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Energy Efficient City in Russia: Preparing, Financing and Implementing Municipal Energy Efficiency Programs

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РЕГИОНАЛЬНОГО РАЗВИТИЯ
Российской Федерации

RF Ministry of Regional Development
World Bank, Europe and Central Asia Sustainable Development Unit,
Energy Sector Management Assistance Program (ESMAP)

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Abbreviations and Acronyms

BEA	Berlin Energy Agency
CENEf	Center for Efficient Use of Energy
EBRD	European Bank for Reconstruction and Development
EE	energy efficiency
EPC	energy performance contract
ESCO	energy service company
ESMAP	Energy Sector Management Assistance Program
ESPC	energy savings performance contract
ESPC	Energy Saving Performance Contracting
GEF	Global Environment Facility
GHG	Greenhouse Gases
HoA	homeowners association
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
JI	Joint Implementation
kWh	kilowatt-hours
Mtoe	millions of tons of oil equivalent
RAF	Rapid Assessment Framework (ESMAP)
REA	Russian Energy Agency
RF	Russian Federation
USD	US-Dollar
VEB	Vnesheconombank
WGB	World Bank Group

INTRODUCTION

The issue of Energy Efficiency has gained special importance in Russia. The recent energy crisis has mobilized the Russian Government to undertake a number of concrete steps towards promoting energy efficiency. For example, in November 2009, Federal Law #261-FZ ("*On Energy Efficiency Improvement and Energy Saving"*) was adopted to help the country reduce its energy intensity by 40% by 2020. The government is also working on more than 50 by-laws formulating specific implementation mechanisms of the policy concepts presented in the Law. In addition, *the State Program of Energy Saving and EE Improvement until 2020* and *Action Plan on EE and Energy Saving* (December 1, 2009), are emerging as main implementation vehicles.

These regulatory changes have important implications for local governments and cities, including the development of new energy efficiency competences and responsibilities. Cities, for example, will have to develop and implement regional energy efficiency programs; hold information campaigns; coordinate and supervise activities and sustain achieved results in local public buildings and utilities; supervise installation of metering devices; maintain local information system on energy efficiency in buildings (including energy audit results, energy passports, energy efficiency measures and savings reports, etc.). While this array of legislation is comprehensive, it is equally ambitious and, many feel unrealistic. The capacities of local governments have yet to be developed; cities often possess old, dilapidated building stocks which may require rehabilitation before energy efficiency improvements can be made; housing associations and cooperatives are unable to access financing and some even lack legal abilities to borrow; and, there are few tested and developed models for energy efficiency financing, implementation, and service provision. Further, the Law has set several tight deadlines for meeting major milestones, such as full metering in public buildings by January 1, 2011, full metering in residential buildings by January 1, 2012, conducting of energy audits by 2012, annual 3% reduction in energy use from 2010 from 2009 levels for five years, banning of 100 W incandescent bulbs by January 1, 2011, conversion to long-term energy tariffs, among other things.

In response to these challenges, the World Bank's Europe and Central Asia Sustainable Development Unit, along with the World Bank's Energy Sector Management Assistance Program (ESMAP), and the Russian Federal Ministry of Regional Development, conducted a conference, entitled "Energy Efficient Russian Cities: Preparing, Financing and Implementing Municipal Energy Efficiency Programs". The purpose of the conference was to discuss city obligations and share international experiences with respect to developing such programs at the municipal level. Local government officials, Russian experts, practitioners from the region (Germany, Poland, Ukraine), World Bank staff and others shared their approaches and experiences. The event took place in the City of Kazan, from June 29-30, 2010.

These proceedings summarize the presentations made, main issues discussed, and suggested actions that the Russian government and international community should consider in order to further promote energy efficient cities in the Russian Federation.

PRESENTATIONS

This section presents a brief summary of each presentation made during the 2-day Conference. Links to the presentations are provided in Annex 3.

Part A. Implications of the recently adopted Federal Law #261-FZ and by-laws for cities
Moderator: Irina Boulgakova, RF Ministry of Regional Development

State policy towards energy saving in housing sector
Irina Boulgakova, Director of the Housing and Communal Services Department, RF Ministry of Regional Development

The RF Ministry of Regional Development is one of the key stakeholders implementing Federal Law # 261 *On Energy Saving and Energy Efficiency Improvement*. The Ministry is currently developing a number of regulatory and legal acts which would facilitate the introduction of Federal Law # 261 provisions into practice. The presentation provided clarifications regarding activities and mechanisms envisaged by Federal Law # 261 with respect to the housing and utility sectors. In particular, the law stipulates the following three groups of activities for the housing and utility sectors: 1) Measures toward provision of metering devices to consumers and encouragement of consumers to save energy and pay full energy costs; 2) Energy efficiency (EE) improving measures for the housing sector, including new construction projects; and 3) Implementation of regional and municipal EE improvement programs. In addition the presentation listed requirements for regional EE programs, and provided explanations regarding economic, regulatory, communication and technical mechanisms to support EE improvements.

REA: support of municipal EE activities
Alexey Poleshchuk. Deputy Director General, Russian Energy Agency (REA)

The Russian Energy Agency (REA) was founded by the RF Ministry of Energy in December 2009; it has 70 regional branches. REA specializes in information and analytical support to the energy sector, in the field of EE and renewable energy sources. The Agency also deals with the development of methodologies, standards, and regulatory and legal frameworks. REA also provides support to municipalities and regions in development of EE programs. Given that Law # 261 obliges municipalities to develop and introduce EE programs, the presentation focused on evaluation of municipalities and regions' activities in the preparation and implementation of the above programs. For example, according to REA, comprehensive EE improvement programs have been approved by 6% of municipalities; 12% of municipalities are implementing such programs; 46% of municipalities are developing such programs; and 36% of municipalities have done nothing to date. In addition, the presentation lists barriers on the way of EE improvement in Russian municipalities, with a lack of energy management capabilities at the city level as the main obstacle. The presentation also contained a list of measures which should be implemented by municipalities to prepare more quality EE plans.

About realization of the Federal Law on EE
Sergei Sivaev, Director of the Municipal Economy Department, Institute for Urban Economics

The presentation revealed barriers to implementation of Law # 261 focused on the following issues: 1) Installation of metering devices. In particular, it was noted that the Law set ambitious deadlines for implementation of this activity: In particular, due to the lack of the required number of metering devices in the market it would be unrealistic to provide all buildings with metering devices by the end of 2011. In addition, the energy resources saving would benefit consumers while costs may have to be borne by

energy supply companies. Issues of ownership of the installed metering devices is also unclear. 2) EE improvement measures. Financing structures for these measures have not been developed. Incorporating EE considerations in new buildings may only have marginally higher incremental costs, but existing buildings in poor physical condition are likely to face very high costs to comply with the Law. Further, owners and residents of such buildings would generally have low income levels, making compliance further problematic. 3) ESCOs activities. Law # 261 has given an impetus to the development of the energy services market. However ESCOs in Russia are still playing the role of leasing companies which mostly deal with delivery and installation of metering equipment. The Law does not define mechanisms for cooperation between ESCOs, HoAs and building management companies nor address public procurement, financing or contracting challenges associated with such complex business models.

Part B. Municipal Energy Efficiency Planning: Data and Analytical Tools
Moderator: Yuriy Myroshnychenko, Russia Energy and Infrastructure Program Coordinator, World Bank

Issues to discuss:

- Data collection and processing and typical data constraints;
- Establishing baseline EE indicators;
- Setting EE targets;
- Energy audits;
- Analytical tools to identify EE actions and conduct their economic and financial analysis;
- Integration of energy efficiency and savings in long-term planning;
- Monitoring systems;
- EE statistics and information systems ("GIS" System).

Recommendations for the development of municipal EE programs
Igor Bashmakov, Center for Efficient Use of Energy (CENEf)

The presentation included recommendations for the development of municipal EE programs, specifically for gathering of data required for development of municipal programs, systematizing acquired information, and analyzing the data. It also described methods for EE program development, and economic analyses. In parallel the presentation criticized the existing regulatory and legal framework established for the development of municipal EE programs. In particular, he discussed the deficient methodology for developing target indicators as specified in Annex 1 of Russian Government Resolution #1225 of December 31, 2009. The draft Methodology for calculation of EE values, targets, and indicators (inter alia, in comparable conditions) were also assessed. The presentation argued that the regulatory documents stipulated too many indicators, and that a lack of formats for statistical reporting would impede their calculations. Therefore, it was recommended that these indicators be calculated only after the development and implementation of the statistical reporting formats.

