

## The energy and raw materials maintenance of the processes of the economic cooperation between the regions

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**Abstract:** This article deals with the problems of the resource support of the processes of the interregional economic integration, which is the basis for the implementation of the innovation modernization of the Russian economy. There the need to improve the effectiveness of the national production on the basis of the implementation of innovative technologies, to ensure high rates of the labour productivity growth, to raise the investment attractiveness of the branches of the economy was stressed. The objective of the effective and rational use and the consumption of all types of resources, fuel and electricity for the industrial production and the household needs was allocated as one of the main objectives. The importance of increasing the production and the consumption of non-traditional and renewable as well as ecologically clean sources of energy was noted.

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### 1. Introduction

The objectives of an effective and sustainable resource maintenance of the processes of the innovative integration of socio-economic systems of the federal subjects in the conditions of overcoming the consequences of the global economic crisis highlight the need for the effective energy and resource consumption in relation to the specific production of the gross domestic product. The reduction of the fuel consumption and materials per unit of the produced goods is a relevant state problem, the solution of which will allow to increase greatly the competitiveness of the economy and to increase considerably its effectiveness.

Thus, question arises not just about the reduction of the energy and resource consumption per unit of the GDP, the question is about the revision of the approaches to the full and effective reproductive maintenance of the innovation development of the regional economies and scientific rethinking of these processes. This is largely due to the fact that the subjects of the Russian Federation differ significantly in terms of the resource potentials and the conditions of a socio-economic management. At the same time each separately taken region has not a full set of the necessary volume of human resources, materials and raw materials, as well as their sources for the effective reproduction.

Therefore, it is important that the resources in their majority could be reproduced and could complement each other effectively not so much within the regional economies, but to a greater extent would come on the basis of the interregional cooperation, and it, first of all, concerns the fuel and energy and the natural and raw materials resources sources, but not

they alone are a determining factor of the production and resource potential.

The increase of the production efficiency on the basis of a complex use of the intensification reserves is based on two key interrelated directions. The first one involves a sustainable growth of the labour productivity; the second one involves a systematic reduction of the reference intensity of the final product (Rau, 2013).

At the same time the reduction of the energy consumption and the increase of the energy efficiency of the reproductive potential of the country are one of the main sources of the economic growth. According to the scientists' estimation the national economy has an energy saving potential of 39-47% of the current annual energy consumption. The greatest potential for the energy savings is provided by: the energy consumption of residential buildings - 38%; from the overall energy consumption: the industry - 38%; the budget sphere, including the housing and utility sector (HUS) - 42% (Ratner, 2013).

Meanwhile, over the recent 20 years (1992-2012) the world consumption of energy resources has increased by 52%, this increase is almost fully provided by the non-OECD countries. However, the statistics shows that the industrializing part of the world is not only ahead of the OECD countries in terms of the consumption growth, but it is the main contributor to the increase of the energy production: over the last ten years the share of the countries outside the OECD has accounted 98% of the growth of the global energy resources production. In 2012 this proportion remained, despite the sharp increase of the

shale resources in the USA and a slowing growth of the coal production in China (Ruhl, 2013).

To this we can add that the households in the USA consume 84.5 times more electricity, than in the Russian Federation, the commercial sector of the USA consumes 10 times more energy, than the commercial sector in the Russian Federation. However, the USA industry consumes less energy, than the industry in the Russian Federation. In Russia the industry consumes 5 times more energy, than the households (Solontsov, 2007).

## **2. Materials and research methods: The energy efficiency as a key factor of the economic development**

Here it should be emphasized, that the factor of increasing the energy efficiency is the most important driving element, capable of providing a basis for the economic growth, laid in the programs of the development of the country till 2020. It is connected with the fact that Russia still belongs to the group of countries with a very high energy intensity of the GDP. The persistence of such a situation leads to a number of consequences: from the global one, implying the reduction of the energy security of Russia and its regions, to the inner one, because of the diversion of significant funds for the energy maintenance and the connection to the grids.

But the most unpleasant thing is that these consequences affect the budgets of the population in connection with the growth of tariffs for the HUS and the energy carriers, including the automotive fuel, and they will contribute to maintaining a high level of poverty and the deterioration of the municipal payments collection, which ultimately the budgets of all levels depend on.

It is not coincidentally that the reduction of the GDP energy intensity has become one of the most important initial conditions for the formation of variants of the economy development for the period till 2020. The targets for the energy efficiency increase for the innovation scenario are formed in the following way: to reduce the GDP energy intensity by 40%; and to receive the electrical energy saving over 1000 million tons of the coal equivalent. The problem is complicated by the fact that the energy carriers in the oil and gas forms are still the main sources of export, in the result of which more than 50% of the federal budget is formed due to the receipt of the rental payments from these resources (Bashmakov, 2009).

At the same time, the oil production in Russia in 2012 rose to 518 million tons, or by 1.3%, however, the gas production during this period decreased by 2.3% and amounted to 655.007 billion cubic meters (Markelov, 2013). The coal production increased by 4.7% in comparison with 2011 and it is equal 352.688

million tons, as well as the electricity production, the growth of which amounted to 1.3% and reached 1.053 trillion kWh (Energy, 2013).

It should be noted that the organizational and economic activity of the state on the resources supply of the national economy is the combination of a number of strategic managerial decisions aimed at the reproduction of the basic economic resources of the society - fixed assets, human and natural resources. The types of such activity can be different and depend on a number of factors: the peculiarities of social types of economic systems and the levels of the development of their productive forces, the resources maintenance has a major influence on their sustainable development and growth, what is especially actual in the conditions of the further globalization of the world economic processes (Kushnir, 2013).

