally friendly polyurethane foam products was held;
10. 05.08.2015 the ICSTI, which is the national executor of the UNIDO/GEF-MNRE Project and the Russian Union of refrigeration industry enterprises (Rossoyuzholodprom) signed a Memorandum of understanding. On the basis of this document, a cooperation was established in order to inform representatives of the refrigeration industry about new technologies that are safe for the ozone layer of the atmosphere and the Earth's climate;
11. 16.09.2015 a seminar on "Ozone-friendly technologies in the foams sector" was held in Moscow;
12. Advisory assistance for the conversion of production capacities to technologies which are safe for the ozone layer of the atmosphere and the Earth's climate was provided to the members of the Union of manufacturers and consumers of eco-friendly polyurethane foam products;
13. Advisory assistance on the preparation and implementation of investment subprojects was provided to the Project enterprises.

Component 4. Development of ODS utilization schemes

1. Supply, installation and commissioning of technological equipment purchased through the Project funds were completed with the purpose of creating the first Russian enterprise for disposal of household refrigerators and freezers and other products, containing ODS, for «UKO «Dedenevo» LLC , Dmitrovsky district, Moscow region;
2. The workshop "Disposal of ozone-depleting substances and products containing them. Changes in the law. Part I" was held on 05.08.2015;
3. The workshop "Disposal of ozone-depleting substances and products containing them. Changes in the law. Part II", dedicated to the official opening of the enterprise for the disposal of household refrigerators and freezers and other products containing ODS was held on 28.12.2015.

Component 5. Organization of training for working with refrigerants

1. The following training courses on the use of natural refrigerants were developed:

- "the safe use of hydrocarbon refrigerants;
- "the safe use of carbon dioxide as a refrigerant";

- "the safe use of ammonia as a refrigerant".

2. Training course for engineers to work in enterprises producing pre-insulated pipes in polyurethane foam isolation was developed
3. Training course "International and Russian legislation in the sphere of protection of the ozone layer" was developed;
4. Programs for additional professional education – training "Installation, maintenance and commissioning of refrigeration, heat pump equipment and equipment for air conditioning based on vapour compression refrigeration machines" for 4 categories of professionals were developed;
5. 23.07.2015-24.07.2015 a workshop on "Control of ODS treatment in the Russian Federation" was organized in Moscow;
6. 10.09.2015 a training workshop on "the safe production of pipes in foam insulation with the use of methyl formate as a blowing agent was organized on the territory of «Pipe insulation plant» LLC, Moscow region;
7. 21.10.2015 a workshop on "the safe use of cyclopentane and its mixtures " was organized on the territory of «TPK «Orsk plants» LLC, Orsk, Orenburg region;
8. 27.10.2015 a workshop on "the safe use of cyclopentane and its mixtures " was organized on the territory of «Polyus» JSC , Yoshkar-Ola;
9. A concept of a Training centre "for work with environmentally friendly energy efficient refrigerants in refrigeration and air-conditioning equipment and recovery of ODS and fluorinated greenhouse gases from the equipment containing them for further regeneration and destruction" was prepared;
10. Training and methodological stands were designed and produced, equipping of the training centre was performed.

Component 6. Public awareness activities

1. The Project team continued to support and update the Project web site - www.ozoneprogram.ru. A section for tenders advertising was created.
2. Two Internet portals for the different target user groups – www.foamunion.ru for the foam sector and members of the Union of producers and consumers of environmentally friendly polyurethane foam products and an educational Internet portal www.hvaccenter.ru hosting online training courses, courses on natural refrigerants, information on non-ODS technologies in refrigeration sector and demonstration projects.
3. 03.03.2015 the Conference "Changes in the legislation of the Russian Federation related to the protection of the ozone layer and the Earth's climate. Inter-state and professional standards" was organized within the largest industry exhibition "Climate World – 2015", in Moscow.
4. 16.08.2015-22.08.2015 the Project team took part in the 24th International Congress of refrigeration in Yokohama, Japan, on the result of which an analytical report was prepared and presented to the MNRE.

5. 16.09.2015 a joint seminar Ministry of Russia, UNIDO and ICSTI "Ozone-friendly technologies in the sector of polyurethanes" dedicated to the International day of ozone layer protection was organized in Moscow.
6. 18.09.2015 the Project team participated in the Forum of school workers and presented the program of the International day for the preservation of the ozone layer in secondary education institutes.
7. 02.10.2015 the Project team participated in the International seminar "Scientific and technical information, statistics and information: national experience and international cooperation" held within the international exhibition "Techmart - 2015", Hanoi, Vietnam and presented the Project to representatives of developing countries and countries with economies in transition.
8. 06.10.2015 the Project team took part in the annual General meeting of the Russian Union of refrigeration industry enterprises, held in the framework of the exhibition "AGROPRODMASH – 2015" in Moscow, "Expocenter", and prepared a report on changes in the legislation of the Russian Federation and the Customs Union in the sphere of protection of the ozone layer and the Earth's climate.
9. 09.10.2015 participation in VII international specialized exhibition "Energy conservation and efficiency. Innovative technologies and equipment 2015" in Saint-Petersburg.
10. 30.10.2015 participation in the conference "Moscow – energy efficient city".
11. 10.11.2015, 17.11.2015 and 24.11.2015 seminars on "Organization of production of CO2 refrigeration equipment. The current layout of the CO2 refrigeration unit for product retail store" were conducted.
12. 16.11.015, 20.11.2015 and 25.11.2015 seminars on "Demonstration model of a mini-hotel with integrated store and Laundry facilities with natural refrigerants".
13. 24.11.2015-25.11.2015 a seminar on the use of methyl formate technology as polyurethane foam insulation blowing agent in the Russian Federation was organized in Vladimir.
14. 09.12.2015-10.12.2015 – participation in the XV international scientific-practical conference "Russian heat", where the largest representatives of the foam sector in the Russian Federation were represented. A presentation on "International and Russian legislation in the sphere the ozone layer protection " was made.
15. 15.12.2015-16.12.015 a seminar on "Technology use of cyclopentane as polyurethane foam insulation blowing agent" was held in Moscow.
16. Two feasibility studies on the use of carbon dioxide and hydrocarbon refrigerants in the refrigeration sector were developed and prepared for printing.
17. A booklet on the implementation of the Project in Russian and English languages was developed, prepared for printing and published.
18. The search, preparation and placement of regular news and publications on the subject of "the Protection of the ozone layer" in "UNIDO in Russia" (No. 16), "Climate World" (No. 89), "Refrigerating engineering" (No. 8, 9, 10 and 11) and leading industry websites (www.aircon.ru etc).
19. Following the completion of the Project a targeted distribution of information on the

results of its implementation was carried out on the database of representatives of the refrigeration and foams sector.

PLANNED PROJECT ACTIVITIES

As part of the implementation of the project the following activities are planned:

- Preparation and submission of the final report on the work performed and the financial report in accordance with the contract between UNIDO and ICSTI to UNIDO headquarter till 01.04.2016.
- Preparation and submission of proposals to the MNRE in order to ensure sustainability of the Project results.

DESCRIPTION OF THE PROJECT. PROJECT ADVANCEMENT

Rational use of energy resources is one of the priorities for modernization and technological development of economy and social sphere not only in Russian Federation, but in the whole world. For different stages of preparing and implementing energy efficiency measures and improving energy efficiency the government forms specific requirements aimed at stimulating the market, intensifying the professional community and increasing importance of energy savings among its consumers, generators and suppliers. That's why the project "Market transformation programme on energy efficiency in greenhouse gas-intensive industries in the Russian Federation" was initiated.

The project is implemented by UNIDO in cooperation with the European Bank for Reconstruction and Development, with support from the Ministry of Energy of the Russian Federation in cooperation with the Russian Energy Agency.

The main objective of the project - reduction of energy costs at enterprises (electricity, gas, etc.) through the introduction of the energy management system based on the international standard ISO 50001, program of optimization of large electrical systems, and the development and assistance in fundraising for modernization projects. **The main target group of the project** - Russian industrial enterprises.

During the project implementation at Russian industrial enterprises, the assessment of energy savings potential is conducted, modern energy management system are established, programs of energy conservation are developed and, if necessary, UNIDO experts help companies to find the financial institutions where they could obtain funds for the implementation of these programs. UNIDO attracts leading international experts on Energy Management Systems (EnMS) and optimization of large engineering systems for the staff training on energy saving best practices that has huge effect on the Russian industry.

The project activities are carried out in 4 directions:

1) Enhancing knowledge assets (methodical, information and human resources support)

2) Energy management system capacity building programme for large energy– intensive industries.

3) Energy management system capacity building and energy efficiency improvement in SMEs.

- Energy management training and implementation;
- Systems optimization training (Fans Steam Compressed air Pumps Motors);
- Assistance for EnMS and benchmarking implementation to improve energy efficiency;
- Energy audit;
- Preparation of energy efficiency investments plans;
- Assistance for enterprises to obtain financing.

4) Government capacity building and support programme.

IN BRIEF

- **Project number:** 103056
- **Implementation dates:** 2010 – 2016
- **Donor**: GEF
- **Main partner:** EBRD, Russian energy agency
- **Objective:** reduce greenhouse gas emissions in the Russian Federation by transforming the market for Industrial Energy Efficiency in GHG-intensive industries
- **For more information please contact:**

Lazareva Maria - Project coordinator
Lazareva.M.E@gmail.com

An important feature of the project is that energy efficiency is achieved largely by introducing no-cost and low-cost organizational changes, in other words by improving the energy management system and not by replacing the production technologies. It should be noted that introduction of the energy management system — is organizational innovation, one of the most effective on the criterion of „investment/saving energy“. Companies that only started to introduce energy management can obtain annual savings of 10-20% within the first 2 years. In the next years, most of companies that introduced EnMS reduce energy consumption by 2-3% per year against 1% in the usual approach.

The project will achieve this market transformation through activities that will:

- structurally improve industrial energy efficiency through increased energy efficiency investments,
- have a wider direct positive effect on rational energy use with related environmental benefits, and
- improve the capacity of the government to develop effective (industrial) energy efficiency policies.

Partners of the Project

The main partners of the project are the European Bank for Reconstruction and Development, which carries out part of the work and functions within the overall project along with UNIDO, and Russian Energy Agency of the Ministry of Energy of the Russian Federation. The project is supported by the Ministry of Foreign Affairs of Russia. A number of other commercial companies performing work commissioned by UNIDO is involved in the project on a contract basis.

EVENTS

Conference "Industrial policy of the regions: energy and resource efficiency, new reserves of development"
3-4 February 2015.

3-4 February 2015, the Project team co-organised the Conference "Industrial policy of the regions: energy and resource efficiency, new reserves of development" in the Analytical Centre for the Government of the Russian Federation, Moscow.

The purpose of the event was to form a programme of action for the Russian industry based on the analysis of ‘best practices’, problems detection in the field of industrial policy and joint proposals of business and government for their solutions.

A key point of the program was devoted to a discussion of the situation of energy-intensive companies (two of the three speakers represented objects of a UNIDO pilot project in Russia).

The event was attended by about 100 representatives of authorities, industry and experts. The project team UNIDO in Russia was well represented - 8 people, including 5 of them - the main speakers in the agenda, the rest - discussion participants.

In addition, 2 experts of the UNIDO project spoke about the experience of working with industrial companies in implementing energy management

	systems, and then, the head of this UNIDO project direction Mr. B. Melnychuk summarized the accumulated practice of energy management and have made suggestions for its replication in Russian enterprises. **Conclusions:** 1. The results of the project in introducing a new ideology of resource use in industrial companies were for the first time so widely presented at the conference with the participation of representatives of the federal legislative and executive powers and caused an interested response from the audience. 2. Following the conference, some of the findings of the project representatives were planned to be included into the resolution and sent to the Government, Ministry of industry and trade, Ministry of economic development of Russia: • a proposal for the conclusion of bilateral agreements between industry and governments (as part of the implementation of the "white certificates" policy in Russia) • a recommendation on the conservation of budget programs of preparation of power engineering personnel in the higher education system while updating software and methodological basis of training, • an emphasis on low-cost energy saving measures (operational controls) during the reduction of the investment market can and should be claimed by those companies who want to use the current period for their own modernization. 3. During the conference, new tools for support of industrial enterprises were discussed. Their use can greatly increase effectiveness of the Project: the mechanisms of interaction with the industry development Fund, created in December 2014 and aimed at long-term lending at preferential rates, an updated list of facilities with high energy efficiency to obtain preferential investment loans (Ministry of industry and trade within 2 months to finalize the draft of the resolution approving the list) and the procedure for obtaining preferential credits, an international agreement on the introduction of new generations of energy-efficient equipment and materials (e.g., 4th generation refrigerants). 4. Reports on the results of the conference were used for the UNIDO project PR activity, especially in the regions where pilot enterprises of the project are located. http://ac.gov.ru/events/04577.html http://ac.gov.ru/events/04593.html http://ac.gov.ru/events/04600.html

The meeting of the Supervisory Board of the UNIDO project "Development of market mechanisms for energy efficiency energy-intensive industries in Russia"; **21April, 2015** 	21 April 2015 the Meeting of the Supervisory Board of the UNIDO project "Market transformation programme on energy efficiency in GHG-intensive industries in Russia" took place in Moscow. The project results in 2014 and main directions of work in 2015 were examined. The event was attended by the following representatives of authorities: Ministry of Foreign Affairs, Russian Energy Agency of the Ministry of Energy, Ministry of Natural Resources and Environment, as well as companies-partners of the project.
Discussion club "Prospects of development of small and medium business in the sphere of energy efficiency. Measures of state support"; **17 December , 2015** 	The event of the UNIDO project - Discussion club "Prospects of development of small and medium business in the sphere of energy efficiency. Measures of state support" was held on 17 December 2015. The project involved over 60 individuals representing Federal and regional authorities, research institutes, industrial enterprises, and the press. Among the participants there were 2 persons in the rank of Deputy Governor, Director of Department of the Ministry of energy of the Russian Federation, Deputy head of the Analytical centre for the Government of the Russian Federation, Deputy Director General of the Russian energy Agency and other dignitaries. The discussion addressed the theme of the federal and regional support for small and medium-sized businesses, financial instruments to facilitate the implementation of energy saving projects, measures to help the business by national banks, guarantee funds, private equity funds, venture capital funds, leasing and energy service companies to implement projects, as well as to improve energy efficiency. The participants highly appreciated the effectiveness of the discussion club, its resolution has been sent to the relevant agencies for review.