City of Naberezhnye Chelny: realizing municipal EE program
Airat Zaynullin. Deputy of Head of Executive Committee, Naberezhnye Chelny City

The presentation described EE measures and tools implemented by the City Administration in the housing sector of Naberezhnye Chelny. The population of the city exceeds 500,000 people – Naberezhnye Chelny is the second city of the Republic of Tatarstan in terms of population and economic activity. The city was constructed in 1965-1990 as a single-industry city (the major enterprise in the city is Kamsky Truck Manufacturing Plant (KAMAZ). This drove the City to launch EE measures even before Federal Law #261 was adopted. Due to the availability of various funds from the Federal Housing and Utility Sector Reform Foundation, republican programs, Ministry of Construction and Housing and Utility Sector of the Republic of Tatarstan, and Tatenergo Holding's investment programs, the city has implemented measures on retrofitting residential and public buildings with various metering devices (the average coverage is

95%). As of January 1, 2010 automatic thermal energy regulation systems were introduced in more than 50% of its residential buildings. The introduction of these systems enabled an up to 30% reduction in residents' heating payments. Three automated data collection systems were also introduced in the city. Naberezhnye Chelny participated in the bidding for selection of municipalities which would participate in the Russian housing and utility sector reform project, and based on the preliminary bid evaluation, the city was included in the main group of project participants (with the total amount of financing exceeding 24 billion rubles[1]).

Vladikavkaz and Yuzhno-Sakhalinsk: preparing municipal EE programs
Alexey Bondar. Director, REA Far Eastern branch

The presentation introduced two approaches for the development of municipal EE programs. The first method dealt with the development of basic principles while allowing flexibility in detailed implementation (a similar approach was applied in Vladikavkaz). The second method involved prescriptive EE measures and activities. The prescriptive approach requires more detailed data and selection criteria for proper program implementation and monitoring. For example, calculation of target EE indicators for each facility and for the program on the whole; collection of information about facilities (projects) for the State Information Energy Saving and Energy Efficiency Improvement System (GIS EEE); establishment in the region of a system for monitoring of target EE parameters (taking into account requirements with regard to data transfer to GIS EEE). However the prescriptive approach has its drawbacks, the major of which is the fact that HoAs do not have complete information on energy resources and water consumption. The lack of information has impeded the gathering of indicators listed in Russian Government Resolution #1225 of December 31, 2009 *On Requirements for Regional and Municipal Energy Saving and Energy Efficiency Improvement Programs*.

Kazan City: implementing the pilot project "Energy Efficient City District"
Almaz Minegulov. Deputy Head of the Committee for Economic Development, Kazan City

Kazan is the capital of the Republic of Tatarstan. The city, the same as the Republic, pays special attention to EE. Kazan is currently implementing the second city energy resources efficiency program which completion is scheduled for the end of 2010. The presentation depicted the experiences and results of their program. During the program's four years, the volume of investments amounted to almost 1.7 billion rubles. These funds, from various sources, enabled saving of over 1 billion rubles of budget funds. Over 1.15 billion rubles were spent during the period of the city program implementation in the housing sector; the energy cost savings exceeded 570 million rubles. The outcomes of the energy resources efficiency program were the basis for the inclusion of Kazan in the group of cities where the pilot Energy Efficient District Project would be implemented. Pilot sites for the program were selected in seven districts of Kazan; each of the districts defined its own list of energy saving measures. The project implementation outcome shall be a reduction in the general level of energy resources consumption by 25-30% within the boundaries of these territories.

Methodology of EE indicators and targets setting
Irina Boulgakova. Director of the Housing and Communal Services Department, RF Ministry of Regional Development

In compliance with Russian Government Resolution #1225 of December 31, 2009 *Requirements for Regional Energy Saving and Energy Efficiency Programs*, regional and municipal EE improvement programs shall include: 1) list of target indicators in the field of EE improvements; 2) list of EE measures and deadlines for implementation these measures with possible use of extra budgetary resources. In this

[1] US$1=30.18 Russian Rubles (RUB)

context the presentation shared target indicators on EE improvements, provided clarifications regarding calculation of these target indicators, included groups of target indicators used for preparing regional and municipal programs, and gave an example of an EE indicator calculation. In addition the presentation provided clarifications regarding the stages of development and implementation of energy saving programs.

Analytical tools developed by the World Bank
Jas Singh, Senior Energy Specialist, World Bank

The presentation shows various tools and approaches developed by the World Bank to help cities assess their energy performance, design better cities, and implement and finance energy savings projects. Among them: The Rapid Assessment Framework - RAF – a diagnostic tool for analyzing energy use in cities, that prioritizes sectors and suggests specific actions to save money and improve performance; "Eco2 Cities" - a holistic urban planning approach to help cities achieve ecological and economic sustainability; and the new, proposed city-wide carbon finance approach for bundling EE projects across sectors for streamlining access to carbon credits. The presentation concluded with recommendations for Russian Cities, including collecting data on city-wide energy use and energy costs, conducting sample audits to assess savings potential and extrapolate, comparing with benchmark data (use developed country data if no Russian data exists), developing short-medium and long-term targets, and prioritizing sectors based on economic benefits, savings potential and ease of implementation.

Part C. Energy Efficiency Implementation: Public Buildings
Moderator: Sergei Sivaev, Director of the Municipal Economy Department, Institute for Urban Economics

Issues to discuss:

- Energy management and monitoring in public buildings;
- Financing of EE activities;
- Public procurement of energy services, ESCO business, EPC contracts;
- Remaining barriers and issues.

Public procurement of EE services: models, issues, country case studies
Jas Singh, Senior Energy Specialist, World Bank

Public sector energy use accounts ~2-5% of total energy use in many countries. Public organizations in Russia can save 42% or about 15.2 mtoe (based on 2008 World Bank report[2]). Reducing energy costs creates fiscal space for socioeconomic investments. However, realization of these gains in the public sector face many barriers, including incentives, financing and bureaucracy (budgeting, procurement). The presentation summarized advantages of using energy savings performance contracts (ESPCs) in the public sector for implementing EE projects. Various ESCO and ESPC models were presented, along with approaches to promoting ESPCs in the public sector in different countries, and alternate financing mechanisms to support ESPCs. Furthermore, the presentation summarized specific barriers to ESPCs in Russia and offered experiences from different countries to show options to address them.

Implementation of the federal pilot project "Energy Efficient Social Sector"
Sergey Bugrov, Nizhny Novgorod Energy Efficiency Investment Center

Nizhny Novgorod Energy Efficiency Center specializes in energy auditing. The Center participated in activities of the Project Office of the EE Working Group under the Committee for Modernization and

[2] IFC/World Bank, Energy efficiency in Russia: untapped Reserves, 2008, at: http://www.ifc.org/ifcext/rsefp.nsf/AttachmentsByTitle/FINAL_EE_report_Engl.pdf/$FILE/Final_EE_report_engl.pdf.

Technological Development of the Russian Economy. The Committee worked in two areas: energy efficient cities and energy efficiency in public social buildings (e.g., schools, hospitals). The Center conducted energy audits in eleven facilities in various regions of Russia selected as pilot sites. The presentation described typical energy saving activities (developed by the Center during its involvement in the Project Office activities) which would be possible to replicate for public buildings. The presentation also lists major challenges on the development of energy audits in Russia, such as a lack of competent personnel in energy savings at the municipal and regional levels, insufficient regulatory and methodological support, insufficient number of specialists in the field of energy audits, and unsatisfactory conditions of schools' energy performance (underfunding and non-observance of sanitary standards).

ESCOs: integrated solutions for EE measures in public sector
Vyacheslav Teplyshev, Director General, "TBN Energy Services"

The presentation revealed problems in development of the ESCO business in Russia. The energy service market is still nascent in Russia. Law #261 set unrealistic tasks and expectations for ESCOs. The presentation listed barriers on ESCO development in Russia: a lack of planning/organization/management/control mechanisms required for the ESCO market; lack of data accounting software for consumers; and, limited understanding of the provision of energy services. The presentation also contained a list of ESCO tasks, among them: 1. developing viable monitoring technologies; 2. establishing an energy consumption informational and analytical accounting system; 3. application of modern information technologies in organization of utility settlements, ensuring of maximum reliability of data transfers; 4. developing a system for information support in the field of energy saving; and 5. developing opportunities for attracting large investments.

