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ESCO COMPANIES

IN NORTHWEST RUSSIA LEGAL ISSUES

AND ORGANIZATIONAL SCHEMES

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ABSTRACT: Energy saving activities in accordance with ESCO (Energy Service COmpany) model is a rather new matter for Russia. Since the end of the 1990s, number of legislative acts on energy saving have been growing. However, there is still much to be done in the legislative system in order to enforce effective law environment for ESCO model operations.

In order to deal with energy equipment a company needs a license for operations of electric and heat networks. This is a possible hinder for market entry for ESCO company. The possible contracting relations in the framework of Russian legislation do not perfectly fit the needs of energy saving companies. As a result, relations between ESCO and a client should rely mainly on typical contractor and sub-contractor agreements, such as consultancy/services agreements (energy auditing, organization of financing, etc.), vendor contracts, and leasing agreements. Leasing schemes seem to be very promising for ESCO projects. The costs related to equipment lease are included in the prime cost for the client and this allows for decreasing of the profit tax.

For the moment, several pilot projects of ESCO have been implemented in Russia. These projects were mostly initiated with the assistance of foreign organizations and financial institutions. A small number of local ESCO companies operating in Russia mostly cannot provide turnkey well-developed energy saving offers that became a standard for foreign players. Freakish low energy and energy raw material prices are hinders for energy saving. On-going steady increase in energy tariffs and forecasted substantial tariffs growth in the medium- to long-term due to the energy reforms and possible WTO accession will create increasing incentives for companies and municipalities to save more energy.

Key words: Energy, Conservation, ESCO, Russia

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Energiansäätö ESCO-konseptin (Energy Service COmpany) avulla on vielä suhteellisen uusi asia Venäjällä. 1990 luvun loppupuolella säädettiin useita lakeja, joilla pyritään edistämään energiansäästöä. Käytännössä nämä lait eivät kuitenkaan ole tukeneet energiansäästöä.

Jos yhtiö Venäjällä omistaa tai operoi energian tuotannon tai siirron laitteita tai merkittävästi energiaa käyttäviä koneita ja laitteita, se katsotaan energiaverkossa toimivaksi yhtiöksi, jolloin se tarvitsee luvan operointiin sähkö- ja lämpöverkossa. Tämä nostaa ESCO-yrityksen markkinoille tulon kynnystä. Myös ESCO-yrityksen määrittelevä lainsäädäntö puuttuu. Niinpä toimintaa on harjoitettava noudattamalla muita sääntöjä kuten konsultti-, rahoitus- tai palvelu- (esim. energia-auditointi), myynti- tai leasing-toiminnan sääntöjä. Leasing sisältää merkittäviä etuja, esim. kaikki leasing-kulut voidaan vähentää verotuksessa.

Venäjällä on toteutettu useita ESCO-koeprojekteja. Useimmat on toteutettu ulkomaisten organisaatioiden ja rahoituslaitosten avulla ja aloitteesta. Venäläisiä ESCO-yrityksiä on vähän, eivätkä ne pysty tarjoamaan kaikkia ESCO-palveluita. Energian ja energiaraaka-aineiden edulliset hinnat eivät luo kiihokkeita energiansäästöön. Ne nousevat kuitenkin jatkuvasti luoden markkinoita ESCO-toiminnalle.

Avainsanat: Energia, säästö, ESCO, Venäjä

Contents

LIST OF ABBREVIATIONS USED IN THE STUDY:

AOEEC – Arkhangelsk Oblast Energy Efficiency Centre

EBRD – European Bank for Reconstruction and Development

EP – Energy Performance Contract

ESCO – Energy Service Company

FEC – Federal Energy Commission of the Russian Federation

FI – Financial Institution

FOREM – Federal Wholesale Electricity Market of Russia

GEF – Global Environment Facility

GosEnergoNadzor – State Inspectorial authority in the Russian energy sector

GosStandart - State Committee of the Russian Federation for Standardization, Metrology and Certification

GosStroi - State Committee of the Russian Federation on Construction and Housing and Communal Complex

IBRD – International Bank for Reconstruction and Development (a member of World Bank group)

KAEEC – Karelian Energy Efficiency Centre

KEEG – Kola Energy Efficiency Centre

KREEC – Komi Republic Energy Efficiency Centre

MEDT - Ministry for Economic Development and Trade

MinEnergo - Ministry of Energy of the Russian Federation

MinFin - Ministry of Finance of the Russian Federation

MinPromNauki - Ministry of Industry, Science and Technologies of the Russian Federation

MOEEC – Murmansk Oblast Energy Efficiency Centre

NEEG – Norwegian Energy Efficiency Group

NEFCO – Nordic Environment Finance Corporation

RAO UES (of Russia) – All-Russian Joint-Stock Company " The Unified Energy Systems of Russia"

REC – Regional Energy Commission

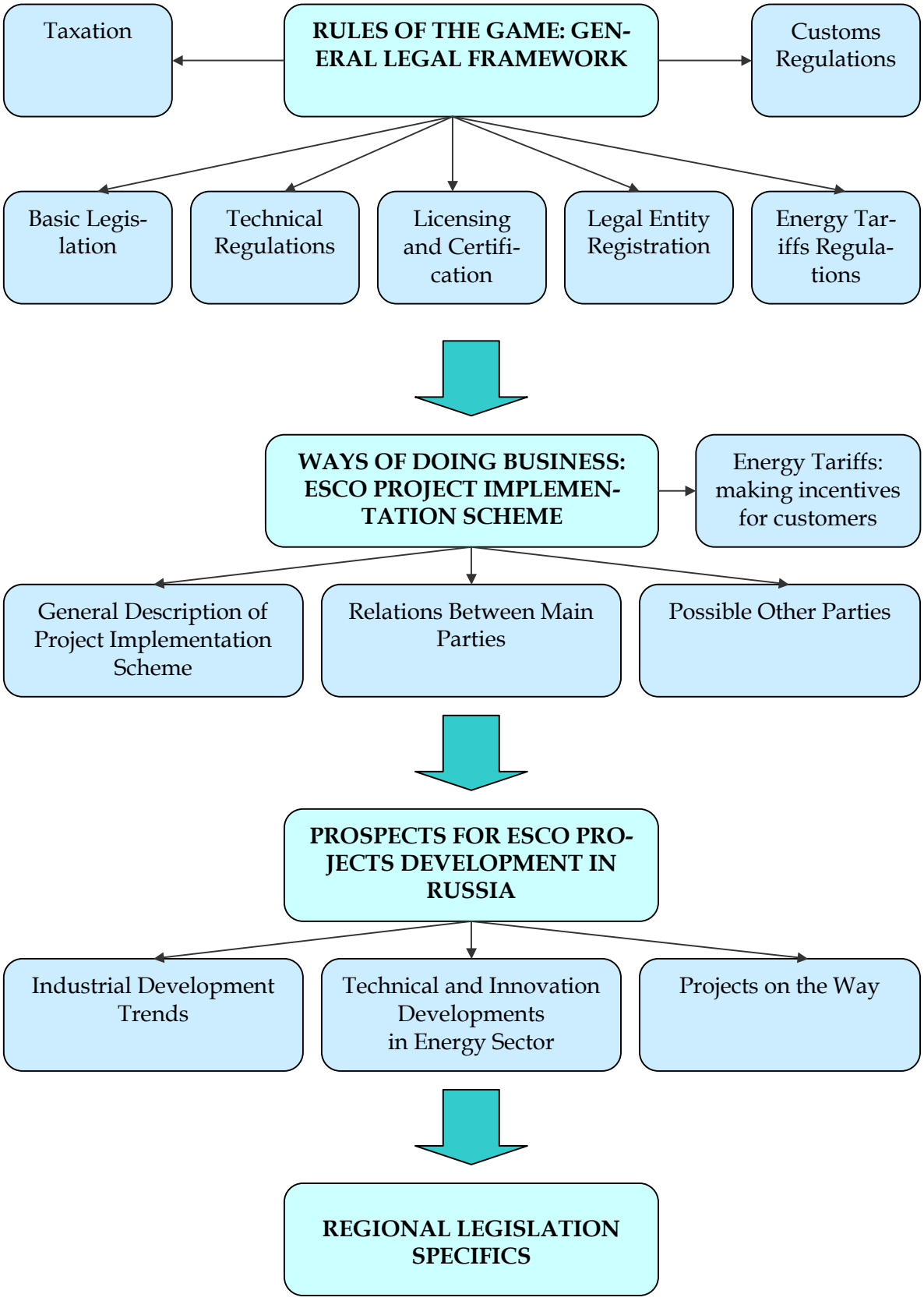
RF – Russian Federation

SIDA – Swedish International Development Cooperation Agency

TACIS - Programme launched by EC in 1991 providing grant-financed technical assistance to 12 countries of Eastern Europe and Central Asia.

WTO – World Trade Organization

FLOW CHART: STUDY CONTENTS



SUMMARY

Energy saving activities in accordance with ESCO model is a rather new matter for Russia. There is still no sound track record of ESCO projects and the term "ESCO" is known mostly by specialists. The representatives of the state have also started talks on ESCO and schemes of energy saving not so long ago on the threshold of energy reforms, and it comes as no surprise that the issues related to energy saving activities and operations of ESCO companies are not properly addressed in the Russian legislation for the moment. However, we can observe that this situation is actively changing, as energy saving policy presently seems to be of higher priority for the State than it was ever before.

Since the end of the 1990s, number of legislative acts on energy saving have been growing and that itself is positive fact pointing that the issue is of particular attention from the side of the State. However, there is still much to be done in the legislative system in order to enforce effective law environment for ESCO model operations. The Federal Law "On Energy Saving" provided for only basic ground for energy saving activities. There is much more progressive «Model Law on Energy Saving» adopted at Inter-Parliamentary Assembly of the CIS countries, but presently it is not in force on the territory of Russian Federation and in its essence it stays but a declaration of priorities and goals in the respective area. At this time, the legal environment both at federal and regional level lacks earth-bound practical legislative acts that will address in detail the specific issues arising in the course of energy saving projects.

Besides adoption of appropriate legislative acts, the State also started promotion of energy saving activities by means of development and implementation of specific programs for the medium- and long term, such as Federal Program "Energy Efficient Economy". The concept of the program is rather good, but we admit the implementation of the program will be a steeplechase.

The practical aspect of regulation of energy saving activities in Russia that mostly concerns procedures related to entering the market and operations supervision, is still in need of a good touch. We cannot say that entering market for energy saving activities is especially tough as compared to other activities in the energy sector, but there are still some legal requirements that make market entry rather time-consuming task. To begin with, the companies need license for operations of electric and heat networks in order to deal with energy equipment. In order to receive this license, the companies firstly should be incorporated within the territory of Russia. Besides this, the compulsory certification procedure for the energy equipment, including the imported one, needs to be come over for each of the equipment articles. One of the specifics of the Russian certification system is that the imported equipment should go through the same certification procedure as the domestic one, even in case it is already certified abroad. The other thing is that it is rather time-consuming process - certification can take up to one year.

The possible contracting relations in the framework of Russian legislation do not perfectly fit the needs of energy saving companies. Nowadays, energy performance contracts and ESCO contractual relationship scheme are not addressed in both federal and regional legislation. As a result, relations between ESCO and a client should rely mainly on typical contractor and sub-contractor agreements, such as consultancy/services agreements (energy auditing, organization of financing, etc.), vendor contracts, and leasing agreements. On the other hand, it provides for a wide field of the parties' discretion within the frames of the general "freedom of contract" principle.

Leasing schemes seem to be very promising for ESCO projects as, according to the Russian legislation, they offer considerable benefits for the clients and provide for important control means over the measures implemented upon the financing attracted by ESCO companies from their own sources or from the financial institutions. In this case, the costs related to equipment lease are included in the prime cost for the client and this allows for decreasing of the profit tax. There are also other benefits, such as accelerated depreciation of the equipment that allow for further decrease in property tax.

In practice, every new business concept takes the most efforts in the course of introduction, and ESCO model is no exception. For the moment, several pilot projects of ESCO have been implemented in Russia. These projects were mostly initiated with the assistance of foreign organizations and financial institutions that are familiar with ESCO model and for each of these projects the specific implementation scheme was elaborated. A small number of local ESCO companies operating in Russia mostly cannot provide turnkey well-developed energy saving offers that became a standard for foreign players.

The Russian business environment tends to be not as stable as one of the developed countries, and the changes significantly influencing the project considerations can be anticipated in the nearest future. Thus,

when the present report was being finalized, it was announced that the structure of the federal government is to be drastically changed. Many ministries were abolished and the list of bodies and authorities, including ones responsible for energy sector, are to be reorganized and the powers and competence are to be transferred. The companies should be ready for these changes and it could be a good strategy to involve local partners in ESCO projects that have a great deal of knowledge of how system works and will be working.

On-going steady increase in energy tariffs and forecasted substantial tariffs growth in the medium- to long-term due to the energy reforms and possible WTO accession, which for the moment looks like a long-lasting story, will create good incentives for companies and municipalities to save more energy. This creates prerequisites for rapid dissemination of ESCO concept that offers most beneficial and professional approach to energy saving.

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1. GENERAL LEGAL FRAMEWORK AND ITS DEVELOPMENT

1.1. Basic Legislation Related to ESCO Operations

Energy saving gradually becomes a matter of major importance for the Russian economy. Meanwhile, the analysis of long-term economic development trends shows that the introduction of energy-saving technologies is implemented slowly, and is accompanied by inefficient use of material, financial and labour resources.

During the last decade, the activities aimed at creating a legal and organisational framework for energy supply have increased to a certain extent, and the shift from ideas' development to practical implementation of specific energy-saving measures has started al all levels: federal and regional, in various sectors of the economy and at particular enterprises.

Since 1993, at the federal level, 15 laws and presidential decrees were adopted in the field of energy supply, as well as 22 Government Resolutions and 24 sectoral regulations.

Federal Law № 28-FZ "On Energy Saving" intended to establish the frameworks for development of energy-saving activities and was aimed at creation of economic and organisational environment necessary for efficient use of energy resources.

The current Law "On Energy Saving" mostly contains rather general provisions. ESCO Company should pay attention to the existence of this Law but will not be able to put its regulations to practical use. This situation causes the most important problem in the field of energy saving. All existing legal acts concerning energy saving are mostly declarative and do not specify how to realize energy saving projects.

The Law does not provide for measures stimulating energy consumption efficiency, budget mechanisms for financing energy-saving programs or responsibility for inefficient use of energy resources. These drawbacks influence the outcome of activities aimed at more efficient use of energy resources.

To compensate for the aforementioned drawbacks the Government of the Russian Federation adopted the Resolution of June 15, 1998, № 588 "On additional measures aimed at stimulating energy saving in Russia", which provided that budget organisations, for the first time, were given the right to keep at their disposal saved financial resources for the period of energy-saving activities payback plus one year. At the same time, a system of limiting fuel and energy consumption by organisations financed from the federal budget was implemented (according to the Governmental Resolution № 5 of 05.01.1998), and a legal framework for such limits was developed. *In this manner Russian legislators tried to provide for measures stimulating efficient energy consumption among budget organisations. But in reality realization of energy-saving projects in budget sphere is highly unlikely because of permanent lack of financing.*

Target programs, adopted by authorities at different levels in the field of energy saving shall be mentioned. The Government of the Russian Federation issued a Resolution on "On Federal Target program "Energy Efficient Economy" for the period 2002-2005 and up to 2010", which recommended the executive bodies of federal subjects to develop regional energy-saving programs.

A number of state authorities participate in the Program. The coordinator and formal beneficiary of the Program is the Ministry of Energy of the Russian Federation[1] (MinEnergo).

The "Energy efficient economy" federal target program envisages two stages of implementation of the program:

1. Stage I (2002-2005) provides for:

1.1. Creation of legal and methodological framework at the federal level. Currently, basic documents covering practical activities are being systematised. Moreover, the implementation of measures aimed at deepening structural reforms and strengthening of market segments in energy sector is envisaged.

1.2. Finalising the implemented structure of energy-saving management at the federal, regional and sectoral levels.

[1] The Ministry of Energy of the RF has been abolished. Its functions have been transferred to the Ministry of Industry and Energy of the RF.

2. Stage II (2005-2010): Energy-saving measures after 2005 will be approved by the government of the RF after implementing goals and objectives of the Stage I of the program.

All reorganizations carried out according to the Program shall be implemented at three levels: federal, regional and sectoral.

Regulatory acts on practical energy saving are being developed in cooperation between Gosenergonadzor and Gosstandard of the RF:

- the first 6 standards have been developed, 12 more are under development;
- guidelines for organization of activities in energy-saving field are published for the use of Gosenergonadzor agencies in subjects of the Russian Federation;
- activities in the field of developing a methodology for energy surveys at industrial enterprises, housing and communal services and organisations of the budget sphere have been organized.

At the regional level 80% of the subjects of the Russian Federation established specialised departments dealing with energy saving, as well as Energy Saving Centres, funds and regional programs. Many regions provide for targeted budget financing of accounting and regulating equipment installation in the budget sphere. 22 regions have adopted laws on energy saving, and in 34 regions respective legislative bills are being considered at the moment.

At the sectoral level through coordinated efforts and with direct participation of MinEnergo[2] of Russia, 26 federal ministries and departments have adopted sectoral energy-saving programs.

The main impediment for practical energy saving in the Fuel and Energy Complex is the lack of tangible economic interest. Currently, the majority of companies (both state and private companies) are not interested in realization of energy-saving projects because of lack of financing, absence of energy-saving practice in Russia and lengthy project payback periods.

The system of basic legal and regulatory acts on energy saving includes, apart from the documents already mentioned, the Federal Law № 41-FZ "On State Regulation of Tariffs on Electric and Heat Energy in the Russian Federation".

It should be noted that the regulations under the Law are designed for the transition period of Russia's energy sector reforms. That is the reason why its force, like, in fact, that of the Federal Law of 14.04.1995 No. 41-FZ "On State Regulation of Tariffs on Electric and Heat Energy in the Russian Federation", is limited by relevant provisions of the Federal Law of 26.03.2003 No. 35-FZ "On Electric Power" coming into force.

According to the Law the main principle of tariff regulation is providing for a balance of economic interests of energy suppliers and consumers of electric and heat energy. The balance should be reached on the basis of availability of the two types of energy, and, more importantly, it should ensure economically sound profitability of capital invested in electric and heat energy production and supply, as well as operational and dispatching management in electricity sector.

According to the amendments, the tariff or tariff thresholds term of validity cannot be less than one year.[3]

It should be noted that the «Model Law on Energy Saving», adopted at the twelfth plenary meeting of the Inter-parliamentary Assembly of the CIS countries (Decision No. 12-5, December, 8, 1998), is of major importance for the development of the legal framework in the field of energy saving in the Russian Federation. The Law fixes legal provisions for the implementation of state policy aimed at increased efficiency of energy use, as well as legal provisions for setting up and functioning of institutional, economic and information mechanisms of such policy implementation.