MAJOR ACHIEVEMENTS IN 2015

During the reporting period of the project "Market transformation programme on energy efficiency in GHG-intensive industries in Russia" the results were accumulated on the part of:

- methods of implementation and application practices of energy management systems in Russian industrial enterprises with obtaining of quantifiable and verifiable indicators of energy savings;

- creation of educational and methodical complex for industrial enterprises, including SMEs, on energy saving and increasing energy efficiency of enterprises in the form of a specialized information portal on the Internet;
- application of benchmarking tools for comparative analysis of specific energy consumption on the example of enterprises of the fuel and energy complex.

Component 1. Enhancing knowledge assets (methodical, information and human resources support). Component 2. Development of energy management systems In large enterprises of large energy-intensive industries

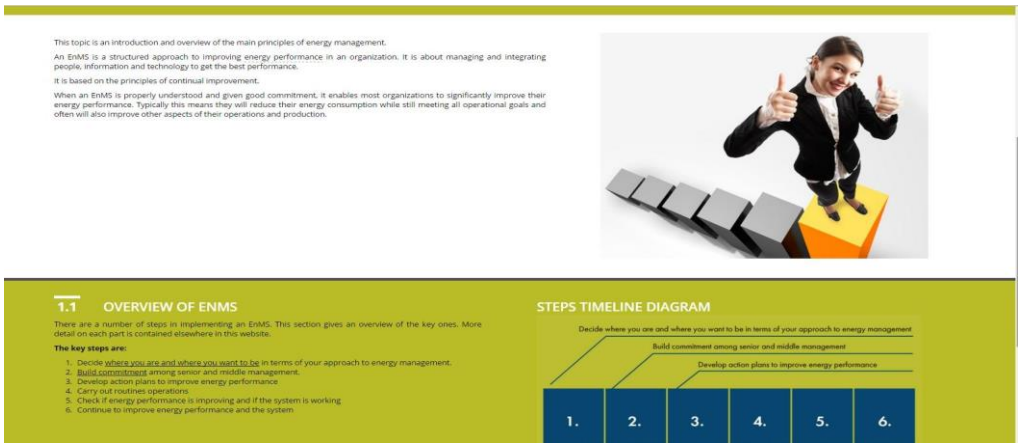
A PR campaign aimed at raising brand awareness of the UNIDO project among Russian industrial enterprises was carried out. The main emphasis was placed on participation in key industry events and holding discussion clubs and workshops on the most pressing issues related to the role of energy efficiency in new industrial policy of the Russian Federation. Along with this came several reports, which were then used in the PR activities for the project and a number of publications in the specialized electronic and printed media that has brought attention to the positive results achieved during the project implementation.

The design of the first unit (e - Guide) of the Portal "energy efficiency and energy saving" was agreed and put into operation.

Figure 1. Approved design of the portal

Figure 2. Design of the unit eGuide

Figure 3. English functional elements of the unit eGuide



Component 3. Energy management system capacity building and energy efficiency improvement in SMEs

1. A set of training activities was conducted and attended by major industrial partners of UNIDO in Russia on this project, companies "Baltika", "Ak Bars", "POZIS", UGMK and others. Trained over 200 people, who appraised highly the work of international experts and organizational support of UNIDO Centre in Russia. Following seminars, trainings, energy audits and workshops were organized for mentioned enterprises within the UNIDO Project by the leading Russian and international experts.

Dat	Event	Location
20-24.04.2015	Five-day training program for optimization of ventilation system: course for users and advanced course	Technical University of UGMK, Verkhnaya Pyshma
16-17.04.2015	Training program for Optimization of ventilation systems : course for users	Technical University of UGMK, Verkhnaya Pyshma

2. An automated system of knowledge testing for students on optimization of systems of industrial equipment was put into commercial operation. Installed on the single server, system works in the interests of UNIDO experts, who conduct training and provide access to the tests - set of interactive exercises checking the level of knowledge that students have studied during the training course. Questions for knowledge testing included in the AIS, it's a kind of test with a choice of single correct answers, as well as with tasks to test skills in the form that is needed to be filled in. The time for test passing established in coordination with the expert, the standard time is no more than 1 hour. At the request of the expert, user may be provided a second attempt to pass the test. AIS provides automated processing, storage and delivery of the results in the form of tables and charts (percentage of correct/incorrect answers) for each connection and each theme of the Curriculum, as well as the final result (in percentage terms).
3. Two modules of the system: Test 'Steam and condensate systems' and test 'Energy management systems' were put into trial operation.

Figure 4. General view, the testing rules for the Test 'Steam and condensate systems'

Figure 5. Test 'Energy management System', question

Figure 6. Test 'Steam and condensate systems', question

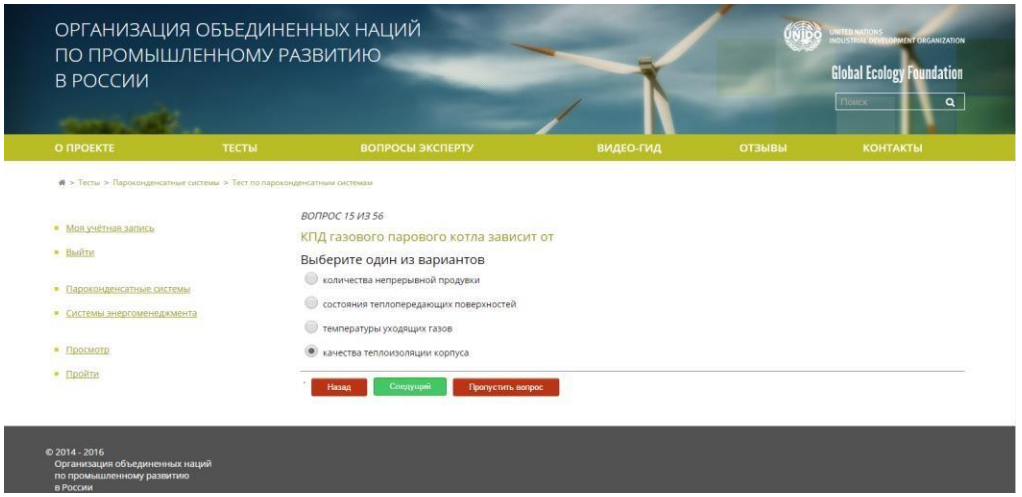
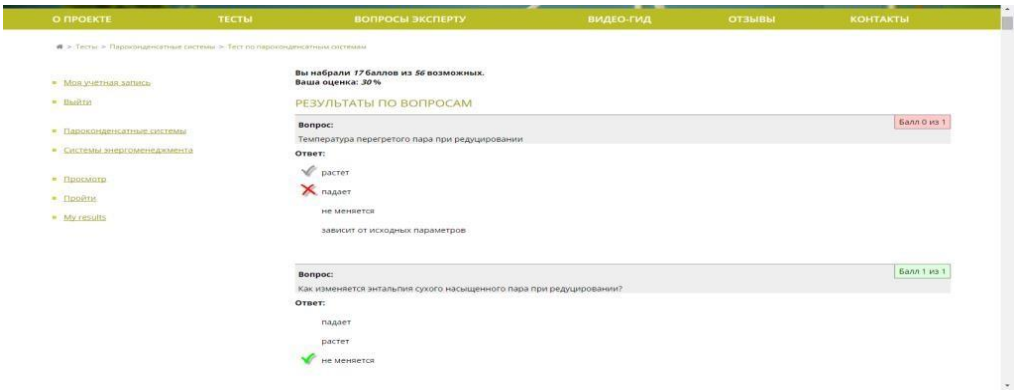


Figure 7. The results of the Test 'Steam and condensate systems'



Component 4. Government capacity building and support programme

Together with the Russian energy Agency a research work on elaboration of a benchmarking methodology for industrial enterprises was carried out and approved in the form of a pilot project of 50 Russian oil companies as part of the automated information system development "Benchmarking for industrial enterprises".

One of the most common forms of attracting big business to the problems of energy saving and environmental protection is the system of rating and comparing the energy efficiency of industrial enterprises and holdings. In Europe for these purposes the standard EN 16231 «Energy efficiency benchmarking methodology» is approved. At the same time in Russia there is no general and officially recognized methodology for the formation of rating and energy efficiency benchmarking in industry, what does not allow to use this tool in practice. Development of guidelines on the implementation of energy efficiency benchmarking of industrial enterprises in Russia, made by the Russian energy Agency, radically changes the situation. Energy efficiency benchmarking is the foundation of energy management of an organization. Events, generated by energy efficiency benchmarking can become part of a long cycle of raising the level of energy efficiency that will solve the problem of reducing the energy intensity of major sectors of the Russian economy.

By using an automated tool for presentation of the results of internal and external benchmarking, a company can analyze its current state and identify opportunities to improve energy efficiency in the future. Benchmarking as an approach to planning, involving a continuous process of products level, services and working methods assessment, studying and assessing all the best in other companies with the aim of using the acquired knowledge in the work of the company. It is best suited to achieve the goals of energy saving.

Thus, elaboration of certain recommendations on the rating formation of the energy efficiency of large industrial enterprises and integrated structures (holding companies) and development of rating formation and benchmarking energy performance methodology is based on data from comparative analysis highlighting the main problem areas of each mechanism, their advantages and disadvantages.

The result of testing is automated dashboard that represents the visualization of the verified data of 50 sample enterprises in the form of interactive dynamic models representing the results of the ranking for the selected benchmarks.

Figure 8. Main page

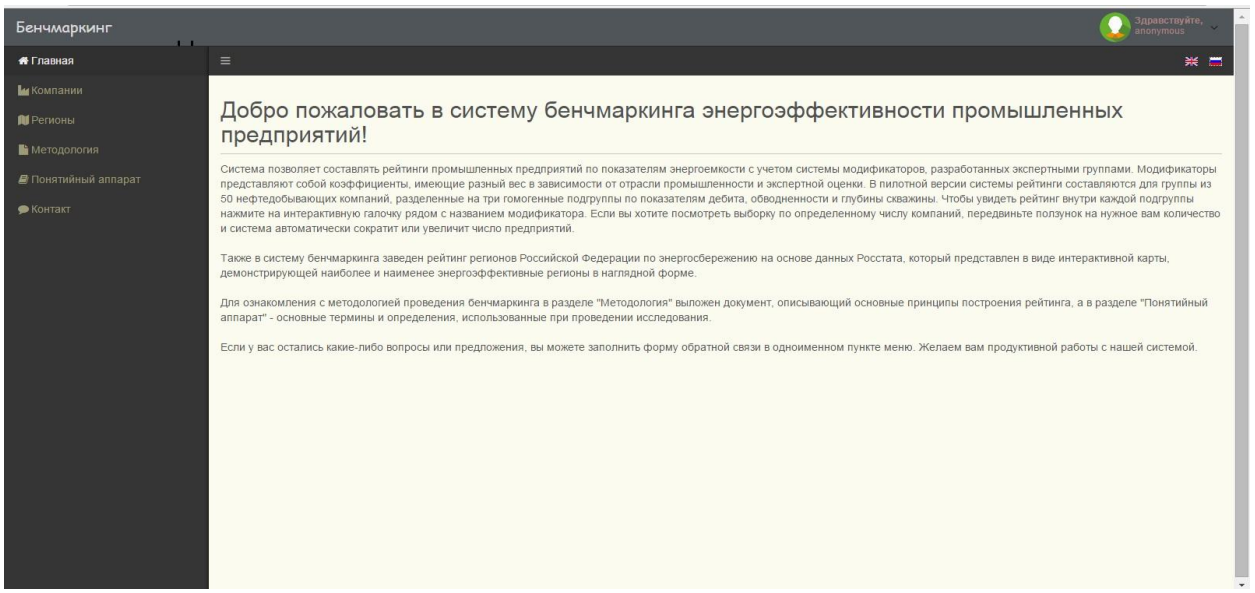
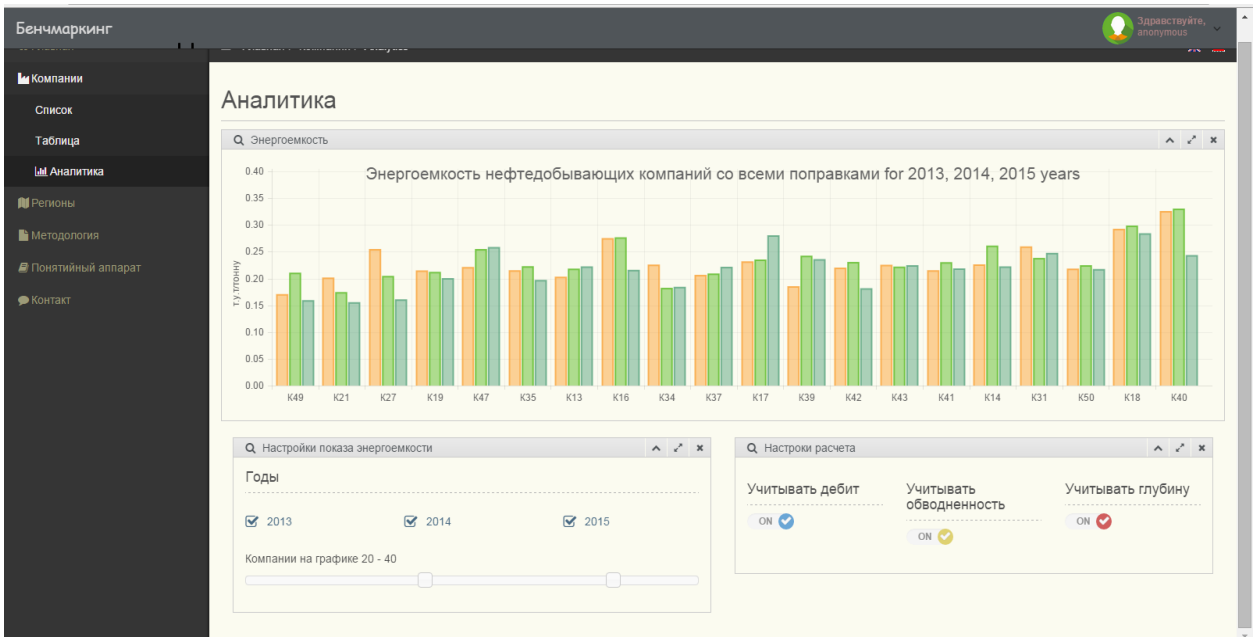