Ukrainian cities: energy management for public buildings
Anatoly Kopets, Association of Energy Efficient Cities of Ukraine

The Association of Energy Efficient Cities of Ukraine was established in 2007 on the initiative of the Cities of Berdyansk, Kamenets-Podolsky, Lviv, Slavutich with support from the Ukrainian Ministry of Housing and Utility Sector and the European Association of Municipalities (ENERGIE-CITE) in order to unite resources of local communities to resist threats in the field of energy security and the environment. The presentation used the example of Lviv to demonstrate the organizing of the energy management and monitoring system developed for public buildings. Special detailed attention is given to the institutional arrangement of energy management, information and software mechanisms as well as the algorithm of energy management within municipal services. Competent organization of management of projects for energy saving in public buildings of Lviv City resulted in over US$1 million in savings in 2007-2009. The Lviv model of energy management system organization in the public buildings sector has been replicated further in nine Ukrainian cities with population of 50-300,000 residents. Lviv is a participant of the European Campaign *Display Energy Certification for Buildings* – in 2009 Lviv took the 3rd prize in the annual European competition within this campaign.

Petropavlovsk-Kamchatsky City: EE in public buildings
Yana Gorbatenko, IFC

The International Finance Corporation (IFC) is an investment arm of the World Bank Group with over seven years experience in financing private projects in Russia. Since 2007, IFC has been involved in project financing in the municipal sector. The IFC investment portfolio in Russia is US$2.4 billion, with over US$300 million invested in EE. The presentation provided examples of IFC investment projects (including financing structures) aimed to improve EE in public buildings in the municipal sector of Russia and Hungary. In particular, in Russia IFC, jointly with the Petropavlovsk-Kamchatsky City Administration, is developing a project to improve EE in schools and kindergartens. The investments

amount to 200 million rubles, with a payback period of 4.4 years, budget savings of 45 million rubles, energy savings of 21%. This project is currently negotiating legal issues between the project participants as there are no precedents in Russia yet. In Hungary, IFC financed a School Energy Saving Program (covering 7,000 schools). The total investments was US$250 million. For six months of proactive operations IFC financed 78 projects for the amount of US$11 million. Annual savings on energy costs amount to US$1.6 million. The Ministry of Education conducted a centralized tender for improvement of lighting and heating (technical solutions + financing) – a consortium including a local bank, an ESCO and equipment suppliers won the bid. IFC provided financing to the consortium. The consortium carried out interactions with municipalities; suppliers provided direct equipment replacement services. There was no municipal guarantee involved, therefore IFC provided a partial guarantee for the entire package to strengthen bank's confidence in repayment of funds from the entire system. The Hungarian approach may be applied at the level of regions or large cities in Russia.

BEA: financing EE in public buildings of Berlin
Claudia Arce, Berlin Energy Agency

Berlin Energy Agency was founded as Public-Private Partnership in 1992. Agency's business areas include: 1. Consulting about all aspects of efficient energy use; 2. International Know-how Transfer; and 3. Contracting. As an Energy Service Company, BEA assists in the implementation of environmentally friendly energy solutions. The presentation demonstrated BEA's Energy Performance Contracting experience in Germany, especially in Berlin, where energy saving measures are considered as an important tool towards the prevention of fiscal deficits. BEA supports the municipalities in preparing tenders for energy performance contract (incl. carrying out initial diagnoses, tender procedures, evaluation and negotiation, verification). Together with ESCOs, BEA develops technical and economic details of the projects, after that ESCOs conclude contracts with the municipal entities. The total number of BEA's project pools is more than 1,300 buildings. Guaranteed energy cost savings in total made €11.34 million (26%).

Part D. Energy Efficiency Implementation: Residential Buildings
Moderator: Irina Boulgakova, RF Ministry of Regional Development/Sergei Sivaev, Institute for Urban Economics

Issues to discuss:

- Capital reconstruction: requirements and financing;
- Looking beyond the Fund to Assist Reforms in Housing and Communal Services Sector: what's next?
- Remaining issues and barriers.

Upcoming reform of the residential housing stock
Irina Boulgakova, Director of the Housing and Communal Services Department, RF Ministry of Regional Development

A large number of buildings in Russia were constructed before 1992, and therefore, their depreciation has already expired. The average wear-out of the housing equals 60%. About 1.5% of the housing stock has been repaired prior to Law #185 effectiveness, which is very low. 95% of funds attracted for capital repairs are state budget funds. In 2013, Law #185 expires, and therefore, there is a need for adoption of a more systematic approach and documentation than the federal targeted program *Comprehensive Program for Housing and Utility Sector Reforms and Modernization for 2010-2020* (the latter envisages, inter alia, capital repairs of multi-apartment buildings). The presentation focused on resolution of financial problems associated with capital repairs of multi-apartment buildings. The speaker highlighted that trillions of rubles were required, and the state budget would not be able to provide the needed financing. It

was proposed for municipalities to: (i) use a consolidated approach to the issue of financing via attraction of funds from budgets of all levels, as well as funds of homeowners (82% of all apartments are privately owned); and (ii) introduce compulsory payments for capital repairs in order to attract homeowners' funds. The presentation also shared additional state budget support options to residents for capital repairs of multi-apartment buildings as well as support to low income residents.

Expert opinion on the proposed reform
Sergei Sivaev, Director of the Municipal Economy Department, Institute for Urban Economics

The presentation provided an opinion on involving HoAs as well as building management companies in modernization of multi-apartment buildings. In Russia: 1. a large number of apartments are privately-owned; and 2. A high share of homeowners are low income. In this context, the introduction of a compulsory payment scheme for capital repairs may not be viable. The presentation included an example based on the international practice of HoAs, which first borrowed funds and then repaid them as results are received. However in Russia it would be problematic to apply this experience as HoAs in Russia are extremely unstable. It is not an obligatory requirement to be a member of a HoA. It was proposed to involve building management companies as a solution to this problem – building management companies may engage contractors for implementation of EE improvement activities and pay them upon completion of these activities. However this approach has its own risk as it does not match interests of building management companies. The most optimum approach would be to combine multi-apartment building management activities and EE improvement within one contract to be concluded with a building management company. This approach is within the boundaries of the legal framework; however there is a problem of interrelations between building management companies and resource supply companies (i.e., utilities). The majority of management companies have debts to resource supplying companies, therefore all funds from energy savings will be spent for repayment of these debts. On the whole, the presentation pointed out that it would be difficult to find simple solutions to the problem of repairs of multi-apartment buildings because the legal situation is complicated.

Tatarstan: Republican Residential Rehabilitation Fund
Marat Khusnullin. Minister. Ministry of construction, architecture and housing, Tatarstan Republic

The presentation shared the experience of the Republic of Tatarstan in the field of establishing the regional fund for housing and utility sector reforms as well as problems with capital repairs of multi-apartment buildings via imposing compulsory payments. The Republican Residential Rehabilitation Fund was established in 2007. Due to Fund operations, and in particular successes in attracting financial resources from the Federal Fund, the republican budget, budgets of municipalities, population and the leasing funds, Tatarstan has successfully mobilized funding and implemented programs for capital repairs of multi-apartment buildings which improved housing conditions for 30% of residents. Obligatory payments (on the basis of five rubles per one square meter) have been introduced in the Republic for capital repairs of multi-apartment buildings – the Fund accumulates these payments and proactively provides upgrades and services to the population. As a result, 85% of all multi-apartment buildings in the region have concluded agreements for participation in activities of the Republican Residential Rehabilitation Fund.

Financing residential EE in Poland
Bolesław Meluch, BGK Thermomodernization Fund, Poland

The presentation summarized Poland's experience in financing of public and residential building reconstruction. Bank Gospodarstwa Krajowego (BGK), a Polish state bank, has been managing the Thermal & Refurbishment Fund (TRF) since 1998. The Fund supports thermo modernization and refurbishment undertakings in apartments. Thermal subsidies are available to: home owners associations,

cooperatives, commercial companies, individual homeowners, municipalities, and local authorities. Further, the presentation detailed BGK's experience in financing HoAs. According to Polish Law, if more than three apartments in the residential house are privately owned, the dwellers are obligated to create an HoA. Completion of an energy audit report is the main condition for an HoA to obtain the Thermal Subsidy. The Subsidy can be applied to one of the 15 commercial banks, which cooperate with the Thermal & Refurbishment Fund (TRF). The TRF provides a subsidy in amount of 20% of the loan to the bank, which finances the refurbishment in the building. The minimum calculated energy savings after thermal refurbishment should exceed 25% (in average in Poland for housing stock it is app. 40%/y).