However, the progressive Model law is not enforced in Russia directly and stays an ineffective list of the goals to be achieved by the anticipated legislative measures.

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[2] The Ministry of Industry and Energy of the RF.

[3] The Supplement 1 contains a list of all effective regulatory documents in this area adopted on the federal level.

1.2. Technical Regulations

The Federal Law "On Energy Saving" sets the following basic principles of the state energy- saving policy:

- the priority of efficient use of energy resources;
- insuring state supervision over the efficient use of energy resources;
- obligatory accounting for energy resources produced or spent by legal entities;
- including energy efficiency in the state standards for equipment, materials, constructions and transport;
- certification of fuel and energy-consuming, energy-saving and diagnostic equipment, materials, structures and transport, as well as energy resources;
- combining interests of consumers, suppliers and producers of energy resources.

Thus, the state energy-saving policy is implemented on the basis of carrying out federal inter-regional programs in the field of energy saving by stimulating the production and use of fuel- and energy-saving equipment and by organizing accounting and control systems for consumption of energy resources.

The regulation in the area is carried out by numerous state executive authorities, and the system of the Federal Government is now being essentially reformed.

I. The Ministry of Industry and Energy of the Russian Federation now being created will:

- coordinate the activities of electric and fuel energy enterprises;
- in cooperation with competent federal executive bodies work out main lines of the state policy in the area of energy saving and insuring environmental safety of the fuel and energy complex functioning and developing;
- provide for coordinating activities aimed at more efficient energy use (e.g. through the use of renewable energy sources and alternative energy) in the Russian economy, coordinates activities in the field of environmental security in the fuel and energy complex;
- together with GosStandart organize activities in the sphere of standardization of equipment for the fuel and energy complex, different fuels and energy resources, as well as electric energy; participate in organizing of their certification and metrological support for fuel and energy sector industrial enterprises;
- provide for the state control over efficient use of energy resources, ensure state control and supervision over the quality and efficient use of electric and heat energy; control fuel and energy sector organizations in terms of compliance of their activities with industrial and environmental safety regulations;
- provide for licensing of specific types of activities within the field of its competence;
- ensure the adoption of regulatory acts, establishing standards, norms and rules of operation, equipment maintenance and site construction for FEC, and provide for industrial security and labor protection, methods and means of compliance control.

II. Technical issues, including licensing and certification are dealt with by departmental committees and commissions of these ministries. However, one particular authority should be mentioned separately - the **Department of State Energy Control and Energy Supply of the Ministry of Industry and Energy of the Russian Federation (Gosenergonadzor)[4].** Gosenergonadzor is an agency of Ministry of Industry and Energy, responsible for standardization, certification and metrology issues connected with fuel and energy resources. Within its field of competence, the authority participates in the certification of electric energy, electric installations, equipment and meters, as well as activities and services under its regulation. Gosenergonadzor possesses significant controlling powers in the power sector.

[4] At present moment Gosenergonadzor has been included into a structure of the Ministry of industry and Energy of the RF.

III. Federal Energy Commission of the Russian Federation (hereinafter, FEC of Russia), formed according to the Presidential Decree dated November 29, 1995, No. 1194, "On Federal Energy Commission of the Russian Federation", is a federal executive authority, regulating the work of natural monopolies in the fuel and energy complex in accordance with the Federal Law "On Natural Monopolies", as well as ensuring state regulation of tariffs for electric and heat energy in accordance with the Federal Law "On State Regulation of Tariffs for Electric and Heat Energy in the Russian Federation ".

IV. The state standardization in the area lies within the competence of the Federal Service for Technical Regulation and Metrology (former **GosStandart**) and the industrial and construction sector energy supply activities are partially regulated and controlled by the Federal Agency for Construction and Housing Sector (former **GosStroy**)**.**

V. At the regional level (in subjects of the Russian Federation) regulatory and methodological functions in the field of energy saving are performed by:

- executive authorities of a subject of the Russian Federation;
- regional energy commissions (RECs);
- territorial authorities of Gosenergonadzor and GosStandart of Russia;
- scientific and research centres and energy saving agencies.

Concerning ESCO Company activities in the sphere of energy saving in Russia, it should be noted that:

1. Regional governmental subdivisions of the Ministry of Taxes and Duties provide registration of a legal entity and tax registration of a company on the territory of Russian Federation.
2. The Ministry of Industry and Energy is a federal executive body responsible for licensing of electricity and heat supply networks operation and auditing activities.
3. The Ministry of Finance is responsible for licensing of ESCO Company auditing activities if it provides energy-auditing services.
4. The GosStandart of RF is a state federal body realizing certification of fuel- and energy- consuming, energy-saving and diagnostic equipment, materials, structures, transport, as well as energy resources.

Special regulative preferences for consumers and producers of energy resources stipulated by law

Consumers and producers of energy resources, carrying out energy-saving activities, e.g. producing and consuming energy with qualities better than set up in the state standards, receive benefits, according to the procedure to be provided for by the Government of Russia. However no such benefits have been yet determined by the Government except for the ones regarding the state unitary enterprises (see below).

For energy installations, using renewable energy sources, the construction of which is carried out within energy-saving programs, prices for electric energy should provide for the payback of capital investment in such construction within the term agreed upon with an executive authority of the respective region.

Construction and operation of energy installations using certified equipment and having the heat energy production capacity up to three hundred kilowatt or electric power production capacity up to one hundred kilowatt can be carried out without a license.

To stimulate efficient use of energy resources within the procedure fixed by the Government of the Russian Federation, seasonal pricing is carried out for natural gas and electric and heat energy, as well as daily tariff differentiation for electric energy.

While determining tariffs for electric and heat energy, regional executive authorities shall consider economically sound energy-saving costs incurred by consumers of electric and heat energy.

State and municipal unitary enterprises consuming energy resources in smaller amounts than those set up by agreements with energy-supplying organizations, are exempt from compensation of costs, incurred by the suppliers, if the smaller energy consumption is a result of implemented energy-saving activities. These benefits, however, are not obtained by any private energy consumers.

1.3. Licensing and Certification

Licensing

ESCO activities will be subject to the licensing to the extent they include operation of electricity and heat supply networks of the client companies by ESCO itself.

The procedure of licensing of a number of activities is regulated by the Government of the Russian Federation in accordance with the «Provisions for Organizing Licensing of the types of activities within the competence of the Ministry of Industry and Energy of the Russian Federation», approved by MinEnergo Order № 2 of January 9, 2003.

Leasing and production and supply of the equipment used for energy saving activities are not subject to licensing in Russia.

Licensing of electricity and heat supply networks operation

The legislative acts, regulating the procedure and stipulating conditions for licensing of electric and heat power networks include the Resolution of the Government of the Russian Federation «On approving the provisions for licensing of power supply networks operation» and the Resolution of the Government of the Russian Federation «On approving the provisions for licensing of heat supply networks operation».

Heat and power networks operation includes admission, transportation and distribution of heat or power energy, as well as technical maintenance and repairs of the said networks.

Construction and operation of energy installations using certified equipment and having the heat energy production capacity up to three hundred kilowatt or electric power production capacity up to one hundred kilowatt can be carried out without a license.

The license for the described activities is granted by Ministry of Industry and Energy for the period of five years, with the possibility of prolongation, where the prolongation procedure is the same as the one of receiving the license.

The following license criteria are set forth:

- compliance with the norms of regulatory acts of the Russian Federation and regulatory technological documents, setting the rules of operating electricity and heat supply networks;
- availability of certificates for equipment, used by the applicant to exercise the licensed activity;
- documentarily proved availability of production premises and equipment, either in the applicant's ownership or used by the applicant on other legal grounds, which must correspond to technological standards and operation requirements for technological equipment and materials;
- availability of employees having specialized higher of secondary professional education or other higher or secondary professional education and having gone through professional training allowing them to exercise the licensed activity, as well as experts, specially trained in accordance with established procedure;
- availability of a person responsible for ensuring reliable no-break power supply to consumers, for operational safety and maintenance of electricity and heat supply networks.

In order to obtain a license, the applicant must submit to the licensing agency the following documents:

a) Application for granting a license containing the following information:

b) Copies of incorporation documents and a documentary confirmation of entry of the legal entity into the State Registry of Legal persons, if the company in question has established a legal entity within the territory of the Russian Federation, or a legalized copy of the entry in the commercial register, or certificate of incorporation, or other analogous document containing information on the agency that has registered a foreign organization, registration number, place and date of registration. Notarised copies of the above documents may be submitted instead of the originals. For organizations not subject to compulsory registration (entry into a commercial register, etc.) – legalized copies of establishment documents or other documents supporting the right to perform commercial activities[5];

[5] If the copies are not notarized, they must be submitted together with the original.

c) A copy of the tax registration document of the applicant;

d) The document confirming the fact of payment of licensing fee for the review of the application;

e) Information on the qualifications of the employees of the applicant.

Certification

The Federal Law "On Energy Saving" provides for compulsory certification of fuel- and energy-consuming, energy-saving and diagnostic equipment, materials, structures, transport, as well as energy resources. Energy-consuming products of any function and energy resources are subject to compulsory certification, as far as their energy efficiency indicators are concerned[6]. So, under installation and putting in operation of energy-saving equipment within the frames of ESCO projects, an ESCO company shall certify given equipment provided that this ESCO company is its manufacturer or its supplier at the Russian market.

The issues of standardization and product certification within the territory of the Russian Federation are regulated by Federal Law "On Technical Regulation»" adopted on 27 December 2002.

The chief regulatory body in the sphere of standardization and certification is the State Committee of the Russian Federation for Standardization, Metrology and Certification (GosStandart). In Northwest Russia, the main agency of GosStandart is the Center for Testing and Certification "Test-C-Petersburg", within which the Testing Laboratory "Test-C-Petersburg" was established.

Energy consuming products of any kind are subject to compulsory certification.

In the event of the instructions of GosStandart on the necessity to remedy the incompliance of products with the requirements of technical regulations not being followed, the GosStandart has the right to apply to court demanding mandatory revocation of such products.

According to the Decree of GosStandart of the Russian Federation, dated 19.06.1998, № 340, «On activities in the field of energy saving» a state institution «Energotestcontrol»[7] of the Russian Center for Testing and Certification is charged with coordination of activities, within GosStandart Russia, of developing automatic devices and systems of control and accounting for fuel and energy recourses.

Russian state standards regulating standardization and certification issues of energy saving products were adopted by GosStandart.

Table 1. State Standards Related to Energy Saving

Name	*Description*
GOST R 51379-99	Energy saving. Energy passport of an industrial consumer of fuel and energy resources. Basic provisions. Model forms.
GOST R 51380-99	Energy saving. Methods of confirming compliance of energy efficiency indicators of energy products with standard indicators.
GOST R 51387-99	Energy saving. Regulatory and methodological support. Basic provisions.
GOST R 51541-99	Energy saving. Energy efficiency of indicators. General provisions.
GOST R 51749-2001	Energy saving. Energy consuming equipment of general industrial use. Types. Variants. Groups. Energy efficiency indicators. Identification.
GOST R 51750-2001	Energy saving. Methods of determining power consumption while production and delivering services in technological energy systems.

[6] Energy efficiency indicator – absolute or specific value of consumption or loss of energy resources for products of any function, set up by state standards.

[7] Institution «Energotestcontrol» is a structural division of Gosstandard.

Provisions, set up in these standards are compulsory for all enterprises, organizations, regional or other entities, situated within the territory of the Russian federation as well as for Russian authorities directly connected with the use of fuel and energy recourses (FER) and energy saving.

Confirmation of conformity

Confirmation of conformity of products and services is one of the components of the mechanism for assessment of their safety. Confirmation of conformity takes place at the pre-market stage of product circulation, and can be performed both by the manufacturer, that is, the first party (declaration of conformity), and by an independent agency, that is, by a third party (certification). The Federal Law «On technical regulation» establishes that confirmation of conformity for products, works and services, whenever such confirmation is compulsory, is performed in two forms: adoption of a declaration of conformity, or obtaining a certificate of conformity.

In order to carry out confirmation of conformity of a specific product (service) it is necessary to comply with the requirements stated in a legal document, and, if possible, submit proofs of safety of such a product (service). In the procedure of confirmation of conformity, the first party to collect such proofs is the manufacturer (producer), if necessary using a third party (for example, a quality system certification agency or a testing laboratory). If a documentary proof of conformity is issued by such third party, this party is also responsible for collecting proofs of safety.

Declarations of conformity and certificates of conformity have equal legal power regardless of the procedures of their confirmation of conformity for the whole territory of Russia.

Interstate standards (GOST) and state standards of the Russian Federation (GOST-R) are applied in the compulsory certification procedures in the Russian Federation.

Certification of electric equipment

It is necessary to point out that certification of the electric equipment used within the frames of ESCO projects has specific regulation. Compulsory certification of electric equipment is necessary to check the conformity with national and interstate standards adopted in the Russian Federation for the products included in the «Nomenclature of products and services (works) subject to compulsory certification in accordance with legislative acts of the Russian Federation".

Certification of electric equipment is carried out following a producer's or a seller's application by the certification bodies accredited by the GosStandart of Russia and having agreements with it, coordinated with the Electric Equipment Certification System (EECS) central authority. Certification of imported electric equipment is carried out according to the same procedure as the certification of domestic products. Rules on certification of imported products take into consideration Russia's commitments within IECEC[8].

Depending on a specific situation the formula for calculating the cost of certification work only includes elements corresponding to the work implemented in practice.

Certification of goods with a foreign certificate of conformity

GosStandart of Russia is the National Certification Agency (hereinafter, NCA), issuing and acknowledging certificates within the IECEC Scheme after testing electric equipment to determine its conformity with security standards.

EESC acknowledges certificates of conformity with testing protocols, granted within national certification systems of exporting countries, with which the GosStandart of Russia has agreements on mutual acknowledgement of certification results.

Granting certificate of conformity within compulsory licensing of products subject to compulsory fire safety licensing, on the basis of accepting foreign certificates, takes place when fire safety certification system certificate is available.

[8] IECEC – the International Electrotechnical Commission system of electric equipment testing for safety standards conformity.

1.4. Registration of a Legal Entity Within the Territory of the Russian Federation

Incorporation of the legal entity

The nature of energy saving services makes it very advisable to establish a new legal entity (fully or partially owned by a foreign investor) for implementation of an ESCO project. The process of incorporation of a legal entity (including tax registration) does not normally require over 2-3 weeks. The costs of registration, including legal fees, do not usually exceed USD 400-500. The documentation provided to the registration authorities, the terms and costs vary depending on the type of the legal entity chosen. For an ESCO fully owned by a foreign investor an "*OOO*" (limited liability company) shall be the most eligible form, whereas for a joint venture a "*ZAO*" (closed joint stock company) shall be preferred. Establishment of *ZAO* will incur more significant costs of incorporation and operation but ensure the interests and rights of a foreign shareholder better.

In the event of establishment of a branch or representative office the cost of registration is increased by the registration fee payable to the Ministry of Justice (USD 1,000 for 1 year, USD 2,000 for 2 years, and USD 2,500 for 3 years).

Registration in tax bodies

In order to obtain a license for ESCO it will be necessary to get a tax registration in the Russian Federation and obtain a tax registration certificate.

If a foreign organization is carrying out, or plans to carry out its activities in the Russian Federation through a branch office for a period exceeding 30 calendar days within one year (continuously or with intervals), such an organization must register with a tax agency no later than 30 days after the commencement of such activities.

Tax registration is documented by a certificate presented by the tax agency to the foreign organization.

1.5. Tariff Regulations

Regulation of Electric and Thermal Energy Tariffs

Federal Law of 14 April 1995 "On State regulation of Tariffs for Electric and Thermal Energy in the Russian Federation" determines the economic, organizational, and legislative institutions for state regulation of tariffs for electric and thermal energy in the Russian Federation, i.e. the state policy in the sphere of energy tariffs regulation.

The key area of the energy policy in the Russian Federation is the increase in efficiency of energy use, including energy saving issues.

Thanks to their privileged position, the fuel and energy natural monopolies may achieve substantial cost savings per unit of products provided in the market.

State regulation of tariffs is primarily necessary now in order to avoid possible distortions resulting from uncontrolled monopolies, and must thus guarantee to the consumer the affordability of the products. The consumer should thus benefit from cost savings achieved by the natural monopoly operators. That is perhaps why the Russian legislators prioritized the goal of "protection of economic interests of consumers from monopolistic increases in tariffs" among other possible targets of the state policy. Still, this legislative principle is not sufficiently supported by appropriate and effective enforcement mechanisms.

The Decree of the President of the Russian Federation of 7 May 1995 "On basic directions of the energy policy and the reconstruction of the fuel-and-energy complex in the Russian federation for the period of up to 2010" stipulated that *the energy policy of the Russian Federation is implemented, inter allia, by means of regulation of prices (tariffs) on the federal and regional levels* in accordance with the procedures established by legislative and regulatory acts. However, the said Decree does not place the "protection of economic interests of consumers from monopolistic increases in tariffs" in the list of energy policy priorities. The "Energy strategy of the Russian Federation" proclaims the increase in energy use efficiency and energy saving as the top national priority.

A more dynamic implementation of energy saving program is not possible without a significant growth of the energy tariffs, which are still lowered by the state authorities controlling the monopolistic players at

the energy markets. The anticipated growth will be provided by the on-going power sector reform and the starting housing sector reform.

The expenses incurred by energy companies in order to compensate for the losses in the operation of residential real estate, social facilities are approved as such by the energy commissions and then included into tariff calculation formulas. In an obvious contradiction with the provisions of the "Guidelines on electric and thermal energy pricing in the territory of the Russian Federation" approved by the Resolution of the Government of February 26, 2004, the demand for equal profitability of electric and thermal energy production is not met.

Roles of Federal and Regional Energy Commissions

The state regulating of tariffs for electric and heat energy is carried out in accordance with regulatory legislative acts of the Russian Federation by the Federal Energy Commission of the Russian Federation and regional energy commissions (correspondingly FEC and REC's).

The Federal Law of April, 14, 1995, N41-FZ "On state regulating of tariffs for electric and heat energy in the Russian Federation" determines the Federal Energy Commission of the Russian Federation as a Federal executive body, responsible for state tariffs regulation on the All-Russian energy market and for coordination of the state policy in the area.

Regional energy commissions are the executive bodies of subjects of the Russian Federation (REC's), responsible for state regulations of tariffs on heat and electric energy within their regions.

REC's set economically sound tariffs for electric and heat energy, supplied by energy suppliers to customers, located at the territories of corresponding regions, with the exception of the customers having access to federal (All-Russian) wholesale marker of electric energy (power), as well as fees for the service of energy transportation within a electric power supply networks. The tariff regulation is carried out by RECs on the basis of provisions, approved by regional state authorities, and basic principles of price formation for electric and heat energy, set up by the Government of Russia.