Figure 9.Design of interactive services



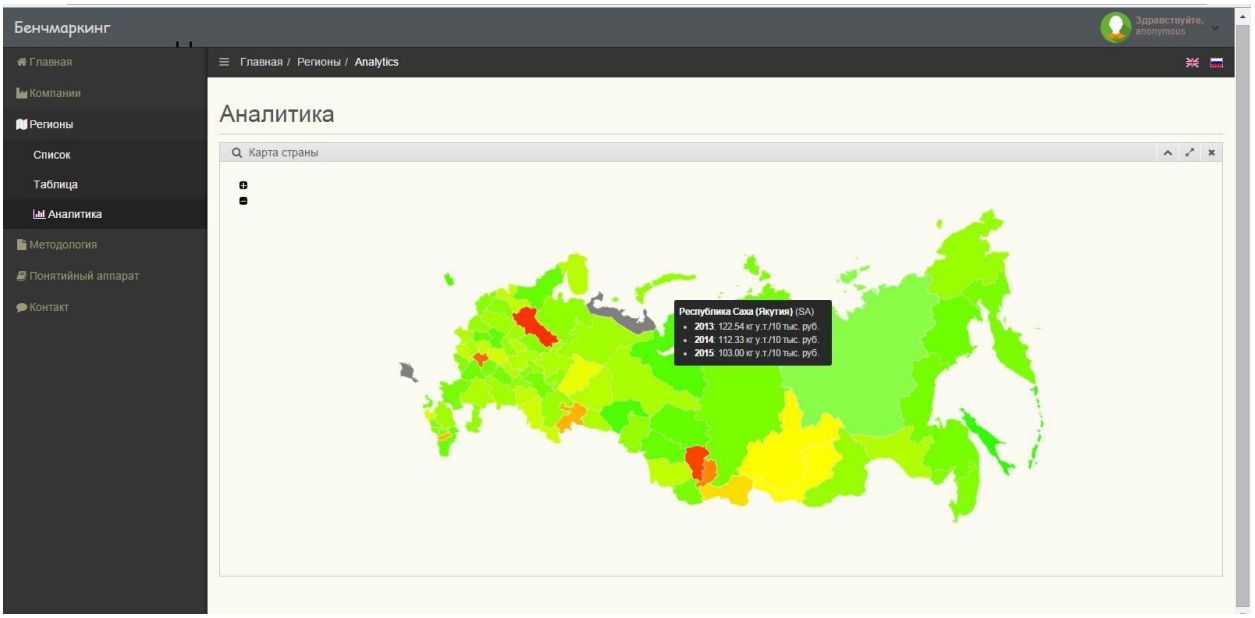


Figure 10. Automated analytical system

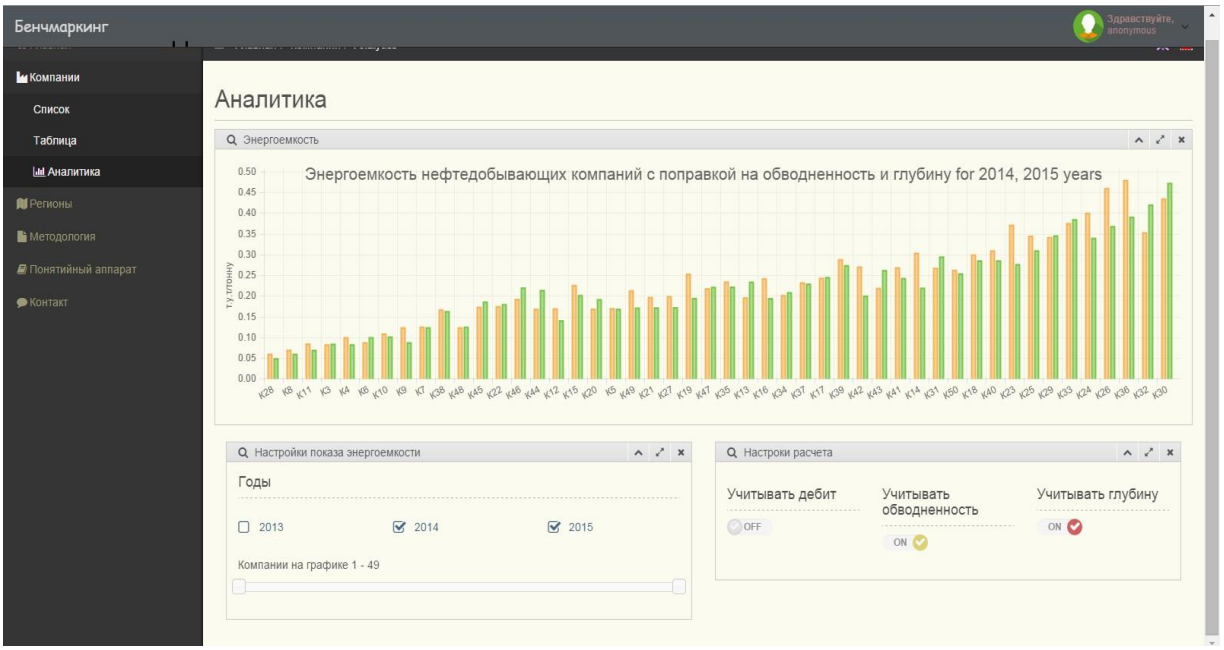


Figure 11.Table of coefficients of modifier based on expert opinions, influencing the formation of the final rating

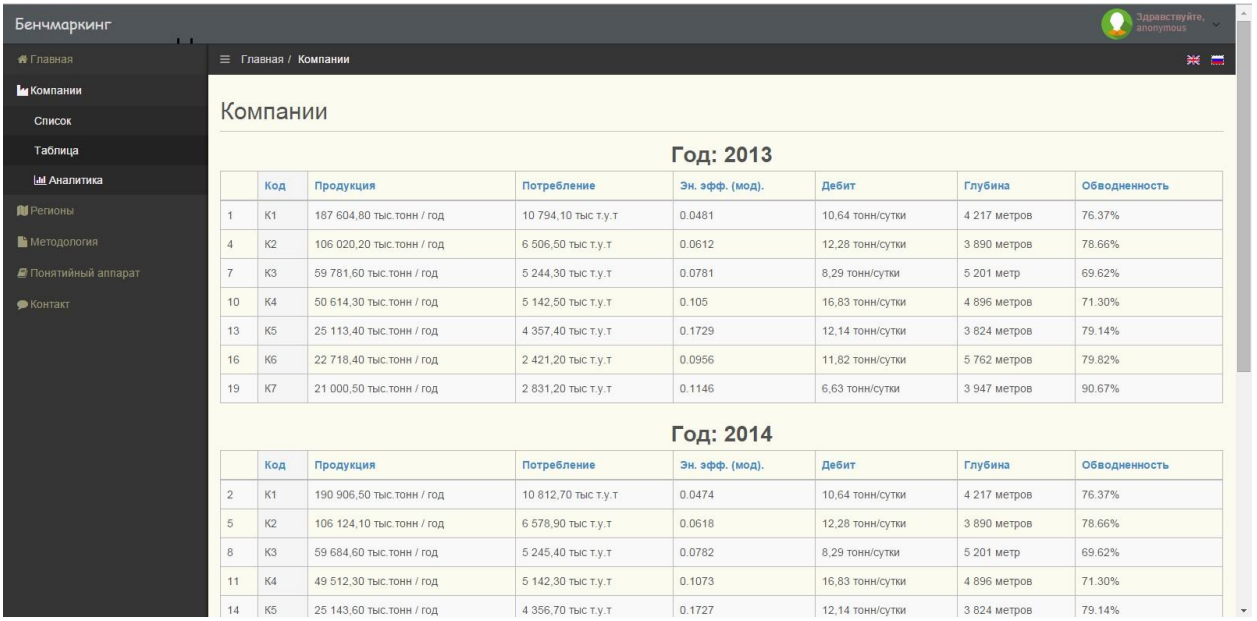


Figure 12. Interactive map of the Russian Federation with the opportunity to obtain online data on the level of efficiency of the Russian regions

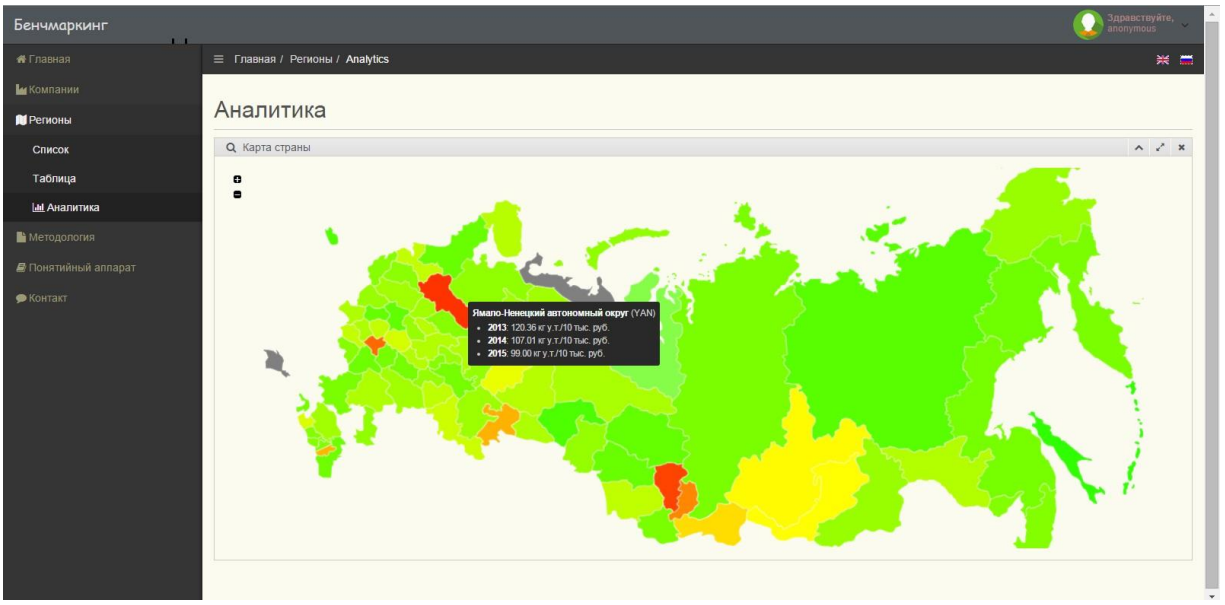
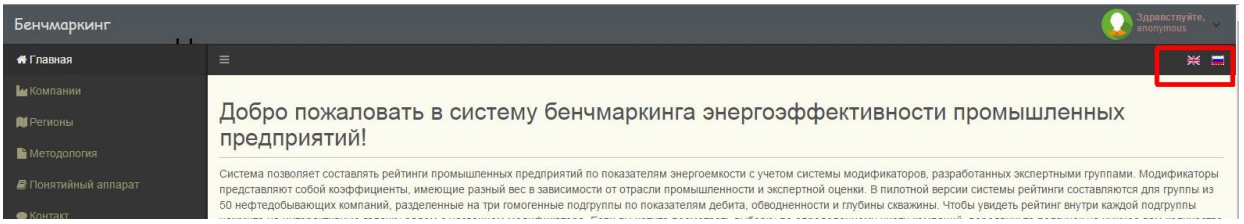


Figure 13. Bilingualism of the system



The analytical services of the system are built on the following methodology:

- The list of companies in the industry is formed;
- The original basis of energy intensity indicators of production of main products (works, services) is formed according to data from the energy passports of enterprises contained in the State information system of fuel and energy complex, as well as additional data submitted by enterprises on a voluntary basis.
- The expert group from the number of industry workers is formed.
- The questionnaire of the expert estimates of key factors influencing the energy consumption in the implementation of this type of business (production, works, services) and coefficients of influence of these factors is prepared and provided to the expert.
- A list of indicators that have strong influence on energy consumption is generated out of the total number of indicators.
- The ranking of energy efficiency of enterprises of the industry as a whole, without division into groups is performed. The highest rating gets the enterprise having the minimum value of energy intensity of production of primary products. Further enterprises are arranged in order

of energy intensity increasing.

- The ranking of enterprises within each group of enterprises having the same or similar indicators with strong influence on energy efficiency is performed.
- The ranking within each subgroup of the group of companies having the same or close values of the indicators with a significant impact on the energy consumption of an enterprise is performed.
- The overall ranking with considering coefficients of influence of each factor is performed, the final ratings (overall rating, and individual ratings of group companies that are close in production volumes of primary products) are prepared.
- Events in the field of energy efficiency carried out in recent years by the leaders of the rating are examined.
- Common industry recommendations for the implementation of energy efficient technologies are defined.

In the framework of the third component, the UNIDO project experts completed "A review of standards and technical regulations of industrial boilers and electric motors in Russia." This work represents a review of incentive mechanisms of energy efficiency of industrial production in Russia, including industrial boilers and electric motors, as well as a list of current acts on technical regulations of industrial boilers and motors.