Part E. Innovative Energy Efficiency Financing
Moderator: Yana Gorbatenko, IFC

Issues to discuss:

- Role of banks;
- Federal and regional support of municipal energy efficiency initiatives;
- Energy performance contracts and ESCO models.

ESCO as a main EE financing instrument
Peter Johansen, Senior Energy Specialist, World Bank

The presentation summarized the World Bank's experience in several countries in Eastern Europe in addressing EE in retrofitting existing buildings using energy performance contracting (EPC), whereby building owners can essentially pay for the upgrades from the resulting energy cost savings. The World Bank developed its programs using two main approaches: 1. Establishing of Energy Efficiency Funds and 2. ESCOs support. The experience with EE Funds revealed that funds can provide good leverage of initial capital but money recycles slowly, so there is a need for new capital periodically. Experiences with utility based ESCOs (e.g., Poland, Croatia) were also shared. Some advantages of this approach include: name recognition, technical expertise, access financing and its existing customer base. The presentation also provided recommendations in terms of developing ESCOs activities in Russia: establishing framework for EPCs to alleviate public sector implementation capacity constraints; providing smart subsidies that achieve maximum leverage (shift from energy price support to investment support); developing investment project pipelines for financing programs with local banks; and, developing EE support structures at municipal levels.

Tsentr-Invest Bank: financing residential EE
Sergey Smirnov, Tsentr-Invest Bank

The presentation demonstrated the experience of Tsentr-Invest Bank in the field of EE financing. Since 2005 Tsentr-Invest Bank has been dealing with financing of EE projects. Their headquarters is located in the City of Rostov-on-Don. To date, the bank has financed over 160 EE projects in the industrial sector as well as the housing and utility sector. Tsentr-Invest Bank credits EE activities within the frameworks of joint programs implemented with EBRD and IFC. It provides the following mechanisms: consumer credit for Ee measures (incl. purchase of boilers, heaters, pumps, etc.); factoring of metering devices and energy saving lighting installation; equipment leasing (absence of security, accelerated depreciation, allocation of costs to the cost of production category); and outsourcing of energy efficient technologies via energy servicing contracts (payment via saving). The bank provides up to five-year credits to HoAs or building management companies under its crediting program *Energy Efficiency in the Housing and Utility Sector*. The financing covers up to 100% of the works value. The maximum amount of the credit is 3-4 million rubles, and it is possible to repay the credit in equal payments.

WBG programs in Russia: opportunities for cities
Yuriy Myroshnychenko, Russia Energy and Infrastructure Program Coordinator, World Bank

The presentation is devoted to the World Bank Group's product – "regional financing"; this product allows the World Bank to provide a direct support to cities in implementation of their plans for modernization of the housing sector without involvement of federal authorities. The cooperation algorithm is simple: 1. project identification phase (an owner informs the World Bank about a project, the World Bank collects and evaluates information on the project); 2. project discusses within its credit committee and project approval; 3 signing of credit agreement. The total process takes from four to six months. The minimum credit amount is 200-250 million rubles. The maturity period is up to eight years (including a 2-3-year grace period), with an interest rate of about 10%, however it may be lower. Within the framework of the regional financing program the World Bank is working together with the City of Mytischi (in the field of thermal power supply system reconstruction), as well as with Ufa City for a water and wastewater treatment plant.

IFC programs in Russia: opportunities for cities
Yana Gorbatenko, IFC

The presentation advised participants about IFC products and services in the field of EE. IFC is a part of the World Bank Group; it focuses mainly on work with the private sector. IFC is currently implementing four crediting programs in this field within Russia: a Residential EE Project; Resource Efficiency Investment Promotion (direct investment); EE Investment Promotion (via banks); and a Renewable Energy Program. In addition, IFC is also involved in the provision of consulting support (including development of a credit product for EE improvement repairs of multi-apartment buildings; product promotion; bank personnel training). IFC is currently financing a number of credit projects in the field of thermal power supply (the investments amount to 337 million rubles, 5-year payback period, the budget savings – 68 million rubles), water supply (e.g., retrofit of treatment facilities) (investments in the amount of 250 million rubles, reduction in payments for discharges – 88 million rubles, reduction in costs for reagents – 10 million rubles; saved electricity – 13 million kW/h), public buildings in Petropavlovsk-Kamchatsky (see presentation from the Section *EE Implementation: Public Buildings*).

DISCUSSIONS

This section presents questions and answers to the sessions as well a summary of the final discussion.

Part A: Implications of recently adopted Federal Law # 261-FZ and By-laws for Cities

Question: The Law envisages obligatory energy surveys of residential buildings. Is this requirement obligatory for buildings and facilities commissioned before the adoption of the effective Law? If YES, then what funds shall be used and to whose competence is it related?

Answer:
The representative of the Ministry of Regional Development clarified that everything that was related to buildings and facilities should fall within competences of municipalities.

Question: What shall be done with dilapidated buildings which will acquire the status of emergency buildings during the next 5-7 years?

Answer:
The representative of the Ministry of Regional Development stated that the "dilapidated building" notion was poorly defined in legislation. Emergency buildings are often called dilapidated only due to the fact that there is no possibility to demolish them. The share of such buildings is very high, therefore it would be difficult to maintain the balance forever. In this context if there is any possibility not to install metering devices before demolition or modernization, it should be used. On the whole, the problem shall be resolved at the regional level.

Question: *(addressed to the representative of the Russian Energy Agency):* To what extent is the information used by REA for its monitoring compilation objective and correct? When will it be compiled in the form of a single database? Are there any regions/municipalities which have their local databases?

Answer:
The representative from REA noted that there were such regions, however they were few. On the whole, the system-wide picture will not be depicted soon as only energy supplying companies have information on consumption of fuel and energy resources, but its validity is unsatisfactory. In view of the above the representative from REA highlighted the need for expediting the creation of municipal databases. REA will participate in this process proactively, and will encourage (on the part of the Ministry of Energy) all regulating organizations without which involvement it would be impossible to obtain specific statistical data.

Comment:
The representative of Syzran City noted that developing programs municipalities faced difficulties because resource supplying organizations did not provide data (they justified their refusals by the absence of legislation obliging them to disclose the information). In this context it is proposed to fix in legislation an obligation for resource supplying companies to provide municipalities with the information.

Comment:
The representative from REA confirmed that there was a problem with receipt of data from resource supplying companies. Requests to the latter through the Ministry of Energy may be a solution to this problem. As for amendments in legislation it was noted that a resolution on the state information system was under preparation – the resolution envisaged collection of all data. In addition, a document on the

information exchange mechanism shall be prepared by August 1, i.e. there will be a possibility to acquire full information.

Question: The Syzran City representative stressed that it was even more difficult to receive information from homeeowner associations. What shall be done in this situation?

Answer:
The representative of the Ministry of Regional Development noted with respect to disclose of information by various entities that a relevant Russian Government Resolution on information disclosure had been issued in May – it obliged resource supplying companies to disclose information. As for management companies, in addition to the above Resolution, amendments to the Housing Code were proposed – they have undergone the first reading stage. The web-site of the Ministry of Regional Development provides access to information on what data is subject to disclosure. As for homeowner associations, the latter represent a completely different form of entities, and requirements to management companies are inapplicable to them. With regard to receipt of information from homeowner associations it was recommended to work with municipalities which everywhere acted as owners within homeowner associations, therefore municipalities had to disclose information almost in each case (with rare exceptions). It was also recommended to monitor the web-site of the Ministry of Regional Development where all draft documents were published. Rules for entering into contracts between resource supplying companies and management companies or homeowner associations will be developed in the near future. In addition, the representative of the Ministry of Regional Development proposed another way of acquiring information on consumption of resources – collaboration with municipal statistics agencies. The latter are obliged to disclose statistical data.

Comment:
Regarding work with statistical data the representative from REA added that for more accurate and systematic arrangement of statistical data REA had developed statistical formats for collection of data on energy consumption and metering devices. At the same time, drawbacks in the use of statistical data were highlighted: the data were of aggregated character, and information could be provided only one year after the fact.

Question: What is meant by social rates (planned for adoption)?

Answer:
The representative of the Ministry of Regional Development explained that it was planned to adopt social rates which should correspond to socially justified necessary minimum consumption ensuring comfortable living of the population. So far they have not been adopted. However there is a relevant draft Resolution. If the latter is approved, electricity would be paid as per social rates corresponding to the tariff set by regional energy committees and in excess of the social rate in compliance with the price existing in the free market of electricity. As of today the difference between the market electricity price and the tariff on average is more than two-fold in Russia.