Up to now, no effective mechanism has been created for insuring cooperation between FEC and RECs and efficiently controlling the work of the latter. No economic tools have yet been found to ensure real saving of funds and resources or to develop renewable and local sources of energy.

Formally, any REC is an independent state executive body. Its decisions on the pricing policy of the region in the field of energy come into force from the moment of their approval by the chairman of the commission. If necessary, the REC informs the tax inspection and other state authorities about its decisions. REC's decisions can be cancelled only by the FEC.

1.6. Taxation

The Federal legislation of the Russian Federation does not provide for any special tax regulation and tax preferences for organizations that use or install energy-saving systems. However, according to the Tax Code of the Russian Federation, legislative authorities of the subjects of the Russian Federation have the right to determine tax preferences and their grounds, while setting a tax rate in the regional legislation[9]. Thus regional legislations can provide for the standards insuring economic incentives in energy saving for enterprises due to setting up tax benefits.

The issue of tax benefits for organizations, carrying out energy-saving activities in accordance with the legislation of the subjects of the Russian Federation is dealt with in more details in Chapter 4 of the present Report, where the specific regional regimes of the North-Western regions of Russia are described. It is necessary to point out that significant tax privileges under introduction of energy saving measures are not established at the level of subjects of the RF either. However, there are efficient methods of tax optimization under usage of leasing operations in a process of implementation of ESCO projects[10].

The previously mentioned «Model Law on Energy Saving» of the CIS countries provides for a possibility of the CIS states setting up their own tax benefits, especially in the area of profit tax and VAT rate reduction. However, the provisions of this CIS Model Law are not implemented in the Russian Legislation.

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[9] This regional taxation preferences may not affect full taxes or their parts collected into the Federal budget of Russia.

[10] See Chapter 2 of the present report "ESCO project implementation schemes in Russia".

At the same time it shall be considered that, any import of goods to Russia in a form of fixed assets contributed into the equity capital of a company registered under the Russian law, is exempt of VAT and customs duties. In case such equipment is contributed into the equity capital of a Russian ESCO, these preferences shall be exercised. However it doesn't seem as a tax optimization scheme eligible for the long-term ESCO operations in Russia, since the preferences are given only within the company incorporation procedure.

1.7. Customs Regulations

The following customs legislation requirements may be used by ESCO Company or by the Client if they buy or carry energy saving equipment from abroad.

In accordance with Order of the State Customs Committee No. 1284 of 29 November 2002 «On Approval of the Rules for Acceptance of Cargo Customs Declarations», the main document required for transportation of goods, including any equipment[11], across the customs border is the cargo customs declaration. The procedure for preparation and approval of the cargo customs declaration is agreed with a customs broker who acts as an intermediary between the manufacturer of goods and the customs agency. The manufacturer and the broker sign an agreement, after which the broker prepares the list of necessary documents for customs clearance of goods. For that purpose, the customs broker must receive the codes for products under the Product Nomenclature for Foreign Economic Activities.

Exemption from duties and taxes, depending on specific types of goods carried through the border of the Russian federation, are applicable. For instance, no customs duties will be collected from imported equipment if it has been imported in a form of contribution into a company's equity capital.

According to the Decree №496 of the State Customs Committee of the Russian federation of 14.08.1996 and №282 of 12.05.1999, goods subject to compulsory certification, including energy-saving and diagnostic equipment, material, structures, transportation means and energy resources *can be brought in the territory of Russia only if certificates are available.*

Customs regulations provide for bringing in energy-saving equipment without presenting a conformity certificate to customs authorities if the following documents are available:

- Copy of application for certification addressed to a certification body
- Letter from a certification authority indicating the number of equipment units necessary for certification.

As a rule, certification takes place prior to goods brought in to Russia.

1.8. Legislative Trends

Increasing energy efficiency of the economy is one of the major tasks of Russia's social and economic development. If problems in this field are not solved, the energy factor will continue slowing down economic upturn.

Basing on the parameters for the long-term social and economic development of the country underlying the «Energy Strategy of Russia for the period up to 2020», which was approved by the Resolution of the Government of the Russian Federation No. 1234-r of August, 28, 2003, the structural economic reform will allow to save about 60% (around 400 million tons of equivalent fuel by 2010 and 1000 million tons by 2020г.) of energy consumption increase that would occur if no structural reforms were carried out in the economy, and in the situation of moderate economic growth – about a half of such consumption increase. However, although the positive structural reform tendencies will be fully used, this process will be accompanied by the implementation of target energy-saving programs.

The main precondition for energy-saving intensification is a rapid growth of the domestic energy prices up to the level providing for the compensation of economically sound costs and receiving reasonable profits for invested capital. Yet, in the near-future outlook, we cannot forecast effective implementation of the target energy-saving programs, as well as the introduction of the necessary amendments to the tax legislation in compliance with the CIS "Model Law on Energy Saving".

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[11] Including equipment used for conducting energy saving measures.

Apart from numerous programs and declarations, the more significant legislative and regulative trend is the gradual coming of the so-called "power sector laws" of March 26, 2003 into force. These acts set the legal framework for power industry reform, and the latter will lead to demonopolization of the power generation and power distribution sectors. Therefore, the pricing on the heat and power on the market will not be determined by tariff regulation in the most regions of Russia, including the North-West. The prices will inevitably grow, and this will further urge the power consuming companies to introduce the up-to-date energy-saving systems and, inter allia, to acquire the services of ESCO.

Besides all legislative trends mentioned above we note the alteration of Federal Ministries Structure in accordance with the Decree of President of the RF of 09.03.2004 # 314 "On system and structure of the federal executive power bodies". The main purpose of such changes is to reduce the number of ministries because the current system of federal executive bodies is too complex. Functions of abolished Ministries were transmitted to federal agencies, federal services and residuary Ministries. There are 17 Federal Ministries now instead of 30.

It is necessary to consider that Russian legislation regulating energy saving issues is being amended permanently in the environment of energy sector reform.

2. ESCO PROJECT IMPLEMENTATION SCHEMES IN RUSSIA

2.1. General Description of Project Implementation Scheme

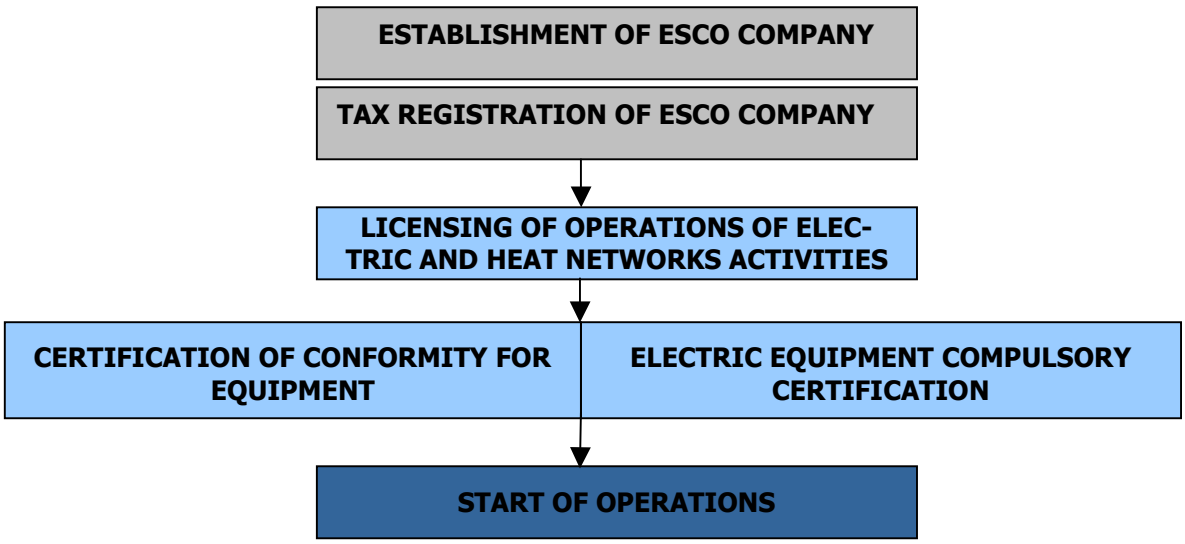
In general, the start-up of the ESCO project will pass the following stages:

1) Incorporation of a legal entity and registration with the tax authorities – 1 month.
2) Obtaining the required license – 2-6 months.
3) Certification of used and/or supplied equipment – up to 6-12 months.
4) Operations start-up.

It should be also clear that for the most kinds of ESCO activities, including the technical services and engineering services provided to the ESCO clients, the license will not be required. Only because of the uncommon nature of the ESCO services for the Russian market, the regulative authorities may deem the respective activities subject to the compulsory licensing. However, in practice it might be feasible for all of the services provided by ESCO to be provided without obtaining the said state permissions. In the present report we include licensing as a necessary stage for the project start-up due to its advisability considering the goal of minimizing the regulative and legal risks in the course of ESCO operation.

Therefore, the general project implementation start-up scheme will look as shown on the Picture A below.

Figure 1. Basic Scheme of an ESCO Project Start-Up in Russia.



After the completion of the start-up stage a company intended for providing the services related to managing and coordination of the energy-saving activities of its clients through entering into energy performance agreements. Introduction of outside financing and leasing of the energy-saving equipment may as well lie within the competence of an ESCO (ESCO company).

Thus the scope of the provided services includes:

1. energy audit;
2. design of project documentation, including technical specifications;
3. management of project implementation and delivery of operational projects;
4. installation of energy-saving equipment;
5. financing, including leasing the energy-saving equipment;
6. training of staff;
7. project financing;
8. long-term control of operational condition and maintenance of equipment (running and servicing the equipment);
9. project monitoring and guaranteed energy savings.

The various contractual schemes will be implemented by ESCO depending on the exact kinds of services, types of the clients and the nature of relations arising in the course of providing the services by ESCO to its clients, including the relations with the outside leasing parties and financial institutions.

2.2. Relations Between Parties in the Course of Project Implementation

2.2.1. Energy Service Company (ESCO) and potential clients at the Russian market

The following main types of ESCO Companies:

1. *ESCO Companies acting as energy consultants*

   These companies have the experience and the know-how in many areas of technology. They have expert technical staff able to provide the following services: energy audit, development of power efficiency projects, management of project implementation and project monitoring.

2. *ESCO Companies that act as energy consultants and as suppliers of energy-saving equipment (including lease on such equipment):*

   These companies are directly involved in arranging deliveries, installation and maintenance of energy-saving equipment. They can also stand as lease providers, if lease transactions are applied. Besides this, this type of ESCO Company will engage in energy service activities indicated in the item above.

3. *ESCO Companies that are established by energy companies*

   These ESCO Companies, assigned to a separate category, are able to provide a full range of energy-serving services, including energy audit, financing, deployment of new equipment and consultancy. They are established directly by energy-generating companies and provide energy-saving services to end users of heat and power supplied by these generating companies in order to reduce their energy losses in the production and distribution process.

The main types of potential clients of ESCO are:

(1) State and municipal authorities, parastatal enterprises and institutions acquiring energy in order to distribute it to the individual consumers ("Public consumers");

(2) Private and state companies requiring heat and power for their production cycles, other than specified in items (1) and (3) of the list ("Industrial consumers");

(3) AO-energos and the power companies established in the course of the power sector reform distributing and supplying energy to industrial customers ("AO-energos").

At the present stage, the most likely potential Clients of ESCO Companies will be the state, municipal and private industrial consumers wishing to increase efficiency of their energy consuming and energy distribution activities. Despite the fact that energy companies (AO-energos) form a potentially lucrative market for ESCO Companies, the possibility of them participating in ESCO project at this time can be considered rather low. AO-energos tend to establish their own units to implement energy efficiency projects. We therefore project that most of the energy companies will choose to become ESCO clients not earlier than 2008-2010. Clients of ESCO that operate in the energy sector are represented in the diagram below.

Please note that the scheme of energy production and consumption presented below (Figure 2) will exist in Russia only until 2008.

Figure 2. Potential Clients of ESCO at the Present Russian Energy Market

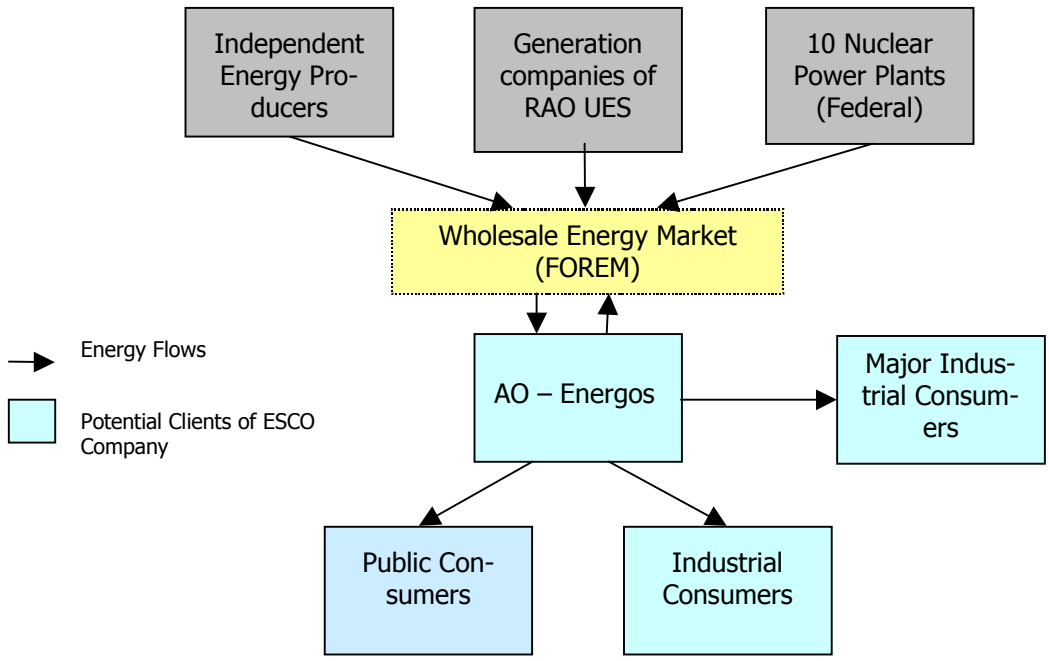
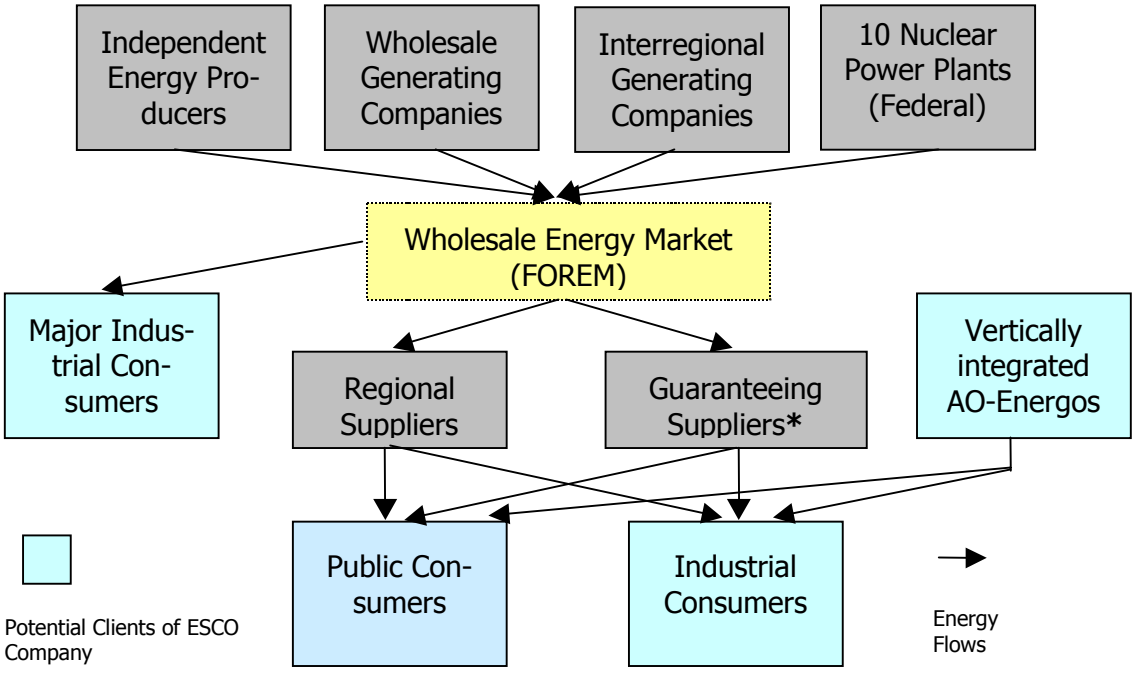


Figure 3. Potential Clients of ESCO at the Future Russian Energy Market



A program for restructuring for the energy sector in Russia has been recently put adopted. A number of federal laws were passed to govern reforms in the energy sector and restructuring of RAO UES of Russia and its daughter and affiliated companies, which chart out main guidelines and principles of how the energy sector will function in the future competitive market, when any government interference with the market will become strictly regulated (Figure 3).

*Guaranteeing supplier - the power supplier obliged to provide heat or power to any customer, applying for energy, and therefore entitled to receive special compensation from the state for its losses caused by the "guaranteeing supplier" functions execution. The status of guaranteeing suppliers will be obtained by some of the regional power companies in the course of the sector reform.

2.2.2. Contractual Framework in the ESCO Project

An Energy Performance Contract (hereinafter also referred to as "EP") may provide for any or all of the services rendered by ESCO: energy audit, engineering of energy-efficiency projects, project implementation all the way up to after-sales service, attraction of outside financing and implementation of leasing transactions. Leasing agreement still will be a separate one, yet mentioned and predetermined by an EP if such a case.

"Energy Performance Contract" term for the purposes of the present report defines a contractual type used in the energy saving services practice in Russia, and the provisions of an EP as well as of the other basic contractual types used for the similar purposes as described below are regarded in connection with the provisions of the effective Russian legislation.

An EP Contract defines relations between the parties including the following basic terms: ESCO provides a predetermined level of energy savings upon completion of an agreed implementation period for specific project(s), while investments are covered by achieved cost savings. A traditional EP Contract includes three types of costs: fuel, maintenance and capital investment.

An ESCO project is based on EP Contract between the ESCO Company and the Client. The actual scope of services and works provided makes this contract in effect a *combination of several types of agreements:*

1. service agreement per se (auditing, engineering, maintenance and consulting);
2. a contractor agreement (installation of energy-saving equipment, achievement of a predetermined material results);
3. a leasing agreement (under which ESCO Company buys energy-saving equipment from its manufacturer in order to transfer it to the Client that will own and use the equipment).