PLANNED PROJECT ACTIVITIES

As part of the implementation of the project the following activities are planned for 2016:

- The portal "Energy efficiency and energy saving" will be put into operation at full capacity. It is designed to become an important resource for Russian industrial enterprises, combining information on the profile subjects from foreign and domestic sources.
- The work on the third component of the project – trainings, seminars and audits in industrial enterprises – partners will be continued and expanded, the fourth component of the project – cooperation with state authorities of the Russian Federation will also be developed.
- In the framework of the fourth components, the project intends to continue and develop its project in the field of benchmarking through the implementation of a pilot project at the level of subject of the Russian Federation within which the benchmarking of 3 major industries will be conducted in the selected region (at this stage, as a pilot region Khanty-Mansiysk Autonomous Okrug-Ugra is proposed). The results of the project will also be supported and disseminated in Russia by REA, and by UNIDO with the assistance of experts of the Austrian energy Agency on the international level.
- REA and UNIDO agreed to hold training sessions in the field of energy management system implementation, the first of which will focus on energy indicators and will be held in

Moscow during 2 days for 30-40 participants from industrial enterprises and consultants in the field of energy management. REA will be responsible for the organization of the training.

- A business model and a prototype of the contract, similar to the energy service contract for ESKO to implement energy management systems at Russian industrial enterprises will be developed. The contract and the business model can be further submitted to public discussion of the expert community to ensure their smooth implementation.

MEDIA COVERAGE

During the reporting period, in print and electronic media, several publications devoted to the Project as a whole and its individual components were published:

1. UNIDO in Russia magazine, issue 16, article "Industrial policy, new reserves of development"
2. Magazine "Energy and Industry of Russia", issue 20, article "White certificates: international experience and prospects of their use"
3. Press release on the results of the discussion club at the Analytical Center for the Government of the Russian Federation 17.12.2015 (http://ac.gov.ru/events/07290.html)
4. A series of press releases on the results of activities of the project on the internet resource of the Analytical Center for the Russian Government
   http://ac.gov.ru/events/04577.html
   http://ac.gov.ru/events/04593.html
   http://ac.gov.ru/events/04600.html
5. The video on training of the company UGMK https://youtu.be/yWnzgsseG0k
6. A series of press releases on the project portal unido.ru
   http://www.unido.ru/programmes/projects_unido/razvitie_rinochnih_mehanizmov/

DESCRIPTION OF THE PROJECT. PROJECT ADVANCEMENT

The UNIDO Project “Partnership between Russia and Brazil in technology and innovation for development of SMEs” is developed in support of BRICS Summit Declaration 2011 on cooperation in science, technology and innovation. The Project is funded by the Government of the Russian Federation (by a voluntary contribution of Russia in the UNIDO Industrial Development Fund) and coordinated by the Ministry of Education and Science of the Russian Federation. Participating countries besides Russia, the donor country, is Federative Republic of Brazil.

The objective of the Project – is to promote innovative technologies in the activities of small and medium-sized enterprises in order to ensure sustainable economic growth in Russia and Brazil by creating conditions for the formation of technology partnerships between interested organizations in the countries participating in the Project with UNIDO support as a broker of East- South cooperation and UN instrument for further of the Project to other BRICS countries.

During the implementation of Project it is intended to develop innovative infrastructure tools for effective dissemination of technological information, training of personnel of organizations integrated into the Project, to assist SMEs in obtaining funding from organizations such as the Global Environment Facility, development banks, etc.

The project implementation began in June 2012. Since 1 January 2013 the Project activities were frozen due to the suspension of funding. The developments on the formation of base technology partnerships made in 2012 could not be restored fully. The main project partner from the Brazilian side - Innovation Agency at the University of Sao Paulo (USP) lost interest in further cooperation due to work stoppages. Specific projects to promote innovative technologies in Brazil, which were elaborated in 2012 with the Russian company OOO "Nanotech", OOO "Tsagrtol", OOO "RADA- Pharma", "MedCo Alliance", ZAO "METTEM Technology" didn’t received further development in connection with the loss of interest in work in this format from potential partners.

In 2015 the work was carried out in accordance with the workplan approved by the project coordinator in the following priority areas:

- Search for primary partners, restoring working contacts and coordination format of their participation in the Project;
- Preparation of TOR for the development of a technology transfer platform, raising funds for the development of software and information base of the platform;
- Promotion of specific projects on technology transfer, with the prospects of implementation before the expiry of the Project;
- Laying the foundations for the expansion of the project and its connection to the activities of the other BRICS countries.

Partners of the Project

Partners of the Project are Latin American Technological Information Network – LATIN, Foundation of Centers for Implementation of Innovative Technologies (Fundação Centros de Referência em Tecnologias Inovadoras – CERTI), Brazilian Institute of Information in Science and Technology (Instituto Brasileiro de Informação em Ciência e Tecnologia - IBICT), Center for Innovation and Technology of the Federal University of São Paulo Paulista (Universidade Estadual Paulista – UNESP), PetroReconcavo S/A, Purcom Quimica Ltda., Russian Technology Transfer Network (RTTN), Novas engineering LLC, NVP Vladipur LLC.

MAJOR ACHIVEMENTS IN 2015

Brazilian organizations that could act as basic partners with from Brazilian side (IBICT, CERTI, UNESP) were determined during the reporting period. Meetings and discussions on possible forms of cooperation in the framework of the Project were held with all-mentioned organizations. The Foundation for the development of technology innovation centres (CERTI - Fundação Centros de Referência em Tecnologias Inovadoras) was recognized as the most promising partner from Brazilian side, possessing practical experience in transfer processes and having a stable business relationship with companies of innovative technologies in Brazil. An agreement on the future work under the project was reached and a memorandum of understanding and co-operation was prepared and submitted to The UNIDO CIIC for approval by the Project coordinator.

1. **A technology platform was developed and tested in the framework of the bilateral Russian Brazilian cooperation (Russian project partner - the Russian technology transfer network - RTTN):**

- business processes of the transfer network with a possible extension and participation of all the BRICS countries were developped;
- training forms of technology offers and requests were worked out;
- the web site «Russia – Brazil» was developed;
- the online system for the participants of the transfer network was launched;
- guidelines for preparing technology offers and requests were prepared;
- operating system on the network was developed;
- a database of offers and requests for technological transfer in the framework of bilateral Russian-Brazilian cooperation was formed;
- the network presentation was prepared for partners and participants.

2. **The work on promotion of technology transfer projects was completed. Two pilot projects of Russian-Brazilian cooperation brought to the stage of their implementation:**

- Project: "The Use of Russian technology of plasmino-pulse impact (PPI) to enhance oil recovery on the deposits in Brazil." Partners of the project: the Russian company "Novas, ingeniering" and the Brazilian company "Petrorecoil" selected wells, agreed terms and conditions (to end 2015) of the pilot project for the treatment of three wells in Brazil. Negotiations were held with

the Brazilian company STR for establishment of joint company to carry out further work of PPI in Brazil on an industrial scale.

- Project: "The use of Brazilian technology in production of polyurethane (PUR) systems and products based on methyl formate in Russia." The project partners, Brazilian company "Purkom Chimica Ltd." and Russian company "NVP Vladipur" signed and implemented agreements on technology transfer and the supply of raw materials for testing and development of the manufacturing process. The work on technologies adaptation to work with raw materials and equipment used in the Russian enterprises was done. Tests of systems and products prototypes were completed, preparatory work on technology introduction in industrial production was carried out.

ACTIVITIES FOR THE SUPPORT AND DEVELOPMENT OF THE PROJECT

Industrial innovation club and the BRICS roadmap

In 2015, the UNIDO CIIC Industrial innovation club participated in and contributed to the development and implementation of the following aspects of the UNIDO/BRICS Project in accordance with the recommendations of the Declaration of the V Summit of the BRICS.

IN BRIEF

- **Implementation dates:** 2012– 2015
- **Objective:** assist in access of Small and Medium Enterprises (SMEs) to modern technologies for providing of sustainable economy growth of participating countries.

I. Basic areas of activity

1. Participation in the formation of the Russian part of the BRICS Consolidated Technology platform for the BRICS Technology Transfer Network in accordance with the objectives of the UNIDO/BRICS project based industrial development programmes of the BRICS countries in the priority sectors and SME development.

2. Elaboration of concepts for development of the Russian priority industries on the basis of modern technology and innovation with the involvement of SMEs.

3. Participation in the preparation of the UNIDO CIIC proposals for the Russian part of the BRICS roadmap, adopted at the VII Summit of the BRICS on July 9, 2015 to further development.

4. Participation in the preparation of the Russian enterprises project proposals under the Memorandum of the UNIDO CIIC and Vnesheconombank.

5. Participation in the preparation of project proposals under the Memorandum of the UNIDO CIIC and Scientific Park of the Moscow state University for submission to the Vnesheconombank on 25 March 2015.

6. Preparation of the project presentation based on the outcome of the UNIDO CIIC project

missions to South Africa, India and China for BRICS Business Forum in the framework of SPIEF on 18 June 2015.

7. Participation in the preparation of the project presentation for the meeting of the BRICS funding agencies representatives in the Ministry of education and science of the Russian Federation on 5-6- July 2015.

8. Preparation of the UNIDO CIIC proposals for the draft " BRICS Economic Strategy for period till 2020" of the Ministry of economic development, adopted at the VII BRICS Summit on 9 July 2015.

9. Development of the project perspective areas for 2015 – 2018 in accordance with the objectives of sustainable development within the UNIDO mandate, supported by the VII BRICS Summit on 9 July 2015.

II. Project proposals

One of the key themes of the BRICS Business Council in the framework of the VII BRICS Summit in July 2015 was «the project cooperation in the field of new technological solutions» considered as a leading direction of Industrial Innovation Club.

1. Participation in the preparation of the UNIDO CIIC proposals for the Russian part of the BRICS roadmap of the Ministry of economic development of the Russian Federation. The draft roadmap included 6 UNIDO CIIC project proposals, presented jointly with Russian enterprises. The draft roadmap was reviewed at the BRICS Summit on July 9, 2015 for further-future development, including:

- Establishment of international trade organization "Foundry Association of the BRICS";
- The creation of a training centre for specialists in metallurgical industry of BRICS countries;
- The development of Small metallurgy and Foundry industry in Russia with the BRICS countries participation.

2. Participation in the preparation of the Russian enterprises project proposals in accordance with the Plan of action for the UNIDO CIIC and VEB Memorandum. On 15- 16 November 2015, working meetings with the enterprises were organized for setting the parameters, project participants and funding for implementation in 2016:

- Plant for the production of 25 000 tons of steel products for construction and mining industry, Bishkek, Kyrgyzstan.
- Next generation Foundry-mechanical plant of for technological castings. Production of 30 000 tons with an increase to 80 000 tonnes per year for the automotive industry and other transportation industries, Tver.
- Production of ceramic gating system for metal casting. A pilot project for enterprises of metallurgical, oil and gas complex, nuclear and energy engineering, Tula.
- Plant for briquetting of iron-carbon wastes and fine ore (40 000 tons per year). The project of small metallurgy, Tula.

- ❖ The creation of sectoral centres to promote the formation, development and practical implementation of innovative projects at all stages of the innovation cycle.
- ❖ Informational support of SMEs in the development of production in Russia.

3. According to the Memorandum for the UNIDO/ BRICS project support between the UNIDO CIIC and the Scientific Park of the Moscow state University a proposal of the Russian enterprise for Brazilian innovative project on water tanks protection was prepared. Proposal submitted to Vnesheconombank to consider the possibility of promoting Russian participation in the Brazilian project. A working meeting is planned in January 2016.

III. Conceptual proposals

Concepts on the development of priority industrial unit "metallurgy, foundry and engineering" of Russia and the BRICS were prepared:

- The concept and Plan of action "Development of small-scale metallurgy and foundry production", developed by Committee on innovations in metallurgy and foundry industry of the Tula chamber of Commerce and the Industrial innovation club in August 2014. The proposal was included into the BRICS roadmap, July 2015. Under the Memorandum of cooperation between UNIDO Centre of the Russian Federation and VEB, two projects in the Tula region, formed on the basis of the Technological Platform of the UNIDO CIIC, were submitted to VEB. In December 2015, an initial meeting with SME Bank on projects of Foundry and Small metallurgy of the Tula region was held upon the VEB recommendation.
- "The program of the BRICS countries cooperation in the field of professionall training, retraining and advanced training in the field of metallurgy" was developed by the Metallurgical Equipment Producers Association, Industrial innovation club in January 2015. The proposal included in the BRICS roadmap, July 2015.
- Suggestions for VEB in the concept note "the Revival and the development of the domestic foundry machinery and foundry production" developed by research and production, engineering, design company - LITAFORM together with the Russian specialized enterprises. In the framework of the Memorandum between the UNIDO CIIC and Vnesheconombank, a primary meeting on the project in the Tver region was held at the VEB in November 2015.
- "The concept of the BRICS countries international industrial cooperation in metallurgy" developed by Magnitogorsk state technical University, the Metallurgical Equipment Producers Association, Industrial innovation club.

IV. Industry projects

Priority industrial sector "metallurgy – foundry – engineering"

Production Cluster "metallurgy - foundry – engineering" determines the pace of industrial development of the real sector of the national economy and is regarded as one of the priorities, key factors of sustainable development of the economy.

Foundry industry is the base foundation of mechanical engineering and machine tool building: from 30% to 50 % of the mass produced machines, equipment and machine tools makes foundry products

(basic castings). However, foundries are closely associated with metallurgy, providing the industry with raw materials.

Casting-foundry industry through multi-purpose foundry products for numerous branches of mechanical engineering traditionally develops in the SMEs sector. Smelting production is an important technological link of Small-scale metallurgy, which is also developing, mainly in the SME sector on the mini and micro factories for the production of ferrous and non-ferrous metals.

Currently, the share of the economic Union of the BRICS (Brazil, Russia, India, China, South Africa) account about 60 % of global foundry production.

The role of small and medium businesses in the foundry industry is reflected in the statistics overview of the foundry market of BRICS countries, prepared with the participation of Industrial innovation club. Marketing review published in "UNIDO in Russia" magazine.