Question*:* A significant part of the Russian population receives subsidies. After conversion to payments for thermal energy supplies based on actual consumption the amounts which were paid equally during the year will be concentrated in the winter period, and the entire difference supported by subsidies will be transferred to the budget. Were any estimates done with respect to how much thermal energy supply costs will be paid by the federal and regional budgets?

Answer:

The representative of the Ministry of Regional Development responded that on the whole subsidies fell within the competence of regional legislation. The federal government provides main parameters only. Therefore regional legislation in this field shall be amended.

Question: Are HoAs able to take a credit from the bank for its repayment? And how are these relations regulated?

Comment:
The representative of the Ministry of Regional Development again pointed out that HoA as institution was poorly developed in Russia. The Law indeed does not regulate such aspects as the possibility of taking credits by houseowner associations. In addition, the mechanism for holding meetings of residents and voting hampers the decision-making process.

Comment:
The representative of the Institute for Urban Economics pointed out that apathy of residents and absence of residents' willingness to participate in work of this institute were the main obstacles on the way of HoAs development.

Part B: Municipal EE Planning: Data and Analytical Tools

Question: How is installation of metering devices proceeding at individual residential houses? The fact is that requirements to program development envisage that the situation in the private residential sector shall be monitored.

Answer:
The representative from REA - Far East gave an example of Khabarovsk City. In Khabarovsk assignments for installation of individual metering devices are issued with respect to individual houses at the stage of their construction. Total monitoring of the private sector is not carried out.

Question: The Kazan City presentation indicated that individual metering devices in apartments on average cost five thousand rubles per family, so they were paid back within 1.5 years. How savings may be achieved if a master building metering device is already in place? Will there be any additional savings at the apartment level?

Answer:
The Kazan City representative clarified that the calculation of the payback period had been done based on average indicators proceeding from installation of two cold water metering devices, two hot water metering devices, an electricity metering device as well as taking into account rated loads in terms of actual average consumption of the population following the metering devices installation. Calculations were also done for the scenario when master building metering devices were installed: the result was 50-60 rubles per person per month, and this figure was used for the payback period calculation.

Question: It is expected that in 2011 the tariffs will be unfixed – is there a sense in two-tariff meters?

Answer:
The Kazan City representative responded that both in Kazan and in the Republic of Tatarstan the following recommendation had been issued to residents: if master building metering devices were two-tariff, then they should also install two-tariff individual metering devices.

Question: Is there a possibility in Russia to provide carbon financing for municipal programs?

Answer:
The World Bank representatives provided clarifications that theoretically it was possible to provide carbon financing in Russia within the frameworks of the Kyoto Protocol – in particular, in the form of Joint Implementation Projects in accordance with the article 6 of the Kyoto Protocol. Legal procedures for execution of JI Projects have been developed, however they are still not operational. Specifically, a project approval procedure at the government level is still missing. In addition, as per article 17 it is possible to sell a country quota and to invest gained funds into GHG emission reduction projects. The name of this mechanism is *Green Investment Scheme*. However no legal frameworks have been created to introduce it in Russia. Another problem is that municipal-level energy efficient projects generate too low CO2 emission reductions, therefore they are not attractive for commercial banks.

Question: Is it possible to receive financial support for projects from federal authorities?

Answer:
The representative of the Ministry of Regional Development noted that such a possibility would be provided within the framework of the federal EE program as well as the Program for Comprehensive Development and Modernization of the Housing and Utility Sector. However the process of approval of the above programs has not been completed. Certain conditions and a certain way of federal support to the housing and utility sector were stipulated in effective Law # 185. In addition, the Ministry of Regional Development is implementing a support program jointly with IBRD.

Comment:
The CENEf expert (who had taken part in the development of the Federal EE Program) pointed out that the Ministry of Finance had requested to exclude all subsidies from the Program, therefore support to municipal programs from the Federal Program was unlikely.

Question: Resolution # 1225 includes a requirement to reduce physical and monetary indicators by 3%. If tariffs increase, what will be the amount of savings in monetary terms?

Answer:
The representative of the Ministry of Regional Development provided explanations that the Law included the wording "*in comparable conditions*". It is possible to save 3% via elimination of the most expensive boiler house. For example, there is nothing to save on in a new school; at the same time, in an old school possible savings amount to 30%. The Ministry of Economic Development has prepared a draft regulatory document which would clarify this notion – "in comparable conditions".

Question *(addressed to the Kazan City representatives):* What has been done at the institutional level? What program management systems have been established in order to develop and monitor EE programs?

Answer:
The Kazan City representative clarified that the economic development committee was the chief program coordinator. However other divisions of the Kazan City Administration also participated in the EE program development (for example, the housing and utility sector committee). In addition, a municipal energy service center was established in Kazan; initially it dealt with installation of metering devices, and then – with energy consumption surveys and preparation of energy certificates (energy passports).

<u>Part C: EE Implementation: Public Buildings</u>

Question*:* To what extent is concluding contracts are feasible in Russia taking into account weak energy-related legislation in Russia and the EE Law?

Answer:
The World Bank expert pointed out that, based on experience of other countries it was better to start with simpler activities and make them more complicated further on. If there is experience in leasing, bonus schemes, fixed payments for equipment, then it is better to start with these types of models first and then transfer to more complicated models envisaging commercial financing as the market develops and capacities get stronger.

Comment:
The representative from the Institute for Urban Economics pointed out that though in Russia there was indeed no energy service market, however legislation still enabled the conclusion of long-term contracts envisaging the possibility of changes in the tariff policy.

Question: In Russia there are no conditions for entering into performance contracts in the public sector. What shall be done to introduce ESCOs into the public sector?

Answer: The representative from the Nizhny Novgorod EE Investment Center pointed out that more regulatory documents were required – they should fix specific results to be achieved.

Comment: The representative from the Institute for Urban Economics voiced his disagreement with the above point of view. The fact is that Russia is notorious for its abundance of regulatory documents which sometimes contradict each other. In his opinion, the problem is the lack of professional real estate management in the public sector. There is one exclusion in Russia–the City of Surgut–where the municipal facilities department maintains all public buildings (instead of budget-financed organizations performing this function).

Question: For what duration are performance contracts concluded in Germany?

Answer*:*
The representative from BEA clarified that in Germany such contracts were for about ten years. However in Romania and Serbia, where the Berlin Energy Agency provides consulting services, this duration is somewhat less –between six to ten years.

Question: What is the main factor for definition of a performance contract in Germany: energy saving potential or payback period?

Answer:
The representative from BEA noted that in Germany the volume of savings was absolutely the main factor as Berlin had assumed obligations to ensure a 40% reduction in electricity consumption by 2020. Therefore a 20% reduction is an absolutely minimum threshold for a contract.

Question: In Russia public buildings fitted with metering devices are very rare. Is Germany experiencing the same problem?

Answer:
The representative from BEA responded that Germany was not facing such a problem. However the international know-how department encounters such problems in other countries, for example, in Serbia, Romania and Slovakia. The following two-stage approach may be offered for such cases: 1. conclude a contract for installation of metering devices; 2. introduce the performance contracting mechanism.

Comment:

In conclusion of this session the representative from the Institute for Urban Economics pointed out that the presentation delivered by Mr. Jas Singh, World Bank representative, dwelled on an interesting aspect – the interconnection between urban planning and EE. The practice of creating a compact energy efficient city is completely new for Russia, and it should be applied when developing city general plans.

Comment:
Summing up outcomes of the first day of the conference, Mr. Jas Singh, World Bank, reiterated his comment that when implementing EE activities the following recommendations should be considered: 1. Start simple, and move from simple to more complicated activities; 2. Build political will, ensuring support from government authorities to implement and support such programs; and 3. Create incentives for EE. The need for major financing for energy efficiency is a prerequisite and often a barrier to implementation; but, given the potential to save in future budgets while upgrading public facilities, governments need to allocate sufficient resources to aggressively move ahead.

Comment:
The CENEf representative objected and pointed out again that it was very difficult to ensure support from financial authorities for introduction of any incentives in Russia. And it is really a serious problem.

Comment:
In his turn, the representative of the Institute for Urban Economics pointed out that the problem of Russia was not in the lack of funds at the disposal of financial institutions but rather in the lack of political will to provide funds for these projects.