Brief descriptions of the most important types of contracts to be used within the ESCO projects are found in the following.

Contractor agreement and subcontract

The contractor agreement provisions will govern the major part of the relationships under the EP Contract. In most cases an ESCO Company takes on the obligation to install industrial equipment at the Client's site. There are two ways to have industrial equipment installed for an ESCO project:

(1) ESCO Company is the producer of energy-saving equipment and installs it using own resources;

(2) ESCO Company engages other entities (subcontractors) in order to perform this work.

Under this type of agreement the contractor undertakes to implement certain activities in accordance with the instructions received from the Client, and to submit the results of such activities to the Client, whereas the Client undertakes to accept such results and pay for them. Specific sub-types of this agreement are construction agreement and research and development agreement.

Services agreement

Engineering, technical consulting and assistance under the EP Contract shall be governed mostly by legislative provisions pertaining to services agreements.

Under a services agreement, the performer undertakes, on instruction from the Client, to render services (carry out certain activities or perform certain actions), and the Client undertakes to pay for these services.

Compensation charged by ESCO

An EP will contain specific provisions directly concerned with ESCO activities, first of all related to the kinds of services being provided under the contract, principles of remuneration, terms on the outside financing and/or leasing transactions.

The ESCO compensation types which are feasible in the Russian practice just as in the ESCO projects in other markets are determined as "Guaranteed savings", "Paid-from-savings" and "Shared savings".

Guaranteed savings contract

This type of contract stipulates that an ESCO Company accepts only the responsibility for ensuring a predetermined level of energy savings. The Client accepts all credit or leasing responsibilities, and ESCO Company receives a fixed remuneration for any services rendered from the Client. In this case an ESCO Company does not enter into any relationships with the FI, while the Client is obliged to pay the compensation from its own saved funds or from funds obtained from the FI, if such FI was engaged in the project.

Paid-from-savings contract

This type of contract envisages a fixed schedule of payments depending on the level of energy savings.

Shared savings contract

In this case, ESCO Company is responsible for financing the project, while the Client is responsible only for paying a portion of proceeds from energy savings to ESCO Company. ESCO Company also takes on the technical and financial risks. This type of contract involves more risks for an ESCO Company, but also more financial benefits.

Leasing agreement

Leasing agreement (which in Russian legislation is also referred to as "finance lease agreement") is among the most important types of agreements used to implement energy-saving activities. Leasing is a tool of innovation policies, and it is appropriate to use it as such in order to introduce energy-saving activities. Leasing is still considered a new scope of activity in Russia, which is why its potential is high, and why it is very likely to develop because of flexibility of the arrangement, high efficiency and quick return of investment.

In the ESCO case the choice of the seller shall as a general rule be the responsibility of ESCO Company (lessor) – a professional user of energy-saving equipment.

The market of leasing services in Russia has not yet stabilized, and there are practically no leasing companies to date able to provide high-quality technical servicing and maintenance for the leased objects.

Besides, Russian leasing companies firstly do not have the sufficient resources to implement cost-intensive ESCO projects, and secondly are not yet prepared to work in real sectors of the economy. Therefore the option of ESCO Company using leasing schemes makes implementing ESCO projects in Russia a considerably more attractive and feasible option.

Lease transactions are particularly worth our while as far as ESCO project implementation is concerned.

The leasing scheme reduces financial risks borne by ESCO Company, proving that the specified equipment is purchased - in Russia or abroad, since the Client is already bound by the EP Contract obligations. Leasing allows ESCO Company to receive a portion of its remuneration in leasing fees, and employ additional mechanisms to control the Client's energy-saving activities. In this case a leasing agreement will be an additional contract between the ESCO and the Client.

Implementation of a leasing scheme is highly recommended because it enables a number of tax privileges.

The following tax privileges are available when the said model of leasing equipment for an ESCO project is used:

(1) ESCO Company, as a lessor, is legible to deduct value-added tax included in the cost of purchased equipment. When lease payments are received from the Client, the ESCO Company calculates and transfers respective amounts of value-added tax.

(2) The Russian Law stipulates that an ESCO Company should keep all equipment leased by ESCO Company to the Client on its books. ESCO Company's source of income is lease payments (less VAT), which consist of commission to ESCO Company, accelerated depreciation of equipment[12] and property tax. ESCO Company's outlays will consist of accelerated depreciation and property tax. Thus, income tax is payable only on commissions paid to the ESCO Company.

(3) The Client (in our case the recipient of investments) will deduct lease payments[13] (less VAT) and credit interest[14] from taxable income. The recipient of investment also subtracts VAT amounts received along with lease payments.

(4) The result in terms of value-added tax is VAT amounts deducted from principal tax on purchased equipment.

(5) The result in terms of income tax is reduction of ESCO Company's taxable income, which is attained by subtracting accelerated depreciation and income tax amounts[15] from taxable basis. The Client's taxable income is also reduced by subtracting lease payments and interest on credit supplied by bank.

Contractual terms for outside financing of ESCO projects

In general, obtaining loans and credits from third parties and financial institutions is not a subject for special contractual regulation within ESCO area of activities. Meanwhile the intention to stimulate Russian companies and, especially, public energy consumers to acquire ESCO services determines the mechanisms of attracting the outside financing for the respective projects.

It should be noted that presently there are no "classic" energy-saving companies in Russia – such as can be found in the US and Europe. The lack of sufficient external funding for the goals not generally regarded as priorities is the major reason preventing power consumers and distributors from acquiring the outside ESCO services. Internal energy-saving measures are inefficient. The Russian energy-saving companies tend to bank on quick-return self-financing projects. Potential clients of ESCO Companies' power-saving services would, however, like to see long-term high-cost energy-saving activities implemented, covering the entire cycle of production and consumption and ensuring optimal profit and risk distribution.

Two most commonly used models of cooperation between an ESCO Company and Client FI can be described as **linear** and **circular** schemes.

Picture 4 below shows the **linear** cooperation model. Under this scheme an ESCO Company acts as the principal partner (consumer of energy) of Client and FI whose role is to finance the project. After a project is fully implemented the Client effects a payment to the ESCO Company, the size of which depends on achieved actual savings, while the ESCO Company pays off its debt to FI according to a pre-agreed payment arrangement, which is usually adjusted for accomplished energy savings.

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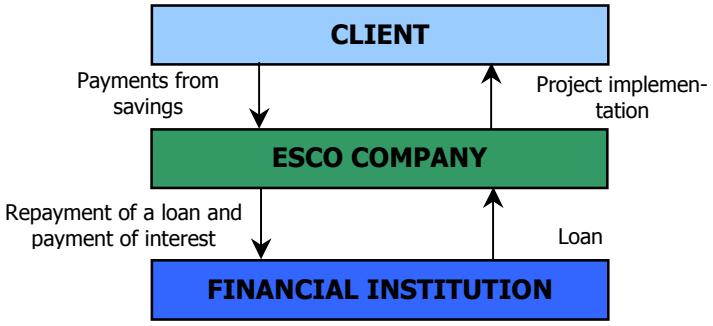
[12] Current Russian Legislation allows using accelerated depreciation rates for leased equipment and making it possible to book lease payments affected by the Lessee (ESCO's Client) as a portion of production costs. This allows reducing tax payable on such operations, making leasing the most attractive model for equipment purchase.

[13] ESCO's client reduces the amount of taxable profit by amounts of lease payments, including lease payments into production price.

[14] ESCO Company, acting as a lessor, can book interest for credit supplied by a bank (in other words, a FI), which has been used to buy leased equipment, as own costs. This allows the ESCO Company to lower its taxable income.

[15] Since both parties to a lease deal are allowed to use accelerated amortisation terms for leased equipment, property tax (paid by ESCO Company, since the equipment is entered into ESCO company's books) payable for the entire duration of the lease is reduced a few times depending on what depreciation rate is used (depreciation coefficient as high as 3 times can be used).

Figure 4. Linear Model of Cooperation between ESCO, Client and Financial Institution

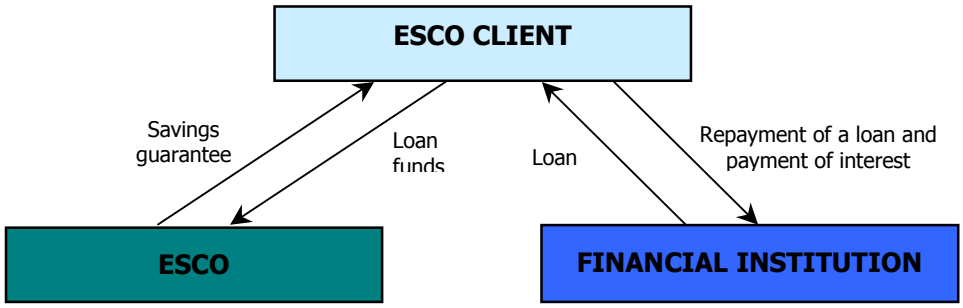


In Russia, where ESCO Companies are just finding their legs and do not enjoy the necessary capital stability, the **circular** model represented in Picture 5 below would be more applicable. In this model the ESCO Company stands as an intermediary and guarantor towards the Client and FI. The Client and FI establish a direct relationship. Any funds received are transferred to the Client's account, while the Client makes payments to ESCO Company for project implementation. The Russian Law does not impose any official bans on transfer of moneys received by the Client under a credit contract to a party that benefits from this arrangement (not to the Client, but, for instance, to supplier of equipment). This type of transaction is not, however, practiced in reality, because of Russia's Central Bank policies.

The Client pays the debt off to FI in scheduled payments. Payments commence before any energy savings are accomplished and verified. The ESCO Company assures the Client that the proposed energy-saving activities are efficient enough to guarantee a return of project costs. If this is not accomplished, the ESCO Company re-pays any respective difference to the Client.

The circular model is used when the Client is a company with extensive track record of consuming power, which FI enters into collaboration with because it knows the Client's standing. A repayment of a loan by the Client, and not ESCO Company, in many instances proves an easier and more dependable reliable arrangement. The negative aspect of this arrangement is that in this case ESCO Company develops at much slower rate, as it shoulders the Client's high risk until such moment when sufficient energy is saved for the ESCO Company to become solvent.

Figure 5. Circular Model of Cooperation between ESCO, Client and Financial Institution



It is therefore our view that a circular model of financing ESCO projects will prove the most efficient in Russian conditions.

Under any arrangement, relations between ESCO Company and FI or between Client and FI (depending on which financing model is implemented – linear or circular) are governed by a contract of credit / loan. Energy-saving equipment can be used as a collateral (pledge) either by ESCO Company, if the equipment is leased, or by the Client, if the Client chooses to purchase such equipment directly from the seller on the basis of sales contract. This method of guaranteeing credit/loan obligations is widely practiced. On the other hand, since very specific equipment is bought for use in ESCO projects, we foresee difficulties in selling it if credit obligations are not met. However, we believe that it would be most advisable to use

an ESCO Company as a warrantor. This model is applicable only when the recipient of funds specified in the contract of credit is the Client[16]. Since, as noted above, the circular model of funding ESCO projects and guaranteeing the obligations arising from bank guarantee appears to be the best solution for implementing ESCO projects in Russia, we shall in the following base our analysis of possible contractual relationships between ESCO Company and the Client on this model. Relations between ESCO Company and the Client under an ESCO project can vary according to whether it is a private or a government interest that owns the Client. When a state company participates in an energy performance project, the relationship with ESCO Company is entered into by a party that owns this state company, this party being some State Authority (for example, the Administration of a subject of RF). There is a practice of administrative subjects of RF establishing revolving funds to accumulate the finance necessary for the implementation of power efficiency projects[17].

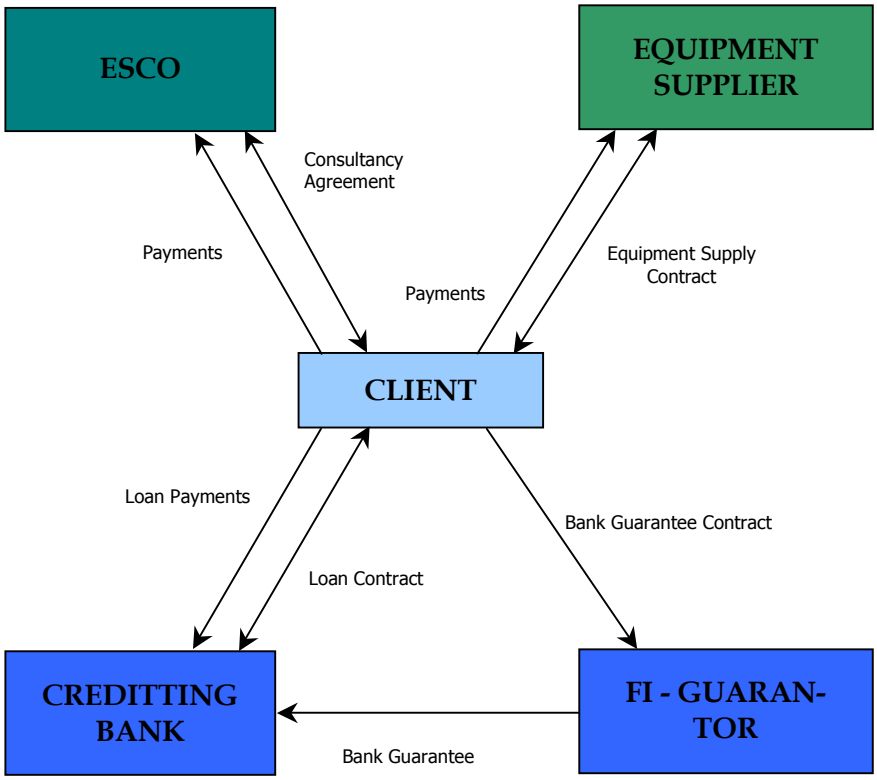
2.2.3. Possible schemes of contractual relationships between ESCO and the Client

Models of Interaction Between ESCO Company and private Industrial Consumer

A. ESCO Company as a Consultant

Under this scheme a Consultancy Agreement is entered into by ESCO Company and its Client, which provides for rendition of services in energy audit, technical consultancy, consultation on finding financial parties to implement the project with and choosing an equipment supplier (Picture 6A). The Client himself enters into all contracts on credit provision, issuance of bank guarantee and equipment supplies. In this case it is the Client's responsibility to fulfill its obligations towards Loan Bank consisting of repayment of credit and incurred interest. As noted above, the most effective method of warranting of the credit obligations if a bank guarantee. Consequently, Client and FI Guarantor will enter into a bank guarantee contract, which will provide a guarantee to the Loan Bank for repayment of credit and interest. Still, in a simpler scheme FI will be a crediting party, i.e. act as a bank, and no bank guarantee will be issued.

Figure 6. Model of Cooperation between ESCO-Consultant, Client and Financial Institution



[16] Since the recipient of investment in a contract of credit and the Guarantor cannot be the same entity.
[17] See Chapter 2.2.3.

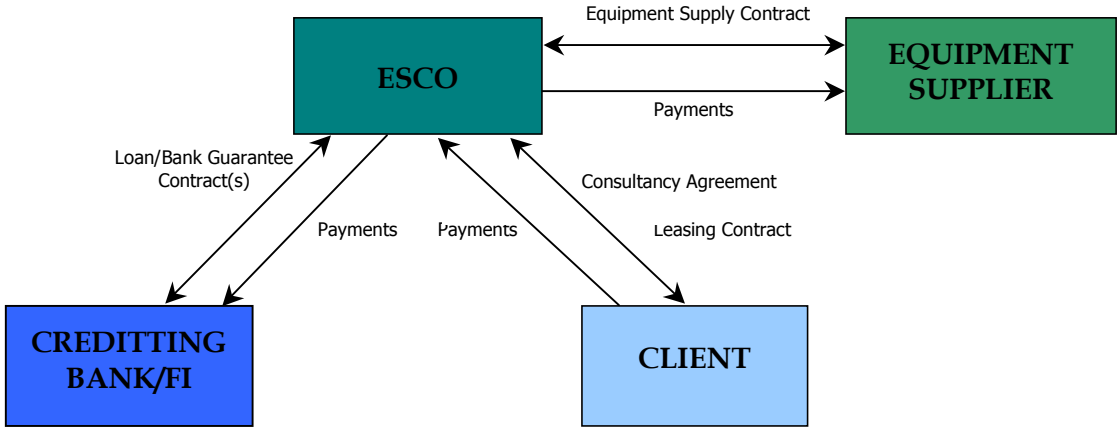
B. ESCO Company as a Supplier

If ESCO Company acts as a supplier of equipment, then – in addition to Service Agreement - ESCO Company and its Client will enter into Equipment Supply Contract. Finance for the project is procured on the basis of Loan Contract concluded by the Client and Financial Institution.

C. ESCO Company as Lessor

When ESCO Company acts as a Lessor, a Leasing Contract is entered into by ESCO Company and its Client in addition to Consultancy Agreement. Throughout the Leasing Contract term the Client keeps on making lease payments to ESCO Company (as a rule from achieved energy savings). As in the Figure 6 above, the present one might be simplified if an FI acted as a bank, and no bank guarantee was issued.

Figure 7. Model of Cooperation between ESCO-Lessor, Industrial Consumer and FI



Possible Schemes of Cooperation Between ESCO Company and Public Consumer

The schemes of cooperation presented above can be used to implement ESCO projects not just with private, but also with state companies. In this case a state authority stands as the Guarantor (FI Guarantor).

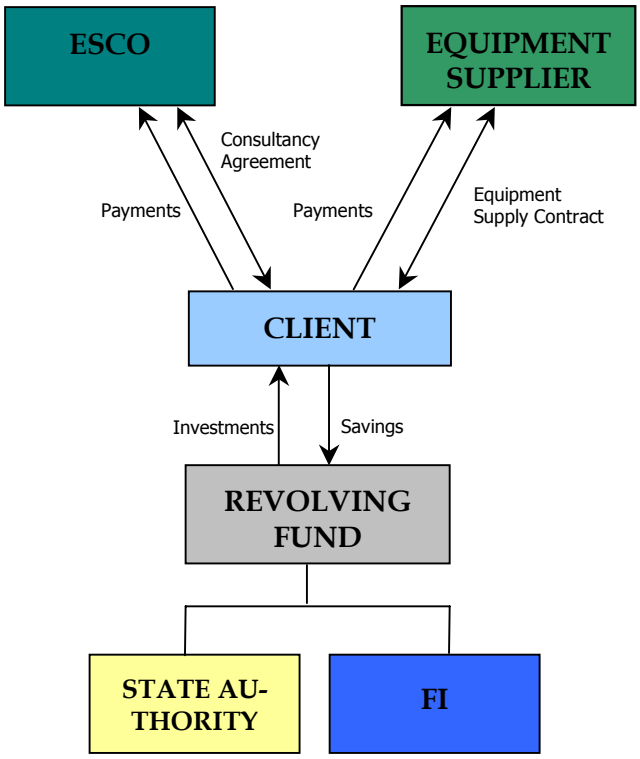
A special model of contractual relationships between ESCO and Public Consumer can be employed here. By a Public Consumer term we determine a public entity or a state unitary enterprise consuming energy for the purposes of its redistribution to individuals, condominiums etc.