Foundry Association of BRICS

- The foundry industry is an important technological part of the industrial unit "metallurgy – foundry – engineering".The Foundry Association is an important unifying link of the BRICS Technology platform.
- The role of the industry Associations was mentioned on the VII BRICS Summit in 2015 during the discussion of the BRICS Road map adopted for further development by the BRICS leaders.
- Foundry Association of the BRICS – industry project of a multilateral, inter-regional industrial cooperation and the first industrial Association of the BRICS. Foundry Association of BRICS initiated by the national foundry associations, and on the proposal of the Industrial innovation club was included into the roadmap.
- Industrial innovation club participated in the elaboration of statutory documents of the Association, which was founded on 10 September 2015 in the framework of the V BRICS forum in Nizhny Novgorod.
- At the present time on the basis of the adopted Constitution and the approved Protocol an action Plan 2015 – 2020 with project proposals, the Association's website (portal) and management structure are being developed with the participation of Industrial innovation club.

Foundry industry

- At the UNIDO CIIC initiative, a comprehensive proposal "Development of small metallurgy and foundry production in Russia with the participation of partners of the BRICS countries" was included into the BRICS roadmap developed by the Ministry of economic development, as part of the economic cooperation Strategy until 2020
- Project proposal of Industrial innovation club and Russian foundry enterprises is also a part of priority clusters of the UNIDO / BRICS project Consolidated Technology platform.

Small scale metallurgy

- The Concepts provisions in metallurgy were used in the development of project proposals 2015 for Technology platform of the UNIDO/BRICS project, for the roadmap and the UNIDO CIIC proposals.

V. Results of 2015

Industrial innovation club (PIC) assisted the UNIDO Centre in the Russian Federation in implementation of the UNIDO/BRICS project in forming project proposals for the Consolidated Technology platform and presentations of the project for UNIDO Missions in the BRICS countries to identify focal points for further development of the project.

VI. Information support

BRICS industrial policy in new economic conditions

Preparation of analytical materials on industrial policy and industrial development in the new economic conditions taking into account the objectives of sustainable development defined by the UN Summit on sustainable development on September 27, 2015:

a)Participation in the first international scientific-practical Conference "BRICS: development strategies and mechanisms of interaction and cooperation in a changing world", RAS, 2 - 3 November 2015,

The analytical material «the BRICS: the goal of sustainable industrial development and industrial policy in the new economy" was prepared:

Contents: Development of the real sector of the economy, development of industrial production, development of science, technology and innovation, development of small and medium business, international interregional industrial cooperation Eurasia – Africa – South America

http://www.unido.ru/programmes/projects_unido/prom_innovac_klub/dk_briks_2015_2020/prom_p olitika_briks/

b)Participation in the International scientific Conference "Modernization of Russia: key problems and solutions", Publication of the article "NEW TRENDS in the development of a SUSTAINABLE ECONOMY". January 2015

http://www.unido.ru/upload/files/e/ekonom_tendencii.pdf

BRICS information resources

- BRICS official sites
  - The BRICS business Council **http://www.brics-info.org/** Information platform of the BRICS (the BRICS portal) for providing information exchange to enhance cooperation between BRICS countries.
    - the Russian part of the BRICS Business Council **http://brics.tpprf.ru/ru/**
    - New Development Bank BRICS **http://ndbbrics.org/**
  - The Secretariat of the BRICS http://infobrics.org/ - an information source for comprehensive coverage of the BRICS activities.
    - the Website of the Russian foreign Ministry "Russia in the BRICS" **http://www.brics.mid.ru/brics.nsf**
- BRICS Research centers:

nkibrics.ru The national Committee on BRICS studies,Russia ,Moscow

http://en.brics.fudan.edu.cn/ The center for BRICS studies, China

http://bricspolicycenter.org/homolog The center for BRICS studies , Rio de Janeiro

http://www.brics.utoronto.ca/ The center for BRICS studies at the University of Toronto

http://www.mgimo.ru/imi/brics/ BRICS Center, MGIMO

http://www.spa.msu.ru/page_331.htm BRICS Interdepartmental coordination Council ,MSU

http://www.iori.hse.ru/bric BRICS research group (the international organisations research Institute)

PROJECT EXPANTION TO OTHER BRICS COUNTRIES

South Africa

In the framework of the UNIDO CIIC Mission in South Africa, a work on the formation of cooperation areas with key South African partners was conducted, including the exchange of letters of intent, the draft Memorandum of cooperation and suggestions for the preparation of a strategic action Plan.

Project partners

Technology innovation Agency (TIA) of the RSA Ministry of science and technology, the industrial development Corporation(IDC) of the RSA Ministry of economic development, The SME development

Agency (SEDA) of the RSA Ministry of small business development, National foundry technologies Network (NFTN) of the RSA Ministry of trade and industry, South African Universities: Pretoria, Johannesburg, Stellenbosch, Eastern Cape Development Corporation (ECDC), the South African Institute of foundry men (SAIF), Nelson Mandela Bay Business Chamber (NMBC), Eastern Cape, South Africa.

Major achievements in 2015

Based on the designed marketing materials, including national development plans, technology development and innovation plans, analysis of existing platforms and potential participants of the BRICS, the formation of the primary model of the BRICS Consolidated Technology platform, as an innovative resource of the project was continued.

The following letters of intent and the draft Memorandum of cooperation for the development of proposals on the forms and areas of cooperation and future plan of action were received from South African partners:

- Letter of Intent, Technology Innovation Agency, South Africa (TIA) of 17 April 2015
- Letter of Express of Interest, Industrial Development Corporation (IDC) of 24 April 2015
- Letter of Intent of Small Enterprises Development Agency (SEDA) of 19 August 2015
- Draft of Memorandum of Understanding of 14 May 2015 from TIA

The project was completed on July 31, 2015

India

In the framework of the UNIDO CIIC Mission in India, a work on the formation of cooperation areas with key Indian partners was conducted, including the exchange of letters of intent, the draft Memorandum of cooperation and suggestions for the preparation of a strategic action Plan.

Project partners

National research and development Corporation (NRDC), the Council for scientific and industrial research, the Association of chambers of Commerce and industry of India (ASSOCHAM), Biotech Consortium India limited (BCIL), The Confederation of Indian industry (CII), Indian Institute of technology and the Fund of innovation and technology transfer, Federation of Indian small and medium enterprises (FISME), Institute of chemical technologies and Centre for Green technologies, The Khadi and Village Industries Commission (KVIC).

Major achievements in 2015

Based on the designed marketing materials, including national development plans, technology development and innovation plans, analysis of existing platforms and potential participants of the BRICS, the formation of the primary model of the BRICS Consolidated Technology platform, as an

innovative resource of the project was continued.

A letter of intent and the draft Memorandum of cooperation for the development of proposals on the forms and areas of cooperation and future action Plan were received from the key partner - National Research Development Corporation.

The project was completed on July 31, 2015

China

In the framework of the UNIDO CIIC Mission in China, a work on the formation of cooperation areas with key Chinese partners was conducted, including the exchange of letters of intent, the draft Memorandum of cooperation and suggestions for the preparation of a strategic action Plan.

Partners

Shanghai Municipal Commission of Commerce, Hong Kong Innovation Services Limited (HKIS) , The Hong Kong Monetary Authority (HKMA), Hong Kong Polytechnic University (PolyU), Hong Kong Applied Science and Technology Research Institute (ASTRI), Beijing Municipal Commission of Science and Technology (BMSTC), International Technology Transfer Network (ITTN), University of Science and Technology Beijing (USTB).

Major achievements in 2015

1. Three delegations of our Chinese partners visited UNIDO Office Moscow.

   1.1 Delegation of the Department of Science and Technology of Henan Province (August 2015).

   1.2 Delegation of Shanghai Investment and Technology Promotion Center of the United Nations Industrial Development Organization (November 2015).

   1.3 Delegation of the Government of Wohan Province (December 2015)

2. At the very end of December 2015 a delegation of UNIDO Office Moscow visited ITTN Office in Beijing.

Negotiations with representatives of Science, Business and Finance societies of China took place during the visits and ways of further cooperation were defined.

3. Within the framework of the implementation of the UNIDO Project "BRICS partnership in Technology and Innovation for development of Small and Medium Enterprises" a meeting of Director of the United Nations Industrial Development Organization Center for International Industrial Cooperation in the Russian Federation (UNIDO Moscow) Mr. Sergey Korotkov and Secretary General of the International Technology Transfer Network (ITTN) Mr. John Zhang took place in Moscow in June 2015.

The talks held, confirmed that both parties attach great importance to sustainable industrial development of their countries and understand the role that the United Nations Industrial

Development Organization (UNIDO) could play in this regard.

To contribute toward realization of this objective **Secretary General of ITTN Mr. John Zhang expressed a desire to establish an ITTN Center in the Russian Federation and invited UNIDO Moscow to take part in the process.**

Being interested in rendering assistance to BRICS countries (including China and Russia) in their efforts to achieve sustained technology-led development through technology transfer, and thereby contribute toward achievement of sustainable industrial development, UNIDO Moscow agreed to take part in the establishment and further cooperation with the ITTN Center in Moscow and proposes to take the following steps towards forging long-term partnership between UNIDO Moscow and ITTN in areas related to technology transfer.

1. To locate the Center in Moscow.
2. To develop the Management Regulations of the Center.
3. To determine primary missions of the Center as:
   - collection of information on Russian innovative technologies for further transfer them to China on bilaterally beneficial or commercial basis;
   - dissemination of information on Chinese innovative technologies in Russia for further transfer them to the country on bilaterally beneficial or commercial basis;
   - collection and dissemination of information on appropriate innovative technologies for industrial development among other BRICS countries for further transfer them on bilaterally beneficial or commercial basis;
   - collection and dissemination of information on appropriate innovative technologies for industrial development among CIS countries (former Soviet republics) for further transfer on bilaterally beneficial or commercial basis;
   - selection of prominent scientists, experts and other specialists in the field of innovative technologies in Russia and CIC for establishing further cooperation;
   - cooperation with UNIDO Moscow;
   - solution of other tasks in accordance with the objectives of the Center
4. To determine primary functions of the Center as:
   - to develop semiannual plans of organizing/visiting appropriate receptions, conferences, exhibitions and other events in Russia, CIS and China for establishing useful contacts and for collection of information on the innovation technologies may be interesting/necessary to China;
   - to arrange familiarization visits to China of outstanding Russian/CIS scientists or specialists in the field of innovative technologies for selection those of them who may be found expedient for invitation to China to carry out their researches at the Chinese scientific research institutions on temporary basis;

- to exchange information and to implement joint projects with UNIDO Moscow;
- to report to the Headquarter in Beijing on the results of the work done every six months.

The work under the Project was continued even after the financing of the Project was stopped in August 2015

DESCRIPTION OF THE PROJECT. PROJECT ADVANCEMENT

Since June 2010, UNIDO conducts the Project „BAT/BEP Center for Environmentally Safe Disposal of Potentially Hazardous Consumer Products and Industrial Wastes" in Russia. The Project was initiated by the Ministry of Natural Resources and Ecology of Russia and was supported by the President of the Republic of Tatarstan, on the basis of the Memorandum of Understanding between UNIDO and the Republic of Tatarstan, signed in December 2009.

The Project aimed to assist the relevant Federal and Regional Ministries and Agencies in the development and application of the industrial strategy and management capabilities through the application of BAT/BEP to create an effective system of collection and recycling of electronic scrap (EEW) and Worn Tires.

The main task of the activities undertaken during the Project is primarily to decrease toxic and dangerous wastes and save natural resources through the use of secondary resources.

Project duration: I phase - 2010 - 2013; Phase II - 2014; Phase III - 2015.

During the first phase of the project (2010-2013) priority was given to the analysis of the current situation in the field of potentially hazardous waste in Russia (such as, electronic waste (EEW) and Worn Tires); changes in the law to encourage and support the implementation of safe methods of disposal and recycling. A comparative analysis of the Russian, EU, US and Japanese legislation related to the management of hazardous waste allowed us to determine the necessary improvements of the legislation and prepare recommendations for the government on amendments to national waste management legislation, in particular on the principle of "extended producer responsibility".

IN BRIEF

- **Project number:** 104121
- **Implementation dates:** 2010– 2015
- **Main partner:** Ministry of Natural Resources and Environment of the Russian Federation
- **Objective:** dcrease toxic and dangerous wastes and save natural resources through the use of secondary resources

The main tasks of the second phase of the Project (2014):

- Comparative analysis of EurAsEC countries legislation, harmonization of legislation in order to facilitate cooperation and cross-border trade in the field of disposal and/or recycling, expanding best practices in waste management to other countries in the region;
- Development of a Unified Information Analysis System including BAT/BEP databases and unify expertise scheme; to create an integrated comprehensive waste management system in Russia and in the EurAsEC countries, as common market for recycled materials;
- Attraction of IPLA's (International Partnership for Expending WM services of local

authorities) opportunities for construction of a comprehensive waste management system for municipalities and regions based on principles of “3R” and “Zero” waste management;

- Development of a regional project on EEW management, with the participation of Russia, Belarus and Armenia to assist countries in order to reduce the production of POPs, ODS and greenhouse gases;
- Organization of trainings and conduct educational seminars on the different WM practices in the field of WEEE treatment and recycling of used tires, development of eco-towns Projects;
- Establishment of Hazardous waste management centers in two EurAsEC countries;
- Implementation of waste management practices in the EurAsEC countries through the established ITPO offices in Belarus, Armenia, and Kazakhstan;
- Creation of a common specialized vocabulary of environmental protection and waste disposal terms (using the languages of the EurAsEC).