Comment:
The World Bank representative noted that it was possible to use nonfinancial incentives as a solution to the problem of encouraging energy efficiency activities where public funds are not feasible: for example, expediting of the procedure for obtaining permits for construction of green buildings, introducing taxes on inefficient products to subsidize efficient ones, awards, etc.

Part D: EE Implementation: Residential Buildings

Comment:
As for the problem of attraction of owners to organization of capital repairs, the Syzran City representative proposed to: 1. remove from the Housing Code the provision envisaging that municipalities should bear responsibilities for capital repairs. Until this provision is effective, it would be difficult to change anything. Courts take side of citizens who suit municipalities for non-performance of capital repairs for more than 30-40 years. 2. It is necessary to increase both pensions and salaries in order to resolve the problem of low income residents. Until the society is poor, it is difficult to discuss with people issues related to creation of HoAs and arrangement of financing. 3. If owners are poor, then there should be envisaged a possibility for re-privatization.

Comment:
The representative of the Ministry of Regional Development noted that re-privatization was possible – nobody had banned it.

Comment:
The Tcherepovets City representative proposed to organize capital repairs assistance mechanisms at the level of regions and municipalities. The example of Hungary was mentioned where minimum building repair programs were developed at the municipal level, and residents received grants for resolution of this problem.

Question: Is it possible to attract federal funds for capital repairs? For example, is the state able to finance 20% of the principal?

Answer:
The representative of the Ministry of Regional Development responded that financing structures should be regional at the beginning. The problem is that as per Russian legislation it is generally rather difficult to attract a credit for capital repairs.

Comment:
The representative of the Institute for Urban Economics pointed out that houseowner associations might establish reserve funds in banks, however this approach had not been introduced into practice. With respect to re-privatization it was noted that this was a very correct comment as the share of privatized housing in Russia was excessive. On the whole, Russia faces two problems: 1. lack of a social housing policy; and 2. low income level of apartment owners.

Comment:
The Sarov City representative pointed out that energy efficient activities did not evolve because of complicated relations between building management companies and resource supplying companies. This issue should be regulated at the regulatory level.

Comment:
The representative of the Ministry of Regional Development noted that at the legislative level a lot was being done. The legal status of HoA institute remains to be the most complicated issue.

Part E: Innovative EE Financing

Question: Is there experience of ESCO establishment in Russia?

Answer:
The IFC representative commented that there were several Russian companies which were trying to develop the ESCO business at the moment. In addition, there are several western companies which are explring the Russian market. But in this respect the main task is to make procurement-related legislation encourage the conclusion of energy servicing contracts.

Comment:
The representative of the Ministry of Construction and Housing and Utility Sector of the Republic of Tatarstan voiced his readiness to divest a subsidiary from the regional fund focused on establishment of ESCOs. To this end the Republic of Tatarstan has the administrative leverage as well as certain financial funds.

Question: What recommendations may be given to municipal authorities with respect to promotion of information about the possibility of receiving bank credits for EE projects?

Answer:
The Tsentr-Invest Bank representative pointed out that municipalities were promoting proactively the bank's EE program. It is more difficult to develop relations with management companies because it is disadvantageous for them to promote the bank's program due to the risk of owners' refusals from their services.

Question: For a city which population is 250 thousand people costs for obligatory installation of metering devices in apartments/houses amount to not less than 500 million rubles. Due to the fact that incomes of

people living in such cities are low, most likely the resource supplying company would take credits. However, would banks provide credits to such companies if their profits are low?

Answer:
The Tsentr-Invest Bank representative clarified that indeed the majority of resource supplying companies were loss-making, and many banks would not provide credits to them or would offer too high interest rates. The way out of this situation is in application of HoAs to banks.

Question: The new draft federal targeted EE program in the majority of cases indicates Vnesheconombank (VEB) as a credit institution for utility infrastructure projects. Is the World Bank ready for a 50/50 participation in such projects?

Answer:
The World Bank representative replied that such an approach was more than welcome because the availability of other financial resources at the disposal of borrowers was one of obligatory conditions for engagement of the World Bank in projects. The World Bank sees itself as a co-financier.

Final Discussion

In conclusion the participants of the conference voiced their comments with respect to certain problems and the conference on the whole.

The Kirov City representative pointed out with respect to EE project financing that whether it were budget funds or bank credits the population would have to pay for them. Therefore the minimum salary increase should be the first step in resolution of this problem. It is especially important for municipal budgets 68% of which are formed by personal income taxes. The increase in salaries would also simultaneously increase profits of municipal budgets.

The Engels City representative thanked the conference organizers and highlighted the high value of recommendations for Russian cities. In particular, Engels City will launch work in the field of EE from resolution of the institutional issue – the establishment of a special division in compliance with the recommendations issued during the conference.

The representative from REA – Far East stressed that it was important to discuss the development of municipal programs which should serve as an incentive for 25% of regions falling behind in this field; and following the conference they would be able to finalize programs by August 1. The Russian Energy Agency representative also voiced a wish to discuss in detail specific projects at next events – i.e. to arrange master classes on projects: for example, devoted to receipt of funds and the possibility of their repayment.

The representative of Tcherepovets City voiced his satisfaction with the way how World Bank representatives provided clear recommendations towards the implementation of EE measures set by the Law # 261. At the same time, he criticized the Ministry of Regional Development for slow development of regulatory documents required for preparation of municipal programs: only 15 regulatory documents were developed by June 1 while municipal programs shall be completed by August 1. Under such circumstances very poor quality of the programs may be expected.

The representative of the Association of Energy Efficient Cities of Ukraine called for the establishment of an association of Russian cities. In particular he pointed out that such associative structure helped in gathering and aggregating experience and resolving of narrow specialized issues (with which state structures usually did not deal). However in order to implement EE activities in cities, it is necessary to

have political will, and establish required institutional structures which would bear direct responsibility for implementation of these projects. In addition, elements of the energy policy as well as energy plans should be developed – they are required to visualize prospects of local energy generation. The Ukrainian expert also noted that so far the EE initiative in Russia was introduced from the federal level. Therefore, Russian cities should take the lead more proactively. In conclusion the Ukrainian expert pointed out that energy generation was far from being a weak sector of the economy, so it was required to learn how to manage the energy capital and understand for what it was more profitable to pay: for energy or for modernization of one's own housing. In this context the representative of the Association of Energy Efficient Cities of Ukraine stressed that comments with respect to work with the population were very relevant, and this work should be expanded at the local level.

RECOMMENDED ACTIONS AND INTERNATIONAL COMMUNITY'S INTERVENTIONS

Barriers	Recommended Actions		
	Federal level	**Municipal level**	**Request for Int'l Community**
Legal			
- Lack of guidelines to regions/municipalities on how to prepare EE programs and plans - Insufficient guidance on methodology for EE indicators and targets setting - Ambitious deadlines for implementation of EE measures, set by Law #261 - Lack of legislation for energy service (ESCO) market	- Improving communication processes between ministries - Facilitating approval procedures - Involving external experts/consultants - Promoting of Minregion's website and/or creating special web-forum for gathering comments and recommendation towards improving legislative basis for EE - Developing of model plans and methodologies for wider dissemination	- Gathering and providing comments and recommendation to Minregion towards improving legislation	- Dialogue with decision-makers at local and national levels - Policy advice - Reduce Bureaucratic procedures - Guidance on ESCO legislation in other countries
Informational			
- Problem with data gathering and creating an integrated data base on energy consumption at federal, state and municipal levels	- Strengthening activities at regional and local level (consulting, training) - Cooperation with the Office for national statistics - Preparing further legal obligations for information disclosure	- Data Request via municipal statistic agencies - Data Request via Ministry for Energy	- Technical assistance for REA in: • Designing, developing and running EE information system and database • Developing standards& methodological guidelines for regional and municipal EE programs - International recognition of local initiatives
Financial			
- Lack of financing for EE projects - Carbon financing issues (incl. delaying implementation of Kyoto protocol mechanisms) - Underdeveloped practices of Russian banks in financing EE projects - Low income level of apartment owners in multi-apartment buildings and difficulties with HOA borrowing	Options for financing municipal EE programs are included in: - Existing Law #185; - Federal EE program (under approval); - Federal housing sector modernization program (under approval). - Clarifying situation of Kyoto protocol (incl. articles 6 and 17) in Russia with Ministry for Economic Development and Sberbank; - Developing national carbon financing	- Imposing compulsory payment for major renovations of multi-family houses - Creating regional Funds for modernization and reconstruction of housing sector (Tatarstan's experience) - Preparing municipal programs for modernization of multi-family houses - Setting integrated budget for EE	- Establishing credit lines for the Russian banks - Establishing grants/special credits for municipalities with weak socio-economic conditions - Technical assistance for the banks in: • identifying, selecting, evaluating and monitoring of EE financial products, • structuring and promoting of