The specificity of this approach is in the fact that a State Authority and FI establish a join revolving fund to invest into ESCO projects. According to Russian legislation state companies are funded from government budget. Russian government authorities prepare an annual budget for each year. Such budgets set rigid categories for various costs items of state companies. Funding of energy-saving projects is, as a rule, not included in such budgets. In order to implement energy efficiency projects State Authorities usually establish an extra-budgetary fund (known as "revolving fund"), which is earmarked exclusively for the funding of energy-saving projects. One of the main goals of revolving fund activity is gaining profit due to realization of energy-saving projects. Received savings are distributed among revolving fund and FI. Funds gained by the revolving fund are used for realization of new energy-saving projects in the region. When this model is used, ESCO Company also can act as a consultant, or equipment supplier, or lessor.

A. ESCO Company as a Consultant

The relationship between ESCO Company and the State under this model is identical to the one displayed in Picture 6A. This model differentiates from the earlier one only in that funding of ESCO project is now borne not by a third-party FI, but is guaranteed by the revolving fund.

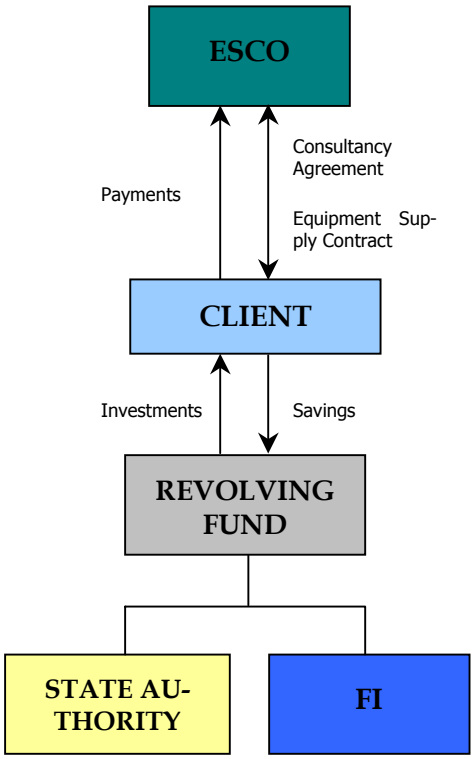
Figure 9. Model of Cooperation between ESCO-Consultant, Public Consumer and FI



B. ESCO Company as a Supplier

When the ESCO project is thus financed from a revolving fund the leasing schemes might be considered less appropriate as the additional funds for ESCO to acquire the necessary equipment will be provided by the revolving fund through the Client.

Figure 10. Model of Cooperation Between ESCO-Supplier, Industrial Consumer and FI

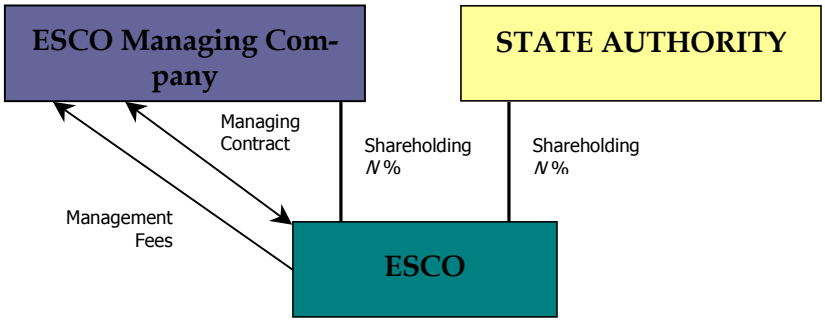


Introducing a ***Management Company*** is yet another option that can be used when ESCO Company is working with the state sector. If this solution is implemented, the new ESCO Company can act either as a consultant, or a Leasing Company. In both cases a new ESCO Company and the professional ESCO Company enter into a Managing Contract. The professional ESCO Company receives a Management Fee.

The major peculiarity of introducing a Managing Company in an ESCO project, e.g. in the Apatity case in Murmansk, is to provide for the interested party's shareholding in ESCO.

Such an interested party could be the Client or a public project participant, such as a state or municipal authority. At the same time, ESCO Managing Company would be a professional to manage the operational and financial activities of the respective ESCO. Thus, ESCO becomes a joint venture, while the ESCO Managing Company remains a legal entity with a 100% foreign capital, regardless of its jurisdiction (see the picture below). If a Management Company is established by the foreign ESCO investor in Russia, double taxation of ESCO revenues will be avoided.

Figure 11. Model of Cooperation between ESCO, Management Company and State Authority



Possible schemes of contractual relationships between ESCO Company and the Client presented above are by no means rigid or exhaustive. *These schemes can be adjusted for specific projects.*

This chapter reviewed some possible models of implementing ESCO projects in Russia. In order to gain most profit from ESCO projects and achieve maximum cost efficiency gains, we propose to use a circular scheme of funding for ESCO projects, and the leasing option to purchase the necessary equipment used implement energy-saving measures.

2.3 Other Parties That Could Be Involved in ESCO Projects

2.3.1. R&D Institutions and Energy Technology Centers

Russian technological partners have necessary know-how of operations in Russia. It could be important to start cooperation with them in the very beginning of operations, because they can help to avoid pitfalls that can arise in the process of market entry, starting from licensing and ending with negotiations with local authorities. Besides this, there are a lot of technologies being developed that are focused specifically on the needs of local companies and can also be introduced with the help of ESCO companies.

Center for Energy Efficiency (CENEf)

Center for Energy Efficiency (CENEf) was established in order to promote energy efficiency and environmental protection in Russia. CENEf was founded by Pacific Northwest National Laboratories of Battelle Memorial Institute (USA), World Wildlife Fund (USA), Social and Ecological Union (Russia), and Mr. Mikhail Berner, President of Russian Energy Managers Association. CENEf is a member of the World Energy Efficiency Association (WEEA), and Igor Bashmakov, CENEf Executive Director, serves as a Vice-Chairman of WEEA. The Center's areas of expertise are development of regional en-

ergy efficiency legislation and programs, establishment of regional energy efficiency centers and agencies providing further assistance to them and development of regional energy efficiency funds. For the moment, the most part of CENEf's projects have been implemented in the Central Russia, however, the centre is looking forward to promote its activities in other Russian regions including Northwest Russia.

Phones: +7 (095) 128-8491, 128-9489
Fax: +7 (095) 128-9353
E-mail: cenef-mailbox@mtu-net.ru
WWW: www.cenef.ru (Russian/English)
Managing Director: Igor Bashmakov

Centre for Energy Policy

Centre for Energy Policy was established in 1997 by the Russian Institute for Industry and Russian Union for Energy Efficiency. The centre's areas of expertise are researches and education on energy saving and promotion of energy effective equipment on the regional markets. The centre's main clients are Russian Ministry for Fuel and Energy, Russian Ministry for Science, GazProm, UES of Russia, regional energy companies and international scientific centres. The centre is located in Moscow. The staff of the centre is 15 people.

Phones: +7 (095) 200-45-06, 200-37-34
Fax: (095) 200-44-79
E-mail: cep@energy.ru
WWW: www.energy.ru (Russian / English)
Address: Petrovka St. 14, Moscow
Managing Director: Oleg Favorsky

AkademEnergoServis

НТЦ ЭПУ ОИВТ РАН

AkademEnergoServis stands for Science and Technology Centre for Power-Saving Processes and Equipment of the United Institute for High Temperatures of Russian Academy of Sciences. The Centre has headquarters in Moscow.

Phones: +7 (095) 484-22-00, 484-33-98
Fax: +7 (095) 485-92-27, 484-21-55
E-mail: energy-saving@mtu-net.ru
WWW: www.aces.ru (Russian only)
Managing Director: N/a

The State R&D Institute for Energy Policy

IEP The Institute for Energy Policy was established in August 2002 by the group of experts that worked in the Russian Ministry for Energy. The institute is engaged in investigation of fundamental and practical problems of Russian energy sector development and Russian energy reforms. The majority of clients of the institute are private companies. The institute has headquarters in Moscow.

E-mail: info@isdei.org, ssriep@energy.ru
WWW: www.energypolicy.ru (Russian/English)
President: Vladimir Milov

Regional Centre for Energy Saving in Kaliningrad

In 1999 the Regional Centre for Energy Saving in Kaliningrad was established in the course of joint project of Kaliningrad City Administration, Danish Energy Agency and JantarGosEnergoNadzor (regional energy sector supervision body). The Centre is involved in promotion of energy effectiveness in the region and coordination of projects on energy saving.

Phones: +7 (0112) 550 051
Fax: +7 (0112) 550-032
E-mail: ensave@baltnet.ru
WWW: www.kreec.ru (Russian only)
Managing Director: Vladimir Potapov

International Centre on Energy Efficiency in the European North of Russia

The centre was established in the course of implementation of the energy saving program by Ministry for Education of Russia. The activities of the Centre are coordinated by Petrozavodsk State University, Republic of Karelia. The centre helps Russian educational and research institutions in establishing cooperation with organizations and companies of Northern Europe on energy saving. Besides this, the centre promotes energy saving activities in the local educational sector.

Phones: +7 (8142) 711 006
Fax: +7 (8142) 711 000, 78 26 68
E-mail: toivonen@mainpgu.karelia.ru
WWW: http://energy.karelia.ru (Russian/English)
Managing Director: Nikolai Toivonen, Rector on International Affairs of Petrozavodsk State University.

Centres for Energy Efficiency in Northwest Russia

Five Centres for Energy Efficiency were established in the regions of Northwest Russia in the framework of Russian-Norwegian bilateral project "Energy Efficiency in Northwest Russia". The main party from the Norwegian side is NEEG (Norwegian energy Efficiency Group). The centres are involved in promotion of energy efficiency activities, implementation of energy efficiency projects in Northwest Russia and transfer of know-how in the field of energy efficiency (see also Currently Considered or Initiated Projects Related to ESCO Model Operations in Russia).

Murmansk Oblast Energy Efficiency Centre

Murmansk Oblast Energy Efficiency Centre (MOEEC) was established in 1998 in the Murmansk region and now operates with 6 full-time employees. MOEEC is the official Energy Efficiency Centre representing the interests of Murmansk Oblast Administration. A co-operation agreement with Murmansk State Technical University has resulted in permanent offices at the University Campus.

Phones: +7 (8152) 239357
Fax: +7 (8152) 234982
E-mail: moeec@online.ru
WWW: www.moeec.com (Russian/English)
Managing Director: Vadim Glukhikh

Kola Energy Efficiency Centre

Kola Energy Efficiency Centre (KEEC) was established in September 1996 in the Murmansk region (Kola Peninsula) and now employs 10 people in its offices in the towns of Kirovsk and Apatity. KEEC is accred-

ited as one of seven official Russian Energy Efficiency Demonstrational Zones. KEEC has certificates of energy auditor granted by the state energy supervision body and by UES of Russia.

Phones: +7 (815) 315 4761
Fax: +7 (815) 319 4436
E-mail: keec@com.mels.ru
WWW: www.keec.com (Russian/English)
Managing Director: Victor Kotomkin

Arkhangelsk Oblast Energy Efficiency Centre

Arkhangelsk Oblast Energy Efficiency Centre (AOEEC) was registered in 1999 and now employs 6 persons full-time. AOEEC has developed close contact with Arkhangelsk Oblast Department of Fuel & Energy and the Arkhangelsk Energy Saving Foundation. AOEEC has arranged two international conferences on the use of biofuel and development of schemes for joint projects implementation in this field. A number of commercial bio-fuel use and energy efficiency projects are in the pipeline of AOEEC.

Phones: +7 (8182) 652 136
Fax: +7 (8182) 657 142
E-mail: pitukhin@arh.ru, aoeec@arh.ru
WWW: www.aoeec.com (Russian/English)
Managing Director: Alexander Pitukhin

Karelia Energy Efficiency Centre

Karelia Energy Efficiency Centre (KAEEC) was registered in 1999 in the city of Petrozavodsk and now employs five people full time. The Centre have already implemented a number of projects on energy saving that were accepted by its co-founders – local energy supervision body (Energonadzor), KarelEnergo, Regional Energy Committee, as well as NEEG. KAEEC have office at the Petrozavodsk State University Campus.

Phones: +7 (8142) 769391
Fax: +7 (8142) 769391
E-mail: kaeec@onego.ru
WWW: www.kaeec.com (Russian/English)
Managing Director: Alexey Smirnov

Komi Republic Energy Efficiency Centre

Komi Republic Energy Efficiency Centre (KREEC) was established in May 2003. At present KREEC is in the process of projects pipeline formation.

Contacts: N/a

2.3.2 Russian ESCO companies

Russian energy service companies can act as local partners in the course of implementation of complex energy-saving projects, especially in the framework of projects at the state-owned companies (municipal sector, regional energy utilities, etc.). Specifically, a foreign ESCO entering Russian market could outsource

activities that require licensing to a Russian partner in order to save time and resources needed for receiving a license.

3E

3E Energy Service Company was established in 2001 as a result of resolution of UN ECE (Economic Commission for Europe of United Nations) on starting "Energy Efficiency 2000" project in Russia (see description of this project below). The company strives to be both organizer of ESCO-model projects and technology partner. However, for the moment, the company mainly operates more as producer of equipment for energy savings' control rather than provider of complex ESCO-model solutions. The headquarters of the company are located in Moscow.

Phones: +7 (095) 916-3728, 916-3762, 916-3922, 916-1459
E-mail: info@esco3e.ru
WWW: www.esco3e.ru (Russian only)
Managing Director: Bronislav Bashkin

ESCO Negawatt

ESCO Negawatt was established by Centre for Energy Policy and presently introduces ESCO concept in the Russian energy sector. One of the major areas of expertise of this company is energy auditing. The company is involved as a partner in Russian-American project on energy saving in the healthcare sector. The main clients of the company are Russian Ministry for Fuel and Energy and Ministry for Science and Technologies.

Phones: N/a
E-mail: negawatt@bk.ru, escom@mail.ru
WWW: negawatt.energy.ru (Russian only)
Managing Director: N/a

RusESCO

RusESCO claims to be the first ESCO-model operating company in Russia. It was founded by EnergoResursoSberezhenie, a non-commercial partnership of 450 companies of the Russian energy sector. RusESCO is presently an international member of NAESCO, the US Association of energy service companies. The company is based in Moscow.

Phones: +7 (095) 1431744, 2056119, 7615994
WWW: http://www.rusenergo.ru/Energy2k/rusesko.nsf/Pages/MainPage (Rus/Eng)
Managing Director: N/a

EnergoServis

The company started with publications of technical literature and legal acts in the field of energy saving technologies. Nowadays, the company also provides environmental auditing services, energy-effective solutions for municipal energy system and training of the appropriate staff. One of the special services of the company is reconstruction of transformer

substations. Recently the company started to offer complex services in accordance with ESCO concept. The company is located in Moscow.

Phones: +7 (095) 911 2577
WWW: www.energoservice.ru (Russian only)
Managing Director: N/a

2.3.3 Financing Partners

At present there are good prospects for drawing in international investors and credit institutions to implementation of projects in the Russian energy sector. Northwest Russian energy sector is one of the focal points of cross-border cooperation activities of Nordic countries and their financial/granting institutions as environmental issues are concerned. Therefore, there are good prerequisites for fund-raising schemes with participation of international creditors or granting institutions in the course of ESCO projects implementation in Russia.

At present, Nordic Environment Finance Corporation (NEFCO) is one the most active player in the loan granting for energy saving activities in Northwest Russia. The description of NEFCO activities is presented below. The list of other possible international partners that can be involved in ESCO projects financing was prepared by Barents Energy Working Group and can be found at:
http://www.barentsenergy.org/docs/financial_sources_barents.pdf

NEFCO

NEFCO (Nordic Environment Finance Corporation) has substantial experience of financing projects on energy efficiency in Northwest Russia. NEFCO has provided loans, grants and equity financing for a significant number of projects in the regional energy sector that have been mostly implemented in cooperation with Norwegian Energy Efficiency Group (NEEG) and energy efficiency centers of Northwest Russia. NEFCO implements the financing of energy efficiency programmes through Energy Saving Programme, Cleaner Production Facility and Renewable Energy facility.
www.nefco.fi

2.3.4 Consulting Companies

REDA

Regional Economic Development Agency, Ltd. (REDA) is a consulting company focused on project management in the field of energy efficient and environment-friendly development of industries and territories, as well as SME support. The company is experienced in implementing international projects supported by specialized funds and organizations. REDA is a member of Northwest Union for Housing and Communal Services and Municipal Chamber of Housing and Communal Services. REDA is a founder and a managing company of Regional Energy Partnership (REP). The company is located in St. Petersburg.

Phones: +7 (812) 388 9268
Fax: +7 (812) 388 8529
E-mail: reda@reda.spb.ru
WWW: www.reda.spb.ru (Russian/English)
Managing Director: Igor Rokhlikov

Solid Invest

Solid Invest is a Russian consulting company with headquarters in St. Petersburg and offices in Moscow and Helsinki. The company has valuable knowledge of the Russian energy sector and cooperates with ETLA (The Research Institute of the Finnish Economy) in research on competitiveness of the energy clus-

ter of Northwest Russia, as well as of the other industries of this region's economy. Besides this, the company has a number of both Russian and international corporate clients operating in the energy sector and related industries.

More information on the research of Northwest Russian energy sector can be found at: http://www.etla.fi/eng/julkaisuhaku.php?action=details&id=ETLA%20B%20197&type=aihe&program=IN and www.competitiveness.ru

Phones: +7 (812) 140 5055 (St. Petersburg), +358 (9) 6873 7570 (Helsinki)
Fax: +7 (812) 335 0506 (St. Petersburg), + 358 (9) 6129 6710 (Helsinki)
E-mail: solid@solidinvest.com
WWW: www.solidinvest.com (Russian/English)
Managing Director: Grigory Dudarev

2.4 Energy Tariffs in the Northwest Russia.

The generation of heat and electric energy in the region is carried out by regional energy companies of RAO UES of Russia (so-called AO-energoes), a number of independent energy producers and municipal heat generation capacities. There are nine AO-energoes operating in the Northwest Russia: LenEnergo (St. Petersburg and the Leningrad region), KarelEnergo (Republic of Karelia), KomiEnergo (Repulbic of Komi), ArkhEnergo (Arkhangelsk region), VologdaEnergo (Vologda region), JantarEnergo (Kaliningrad region), KolEnergo (Murmansk region), NovgorodEnergo (Novgorod region) and PskovEnergo (Pskov region). Independent energy producers are mostly represented by large industrial enterprises that often have excess capacity to cover the needs of towns they are located in, or even to sell it to other consumers through federal electric energy market (so-called FOREM, Federal Wholesale Market for Electric Energy and Capacity).