The main tasks of the third phase of the Project (2015):

- Formation of a working group on the management of hazardous wastes in the countries of the Customs Union in order to start the process of creating harmonized environmental legislation for the Customs Union.
- Introduction of norms for the use of crumb rubber prepared and translated by UNIDO experts. The improvement of the Draft of national standards for crumb rubber, which were also prepared by UNIDO experts. The final version of the standards to be sent to the Federal Agency for adoption.
- Continued support of the Project Koltek-Kama in Tatarstan with the provision of consulting services. On demand - the search for new technologies for the use of crumb rubber in various kinds of designs.
- In collaboration with the Waste Electrical and Electronic Equipment (WEEE) Recyclers Association and other project partners, continue the work on the project of WEEE management system in Russia, Russian regions and countries of the Customs Union, which includes: legislation, technical regulations and directives, the establishment of pilot projects for recycling of WEEE, the creation of sub-regional centers for deep WEEE processing and their distribution in the countries of the Customs Union.
- In collaboration with the Moscow Government – the Department of natural resources and environment, implement the introduction of technologies from a database created by the Project experts in the field of solid waste management, especially in the area of WEEE and RTI control. The main objective: reduction of waste disposed in the Moscow region and dissemination of successful experiences in the countries of the Customs Union.
- In collaboration with the Institute of GIS technologies, continue to work on GIS in the field of waste management, through increasing the number of analytical layers, and its subsequent implementation in the countries of the EAEC (starting with Belarus, Armenia, Kazakhstan) in

order to promote technology transfer and exchange of experience and information in waste management.

- Attraction of IPLA's (International Partnership for Expending WM services of local authorities) opportunities for construction of a comprehensive waste management system for municipalities and regions based on principles of "3R" and "Zero" waste, including the use of GIS. Continuation of work on the preparation of the IPLA Global Forum-2015 in Russia.
- In collaboration with the Association Shinoecologhia and «Koltek LLC, continue to develop the Integrated control system of worn tyres in the Central Federal District of the Russian Federation.
- Development of training and educational programs for professionals in the field of hazardous waste management, state and regional environmental agencies.
- Development of educational programs for schools and basic materials for environmental activists in order to assist in the early environmental education and public awareness of the need to separate waste collection.

Partners of the Project

Public authorities and non-governmental organizations:

- The State Duma of Russia: work with the Committee on Transport, work with the Committee on Environment and Ecology and the Higher Environment Council for development and finalization of proposals to the Law on Wastes (No89-FZ) in part of introduction of the principle of "extended producer responsibility";
- Chamber of Commerce and Industry of the Russian Federation: the formation and implementation of the Project on "green" economy in Russia;
- Analytical Centre under the Government of the Russian Federation: Fostering recycling industry in Russia;
- Coordinating Council on development of the waste management sector of the Association of interregional social and economic interaction "Central Federal District": formation of inter-regional cooperation programs in the Central Federal District in the area of waste management.

Main partners:

- Association to facilitate the recovery and recycling of tires "Shinoekologiya";
- Industrial association of recyclers EEW "APET";
- Association of Manufacturers and importers of tires;
- Association of trading companies and manufacturers of consumer electronic and computer equipment (RATEK);
- Association of handling mercury waste NP "APCO";
- Company "Environmental services plant";
- Group of companies "Koltek";
- Magazine "Household Solid Waste";

- Magazine "Waste Recycling";
- ZAO International Center for Regional Development.

International cooperation:

- UNIDO ITPO Japan;
- Federal Environment Agency (Das deutsche Umweltbundesamt (UBA));
- StEP Initiative;
- European association WEEE Forum;
- ANO "Japan Center";
- Asphalt Rubber Association, USA;
- International Partnership for Expending WM services of local authorities (IPLA);
- Valorpneu Company, Portugal;
- Steinbeis University, Germany;
- SET-Group, Finland;
- State Institution "The operator of secondary material resources", Republic of Belarus;
- OAO BelVTI, Republic of Belarus;
- NGO "Center for Environmental Solutions", Republic of Belarus;
- Centre for Sustainable Production and Consumption, Republic of Kazakhstan;
- Waste Management Association «Kazakh Waste», Republic of Kazakhstan.

EVENTS

High-level Symposium on issues of sustainable urban development "the Link between people, environment and technology", 15-16 January 2015	High-Level Symposium on "Sustainable Cities: Connecting People, Environment and Technology" was held in Toyota city, Japan. The Symposium was attended by about 200 people, including mayors, government officials, civil society representatives, experts and representatives from academia and the United Nations. Also, Participants were briefed about the conduct of the IPLA Global Forum 2015 in Moscow.
The first meeting of the Working Group for preparation of the Government's acts under the Russian Ministry of Natural Resources and Environment, 10 February 2015	In Moscow, the Ministry of Natural Resources and Ecology of the Russian Federation hosted the first meeting of the Working Group for preparation of the Government's acts, necessary for the implementation of the Federal Law provisions dated 29.12.2014 No 458-FZ "On Amendments to the Federal Law" On Production and consumption waste", other legislative acts of the Russian Federation and the Annulment of certain legislative acts and its provisions".

XII Krasnoyarsk Economic forum "KEF 2015", 27 February 2015	More than one hundred people took part in the round table within the framework of additional program of the XII Krasnoyarsk Economic forum "KEF-2015", devoted to the problem of integrated system of waste management. The event was attended by representatives of regulatory bodies, commercial and non-profit organizations working in the field of waste management. Also the site was visited by the Director of the ANO "International centre for best environmental technologies" and expert of the UNIDO CIIC - Mariev Vladimir, at whose suggestion the initiative for the creation of expert-consulting Council at the Plenipotentiary of the President in the Siberian Federal district on the development of waste recycling industry in Siberian region was made. Following the discussion, a number of agreements on interregional cooperation of non-profit organizations of the Siberian Federal District – "ecoresource"LLC, "Utilityservice"LLC, SRO "Kuzbassenergo" were signed.
Regional seminar on the WEEE management, 22-23 April 2015	Representatives of APET (Sectoral Association of WEEE recyclers) took part in the regional seminar on the management of WEEE in Minsk. Director of the Association spoke about the situation of WEEE management, the plans of the Association together with the Centre for International industrial cooperation UNIDO in the Russian Federation, the relevant departments of the EEU countries to implement a regional project on the development of a consistent legislative, regulatory management system of WEEE, which will allow to optimize logistic flows of waste, expanding the use of best available technologies. Russian participants of the seminar got acquainted with the organization of the collection of WEEE in Minsk, visited the processing plant of refrigeration equipment and other WEEE.
The meeting of the Economic Comission of the CIS Economic Council, June 10, 2015.	The director of (Sectoral Association of WEEE recyclers) - Komissarov V. A. prepared progress report on the implementation of the Project on organization of international cooperation in the efficient recycling of WEEE.
Sixth regional 3R forum in the Asia-Pacific region, 16-19 August 2015	The forum was organized by the UN Centre for regional development (UNCRD), the Ministry of environment Japan, Ministry of environment and energy and the Ministry of tourism of the Republic of Maldives.More than 300 representatives from 33 countries of the Asia-Pacific region participated in the Forum, which served as a platform for 3R policy dialogue between senior government representatives of the Asia-Pacific region, the mayors and the administration of cities and other experts.According to the results of the Forum:- 77 local resorts signed a Declaration malé 3R, committing itself to promote the principles of 3R and resource efficiency;- The Council of male and 20 island groups of the Republic of Maldives signed the Initiative "Saafu Raajje" the promotion of sustainable waste management;- A resolution calling for the improvement of trade, promotion of waste minimization and low carbon development, the establishment of certification systems and labelling, the gradual abandonment of subsidies that are contrary to the efficient use of resources and improve the training of specialists was adopted.The resolution also noted the promotion of 3R principles to achieve Sustainable Development Goals and development after

	2015.
Round table "On improving the system of collection and recycling of waste from electrical and electronic equipment in the Russian Federation", 17 September 2015	On the initiative and with the participation of APET (WEEE recyclers Industry Association) a round table meeting of the Committee for Environment and Ecology on "On improving the system of collection and recycling of waste from electrical and electronic equipment in the Russian Federation" was held. The roundtable, prepared by the Committee was attended by representatives of the State Duma of the Russian Federation, the Ministry of Natural Resources and Environment, Ministry of Economic Development, Ministry of Industry and Trade of the Russian Federation, the Federal Service for Supervision of Natural Resources; of Natural Resources and Department of Environmental Protection (DPiOOS) of Moscow, Association of inter-regional socio-economic cooperation of the Central Federal District of the Russian Association of Trading Companies and Manufacturers of Consumer Electronic Engineering (RATEK), non-commercial partnership Enterprises Association for the Treatment of mercury and other hazardous waste (NP APCO) , the National Association of producers of power sources (RUSBAT); companies engaged in the production, import and sale of electronic and electrical equipment, companies engaged in the collection and processing of electronic and electrical equipment waste (WEEE).
Ninth International Ecological Forum "Nature without Borders", 29-30 October 2015	Ninth international ecological forum "Nature without borders" was held in Vladivostok. The main topic was the preservation of favorable environment, fauna and flora in the environment of accelerated socio-economic development of the Far East. Forum "Nature without borders" is one of the leading international communication platforms, developed in the Primorsky region. The forum traditionally brings together representatives of government, business, academic and business circles, public organizations in order to discuss vital issues of environment protection, ecological safety of the Russian Far East and the Asia-Pacific region. Last time it was attended by almost 400 people from almost all over the Far East, from Novosibirsk, Moscow, St. Petersburg and the Republic of Korea and Japan.
Public hearings on the topic: "the formation of waste recycling industry in the Russian Federation in the light of the provisions of Federal law No. 458. The current status of the issue. Problems and solutions", 5 November, 2015	The public hearings participants discussed the problems of formation of a complex waste management system in the Russian Federation, the status of normative-legal acts regulating the waste treatment sector, the role of NGOs and the public in conservation activities, as well as foreign experience. The event was attended by manufacturers and importers of electronic machinery and equipment, as well as Associations of waste recyclers.
UNIDO seminar on regional environmental projects in the CIS countries,	UNIDO seminar on regional environmental projects in the CIS countries was organized in Vienna. The readiness to take part in the project was reported by Armenia, Belarus, Kazakhstan, Kyrgyzstan. The working group will include representatives of

7-8 December, 2015	relevant ministries, associations of producers and processors, foreign experts.
Conference on the organization of the WEEE treatment in Belarus, 22 December 2015	Minsk hosted a Conference on the organization of waste electronic and electrical equipment. In the period from 2012 to 2015 the work on the study of different forms of organization of waste collection and forms and methods of work with the population was carried out. At the conference, the Director of APET (WEEE recyclers Industry Association) – Komisarov V.A. reported on the general situation with the processing of WEEE in EAEC countries, including Russia, he also spoke about the work being carried APET, in cooperation with the CIS Executive Committee and UNIDO for organizing the project to establish a regional WEEE management system in EAEC countries.

MAJOR ACHIEVEMENTS IN 2015

- During the meeting at the Department of Ecology and Nature Management (DENM) of the Moscow region it was decided to implement a pilot project to organize the collection and recycling of electronic scrap waste. In the framework of the pilot project, stationary collection points of electrical and electronic equipment waste will be placed in a number of municipalities in the north of Moscow region for subsequent disposal. Potential participants: inhabitants of the cities in which the project will be carried out, as well as enterprise-manufacturers, retail chains, companies engaged in recycling of mercury-containing wastes, municipal government bodies.
- The Declaration of IPLA forum on interregional cooperation in the field of waste management and resource recovery towards economic development on the basis of "closed cycle" was presented and adopted in the framework of the IPLA Global Forum-2015, in Moscow.
- A tripartite Memorandum of understanding on cooperation between the International Centre for the best environmental technologies, representing the interests of the UNIDO Centre for International Industrial Cooperation in the Russian Federation, the Fund "National Environmental Management and Cleaner Production Center of oil and gas industries", created on the basis of the the Gubkin Russian State University of Oil and Gas and Wuhan Institute of Technology. The main purpose of the memorandum is the creation of a regulatory framework for cooperation in the common interests of the parties, first of all, in the use of crumb rubber in the materials for road and bridge construction in the Russian Federation and China.
- By order of the Minister of Natural Resources and Environment of the Russian Federation, on the approval of the Working Group for preparation of the Government's acts, necessary for the implementation of the provisions of the Federal Law dated 29.12.2014 No 458-FZ "On Amendments to the Federal law "On production and consumption waste", separate legislative acts of the Russian Federation and the Annulment of certain legislative acts (provisions of legislative acts) of the Russian Federation", a Working Group under the

Ministry of Natural Resources and Environment for preparation of the Government's acts was established on On January 30. The composition of the Working group was approved.

PLANNED PROJECT ACTIVITIES

As part of the implementation of the project the following activities are planned:

1. To continue work on the implementation of the pilot project on organization of collection and recycling of electronic scrap in Moscow region;
2. Organization and holding of the first Eurasian Congress on e-waste by Association of recyclers of electronic and electrical equipment. The Congress will be attended by: the Russian business Association ERBA, a Swiss company Smart Resources. Organizational support will be provided by the UNIDO Centre for international industrial cooperation in the Russian Federation, the Russian chamber of Commerce, Embassy of Switzerland in Russia, the organizing Committee of the US conference on processing of electronic waste (e-scrap Conference USA), Association of trading companies and manufacturers of electrical household and computer technics (RATEK), non-commercial partnership Association of enterprises for handling mercury containing and other hazardous waste (NP ARSO), a number of other Russian and foreign companies and organizations.
3. In cooperation with the Institute of GIS technology, continue work on GIS in the area of recycling, increasing the number of reporting layers, and its subsequent implementation in the EEU member countries (from Belarus, Armenia, Kazakhstan) to encourage the transfer of technologies and exchange of experience and information in the waste management.
4. To participate in the organization of the conference on topical issues of recycling used tires and the use of crumb rubber in road construction.
5. Continued cooperation with the members of the International Partnership for the expansion of the local waste management authorities services - IPLA, for the creation and development of a permanent expert platform IPLA-RUSSIA, which will help to shape the proposals of the participants in the field of waste management and to bring these proposals to government agencies.
6. To initiate unification of industry associations of processors in order to create a Board of Directors, which will be able to build an advisory and practical cooperation with the Federal Service for Supervision of Natural Resources (Rosprirodnadzor) to streamline the waste recycling industry.