	schemes - Developing financial programs with World Bank and other IFIs - Developing legal framework for crediting EE projects - Possibility of re-privatization - Raising wages and pensions	programs from federal, regional, municipal and borrowed funds (experience of Kazan and Naberezhnye Chelny) - Monitoring realization of Kyoto protocol in Russia - Packaging small carbon project realized at municipal level to increase the volume of carbon financing and attractiveness for private investors - Improving subsidy policy - Creating municipal funds/ financing programs for housing reconstruction and modernization	EE financial products, especially in public and residential sectors. - Procurement advice - Exploring new policy and incentive schemes (e.g., white certificates, carbon trading, taxes and tax forgiveness) to help the government meet its goals - Development of suitable risk mitigation measures for underdeveloped markets - Training
Institutional			
- Lack of institutional mechanisms for EE program implementation - Association of Russian Cities are not active in addressing common EE issues faced by cities - Weak legal status of HoAs - Lack of interest among building management companies in EE measures - Nascent energy service industry - Limited public awareness and interest in EE	- Creating institutional arrangements to facilitate EE implementation at national and local levels - Providing technical assistance to Association of Russian Cities - Resolving legal status of HoAs - Establishing a legal framework to minimize risks of multi-apartment building management companies - Establishing legal framework for the energy service market - Promoting EE among the general population	- Assigning an institutional unit in the municipal structure responsible for implementing and facilitating EE programs - Developing cooperation and twinning with other cities (Ukraine's experience) - Encouraging HoAs to implement EE programs - Encouraging multi-apartment building management companies to implement EE programs - Promoting EE among its citizens	- Fostering leadership in EE - Promoting long-term cities development strategies - Maximizing partnership where each party benefits from participating in EE programs - Technical Assistance towards developing ESCO markets - Training for municipalities and federal entities
Technical			
- Lack of metering equipment needed for the realization of targets set by Law # 261 - Lack of synergy between urban planning and development and energy efficiency - Limited availability of quality efficient products in Russian market	- Establishing conditions for domestic production of metering equipment - Postponing deadlines set by Law # 261 - Promoting national equipment standards and labeling, banning inefficient products, development of incentive schemes for EE products - Development of public purchasing programs for EE products	- Developing and implementing of space-effective city models - Implementation of public purchasing programs	- Technical know-how transfer to monitor implementation and impact of EE projects - Increase access to good practices

ANNEXES

Annex 1

Conference Agenda

WORLD BANK

MINISTRY OF REGIONAL DEVELOPMENT
Russian Federation

Energy Efficient City in Russia
Preparing, Financing and Implementing Municipal Energy Efficiency Programs
Conference Agenda

Dates: June 29-30, 2010
Venue: Kazan City
Day 1. Tuesday, June 29, 2010.

8:30-9:00	**Registration and Breakfast**
9:00-9:30am	**Greetings and Introductory Remarks. Energy Efficiency at the City Level: Benefits and Typical Barriers for Implementation.** 1. *Irina Boulgakova*, Director of the Housing and Communal Services Department, RF Ministry of Regional Development/*Yuriy Myroshnychenko*, Russia Energy and Infrastructure Program Coordinator, World Bank 2. *Ildar Khalikov*, Prime Minister of the Republic of Tatarstan
9:30-10:30am	**Implications of the recently adopted Federal Law #261-FZ and by-laws for cities.** **Speakers:** 1. *Irina Boulgakova*, Director of the Housing and Communal Services Department, RF Ministry of Regional Development 2. *Alexey Poleshchuk*. Deputy Director General, Russian Energy Agency (REA). Federal support of municipal energy efficiency activities within the framework of the State Energy Efficiency Program and assistance provided to cities by REA. 3. *Sergei Sivaev*, Director of the Municipal Economy Department, Institute for Urban Economics. **Moderator:** Irina Boulgakova
10:30-11:00am	**Q&A**
11:00-11:15am	**Coffee-break**
11:15am-1:00pm	**Municipal Energy Efficiency Planning: Data and Analytical Tools**

	Issues to discuss: • Data collection and processing and typical data constraints; • Establishing baseline EE indicators; • Setting EE targets; • Energy audits; • Analytical tools to identify EE actions and conduct their economic and financial analysis; • Integration of energy efficiency and savings in long-term planning; • Monitoring systems; • EE statistics and information systems ("GIS" System). **Speakers:** 1. *Igor Bashmakov*, Center for Efficient Use of Energy (CENEf). Practical experience of municipal energy efficiency program preparation for the City of Tyumen. 2. *Ayrat Zaynullin.* Deputy of Head of Executive Committee, Naberezhnye Chelny City. Preparation of municipal energy efficiency program of the City Of Naberezhnye Chelny. 3. *Alexey Bondar*. Director, REA Far Eastern branch/*Irina Zadirako*, Deputy Director General, REA**.** Practical experience of municipal energy efficiency program preparation for the Cities of Vladikavkaz and Yuzhno-Sakhalinsk. 4. *Almaz Minegulov*. Deputy Head of the Committee for Economic Development, Kazan City. Practical experience of the implementation of the federal pilot project "Energy Efficient City District". 5. *Irina Boulgakova*. Director of the Housing and Communal Services Department, RF Ministry of Regional Development. Methodology of energy efficiency indicators and targets setting. 6. *Jas Singh*, Senior Energy Specialist, World Bank. Analytical tools developed by the World Bank (Rapid Assessment Facility, Eco2, City-wide Carbon Finance, etc.) 7. **Moderator:** Yuriy Myroshnychenko
1:00-1:30pm	**Q&A**
1:30-2:30pm	**Lunch-break**
2:30-3:15pm	**Energy Efficiency Implementation: Public Buildings** **Issues to discuss:** • Energy management and monitoring in public buildings; • Financing of energy efficiency activities; • Public procurement of energy services, ESCO business, EPC contracts; • Remaining barriers and issues. **Speakers:** 1. *Jas Singh*, Senior Energy Specialist, World Bank. Public procurement of energy

	efficiency services: models, issues, country case studies. 2. *Sergey Bugrov*, Nizhny Novgorod Energy Efficiency Investment Center. Practical experience of a federal pilot project implementation "Energy Efficient Social Sector". 3. *Vyacheslav Teplyshev*, Director General, "TBN Energy Services". ESCOs: integrated solutions for energy efficiency measures in public sector. 1. *Anatoly Kopets*, Association of Energy Efficient Cities of Ukraine. Energy management and monitoring systems in public buildings in Ukrainian cities. 2. *Yana Gorbatenko*, IFC. Energy efficiency in public buildings: Petropavlovsk-Kamchatsky's and Odessa's experience. 3. *Claudia Arce*, Berlin Energy Agency. Financing EE in public buildings of Berlin. **Moderator:** Sergei Sivaev
3:15-3:30pm	**Coffee break**
3:30-4:30pm	**Energy Efficiency Implementation: Public Buildings *(continuing)***
4:30-5:00pm	**Q&A and day closing remarks**
7:00-9:00pm	**Dinner**

Day 2. Wednesday, June 30, 2010.

9:00-10:30am	**Energy Efficiency Implementation: Residential Buildings** **Issues to discuss:** • Capital reconstruction: requirements and financing; • Looking beyond the Fund to Assist Reforms in Housing and Communal Services Sector: what's next? • Remaining issues and barriers. **Speakers:** 1. *Irina Boulgakova*, Director of the Housing and Communal Services Department, RF Ministry of Regional Development. Upcoming reform of the system of residential housing stock capital reconstruction and modernization. 2. *Sergei Sivaev*, Director of the Municipal Economy Department, Institute for Urban Economics. Expert opinion on the proposed reform. 3. *Marat Khusnullin.* Minister. Ministry of construction, architecture and housing, Tatarstan Republic. Republican Residential Rehabilitation Fund. 4. *Bolesław Meluch, BGK Thermomodernization Fund, Poland.* Financing residential energy efficiency in Poland.