The exact values of tariffs for electric and heat energy are stated by regional energy commissions (RECs) that operate in the regions of the Northwest of Russia. The guidelines for RECs are provided by Federal Energy Commission (FEC). FEC states the maximum energy tariffs for each of the regions and regional energy companies by means of issuing special resolutions. FEC also provides tariffs for energy that is supplied to FOREM by AO-energoes and independent energy producers.

About 34% of generated electricity in Russia is distributed through FOREM. The operations of FOREM are presently not so efficient, as there is a conflict of interests between independent producers and RAO UES that owns most part of generating capacity and at the same time deeply involved in wholesale market management. The all-Russian wholesale gas market (FORG) is also under formation for the moment.

We should notice that in the course of Russian energy reforms the new rules were introduced at FOREM that provided for the sector of free trade at the federal electric energy market. Since 1st of November, 2003 the electric energy producers are allowed to sell from 5% to 15% in the sector of free trade. Before this, 100% of electricity supplied to FOREM was sold by FEC's stated tariffs. Energy reforms assume further extension of the free trade sector. It should be noted that energy tariffs within Russia are substantially lower as compared to the western countries. That is why local consumers pay much less attention to energy saving issues.

At present in many cases regional energy companies (AO-energoes) define their tariff level as costs plus profit margin and provide their calculations to RECs that make the final decision on tariffs considering maximum level for the region provided by FEC. The main drawback of this system is that it does not create incentives for AO-energoes for energy savings.

The "costs plus" system of tariff formation also decreases the effectiveness of capital expenditures and investment projects at generating companies, as the investment expenditures are also included in tariffs. In this case final customers bear all investment risks and the selection of investment projects is not so tough. The generating companies also carry out various non-core activities that are unprofitable in some cases and lead to further increase in tariffs.

The situation is likely to change when the tariffs will be defined depending on the inflation. Such system of tariffs regulation is being introduced in St. Petersburg and the Leningrad region.

At present the cross-funding is widely used in RAO UES that took place when the incorporated generating companies with poor financial performance are funded by cash flow from well-performing companies. This eventually increases tariffs for all consumers.

The tariffs vary significantly among the regions. In Northwest Russia the largest tariffs are observed in the Republic of Komi, Kaliningrad region and Pskov region, while the lowest tariffs are in Murmansk region. At the same time, there are many factors and categories that influence the specific tariffs both for the population and for the industry.

- Depending on the sector of economy: industrial consumers, non-industrial consumers, state consumers, railway transport, agricultural sector and population. The highest level of tariffs is usually observed in the industrial/non-industrial sector, while the population enjoys lowest tariffs;
- Depending on energy consumption in the industry: more than 750 kVA and less than 750 kVA. It should be noted that often the companies, which consume more are paying less for a kilowatt-hour. This creates less incentives for energy saving;
- Depending of the district: each of districts within a region may have its own energy tariffs stated by RECs;
- Depending on the industrial consumer: some of the industrial consumers (usually large enterprises) benefit from the special tariffs that are usually lower than the common level;
- Depending on the place of habitation of people: citizens and country people (for the citizens tariffs are usually higher).

The forecasted steady growth in tariffs in the medium run and chances for WTO accession that could boost tariffs significantly at once – all this focuses the attention of companies' top managers on energy saving activities.

3. PROSPECTS OF ESCO PROJECTS DEVELOPMENT IN RUSSIA

3.1 General Overview of Industrial Development Trends in Russia

The following development trends are observed in the Russian industry:

High level of equipment depreciation. During the last decade the depreciation rates of energy generation equipment in Russia have been exceeding rates of new generation capacities introduction and re-equipment rates. That means that the total capacity of the Russian power generation have been decreasing over time. Referring to the Ministry for Energy of the Russian Federation, at present the average level of equipment depreciation in the energy generation sector exceeds 60%. At the same time, energy consumption is expected to grow in Russia in the coming decade, so the lack of energy generation is possible. However, Northwest Russia is characterized by excess energy generation and for this region the problems with energy supplies are much less urgent.

After a dramatic slump in *production capacities utilization* in the 1990s, we can now observe a slow up-trend. For example, in 2003 the level of capacities utilization has increased from 70 to 73%. In fact, the level of 1992 has been achieved, while in 1996-1998 it was about 55%.

Level of barter in industrial transactions is decreasing. The share of barter started to decrease after the crisis of 1998 and during 2003 it amounted to about 9%. As the level of pre-crisis 1992 is nearly reached (6%), we can expect that the share of barter will remain on the level of 5-9% in the medium-run.

The financial performance of the industrial companies is increasing. According to survey of the Centre for Economy in Transition of the Russian Academy of Sciences (Russian Economic Barometer programme), the share of producers with stable or good financial performance amounted to 58% in 2003, while in 2001-2002 it was equal to 52-54%. About 14% of companies were in near bankruptcy state in 2003, while in 1996-1998 this share was 35-40%.

The industrial companies more widely use bank loans and other external financing. In 1999 the share of companies that used bank loans was less than 50%, while in 2003 it was 66% and is supposed to increase further more. Correspondingly, the share of companies that purchase the equipment regularly is increasing. It was equal to 34-35% before 1998, and now it approaches 60%.

The focus of Russian industrial companies is shifting towards operations efficiency. In the period of perestroika, the Russian industry overcame a mess. Long-lasting property redistribution and corporate conflicts were great obstacles for Russian companies. For today, the situation became much more stable and Russian companies' owners together with management have possibility and incentives to focus on operational efficiency.

The sophistication of consumers is increasing that leads to *increasing price/quality ratio of Russian products.* The competition is increasing, as well as number of sophisticated consumers who seek for good quality and cost-effective solutions. In order to improve quality of products, many Russian industrial companies introduce the systems of ISO 9000 quality standards.

High level of interference of regional authorities in operations of large industrial companies. Specifically, this is rather painful matter for the regional energy companies (AO-energoes) that leads to the lack of healthy competition at the energy market due to arising of administrative barriers and the lack of unified energy policy in Russia.

3.2 Technical and Innovation Developments in the Field of Energy Generation and Energy-Saving Technologies

There are following most promising technical solutions and trends that are observed in the Russian energy generation and energy savings.

More attention to small-sized and alternative energy generation. At present, small-sized and alternative energy sectors account for about 5% of all electric energy produced in the country. The state presently considers the development of alternative energy sources (wind, sun, geothermal, etc.) to be a part of Russian *energy saving* strategy. In Russia, which in general has sufficient generation capacity of large-scale energy producers, the alternative energy sources are vital mostly for remote locations such as the Far North, where the centralized networks are not available. According to Russian State Committee for Statistics, about 20 million people live within the Far North area. In order to address this issue properly, the Russian government has adopted the special programme called "Energy supply to the areas of the Far North". The introduction of alternative energy sources allows for about 30% savings in liquid fuel to be supplied in the Far North.

The research on the use of alternative sources of energy in Russia in some cases is ahead of advances of the developed countries. For example, Russian photovoltaic converters that are made of mono- and polysilicon, have 46% efficiency rate and the price about USD 5/Watt (peak) for 50 Watt module. The price of a watt is now on the level of international market and is supposed to be decreased to USD 2-3 in the future. Such projects are implemented at the enterprises of the defense industry that have necessary technological base and production facilities.

Small-sized energy sector is represented by generating enterprises that have units of 0.1 – 10 MWt capacity (heat-based, diesel-based, hydropower, etc.). For the moment there are about 50 thousand such enterprises in Russia. The private energy consumers become much more interested in introduction of their own small-sized generating units because of independence on regional monopolistic energy companies and the short payback period of such projects.

Cogeneration (simultaneous generation of heat and electricity). Cogeneration is rather important direction of Russian energy policy. GUP TEK Spb, a large St. Petersburg heat supplier, today introduces units for electricity generation at large incorporated boiler houses. They will use the steam energy as the technological cycle of the boilers assumes generation of high pressure steam that is throttled further at reducing units to lower pressure. In this process the potential steam energy was not used. The installation of steam turbines coupled with electric power generators allows using this energy.

The potential targets for modernization are the largest 11 boiler houses of GUP TEK Spb with the designed capacity of 275 GCal per hour. The electricity generated by each of the target boiler houses can be up to 30 thousand MWt hours per year.

The other technology for cogeneration is supposed to be used at 21 combined heat and electricity plants of LenEnergo, a St. Petersburg and Leningrad region AO-energo, as well as at Parnas boiler house, which belongs to GUP TEK Spb. So-called cogenerators that are the special type of gas-piston combustion engine are to be installed there. The fuel for this units will be gas. Cogenerator units could be produced by Zvezda, a local energy equipment plant.

It should be noted that GUP TEK Spb, which has wide network of standard heat generation facilities, now has the opportunity to test each technological solution at 1-2 boiler houses and then choose the best of them.

Turning boiler houses to mini combined heat and electricity stations. In this case the competitiveness and efficiency of the old boiler houses is increasing. There are two most common technical solutions for this. One option is installation of back-pressure turbines, while another option is introduction of gas turbine before boiler. After modernization, a boiler house can cover its own electricity needs or even sell it to other consumers. The another direction is introduction of ready-made mini combined stations with gas/diesel turbines. The main problem with re-equipment of boiler houses concerns economic feasibility: the payback period for a common boiler upgrade could be up to 20 years. That is why in many cases there should be some alternatives such as replacement or burners or fettling that provides for up to 80% burning efficiency.

Heat generators in apartments. In some cases it is not possible or economically feasible to provide for central heat supply due to low density of heat consumers in an area or too high density of engineer infrastructure that does not allow for heat distribution. When central heat network is not available, the heat generators operating on gas become the only means of heat supply. The great amount of gas is saved due to possibility to set mode of operations depending on the needs. The introduction of heat generators at housing is just in the beginning of the way in Russia and is likely to grow at high rates. At present, ProServis, a firm from St. Petersburg, has prepared the federal programme for introduction of heat generators for consideration of state authorities. The calculations show that use of gas-based generators allows for saving of up to 75% of gas used for heating in apartments. Besides this, the costs on personnel and customer relations costs are reduced for heat/gas suppliers, as there is a possibility to turn off non-paying customers without technical problems. The metering is also becomes much more convenient, as a simple gas-meter is used instead of automatic non-precise calculation of difference between volume and temperature of water inflow and outflow. GazProm, a Russian gas monopolist, plans to be one of the initiators of pilot project on apartment heat generators introduction.

Slow shift to cheaper fuels. The gas and biofuels (for instance, woodchips) allow for much more efficient and environmentally sound way of generation of energy as compared to black oil and coal. For example, the half of the coal-based boilers at Russian power plants provide for only 50% burning efficiency.

Bio-fuels use. Bio-fuels, especially the use of wood chips, is considered to be one of the most promising segments of small-sized energy sector. There is abundance of rather chip biofuels in Northwest Russia and several boiler houses were already introduced, for example, in the Republic of Karelia in the course of joint projects. However, due to poor infrastructure and market information inefficiencies, this boiler houses show quite poor performance as the fuels of wrong moisture content and quality are burnt. This leads to decrease in equipment operational period and increases the risk of fire. The boiler houses are often stay unloaded due to the lack of fuel and the boilers on expensive diesel fuel are used. Thus, the good idea on the use of biofuel still needs sound and coordinated implementation.

The other case of bio-fuels use is the boiler house of Forest College and forest enterprise of Lisino-Korpus village, Leningrad region. Before the reconstruction the boiler house burnt black oil that was delivered from KINEF, a large refinery. That boiler house is located in the middle of the forested area and provides heat to the buildings of Forest College and housings nearby. The project, which was implemented in 1996 in cooperation with Swedish National Energy Administration that provided long-term 5-years loan to project initiators, assumed introduction of waste wood use at the boiler house. Nowadays, 80% of the required heat is generated using the waste wood produced by Lisino forest enterprise.

The another good example is central heating system based on biofuel in the town of Pravdinsk. Pravdinsk is a small town located in the Kaliningrad region in 50 km to the south-east from Kaliningrad. In 1996 the

Administration of Pravdinsk signed an agreement with the town's housing utility on implementation of the project of biofuel use. In 1997-1998 the reconstruction of heating system took place. In the course of it a new boiler, which works on biofuel (wood chips) was installed.

Introduction of pipes insulated with polyurethane foam in heat networks. This allows for sound decrease in heat leakage.

Penetration of modern IT technologies in the energy saving sector. The modern IT technologies are slowly penetrating in the Russian energy sector. Specifically, there are automated systems for control and measurement of energy that are introduced at energy consumers in order to increase the preciseness of data on consumed energy and improve their energy efficiency. We can mention the following systems that have been introduced at Russian companies: TOK-S, Energia, Sikon-S1, RTU-300, Altair, ASKUE-E1, Power 2000, MARSEL, MSR-Energo and TOPAZ-DEP. This list is not full, and a number of solutions offered for introduction is growing.

3.3 Currently Considered or Initiated Projects Related to ESCO Model Operations in Russia (World bank and Other Investors)

Energy Efficiency in Northwest Russia

In April 1999, a Collaboration Agreement on Energy Efficiency was signed between Norway and the Russian Federation. NEEG (The Norwegian Energy Efficiency Group) was commissioned to prepare and implement various activities under this arrangement through the bilateral project "Energy Efficiency in Northwest Russia". RUSDEM – The Russian Association for Energy Efficiency Demonstration Zones is responsible for this project from the Russian side. The project is being implemented under UN Economic Commission for Europe Energy Efficiency 21 Project. The objectives of the project are to contribute to increased energy efficiency in industry and buildings in Northwest Russia, increased cooperation between Norwegian and Russian companies and organizations, improved environment and adjustment to a sustainable and market-oriented economy. In the course of the project five regional energy efficiency centres were established in the regions of Northwest Russia (see also "Other Parties That Could Be Involved in ESCO Projects") that are involved in demonstrational energy-saving projects (according to ESCO model), training, as well as collection, processing and presentation of information on energy saving. The project, being supported by Barents Working Group on Energy, involves a number of international financing organizations and programmes, such as TACIS, NEFCO, GEF, etc.

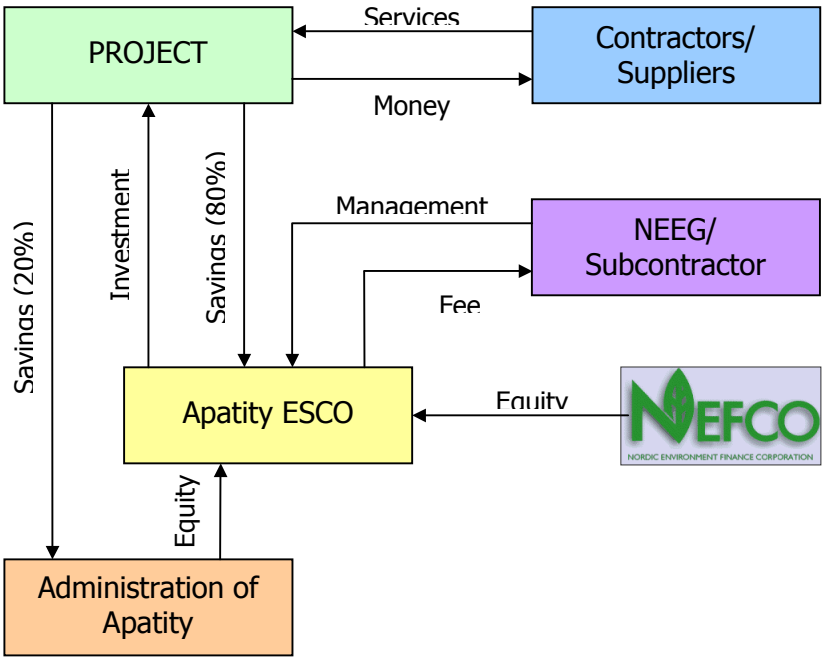
Case Study. Apatity ESCO.

In 1998, Kola Energy Efficiency Centre (KEEC), the Murmansk region, made an agreement with Administration of the town of Apatity concerning consulting services on energy efficiency in the public sector and housings of the town. An estimate on the potential energy saving was made and suitable demonstration projects were selected.

Due to the positive experience of energy saving projects managed by Norwegian Energy Efficiency Group, a KEEC founder, in the city of Kirovsk of the same region, Nordic Environment Finance Corporation (NEFCO) proposed to make Apatity a testing ground for an ESCO and financing mechanism for energy efficiency projects.

The Administration accepted the proposal and in 2001 the ESCO was established. NEFCO and the Administration contributed 50/50 to equity of a new company, enabling it to finance the first projects.

Figure 12. The Scheme of Apatity ESCO Operations



Source: Energy Efficiency in Northwest Russia. Status report by NEEG (May 2003).

During 2002 all legal issues regarding ESCO incorporation were settled and in 2003 the company started managing the Revolving Fund for the town of Apatity,

Energy Efficiency in the Municipal Sector

In February 2002 the Russian Government and IBRD (World Bank group) signed the agreement concerning the loan of USD 85 million for financing heat networks reconstruction in several Russian cities and promotion of municipal energy saving projects. The list of main focal points stated by IBRD includes "Increase in Effective Energy Use", "Heat Generation and Use in the Cities" and "Water Supply and Sewage System in the Cities". The loans are guaranteed by the Russian Government. Introduction of ESCO model is considered to be one of the most promising schemes in the course of projects implementation.

Besides IBRD, EBRD (European Bank for Reconstruction and Development) also was involved in this project. The bank signed two separate agreements on sub-loans with the Russian cities of Jaroslavl and Surgut guaranteed by the subjects (regions) of the Russian Federation that are acceptable for the bank in terms of their credit rating. EBRD is also ready to grant EUR 400 million loan for other separate projects with regions and companies in case the loan will be guaranteed by the State on the federal level.

In order to test the project implementation scheme, the pilot project was launched in the town of Gatchina, Leningrad region, in cooperation with SIDA (the Swedish International Development Cooperation Agency). In the course of the project new equipment was purchased for effective operations of heating networks of one of the town's residential areas (30 thousand people). This resulted in 20% savings in whole town's heat expenses in the first year of project implementation.

EBRD's Energy Efficiency and ESCO Activities

The European Bank for Reconstruction and Development's (EBRD) Energy Efficiency Team assists in the development of investment mechanisms such as ESCOs and energy efficiency credit lines. They also identify and implement industrial energy efficiency opportunities with other Bank clients.