MEDIA COVERAGE

During the reporting period, in print and electronic media, several publications devoted to the Project as a whole and its individual components were published:

1. October 6-7, 2015, IPLA Global Forum 2015 was held in Moscow /Website of the Federal Service for Supervision of Natural Resources/ http://rpn.gov.ru/node/15819
2. IPLA forum 2015 gathered more than 800 people /«RIAMR» - Regional information Agency of the Moscow region/ http://riamo.ru/happen_news_moscow/20151006/615628364.html
3. IPLA Global forum-2015 – International partnership for expanding services of local authorities on waste management /City portal of Moscow/ http://gorodskoyportal.ru/moskva/news/society/18724080/
4. Information portal of the Federation Council http://mobile.council.gov.ru/press-center/news/59763/
5. The Governor of Orel region Vadim Potomsky participated in the IPLA Global Forum – 2015 /"The capital of the country" - Federal online edition/ http://kapitalrus.ru/uznai/news/gubernator_orlovskoj_oblasti_vadim_potomskij_prinial_uchastie_v_globalnom_forume_ipla__2015/
6. IPLA 2015 /Website of the Association for Neighborhood and Housing Development «Razvitiye»/ http://gkhrazvitie.ru/tape/news/2015/10/710/
7. The Civic Chamber of the Russian Federation participated in the Global forum on the best technologies in the field of waste management /Planet-today.ru - Information portal/ http://planet-today.ru/novosti/obshchestvo/ekologiya/item/22393-op-rf-prinyala-uchastie-v-globalnom-forume-po-nailuchshim-tekhnologiyam-v-sfere-obrashcheniya-s-otkhodami
8. IPLA global Forum 2015: the new word in the waste treatment industry/Website of the Vladimir region Administration/ http://dpp.avo.ru/news/336--ipla-2015-
9. Environmental education: regions sharing experience /Portal "Ecocity" of the Department of natural resources and environmental protection of Moscow/ http://ekogradmoscow.ru/novosti/ekologicheskoe-prosveshchenie-regiony-delyatsya-opytom
10. IPLA global Forum /«Vechernaya Moscva» - Information portal/ http://www.vm.ru/news/2015/10/06/sobrat-i-razdelit-ekologiyu-uluchshit-pererabotka-musora-299350.html
11. The delegation of the Kaluga region will take part in the work of the Global environmental forum IPLA – 2015 /Kaluga-poisk.ru - Information portal/ http://www.kaluga-poisk.ru/%D0%9D%D0%BE%D0 -ipla-2015
12. Online edition «Recycle» http://recyclemag.ru/news/v-podmoskove-zapustili-proekt-po-sboru-elektroloma
13. The website of the Department of natural resources and environmental protection of Moscow region http://mep.mosreg.ru/multimedia/novosti/glavnie/15-01-2016-11-54-30-pilotnyy-proekt-po-organizatsii-sbora-i-pererabotk/
14. The Newspaper «Kommersant» http://www.kommersant.ru/doc/2873591
15. The TV Channel «360° Moscow region» http://360tv.ru/news/perspektivy-sortirovki-i-pererabotki-musora-v-podmoskove-41506/
16. Th website of the Agency for social information http://www.asi.org.ru/announcement/obshhestvennye-slushaniya-problemy-pererabotki-othodov-elektronnogo-i-elektricheskogo-oborudovaniya-i-shin-v-moskve-i-drugih-regionah-rossii/
17. Network edition Primgazeta.ru http://primgazeta.ru/news/forum-nature-without-borders-to-obtain-the-status-of-federal
18. Network edition "UlanMedia" http://ulanmedia.ru/news/society/03.11.2015/470911/sohranenie-blagopriyatnoy-sredi-obitaniya-cheloveka-obsudili-na-forume-vo-vladivost.html
19. Information agency "Vostok media" http://www.vostokmedia.com/n261323.html

ENVIRONMENTALLY SOUND MANAGEMENT AND FINAL DISPOSAL OF PCBS AT THE RUSSIAN RAILROAD NETWORK AND OTHER PCB OWNERS

DESCRIPTION OF THE PROJECT. PROJECT ADVANCEMENT

The Project aimed at the establishment of the system for environmentally sound polychlorinated biphenyls (PCBs) management in the Russian Federation, the establishment of the system for PCBs identification in the electrical equipment also its sound management and environmentally sound disposal according to the Russian and international standards.

The project is the first stage of the National program to phase out the use of PCBs in all industries.

Within the project it is prescribed to implement the following activities:

- The establishment of the institutional regulatory and human resources capacity building for establishment and operation of ESM system for PCB disposal;
- Country-wide inventory of PCB-contaminated equipment and waste;
- Environmentally sound management and disposal of PCB-contaminated equipment and waste.

IN BRIEF

- **Project number:** 140019
- **Implementation dates:** 2014 – 2018
- **Donor**: GEF
- **Main partners:** Ministry of Natural Resources and Environment of the Russian Federation; "Russian Railways" JSC; SUE "Vodokanal of St. Petersburg"; FSBI HPE " Gubkin Russian State University of Oil and Gas"
- **Objective:** establish a management system for PCBs-contained equipment in the Russian Federation and environmentally safe waste utilization
- **For more information please contact:**

Ekaterina Ivanova - National consultant for PCBs management and disposal
e.ivanova@unido.org

At the present time in Russia there is no management system for hazardous substances, PCBs-contained materials and equipment utilization. Herewith in the territory of the country there is a big quantity of oil-filled electrically-powered equipment potentially polluted with PCBs, which must be put out of commission till 2025. By 2028 as consistent with the Stockholm Convention on Persistent Organic Pollutants (POPs), the PCBs-contained equipment and materials must be utilized. Singulars installation for hazardous substances utilization including pesticides and PCBs that exist nowadays don't meet the industrial requirements for the liquidation of polluted materials and sometimes even fall short of accepted ecological norms on the part of emissions and discharges. Within the framework of UNIDO project there will be established the infrastructure that will not only allow to put out of the commission and utilize PCBs at the object of "Russian Railways" JSC but also to engage other electricity-generating equipment owners into the process of PCBs inventory, accounting and liquidation.

Partners of the Project

The project is performed in cooperation with “Russian Railways” JSC, SUE “Vodokanal of St. Petersburg” and Gubkin Russian State University of Oil and Gas with the assistance of the Ministry of Natural Resources and Environment of the Russian Federation, FSBO “Russian Energy Agency” of the Ministry of Energy of the Russian Federation.

EVENTS

Round table discussion «The formation of a sectoral system of measures on the contraction of usage, unintended production and environmentally friendly disposal of polychlorinated biphenyls (PCBs) in the production industry and the Fuel and Energy Sector of Russian» **27 May 2015** 	The round table discussion was carried out on the 27th of May 2015 at the Analytical Centre for the Government of the Russian Federation. The representatives of the Federal agencies and lower organizations (the Ministry of Natural Resources and Ecology, The Ministry of Energy, Federal Service for Supervision of Natural Resource Usage, “Russian Energy Agency” FSBI), the owners of the electrical equipment, the representatives of the recycling companies of the hazardous waste and the others took part in this event. Within the round table discussion the law aspects for PCBs and other POPs management were being discussed; the issues of inventory of electrical equipment and also its owners’ engagement into this process. It was discussed the question of the hazardous waste disposal, including PCBs, in accordance with the Stockholm Convention principles and Russian relevant technologies. The participants of the round table discussion decided upon the identification and engagement of the electrical equipment owners into the process of inventory of the oil-filled transformers including the experience of the “Russian Energy Agency” FSBI. Summarizing the results of the round table discussion the Analytical Centre for the Government of the Russian Federation prepared a note about the necessary amendments for its consideration to the Government of the Russian Federation in the part of the Stockholm Convention implementation.
The ceremony of official opening of the complex for the thermal treatment for hazardous wastes within the common project UNIDO- “Russian Railways” JSC **28 July 2015**	On the 28th July 2015 the ceremony of official opening of the complex for the thermal treatment for hazardous wastes took place in c. Yaroslavl. The president of the “Russian Railways” JSC Mr. Yakunin, the managing director of UNIDO Mr. Philippe Scholtes, the governor of Yaroslavsky region Mr. Yastrebov, the representatives of the executive authorities of the Russian Federation, Republic of Belarus and Armenia took part in this event. The construction of the complex was made within the co-financing of UNIDO project “Environmentally sound

	management and final disposal of PCBs at the Russian Railroad Network and other PCB owners".
Round-table discussion for the realization of international environmental agreements within IPLA 2015 Global Forum **6 October 2015** 	On the 6th of October within IPLA Global Forum 2015 round-table discussion «Realization of international environmental agreements as the element of chemical and ecological system of Russian and countries of EEU safety" took place. The international and Russian experts for the realization of Stockholm Convention on persistent organic pollutants, Basel Convention, Rotterdam Convention, Minamata Convention on Mercury and Strategic Approach to International Chemicals Management, the representatives of Kazakhstan and Belarus Republics, the representatives of industrial enterprises occupied with POPs, the representatives of specialized agencies of UNO-UNIDO, UNEP, Russian National Committee for UNEP participated in this global event. Ms. Tatiana Terekhova, the representative of Stockholm, Basel and Rotterdam Conventions Unite Secretariat greeted the participants of round-table discussion remotely. Within the round-table discussion the problems of the Stockholm Convention on Persistent Organic Pollutants implementation were discussed, especially in the part of PCB management, pesticides organization and storage. It is observed that in recent years the work in the field of environmentally safe management of POPs in the Russian Federation, Belarus and Kazakhstan Republics has become more active (those of thanks to UNIDO and UNDP projects), however the quantity of issues which require the operative solution is still grand. The participants of round-table discussion considered high priority measures of the uniting together efforts within the implementation of the international environmental agreements. The proposals were fixed in the round-table resolution which has been directed to the Government of the Russian Federation and concerned Ministries and governmental agencies with the resolutions of IPLA Global Forum.

Workshop "The organization of accounting system of polychlorinated biphenyls in the energy-intensive industries of Russia" **28 October 2015** 	The workshop took place in the Analytical Centre for the Government of the Russian Federation on the 28 of October 2015. More than 80 representatives of Russian generating companies, energy suppliers, energy providers, federal executive agencies, scientific and public organizations. Within the seminar the problems of polychlorinated biphenyls (PCBs) inventory and their accounting in the enterprises of energetic and other industrial fields were discussed in detail, the issues on PCBs-containing equipment owners' awareness were also discussed. The questions of financial and fiscal stimulation of business to realize the environmental projects were elucidated in detail. It is worth noting that today there are a lot of mechanisms mainly based on immunity grant while implementation the special types of energy-efficient equipment, the best available technologies and realization of environmental measures. Also the questions of the laboratories establishment for the analytical support of the inventory of the transformer equipment and capacities and the technologies for PCBs utilization in the Russian Federation were discussed in detail by the participants.
The Steering Committee of UNIDO/GEF project "Environmentally sound management and final disposal of PCBs at the Russian railway network and other PCBs owners" **18 November 2015** 	On the 18th November 2015 the Steering Committee took place in the Center for Scientific and Technical Information of Russian Railways. The representatives of UNIDO head-office, the federal executive authorities of the Ministry of Natural Resources and Ecology of the Russian Federation and the Ministry of Energy in the Russian Federation, and also the counterparts of the project – the representatives of "Russian Railways" JSC, SUE "Vodokanal of St. Petersburg", Gubkin Russian State Oil and Gas University, and the representative of FSBI "Russian Energy Agency" for the Ministry of Energy of the Russian Federation took part in this event. During the Steering Committee there were enlightened the main achievements while project realization, and also there was a discussion about the issues concerning the possible project expansion to the Arctic territories of Russia with engagement of financial resources from Arctic Council and the rise of awareness of the electrical equipment owners for their further engagement into the project. The special attention was paid to the discussion of the available technologies for PCBs disposal. The participants of the Steering Committee expressed their hope to continue the work and extend the working fields including the establishment of the ESM system in the Russian Federation and neighboring countries.

MAJOR ACHIEVEMENTS IN 2015

Component 1.1. Policy and institutional regulatory reinforcement

1. The plan for the amendments with the purpose of requirements implementation provided for the Stockholm Convention on POPs was developed and approved by the workgroup of the Federal Service for Supervision in the Sphere of Natural Resource Use. It includes provisions in the part of establishment of the environmentally sound management system:
   - The requirements determination for the identification and marking of PCBs-containing equipment and other materials and also operation requirements determination for the incorporated PCBs-containing equipment;
   - The requirements determination for the organization of environmentally sound disposal of PCBs-containing liquids and contaminated equipment by 2028;
   - The arrangement of conditions for the enterprises operation that specialize in environmentally safe disposal of waste, including PCBs-contaminated equipment (liquids);
   - Environmentally sound liquidation of PCBs-containing substances and materials in the shortest possible time but no later than 2028;
   - The control realization for the PCBs content in the environment;
2. The draft order "About the approval of inventory conditions for the equipment, materials using or containing polychlorinated biphenyls (PCBs) and also PCBs-containing equipment in the territory of the Russian Federation" was elaborated by the Ministry of Natural Resources of the Russian Federation;
3. The draft decree of the Government of the Russian Federation "About the adoption of regulations for the polychlorinated biphenyls containing equipment and waste management" was elaborated. The draft decree was approved by the Federal agencies of executive authority and directed to the State Duma of the Russian Federation for the ratification and approval;
4. The proposal for the amendments in the Federal Law № 7-ФЗ "On Protection of Environment" of 10 January 2002 in reference to the definition of term "persistent organic pollutants", the government interventions in the part of persistent organic pollutants management was directed to the State Duma Committee on Natural Resources;
5. The draft amendments for the Russian Federation Administrative Offence Code (Federal Law № 9 195-ФЗ of 30 December 2001) were elaborated in the part of the determination of dimensions of the administrative fine for the non-implementations of the regulations for the management of the equipment and waste containing polychlorinated biphenyls;
6. The proposal for the amendments in the Federal Law № 89-ФЗ "On Production and Consumption Waste" of 24 June 1998 was elaborated in the part of the requirements determination for the management of the equipment and waste containing polychlorinated biphenyls;