	Moderator: Irina Boulgakova/Sergei Sivaev
10:30-11:00am	**Q&A**
11:00-11:45am	**Coffee break**
11:45-1:30pm	**<u>Innovative Energy Efficiency Financing</u>** **Issues to discuss:** • Role of banks; • Federal and regional support of municipal energy efficiency initiatives; • Energy performance contracts and ESCO models. **Speakers:** 1. *Peter Johansen,* Senior Energy Specialist, World Bank. ESCO as a main energy efficiency financing instrument. 2. *Vassiliy Nikiforov,* Advisor to the Head of Petropavlovsk-Kamchatsky City Okrug. Financing and administration of energy efficiency activities in Petropavlosk-Kamchatsky city okrug. 4. *Sergey Smirnov, Tsentr-Invest Bank.* Financing residential energy efficiency as a new business opportunity for the bank. 5. *Yuriy Myroshnychenko,* Russia Energy and Infrastructure Program Coordinator, World Bank/*Yana Gorbatenko,* IFC. WBG programs in Russia: opportunities for cities **Moderator:** Yana Gorbatenko
1:30-1:45pm	**Q&A**
1:45-3:15pm	**Lunch-break**
3:15-4:00pm	Roundtable discussion. Brainstorming on barriers and solutions, desired federal government's involvement and Bank's help (TA and financing), and way forward.
4:00-6:00pm	Site visits: Kazan model energy efficient building.

Annex 2
Participant List

#	Name	Title /Organization (Должность/Организация)	Contact details/Контактные данные
1	Antipkina, Valentina АНТИПКИНА Валентина Михайловна	Deputy Head of Department for city services and rehabilitation of Naberezhniye Chelny City administration, Republic of Tatarstan / Заместитель начальника управления городского хозяйства и жизнеобеспечения исполкома г. Набережные Челны, Республика Татарстан	
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90	Travnikov,Andrey ТРАВНИКОВ Андрей Александрович	The First Deputy Major of Cherepovets City, Vologda region/ 1-ый заместитель мэра г. Череповца, Вологодская область	
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94	Khalikov, Ildar Халиков Ильдар	Prime Minister of the Republic of Tatarstan/ П ремьер-министр Республики Татарстан	
95	Khusainov, Uel ХУСАИНОВ Уел Галимович	General Director “Chelny vodokanal” JSC, Naberezhniye Chelny City, Republic of Tatarstan/ Генеральный директор ЗАО «Челны водоканал», г. Набережные Челны, Республика Татарстан	
96	Khusnullin, Marat Хуснуллин Марат	Ministry of construction, architecture and housing, Tatarstan/ Министр строительства, архитектуры и ЖКХ Республики Татарстан	
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100	Shilov, Juriy ШИЛОВ Юрий Александрович	Acting Head of Cheboksary City administration, Republic of Chuvashiya/ И.о. главы администрации г. Чебоксары, Чувашская Республика	
101	Shirinskikh, Elena ШИРИНСКИХ Елена Юрьевна	Deputy Director of municipality company “WCS” for economics, Buzuluk City, Orenburg region/ Заместитель директора МУП «ВКХ» по экономике, г. Бузулук, Оренбургская область	

102	Shlyapugina, Lyudmila ШЛЯПУГИНА Людмила Николаевна	Head of Department for city economy of Sarov City administration, Nizhniy Novgorod region/ Директор департамента городского хозяйства администрации г. Саров, Нижегородская область	
103	Yalfimov, Vladimir ЯЛФИМОВ Владимир Викторович	The Administration of Chaykovskiy City, Perm region/ Начальник отдела по реализации федеральных и региональных программ администрации городского поселения Чайковский, Пермский край	
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105	Bebikova, Anna/ Бебикова Анна Валерьевна	City Administration, Solikamsk/ Администрация г. Соликамск	
106	Trifonov, Nikolay/ Трифонов Николай Константинович	City Administration, Solikamsk/ Администрация г. Соликамск	
107	Kostyukov, Sergey/ Костюков Сергей Александрович	City Yelabuga ППСР г. Елабуга	
108	Zaytsev, Boris/ Зайцев Борис Александрович	Institute for microeconomics/ институт микроэкономики	
109	Maksimov, Sergey/ Максимов Сергей Валентинович	City Administration, Saransk/ Администрация г. Саранск	
110	Galyanin, Alexander Галянин Александр Александрович	City Administration, Saransk/Администрация г. Саранск	
111	Romashova, Viktoria Ромашова Виктория Сергеевна	Federal Agency for Taxation/ ФСТ России	

Annex 3
Links to Presentations

Presentations are retrievable at website through the links provided in the table below

Irina Boulgakova, Director of the Housing and Communal Services Department, RF Ministry of Regional Development	State policy towards energy saving in housing sector (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/1_Bulgakova_gospolitika.pdf)
Alexey Poleshchuk. Deputy Director General, Russian Energy Agency (REA).	REA: support of municipal EE activities (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/2_Polischuk_rea.pdf)
Sergei Sivaev, Director of the Municipal Economy Department, Institute for Urban Economics.	About realization of the Federal Law on EE (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/3_Sivaev_zakon261.pdf)
Igor Bashmakov, Center for Efficient Use of Energy (CENEf).	Recommendations for the development of municipal EE programs (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/4_Bashmakov_municipal_programs_develop.pdf)
Ayrat Zaynullin. Deputy of Head of Executive Committee, Naberezhnye Chelny City.	City of Naberezhnye Chelny: realizing municipal EE program (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/5_Shakhraziev_NabChelny.pdf)
Alexey Bondar. Director, REA Far Eastern branch**.**	Vladikavkaz and Yuzhno-Sakhalinsk: preparing of municipal EE programs (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/6_Bondar_REA_far_east.pdf)
Almaz Minegulov. Deputy Head of the Committee for Economic Development, Kazan City.	Kazan City: implementation of the pilot project "Energy Efficient City District" (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/7_Mingulov_EE_Kazan.pdf)
Irina Boulgakova. Director of the Housing and Communal Services Department, RF Ministry of Regional Development.	Methodology of EE indicators and targets setting (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/8_Blgakova_metodika.pdf)
Jas Singh, Senior Energy Specialist, World Bank.	Analytical tools developed by the World Bank (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/JSingh_Municipal_EE_Analytical_Tools_ENG.pdf)
Jas Singh, Senior Energy Specialist, World Bank	Public procurement of EE services: models, issues, country case studies (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/JSingh_Public_Procurement_of_EE_Services_ENG.pdf)
Sergey Bugrov, Nizhny Novgorod Energy Efficiency Investment Center.	Implementation of the federal pilot project "Energy Efficient Social Sector" (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/11_Bugrov_EE_social_area.pdf)
Anatoly Kopets, Association of Energy Efficient Cities of Ukraine.	Ukrainian cities: energy management for public buildings (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/12_Kopets_Emanagement_systems.pdf)
Yana Gorbatenko, IFC.	Petropavlovsk-Kamchatsky City: EE in public buildings

	(http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/13_Gorbatenko_EE_PK.pdf)
Claudia Arce, Berlin Energy Agency.	BEA: financing EE in public buildings of Berlin (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/CArce_BEA_ENG.pdf)
Irina Boulgakova, Director of the Housing and Communal Services Department, RF Ministry of Regional Development.	Upcoming reform of the residential housing stock (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/15_Bulgakova_reform.pdf)
Sergei Sivaev, Director of the Municipal Economy Department, Institute for Urban Economics.	Expert opinion on the proposed reform (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/16_Sivaev_EE_residential_sector.pdf)
Marat Khusnullin. Minister. Ministry of construction, architecture and housing, Tatarstan Republic.	Tatarstan: Republican Residential Rehabilitation Fund (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/17_Khusnullin_Fund_Tatarstan.pdf)
Bolesław Meluch, BGK Thermomodernization Fund, Poland.	Financing residential EE in Poland (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/19_Meluch_Fund_Poland.pdf)
Peter Johansen, Senior Energy Specialist, World Bank	ESCO as a main energy efficiency financing instrument (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/PJohansen_ESCOs_ENG.pdf)
Sergey Smirnov, Tsentr-Invest Bank.	Tsentr-Invest Bank: financing residential EE (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/20_Smirnov_CentrInvestBank.pdf)
Yuriy Myroshnychenko, Russia Energy and Infrastructure Program Coordinator, World Bank/ *Yana Gorbatenko*, IFC. WBG programs in Russia: opportunities for cities	WBG programs in Russia: opportunities for cities/ IFC programs in Russia: opportunities for cities (http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/305499-1280310219472/21_Gorbatenko_Financing.pdf)