The EBRD is the only IFI with a specialised Energy efficiency team. The team comprises nine professionals, The role of the team is to:

- develop specialised energy efficiency investment mechanisms such as ESCOs and energy efficiency credit lines
- identify and implement industrial energy efficiency opportunities with other Bank clients
- develop opportunities to sell carbon credits from EBRD funded projects
- promote and develop renewable energy projects with the Power and energy team.

As of 31 December 2002 there were any Russian energy efficiency and ESCO project in the financing portfolio of EBRD's energy efficiency sector. Net cumulative business volume was 294 million euros of which loans were 255 million euros and equity investments 39 million euros. Total value of these project were 712 million euros. After that EBRD has become more active in Russia (see below).

Energy Efficiency Showcase of EBRD in Russia

In 2003, the EBRD agreed a USD 60 million loan to Karelsky Okatysh (KO), a large iron pellets operations located in Karelia region, Russian Federation. The Bank's funds aims to strengthen long term KO viability and competitiveness through energy and operational efficiency improvements and balance sheet restructuring. Several components of the capital expenditure programme (>30% of the total value) will lead to improved energy efficiency. These energy efficiency projects once implemented will bring an average 8% overall reduction in energy consumption. The subsequent CO2 emission reduction has been estimated at 90,000 tonnes CO2/year. Other indirect benefits will include enhanced availability of equipment and machinery, reduced maintenance costs, improved operational performances and more accurate cost control.

In 2003, the EBRD approved a USD 75 million loan to Uralkali, the largest Russian potassium salts producer. USD 55 million of the Bank's funds will finance the purchase and installation of a new power plant supplying electricity and heat to the company's four production sites. This represents the largest energy efficiency investment to be supported by the Bank to date. The major benefits of the project will be: 1) Higher overall efficiency compared to separated generation of electricity and heat – primary energy saving estimated at 2,500 TJ/year equivalent to 74 million m3 of natural gas per year; 2) Reduced transmission and distribution losses being electricity generated right at the spot – electricity savings estimated at 66GWh/year. 3) Reduction of CO2 emissions – estimated at 200,000 tonnes CO2 per year; 3) Lower investment costs and higher operational and maintenance flexibility compared to other alternatives.

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Northern Dimension Environmental Partnership - NDEP

The Northern Dimension Environmental Partnership was developed for a concentrated effort to address environmental problems in Northwest Russia. The most pressing relate to water, waste-water, solid waste, energy efficiency and nuclear waste. The NDEP envolved from this initial idea into Support Fund. The European Union, The Russian Federation, Canada, Denmark, Finland, France Germany, the Netherlands, Norway, Sweden and the United Kingdom are the sponsors of the NDEP Support fund, which currently stands at close to EUR 200 million. Support Fund is managed by EBRD.

NDEP environmental projects are carried out throughout the whole of Northwest Russia and Kaliningrad. The NDEP's environmental programme consists of 13 priority projects whose combined cost ascends to EUR 1.3 billion. These projects aim to deliver environmental solutions to Northwest Russia in the areas of district heating, solid waste management, wastewater treatment and energy efficiency. NDEP grant size for district heating projects, which contain energy efficiency measures and are potential ESCO projects, are approximately one third of total costs: grant for Kaliningrad was EUR 7.3 of EUR 20,8 million total

costs (approved), for Murmansk EUR 7,5 of EUR 20 million total costs (in process) and for St. Petersburg EUR 26.1 million of EUR 74.1 million total costs (in process).

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4. REGIONAL DIFFERENCES RELATED TO ESCO PROJECT IMPLEMENTATION

Regional regulatory framework is represented by a limited number of legislative documents and regulations. In the territories of St. Petersburg, Leningrad Region, Republic of Karelia, Republic of Komi, Arkhangelsk Region (including Yamalo-Nenets Autonomous District), Vologda Region, Novgorod Region, Pskov Region, Murmansk Region, and Kaliningrad Region there is no specific legislation concerning energy saving issues. However, in order to implement the Federal law "On energy saving", the above-listed subjects of the Russian Federation have adopted certain regulatory acts specifying the provisions of the Federal law.

St. Petersburg

The main documents determining energy saving strategy in St. Petersburg are the following: Resolution of the Government of St. Petersburg No. 49 of November 1997 "Guidelines for energy-saving in St. Petersburg" and the "Regional energy saving Program for the period of up to 2005".

In accordance with the above Resolution, the Committee on Energy and Engineering Support of the Administration of St. Petersburg is the agency responsible for the development and implementation, jointly with sectoral agencies of the Administration of St. Petersburg, of the state policy in the sphere of energy saving.

In St. Petersburg the development of the regulatory framework has been slightly intensified over the last few years:

- Order of the Governor of St. Petersburg No. 217-r of 17 September 1996 defined the rules and procedures for installation of energy meters in all newly constructed or reconstructed buildings.
- Order of the Governor of St. Petersburg No. 267-r of 28 March 1996 established the schedule and procedure for installation of water metering facilities and water meters in residential buildings owned by the city of St. Petersburg where such meters are absent or subject to replacement.
- Resolution of the Government of St. Petersburg of 10 April 1997 No. 17 "On establishment of a demonstration energy efficient zone in St. Petersburg" defined the list of priority model energy efficiency projects in the housing and industrial sectors of the city, as well as the program for implementation of pilot projects.

Jointly with the federal agencies of the Russian Federation, the Administration of St. Petersburg established the Territorial Authority of Gosenergonadzor for St. Petersburg and Leningrad Region, which plays an important role in the implementation of energy saving policies in the region.

The Government of St. Petersburg notes that rational use of energy is the city's priority due to the apparent shortage in resources and power generation facilities, increase in fuel prices, deterioration of environment and new economic situation. However, under the existing unfavorable conditions and the monopolist status of energy providers, the increase in energy prices does not stimulate energy saving activi-

ties. At the same time, it is understood that investments in energy-saving technologies are 3-5 more effective than investments in new energy production facilities.

Over the last few years, a number of activities have been carried out in St. Petersburg in this area, including several pilot energy efficiency projects aimed at thermal insulation of construction facilities, modernization of central heating systems and small non-efficient boiler houses, introduction of controlled frequency electricity supply systems at utility enterprises. The city has also introduced production and installation of heating piping systems with high-quality thermal insulation.

Over the last three years, budget investments in St. Petersburg have been targeted at installation of thermal meters and implementation of energy-saving measures at budget enterprises and residential housing sector. The Administration of the city developed a list of buildings, enterprises and budget-financed organizations where a target program of energy meters installation will be implemented in order to provide for compensation of budget investments. The Energy Committee, jointly with the Finance Committee of the Administration of St. Petersburg, has put together a list of organizations financed from the municipal budget of St. Petersburg, defined and established the limits for consumption of fuel and energy resources in kind and in monetary terms for the main budget control bodies which carry out financing of budget-financed organizations and enterprises. Starting from 1998, limits were introduced in the budget sphere for consumption of energy resources and water, which provided for the annual saving of up to 200 million rubles.

In order to speed up energy-saving activities the Government of St. Petersburg defined the following priorities for energy-saving activities in St. Petersburg:

- ✓ Development of economic and legal methods of stimulation for energy consumers, energy suppliers, investors and the population in order to facilitate energy-saving activities;
- ✓ Creation of conditions for introduction of water and energy meters and technologies for automatic control of water and energy use as the basis for further effective energy-saving activities;
- ✓ Preparation and development of legislative and regulatory frameworks providing priority for implementation of energy-efficient projects and technologies;
- ✓ Creation of demonstration energy efficient zones and pilot projects.

It should be emphasized that Resolution of the Government of St. Petersburg of 11 July 2002 № 38 approved the "Guidelines for tariff policy in St. Petersburg"**.**

The measures taken by the authorities of St. Petersburg are still not sufficient, and have not yet brought decisive results. The main reasons for this are the absence of a unified comprehensive approach and coordination of environmental activities, which involve the sectoral and territorial bodies of state power of St. Petersburg, insufficient financing of environmental activities, absence of an effective mechanism for environmental protection, and uncoordinated management in environmental protection. No economic incentives for the industrial power consumers have been implemented.

Leningrad Region

The basic legal act regulation energy saving issues in the territory of Leningrad Region is Resolution of the Government of Leningrad Region of 26 February 1998 No. 4 "On priority measures for energy saving in Leningrad Region".

The Government of Leningrad Region declared energy saving one of the key issues in the process of stabilization of the economy of Leningrad Region.

In accordance with the above decision, a number of priority measures were planned for implementation in 1998 targeting the formation of a regional system of energy saving management, introduction of energy efficient programs in the spheres of housing and utilities, industry, construction, agriculture, fuel and energy and transportation in Leningrad Region.

However, the above Resolution proved to be purely declarative, since the Government of Leningrad Region in fact did not undertake any activities in order to implement the aims and goals formulated in the Resolution.

Republic of Karelia

At present, the authorities of Republic of Karelia are developing a regional target program "Energy saving in Republic of Karelia up to 2006". The program is being developed on the basis of the key provisions of the Federal target program "Energy-efficient economy for 2002–2005 and for the period of up to 2010", and takes into account the deficiencies of the previous regional target program "Energy saving in Republic of Karelia up to the year 2000" which did not have the desired impact on the energy saving indicators in the region.

For Karelia, which does not have sufficient fuel and energy resources and suffers from energy deficiencies, energy saving is the only viable alternative in the republic's economic development. The current level of energy consumption resulting from the existing industrial capacity and the climatic conditions of the region, as well as from fuel and energy deficiencies, calls for the development and implementation of new energy policies with energy saving and energy efficiency considerations being top priorities. The fuel and energy balance forecast for the period of up to 2020 made by the energy supervision agency of Karelia has demonstrated that energy saving is a decisive factor in the required decrease of energy resources consumption. Even given an average GRP growth rate of 3% and annual decline in energy efficiency of the Karelian economy, the total energy saving by 2020 will amount to 2 million tons of fuel equivalent, which is about 30% of the estimated level of consumption of fuel and energy resources in 2020 (given no energy saving).

Republic of Komi

The legislation of the republic of Komi in the sphere of energy saving includes the Law "On energy saving" adopted by the State Council of Republic of Komi on 25 June 1997 and the Resolution of the State Council of Republic of Komi "On republican non-budget inter-sectoral energy saving fund".

This Law defines legal framework for the implementation of energy saving policy in the Republic of Komi, creates conditions for the effective use of energy resources, and determines the basic organizational, financial and economic provisions for state control and stimulation of energy-saving activities in Republic of Komi.

The main agency responsible for regulation in the sphere of energy saving is the State Council of Republic of Komi, the areas of competence of which include:

- adoption of laws and regulations of the Republic of Komi in the sphere of energy saving, as well as the supervision over enforcement of such laws and regulations;
- adoption of a regional energy saving program and supervision over its implementation and financing from the budget of the Republic of Komi[18];
- provision of benefits to organizations carrying out energy-saving activities in accordance with procedures determined by the legislation of the Russian Federation and Republic of Komi.

The Law established general provisions for granting benefits to organizations carrying out energy saving programs:

- local bodies of power may provide tax benefits within the amount of taxes payable to local budgets by legal entities and individuals who implement energy saving projects included in local energy saving programs;
- for energy facilities that use renewable sources of energy and are constructed in accordance with energy saving programs, tariffs for electric energy must provide return of capital investment within the periods approved by the Regional Energy Commission (Tariff Committee of Republic of Komi);
- construction and operation of energy facilities using certified equipment and providing thermal capacity of up to 300 kW or electric power capacity of up to 100 kW may be carried out without licensing;

[18] The regional energy saving program up to the year 2010 in the Komi Republic has been adopted.

- legal entities consuming energy resources, in the event of using lower volumes of energy resources than those stipulated in their agreements with energy suppliers, are released from compensation of incurred losses to energy suppliers, if decreases in energy consumption result from energy-saving measures.

In accordance with the above-mentioned Resolution of the State Council of Republic of Komi "On republican non-budget inter-sectoral energy saving fund", such a fund has been established in the Republic (hereinafter, the Fund). The Fund was established in order to provide financial support for state energy saving policies and is operated by the Regional Energy Commission of Republic of Komi.

The Fund provides financing for:

- activities under the regional energy saving program;
- investment programs aimed at the creation and implementation of new types of equipment, technologies and energy consumption metering devices which provide for rational use of energy resources and introduction of alternative sources of energy;
- research and development activities in the sphere of energy saving;
- activities in the sphere of regulation and methodological support in the sphere of energy saving;
- organization of regional exhibitions of energy efficient equipment and technologies.

Arkhangelsk Region (including Yamalo-Nenets Autonomous District)

1.1. Recently, the city of Arkhangelsk and Arkhangelsk Region have been attracting national attention in the spheres of energy production and energy saving. The city of Arkhangelsk has been included in the list of Russian cities entitled to investments from the European Bank for Reconstruction and Development for energy saving program.

Arkhangelsk Region has been selected as a pilot region for the implementation in the Russian Federation of Kyoto Protocol and the UN Framework Convention on Climate Change. The following projects are being implemented in the region: reconstruction of heating network, introduction of energy saving technologies. Other projects are also being prepared in the field of alternative sources of energy.

A program of energy supply to remote northern settlements involving the construction of wind-power stations and other alternative sources of energy has also been developed.

Arkhangelsk Region has been included in the federal investment program for development of nuclear energy production in Russia. The first energy block of the new nuclear power station is planned for completion by 2010.

In 1999, the Administration of Arkhangelsk Region, V. I. Vernadsky Non-Governmental Ecological Fund, Norwegian Energy Efficiency Fund (NEEG), Russian Association of Demonstration Energy Efficient Zones (RUSDEM) jointly established the "Arkhangelsk regional center for energy efficiency" (AOTsEE) in order to organize and coordinate energy and resource saving activities and to disseminate the most effective technologies in this sphere in the Russian North, as well as to attract foreign partners and investments in this field. The Center works in close cooperation with the Department of Construction, Housing, Utilities and Energy of the Regional Administration, the Committee for International and Interregional Relations and the National Policy of the Regional Administration, as well as with the local bodies of power. The center signed a multilateral agreement with the regional Administration, the Ministry of Energy[19] of the Russian Federation, the Ministry of Industry and Research of the Russian Federation[20], and RUSDEM for the implementation of industrial, agricultural and utilities projects in Arkhangelsk Region within the framework of the Federal target program "Energy Efficient Economy".

1.2. The authorities of Yamalo-Nenets Autonomous District adopted Law No. 60 of 30 October 2002 "On the Program "Development of small and community energy supply in Yamalo-Nenets Autonomous District for the period of 2002-2006" (hereinafter, the Program). The Program is based on the «Methods for development of regional energy programs" issued by the Ministry of Industry and Energy of the Russian Federation and the "Recommendations on urgent low-cost activities providing energy saving in the hous-

[19] Now the Ministry of Industry and Energy of Russian Federation.
[20] Now the Ministry of Industry and Energy of Russian Federation.

ing and utilities sector" issued by the Ministry of Construction of the Russian Federation. In accordance with the Program, one of the key priorities in the energy strategy of Yamalo-Nenets Autonomous District must become progressing regional economy to embrace energy-efficient model of development. Intensive development of oil and gas deposits in 1970-90s resulted in high discrepancies in technological and energy supply levels in various parts of Yamalo-Nenets Autonomous District. Energy facilities in the north and west of the District still use expensive diesel fuel brought from far away, which results both in low reliability of energy supply and high cost of energy. High level of deterioration of facilities in thermal and electric energy production and underinvestment of the sphere are the main barriers for development both in this sector and the regional economy on the whole.

The Program is being implemented by the Administration of Yamalo-Nenets Autonomous District through its Department of Energy and Housing and Utilities Complex. In accordance with the Law, the Administration of the District has the right to provide tax benefits to organizations participating in the Program in relation to the regional taxes transferred to the budget of Yamalo-Nenets Autonomous District. Besides, the Program is being implemented with the participation of the branch of the Regional Energy Commission of Tyumen Region, Khanty-Mansi Autonomous District and Yamalo-Nenets Autonomous District which carries out the analysis of tariffs for thermal and electric energy produced by all sources regulated by the state.

Vologda, Novgorod, Pskov, Murmansk and Kaliningrad regions

These regions have not yet developed their specific legislative frameworks in the sphere of energy saving, and thus there are no specific regional energy-saving regulations in the territory of these subjects of the Russian Federation.

The problem of energy efficiency and energy saving, as anywhere else in Russia, is quite essential for Kaliningrad Region as well, since the region consumes more energy resources than may be considered adequate for its level of economic development. Economic recession in the region over the last several years has not been accompanied by a corresponding decrease in energy consumption. Maintaining the current energy consumption levels of enterprises after the end of the economic crisis may lead to energy shortages which will hardly be compensated by the existing energy facilities with their high capital intensity and inertia. In order to avoid such developments and to provide for energy security of the region, it is vital to speed up energy saving activities. OAO Yantarenergo, the main energy supplier in Kaliningrad Region, has developed its "Energy saving program for 1998-2000 and up to 2010". This program serves as a basis for the power sector of the whole region.

At present, the Regional Energy Commission, the Kaliningrad Energy Saving Association and the regional Legislative Assembly are jointly working on the establishment of a regional non-budget energy saving Fund, which could facilitate financing of investment projects in the sphere of energy saving.

By the Order of the mayor of Kaliningrad, the "Municipal target energy saving program for the period of 2000-2005" was approved**.**

This program envisages a number of measures aimed at facilitating energy resources saving. It is planned that the task of increasing the efficiency of electric energy, heat and water use will be realized by municipal enterprises and organizations through lowering losses and the introduction of new energy-saving technologies and equipment.

CONCLUSIONS

I. Energy saving gradually becomes a matter of major importance for the Russian economy. The analysis of long-term economic development trends shows that the introduction of energy saving technologies is implemented slowly, and is accompanied by inefficient use of the material, financial and labour resources.

II. The main impediment for practical energy saving in the Fuel and Energy Complex is the lack of tangible economic interest. Most of the companies are not interested in implementation of energy saving projects because of lack of financing, absence of energy saving practice in Russia and lengthy of projects payback.

III. General legal framework for ESCO projects implementation in Russia can be characterized by the absence of specific effective and comprehensive legislative incentives for the companies carrying out energy-saving activities.

IV. The specific legislative and regulatory acts in the power sector do not contain any provisions ensuring the energy-saving activities of the private power consumers. The current Law "On Energy Saving" mostly contains rather general provisions. ESCO Company should pay attention on the existence of this Law but couldn't use its regulations in practice. Such situation is the most important problem in energy saving area. All existing legal acts concerning energy saving are mostly declarative and don't determine how to realize energy saving projects.

V. The Model Law "On Energy Saving" of the CIS countries is not yet implemented into the national legislative framework of Russia, which leaves its positive innovations ineffective.

VI. The target programs on energy saving and power efficiency adopted on the national and regional levels are mostly addressed to the state and municipal authorities and can be considered as declarations not to be taken into account in the course of project implementation.