7. The discussion of the Technical Regulation of Customs Union TP TC 030/2012 “About the requirements for the lubricants, oils and special liquids” was hold in the Ministry of Energy of the Russian Federation;
8. The draft amendments to the Decree of the Government of the Russian Federation №400 of 30 July 2004 “About the approval of Statue for the Federal Service for Supervision in the Sphere of Natural Use and the amendments in the Decree of the Government of the Russian Federation №370 of 22 July 2004” were developed in the part of granting of power of attorney for the Federal Service for Supervision in the Sphere of Natural Use for the maintenance and annual update of the electronic database for PCBs-containing equipment, materials and waste accounting, operation site and PCBs-containing equipment storage, landfill site for the PCBs-containing waste and materials;
9. The draft amendments for the Decree of the Government of the Russian Federation №400 of 28 May 2008 “About the Ministry of Energy of the Russian Federation” were proposed in the part of granting the power of attorney for the Ministry of Energy of the Russian Federation for the development of the order and conditions for the retirement, usage and replacement of the energy equipment, containing PCBs and also the development of the register form of the power supply network equipment containing polychlorinated biphenyls;
10. The draft amendments for the Order of the Ministry of Natural Resources of the Russian Federation № 868 of 18 December 2002 “About the organization of professional education as to work with hazardous waste” were proposed with regard to the tentative programme of the professional education of the persons as to work with hazardous waste in the part of the determination of core requirements applicable to the private entrepreneurs, legal entities which are the owners of PCBs-containing equipment and waste;

Component 1.2. Introduction of the new rules for the employees to the federal and local government agencies, customs authorities, non-governmental organizations and persons who work with PCBs

11. The project on the preparation and distribution of the special educational learning and information materials about POPs for the enterprises, institutes and organizations that make, use and intoxicate POPs has started;
12. The Ministry of Natural Resources and Environment of the Russian Federation incorporated in the Minutes №10-17/38-pr of 24 March 2015 the order for the Federal Service for Supervision of Natural Resource Usage about the presentation of developed regulatory acts for the introduction to the concerned executive authorities;
13. The expert session for the scientific rationale of the contract commitments of the Russian Federation within the contracts and convention on environment and natural use was hold on the base of Federal Agency for Scientific Organizations in the Russian Federation (14.04.2015);
14. Within the workgroup the cooperation with institutes, concerned to the problems of persistent organic pollutants, including PCBs waste has started, namely: the Institute of

Organic Synthesis Ural Division of RAS represented by the director and academician of RAS V.N. Charushin; Boreskov Institute of Catalysis SB RAS represented by PhD in Chemistry, the team leader N.Y. Adonin;

15. The preparation for the training of technical specialists and directors of energy enterprises for the PCBs management is being carried out, including the inventory – sampling, analysis; the problems of equipment marking; environmentally sound disposal; and also the management of legislative regulatory for PCBs-containing equipment and waste;

Component 1.3. Taking actions for the environmentally sound management in the sphere of sound liquidation/utilization of PCB-containing waste and labour safety

16. The federal classified catalogue of waste including waste of transformer and other oils containing polychlorinated dephenyls and terphenyls has been approved. (Approved with Order № 445 of the Federal Service for Supervision of Natural Resource Usage of 18 July 2014)
17. The project for the identification of core sources of POPs emission as the consequence of unintentional production in accordance with the inventory has been started.

Component 2.1. The inventory of equipment and waste polluted with PCBs in the territory of the country based on the results of PCBs-inventory and risk evaluation for the efficient distribution of labor and financial assets

1. The technical standard- GOST 61619-2013 on “Insulating liquids. Detection of the PCBs pollution by gas chromatographs” commenced on the 1st July 2014. The above-named GOST can be considered as a legal translation of the Standard IEC 61619 approved by the International Electrotechnical Commission, IEC;
2. There have been chosen three laboratories for the inventory of the PCB-contained equipment at the production sites of the “Russian Railways” JSC and SUE “Vodokanal of St. Petersburg”. The chosen laboratories include the following: 1. The Laboratory of analytical chemistry and ecology, Department of the Industrial Ecology at the Gubkin Russian State University of oil and gas; 2. The Laboratory of analytical chemistry at the Research- and Production Center for the environmental protection within the branch office of the “Russian Railways” JSC; 3. The laboratory at “Inspectorate R” JSC (Proceedings №16 for the UNIDO internal meeting on the 3rd of November, 2015);
3. Procurement of the necessary gas chromatographs and other laboratory-equipment. Thus, the Gubkin Russian State University of oil and gas at its own expense has purchased one gas chromatograph with mass spectrometer and renovated the laboratory facilities (including the replacement of furniture and glassware). At the moment the negotiations of the additional chromatograph’s purchasing are taking place;
4. UNIDO has purchased two gas chromatographs with electron-capture detector for the PCBs-analysis according to the requirements of the GOST IEC 61619-2013. The equipment has been calibrated and delivered to the laboratory at “Inspectorate R” JSC;

5. The Laboratory of analytical chemistry at the Research- and Production Center of the "Russian Railways" JSC (Yaroslavl) worked out the list of the requirements for the laboratories providing analysis of PCB within process liquids;
6. In cooperation with the Laboratory of analytical chemistry and ecology of the Gubkin University and UNIDO-consultants there was worked out an instruction on management of PCBs- contaminated waste ";

Component 2.2. Expand inventory of the PCBs-contained equipment

There were collected 5000 samples from the oil-containing equipment at the October Railway, Moscow Railway, Northern Railway, Privolzhskaya Railway, Gorky Railway, South Eastern Railway, East Siberian Railway, Krasnoyarsk railway as well as 130 units of the oil-containing equipment from "Vodokanal of St. Petersburg".

Component 2.3. Establishment of the database for the equipment contained PCBs. Elaboration of the labeling system for such equipment

There was established a database for monitoring of the implementation of the Stockholm Convention on Persistent Organic Pollutants in terms of inventory of PCBs-contained production-sites, equipment, materials and waste in Russia. The base's interface and structure have been approved by the Federal Service for Supervision in the Sphere of Natural Resource Use- the prospective user of the suggested software.

Component 3.1. Establishment of ecologically sound system of PCB packing, storage and transportation

1. The specialists of the Scientific and Production Center for Environmental Protection (city of Yaroclavl) together with analytical ecotoxicological laboratory of the A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences have carried out works on the definition of substance hazard category of the equipment and technological liquids containing polychlorinated biphenyls, on the basis of the available data on their component composition when decommissioning and transferring them to the category of waste;
2. The railways sites are defined aiming to create a pilot system for the collection, storage and transportation of discharged transformer oils contaminated with PCBs and polychlorinated biphenyls;

Component 3.2. Technology option of environmentally sound disposal

3. The studies on the identification of domestic technologies for disposal of PCBs, including facilities already introduced in the operation were conducted;

4. Preparation of technical specifications for the procurement of equipment for the purification of transformer oil from the PCBs and disposal of PCB-contaminated materials and substances is being carried out;

Component 3.3. Environmentally sound disposal of 3,800 tons of equipment and waste containing PCBs

At the premises of the Scientific and Production Center of JSC " Russian Railways" (Yaroslavl) the plant for waste disposal of III-V hazard class (including PCB- containing) was put into operation. The process of disposal is carried out by thermal destruction with the help of a complex of interconnected equipment and facilities equipped with afterburner systems and tail gas cleanup before the actual release into the atmosphere. The commissioning permit was obtained on 30.10.2015 №RU 6517306-019-2015

PLANNED PROJECT ACTIVITIES

As part of the implementation of the project the following activities are planned for 2016:

- Introduction of amendments to the Russian legislation in a part of the implementation of the Stockholm Convention;
- PCB-analysis training for the personnel at the laboratories. The training program should comply with the relevant standards and regulations (February 2016);
- Training on environmentally sound PCB-management for the personnel and managers at the industrial and power facilities;
- Collection of 10 000 oil-samples from power equipment at the production-sites of JSC “Russian Railways”;
- PCB-analysis of the transformer oils;
- Setting into operation the database on monitoring of the Stockholm’s Convention implementation in a part of inventory of the production sites, equipment, materials containing (or using) PCBs/ PCBs containing wastes.
- Establishment of the PCB-labeling system for transformers based on the level of PCBs in insulating liquids;
- Introduction of amendments to the risks during the work with power equipment due to the presence of PCBs within insulating liquids;
- Meeting on the base of the Public Chamber of the Russian Federation on issues of public awareness about POPs and full-scale PCBs-inventory of the power equipment;
- Purchase of the equipment for the cleaning of the transformer oils to eliminate PCB-contamination.

MEDIA COVERAGE

During the reporting period, in print and electronic media, several publications devoted to the Project as a whole and its individual components were published:

1. Ivanova E.A., Sokolova N.R., Mar'ev V.A., Nikiforov M.P. On PCB disposal within the frameworks of the Stockholm's Convention implementation in the Russian Federation. // UNIDO in Russia, №15, 2015.- P.20-23
2. Korotkov S.A.,UNIDO Project on environmentally sound disposal of PCBs. //UNIDO in Russia, №16, 2015.-P. 2-4
3. Ivanova, E.A. Inventory of PCBs as a key-factor for the establishment of the disposal system within the frameworks of the Stockholm Convention on POPs//UNIDO in Russia, №16, 2015.-P. 5-6
4. SokolovaN.R. Improvement of the Russian legislation in a part of implementation of the requirements of the Stockholm Convention on persistent organic pollutants. // UNIDO in Russia, №16, 2015. - P. 7-9
5. In Yaroslavl was launched a plant for the disposal of hazardous wastes. // UNIDO in Russia, №16, 2015.- P. 10-13
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Publications

The CIIC official magazine "UNIDO in Russia" is published on a regular basis. At the present time the magazine is distributed through the Investment and Technology Promotion Offices (ITPO) and the Ministry of Foreign Affairs of the Russian Federation to the largest government agencies and industrial enterprises of the Russian Federation.

The main purpose of the magazine — information support on UNIDO projects and activities, aimed at attracting foreign technology and investments related to modernization of the Russian industry and economy, promotion of Russian technologies in other countries and assistance in the placement of funds of Russian investors abroad.

The magazine covers the following topics:

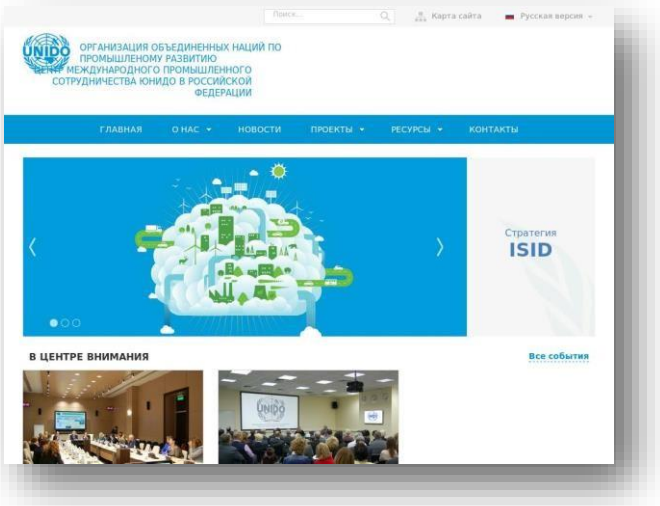
- Automotive industry
- Mining industry
- Rail transport
- Housing and public utilities
- «Green» building
- Medical industry
- Metallurgical industry
- Waste management
- Food Industry
- Industrial Ecology
- Vocational education
- Rocket and space industry
- Fishery
- Agriculture
- Textile Industry
- Fuel industry
- Chemical and Petrochemical Industry
- Refrigeration industry
- Power industry

«UNIDO in Russia» Magazine, № 15 и № 16

Internet resources

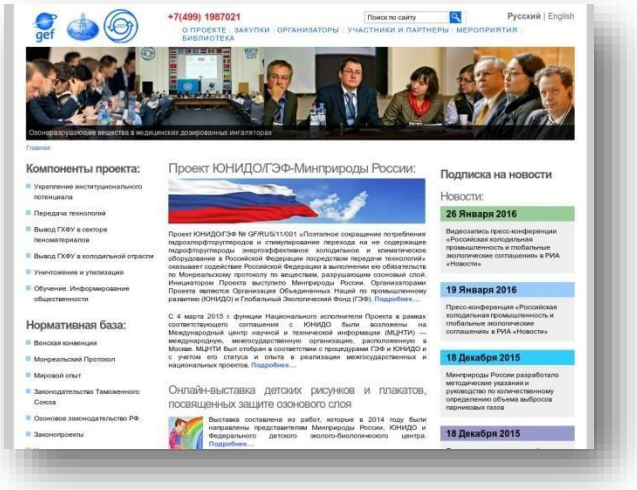
The following websites were established to inform on the activities of the UNIDO CIIC and UNIDO Projects in Russia:

1. **The UNIDO CIIC official website** (www.unido.ru) is devoted to the description of the mission and activities of the Center in Russia and abroad. The website news line is regularly updated. A large-scale modernization of the Russian and English version of the website was done in 2015.



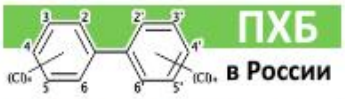
2. **Online version of the magazine "UNIDO in Russia"** (www.unido-russia.ru)

3. **The website of the project "Phase Out HCFCs and Promotion of HFC-free Energy Efficient Refrigeration and Air-Conditioning Systems in the Russian Federation Through Technology Transfer"** (http://www.ozoneprogram.ru/) informs not only about the project stages of realization and plans, but also gives a large amount of actual information on the ozone layer protection problems, international initiatives and the world community coordinated actions results concerning the issue.

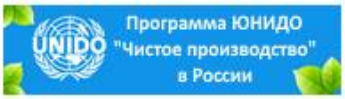


4. The UNIDO CIIC continues to develop a number of Web portals:

Phase out of HCFCs in Russia



PCB in Russia: problems and solutions (Phase out of PCBs Project)



National Cleaner Production Centre

ISID Operation Platform

UNIDO Open Data Platform

UNIDO Centre for International Industrial Cooperation in the Russian Federation

125252 Moscow,
Russia 21B Kuusinen st.
Telephone: +7 499 943-00-21
Fax: +7 499 943-00-18
e-mail: info@unido.ru

www.unido.ru