VII. Tax and customs legislation does not provide for preferences and incentives for the companies introducing and maintaining energy-saving systems.

VIII. The major legislative trends to affect the feasibility and profitability of the ESCO projects is the ongoing power industry reform, whereupon the demonopolization of the generation and distribution sectors will inevitably lead to the growth of prices on the supplied energy sources and the cessation or essential restriction of the tariff regulation. A number of federal laws have been passed to govern the reforms in the energy sector and reorganisation of RAO UES of Russia, which chart out main guidelines and principles of how the power sector will function in the future competitive market, when any government interference with the market will be strictly regulated.

IX. Numerous federal and regional state authorities are engaged in the process of implementation of the target programs in the power efficiency; the respective state bodies do not possess any competence to effectively encourage the power consumers to introduce energy-saving systems due to the drawbacks of the current legislation.

X. Certification of the services and products in the area of power efficiency and energy saving is compulsory and requires these products to be compliant with the internal national standards of Russia. Provisions, set up in the standards are compulsory for all enterprises, organizations, regional or other entities, situated at the territory of the Russian Federation as well as for Russian authorities, directly connected with the use of fuel and energy recourses and energy saving.

XI. Licensing of the ESCO activities will be required to the extent such activities contain the exploiting and maintenance of the power and heating networks. Installation and short-term operation of the energy-saving equipment at the client's networks may be in various cases deemed an operation of the power and heating networks by Gosenergonadzor. Although the specific activities of an ESCO company are not subject to the licensing in accordance with their formal nature, obtaining a respective license is highly advisable in order to minimize the regulative and legal risks in the course of an ESCO project implementation.

XII. There are no "classic-type" energy-saving companies in Russia at the moment. The principal difference between Russian energy service companies and their Western counterparts is the lack of sufficient external financing. The Russian energy-saving companies tend to bank on quick-return self-financing projects while their potential clients seek after the long-term high-cost energy-saving activities, covering the entire cycle of production and consumption and ensuring optimal profit and risk distribution.

XIII. Main types of the potential Clients of ESCO are state and municipal enterprises distributing the electric and thermal power to the individual consumers, however possessing low financial resources; industrial consumers (both private and state owned companies requiring heat and power for their production cycles); and AO-energo and the companies to be established in the course of the power sector reform, distributing and supplying heat and power services to various customers. Despite the fact that energy companies (AO-energos) form a potentially lucrative market for ESCO Companies, the possibility of them participating in ESCO project within the 4-6 years reform period is rather low.

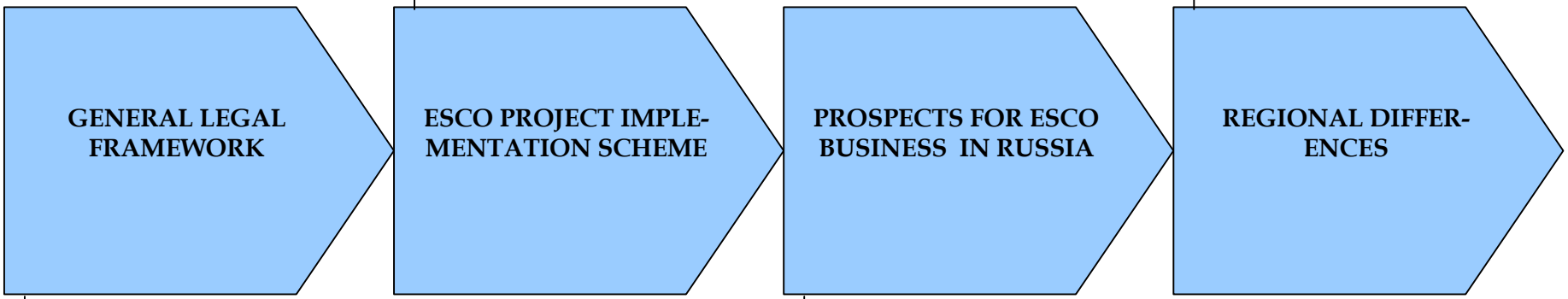
XIV. Contractual relationships between the participants of ESCO projects are left to the parties' own discretion, the so-called Energy Performance Contracts are a new unusual but yet effective and flexible tool of governing the relations between ESCO and its Client in Russia. Energy Performance Contract – is a multi-purpose contract entered into by ESCO Company and a company pursuing the following energy-saving activities: energy audit, engineering of energy-efficiency projects, project implementation all the way up to after-sales service.

XV. The circular model of funding ESCO projects and guaranteeing the obligations arising from bank guarantee appears to be the best solution for implementing ESCO projects in Russia. A practice of establishing revolving funds to accumulate the financial resources necessary for the implementation of power efficiency projects shall be taken into consideration, especially in the relationships with the state and municipal authorities involved as the clients of ESCO.

XVI. Implementation of leasing schemes is advisable in order to minimize the financial risks of ESCO in its relationships with the Client and to obtain an additional mechanism of control over the Client's operations within the frame of the energy-saving system and technologies.

XVII. Regional differences in the power efficiency regulation cannot be considered as significantly influencing the feasibility of the ESCO projects. However, the preferences and incentives for the foreign investors actively used in the several regions of the North-Western Russia shall be taken into account in the investment considerations.

FLOW CHART: RESULTS OF THE STUDY



Basic Legislation: Issues related to energy saving activities are addressed in declarative rather than practical manner.

Technical Regulations: No sound incentives for energy saving activities.

Licensing and Certification: certification is always needed when importing equipment to Russia (6-12 months), licensing is needed for power networks operations (2-6 months).

Legal Entity Registration: will take about 1 month.

Energy tariffs regulations: implemented by FEC and RECs, system of regulations is presently not effective.

Taxation: no special benefits.

Customs Regulations: no special regulations.

Legislative Trends: more attention to energy saving

Relations Between Parties: Energy performance contract is uncommon to Russian contract law, so relations between parties should be based on standard contracts (consulting, etc.), in practice composing a Russian EP contract.

Possible Partners: Local R&D institutions and energy technology centres, ESCO companies, financing partners, and consulting companies

Energy Tariffs: Russian system of energy savings does not create incentives for companies to save more energy.

Industrial Development Trends: There are sustainable prerequisites for development of energy saving activities in the Russian industry.

Technical and Innovation Developments: developing small-sized and alternative energy generation, cogeneration development, slow shift to cheaper fuels and biofuels use, etc.

Projects on the Way: The introduction of ESCO concept has just started in Russia and a number of closed or ongoing ESCO projects is rather small. The two largest projects are Energy Efficiency in Northwest Russia (NEEG, NEFCO and other investors) and Energy Efficiency in the Municipal Sector (IBRD, EBRD, Russian Government). Besides this, there are projects on energy efficiency initiated with the help of EBRD.

Regional Differences: do not significantly influence feasibility of ESCO projects. However, the preferences and incentives for the foreign investors in some regions should be considered.

APPENDIX: REGULATORY FRAMEWORK: LIST OF BASIC LEGISLATIVE ACTS IN THE FIELD OF ENERGY SAVING

Federal legislation in the sphere of energy saving

1. Federal Law "On energy saving" No. 28-FZ of April 3, 1996
2. Federal Law "On state regulation of tariffs for electric and thermal energy in the Russian Federation" No. 41-FZ of April 14, 1995
3. Federal Law "On amendments to the Federal Law "On state regulation of tariffs for electric and thermal energy in the Russian Federation" No. 83-FZ of February 11, 1999

General legislation

1. Civil Code of the Russian Federation.
2. Federal Law "On natural monopolies" No. 147-FZ of August 17, 1995
3. Federal Law "On leasing" No. 164-FZ of October 29, 1998
4. Federal Law "On licensing of specific activities" No. 158-FZ of September 25, 1998
5. Federal Law "On technical regulation" No. 184-FZ of December 27, 2002
6. Federal Law "On provisions for unification of measurements" No. 4871-1 of April 27, 1993

Decrees of the President of the Russian Federation

1. Decree of the President of the Russian Federation "On the main tendencies of the energy policy and structural reconstruction of the fuel and energy complex of the Russian Federation for the period till 2010" of May 07, 1995 No. 472
2. Decree of the President of the Russian Federation "On state supervision over efficient use of energy resources in the Russian Federation" of September 11, 1997 No. 1010
3. Decree of the President of the Russian Federation "On the main provisions of the structural reform in the sphere of natural monopolies" of April 28, 1997 No. 426
4. Decree of the President of the Russian Federation "On measures to reduce electric energy tariffs" of July 25, 1998 No. 889
5. Decree of the President of the Russian Federation "On additional arrangements to provide for the management of the electrical power complex of the Russian Federation" of March 3, 1998 No. 222
6. Decree of the President of the Russian Federation "On the reform of the housing and utilities system in the Russian Federation" of April 28, 1997 No. 425
7. Decree of the President of the Russian Federation "On the system and structure of the federal executive bodies" of March 9, 2004 No. 314

Acts of the Government of the Russian Federation

1. Resolution of the Government of the Russian Federation "On state support to the creation of energy-efficient demonstration zones in the Russian Federation" of October 12, 1995 No. 998
2. Resolution of the Government of the Russian Federation "On urgent measures concerning energy saving" of November 2, 1995 No. 1087
3. Resolution of the Government of the Russian Federation "On federal (all-Russian) wholesale electric energy (power) market" of July 12, 1996 No. 793
4. Resolution of the Government of the Russian Federation "On the approval of the list of strategic organizations providing for national security, fuel and energy deliveries to which are not subject to limitations or discontinuance" of January 28, 1997 No. 74
5. Resolution of the Government of the Russian Federation "On raising the efficiency of the use of energy resources and water by budget-financed enterprises, institutions and organizations" of July 8, 1997 No. 832
6. Resolution of the Government of the Russian Federation "On auditing electric energy meters and their labeling with special visual control signs" of December 27, 1997 No. 1619
7. Resolution of the Government of the Russian Federation "On the development of the state regulation procedures for electric and thermal energy tariffs" of December 27, 1997 No. 1629

8. Resolution of the Government of the Russian Federation "On measures to raise the effectiveness of economic reforms in the fuel and energy complex" of April 25, 1997 No. 491
9. Resolution of the Government of the Russian Federation "On the procedure for discontinuance or limitation of electric and thermal energy and gas supply to consumer organizations after their failure to pay for the supplied (consumed by them) fuel and energy resources" of January 5, 1998 No. 1
10. Resolution of the Government of the Russian Federation "On empowering the Ministry of Fuel and Energy of the Russian Federation with the authority of state supervision over effective use of energy resources in the Russian Federation" of February 12, 1998 No. 166
11. Resolution of the Government of the Russian Federation "On additional measures to stimulate energy saving in the Russian Federation" of June 15, 1998 No. 588
12. Resolution of the Government of the Russian Federation "On additional measures to raise consumer responsibility for fuel and energy resources payment" of June 17, 1998 No. 601
13. Resolution of the Government of the Russian Federation "On the introduction of separate calculation of expenditures for the regulated types of activities in the energy system" of July 6, 1998 No. 700
14. Resolution of the Government of the Russian Federation "On the amendments and addenda to the Procedure for cessation or limitation of electric and thermal energy and gas supply to consumer organizations after their failure to pay for the supplied (consumed by them) fuel and energy resources" of July 17, 1998 No. 789
15. Resolution of the Government of the Russian Federation "On the principles of price formation regarding electric energy consumed by population. In order to reduce electric energy tariffs for industrial consumers and develop electric energy price formation , taking into account step-by-step liquidation of cross-subsidies" of December 7, 1998 No. 1444
16. Resolution of the Government of the Russian Federation "On the approval of the regulation on the cessation or temporary restriction of electric energy (power) supply to consumers subject to occurrence or threat of occurrence of a breakdown in the operation of power-supply systems" of June 22, 1999 No. 664
17. Resolution of the Government of the Russian Federation "On the approval of the regulation on the Ministry of Energy of the Russian Federation" of October 12, 2000 No. 777
18. Resolution of the Government of the Russian Federation "On the reform of the power industry of the Russian Federation" of July 11, 2001 No. 526
19. Decree of the Government of the Russian Federation of August 3, 2001 No. 1040-r
20. Resolution of the Government of the Russian Federation "On price formation regarding electric and thermal energy" of April 2, 2002 No. 226
21. Resolution of the Government of the Russian Federation "On the provision of stable gas and energy supply to budgetary organizations providing for national security" of May 29, 2002 No. 364

Regulations issued by governmental agencies

1. Order of the GosStandart of the Russian Federation "On activities in the sphere of energy saving" of June 19, 1998 No. 340
2. Order of the Ministry of Fuel and Energy of the Russian Federation "On conducting energy audit and implementing priority energy-saving measures in budgetary organizations" of January 22, 1998 No. 17
3. Order of the Ministry of Fuel and Energy of the Russian Federation "On the procedure of organization of activities for implementing federal target program "Energy saving of the Russian Federation" of July 20, 1998 No. 246

Regulatory and methodological documents

1. RD 50-374-82 Methodological guidelines on the composition and content of energy consumption norms per unit of product (work) included in standards and technical conditions
2. GOST 27322—87 Energy balance of an industrial enterprise. General provisions
3. GOST 28310—89 Solar collectors. General technical specifications
4. Instructions for reporting on the use of thermal energy under form 9-PS (electric energy). Approved by the State Committee for Statistics of the Russian Federation on September 29, 1992
5. Instructions for reporting on the use of thermal energy under form 9-PS (thermal energy). Approved by the State Committee for Statistics of the Russian Federation on July 26, 1993, No. 150

6. Instructions for reporting on the use of fuel, thermal and electric energy, as well as on the formation and use of secondary energy resources (form 11-SN to be replaced by form 11-TER and appendices thereto). Approved by the State Committee for Statistics of the Russian Federation on September 5, 1994, No. 154

7. R 50-605-89-94 Recommendations on standardization. Energy saving. Procedure for setting energy consumption and energy saving indicators in product and process technical documentation

8. R 50-605-90-94 Recommendations on standardization. Energy saving. Electrolytic cells for aluminum production. Standards for electric energy consumption

9. R 50-605-91-94 Recommendations on standardization. Energy saving. Pumping units for transportation of oil. Standard performance indices

10. R 50-605-92-94 Recommendations on standardization. Energy saving. Equipment for heat and moist curing of pre-cast concrete units. Standards for thermal energy consumption

11. R 50-605-93-94 Recommendations on standardization. Energy saving. Trolleybus transport. Standards for electric energy consumption

12. R 50-605-94-94 Recommendations on standardization. Energy saving. Tram transport. Standards for electric energy consumption

13. R 50-605-1995-94 Recommendations on standardization. Energy saving. Melting units and thermal treatment chambers for mineral wool products. Standards for boiler and furnace fuel consumption

14. R 605-1996-94 Recommendations on standardization. Energy saving. Hole-type steam-curing chambers for heat and moist curing of pre-cast concrete units. Standards for thermal energy consumption

15. R 50-605-1997-94 Recommendations on standardization. Energy saving. Gas air heaters. Standards for thermal energy consumption

16. R 50-605-1998-94 Recommendations on standardization. Energy saving. Laser technological complex with the emission power of (25±5) kW for cutting of scrap metal. Basic provisions.

17. R 50-605-1999-94 Recommendations on standardization. Energy saving. Technological processes of heat-insulating materials manufacture. Standards for boiler and furnace fuel, thermal and electric energy consumption

18. R 50-605-100-94 Recommendations on standardization. Energy saving. Main directions of energy saving in ferrous metallurgy. Technological arrangements for reducing boiler and furnace fuel consumption

19. R 50-605-101-94 Recommendations on standardization. Energy saving. Bio-functional poultry farming production systems. Standards for electric energy consumption per production unit

20. R 50-605-80-94 Wind-power engineering. A method for determining wind energy resources and assessment of the efficiency of use of wind power systems (SEU) in the territory of the Russian Federation and CIS

21. R 50-605-81-94 Wind power stations. Testing requirements

22. R 50-605-82-94 Certification of wind-power installations. Basic provisions.

23. R 50-605-83-94 Solar power engineering. A method for determining solar energy resources and assessment of the efficiency of use of solar power systems (SEU) in the territory of the Russian Federation and CIS

24. R 50-605-84-94 Certification of photovoltaic module. Basic provisions.

25. R 50-605-85-94 Electric power installations for producing biogas from livestock waste. Procedure for test operation preparation

26. R 50-605-86-94 Geothermal power engineering. A method for determining resources

27. R 50-605-87-94 Minor hydropower industry. A method for calculating gross and technical and ecological potential of minor hydropower industry

28. R 50-605-88-94 Small hydro-energy facilities. Low-power hydroelectric installations. Types and basic characteristics.

29. Rules for thermal energy and heat-carrier accounting. Approved by Ministry of Fuel and Energy of the Russian Federation on September 09, 1995. Registered by Ministry of Justice on September 25, 1995, No. 954

30. Rules for electric energy accounting. Approved by Ministry of Fuel and Energy of the Russian Federation and Ministry of Construction of the Russian Federation on September 09, 1996

31. Rules for gas accounting. Approved by Ministry of Fuel and Energy of the Russian Federation on October 14, 1996, registered by Ministry of Justice on November 15, 1996, No. 1198

32. Methodical guidelines on the procedure for the calculation of tariff for electric and thermal energy in consumer market. Approved by the Federal Energy Commission of the Russian Federation on April 16, 1997

33. Temporary methodical guidelines (regulations) regarding setting by industry of differentiated wholesale prices for natural gas. Approved by the Federal Energy Commission of the Russian Federation on July 22, 1997

34. Energy passport of energy resources consumer (EPP), standard forms. Approved by Ministry of Fuel and Energy of the Russian Federation on December 15, 1997

35. Methods of calculation for saving budgetary funds which determine the effectiveness of energy saving measures in industry and housing and utility sector. Approved by the Ministry of Construction of the Russian Federation on April 30, 1998

36. Rules for conducting energy inspections at organizations. Approved by Ministry of Fuel and Energy of the Russian Federation on March 25, 1998

37. Rules for limiting consumption of electric and thermal energy. Approved by Ministry of Fuel and Energy of the Russian Federation on April 16, 1998, registered by Ministry of Justice of the Russian Federation July 07, 1998, No. 1554

38. GOST R 51237—1998 Non-traditional energy production. Wind-power engineering. Terminology and definitions.

39. GOST R 51238—1998 Non-traditional energy production. Minor hydropower industry. Terminology and definitions.

40. GOST 30583—1998 Energy saving. A method for determining full power intensity of products, activities, and services

41. Computer-based system for the analysis of heat and electric energy conservation by enterprises and organizations (AS ARITE). MANUAL on preparing and transferring data on energy use at enterprises by forms 10111-CH (electric energy) and 10111-CH (thermal energy) for Gosenergonadzor territorial directorates. Published by Ministry of Fuel and Energy of the Russian Federation in 1998.

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