According to the doctor of economic sciences, Professor I.A. Budanov, the main problems of the economic development of Russia in the mid 2000-ies are connected with the resources of the formation of the production potential (engineering, construction capacities, investment products, science and research developments and others). The reproduction of these resources has its specificity, and it was paid an insufficient attention in the process of reforming the economy, and this became one of the preconditions of the current system of constraints to the economic growth. All Russian companies indicate the problems with the delivery of the modern domestic equipment, training the qualified personnel. If in the 1990s for the builders as restrictive factors there were mainly the issues of financing, a tax burden, but currently it is increasingly the system of the material maintenance (Budanov, 2013).

However, according to the scientists of Russian University of Economics named after G.V. Plekhanov, the objective prerequisites for the improvement of the system of the material-resource maintenance in modern Russia are generated by an unsatisfactory situation in the sphere of supplying enterprises with raw materials and materials and there are significant gaps between the management theory and the practice of making decisions. The poorly balanced system of the resources maintenance of economic structures is the result of two main reasons: at first, the administration of the enterprise pays the main attention to the rapid growth of the sales volume, in the detriment of the effective management of the material resources and reserves; secondly, it is the use for the business management of the developed by economists mathematically "clean" models of making decisions, which have not a practical value (Garnov, 2013).

The problem of the maintenance and use of raw materials, resources and materials occupy a significant place in the research of scientists, because it is the

resource and the energy saving policy of the enterprise, which the success of this policy on the regional and the national level largely depends on. Moreover, it is in the energy saving, where some of them see the imperative in the formation of the effective economic functioning of the region. Thus in the development of the energy saving in the enterprise the role of a public-private partnership is emphasized, as the reduction of dead expenses on the one hand is a key goal of any effective business management, on the other hand this objective can be achieved at the expense of the use of such conditions in contracts, which create incentives for increasing the energy efficiency, which establish the necessity of applying energy saving technologies and conducting relevant arrangements (Faustova, 2012).

At the same time the considered actions of companies trying to enter independently the wholesale energy and capacity market, implementing energy-saving technologies, or building small energy installations at their place, often meet a violent opposition on the part of the main energy producer or the energy supplier in the region, because the arrangements on the implementation of small power plants, as well as the undertaking arrangement on energy savings lead to a reduction of their profits and can affect the technical conditions of the power system in general (Borovikov, 2012).

### **3. Results: The introduction of innovations in the energy production and the energy consumption**

Thus we must emphasize, that the problems of the efficient and economical use and consumption of all kinds of resources, fuel, thermal and electric energy, raw materials and materials for the production purposes highlight the objective of the introduction of innovative production technologies and the use of the energy-saving equipment to get a widespread reduction of the specific consumption of raw materials and energy intensive resources, the application of modern technologies of the nature management. And therefore, in our opinion, it is sensible on the part of the authorities to use compulsory measures to encourage the consumers' desire for economical use of resources.

On this basis, the rational nature management and the efficient use of resources become, including for energy companies, such important objectives, that they require fundamentally new approaches and the change of their own production policy and improving it with help of the innovative arrangements. The present situation demands the development and the application of new energy-informational systems, the creation of fully integrated "smart grids", the development and the implementation of renewable and alternative energy sources, an intelligent distributed generation (Aleksandrov, 2013).

It is necessary to note, that specialists of the electric power industry consider the insufficient financing of the innovative development to be a specific feature of the Russian energy sector. In their opinion, the terms of the change of the technological structure in the energy sector are estimated in the range of 2025 - 2030, when developed countries will relocate the balance of scientific and technical works to the area of new and alternative energy technologies, so the state preferences in the scientific and technical sector are required. The Russian current scheme of financing similar developments is a combination of grants from scientific funds, own funds of enterprises and other single, often non-core sources. In the conditions of a competition of completely heterogeneous developments the "investment" selection mechanism inevitably turns on. The result of the functioning of the current scheme is the lack of the management by the technological upgrade process. The substitution of the innovative selection by the investment selection occurs, what inevitably leads to a recession in some sectors of the economy (Borovikov, 2012). A completely different situation is in the sector related to the oil processing. Despite the fact that this sector does not relate to high-tech sectors among oil refinery organizations, 31.7% of enterprises are the companies, which realise innovations (Russian Statistical Collection, 2013).

Further, there are enterprises dealing with the production of the electrical equipment 26.5%, the chemical production 21.5%, the production of vehicles and the correspondent equipment 20.8%. The lowest innovation indicator belongs to the enterprises dealing with the pulp and paper production 2.9%, the production of leather goods 3.8%, the wood processing 4.7%. At the same time for the period 2009-2012 the innovation costs in the oil refining industry increased by 221% - from 32 to 103 billion roubles, in the segment of the production of vehicles the growth was 99.6%, in the production of electronics and optics the growth was 120.6%.

According to scientists from the Institute of Energy Strategy (Moscow), the above indicated figures show that a significant potential for the development of the innovations in our country is laid in the resource based economy. They believe that it is possible to build a modern innovative economy at the junction of the resources and the innovations. If a flexible processing of raw materials, including the petrochemicals and the gas chemistry develops, the possibility to get more value added at the supply to final consumers will appear. This will allow expanding export horizons and creating an environment for the investments in new high technologies: the integrated engineering and electronic industry. The authors underline, that if the Russian economy goes the resource-innovative way, the GDP of

the country may grow twice as much during the shortest terms of 10-15 years, taking into account the current crisis (Bushuev, 2012).

This assumption seems to be relevant and significant, because, according to the RAS academician A.A. Makarova the forecast of the world energy markets has revealed moderate opportunities of increasing the export of the Russian energy resources, only by 5-13% in 2020-2025, with the return in 2035 to practically a current level. The share of oil and petroleum products in it will fall from 61.7% in 2010 to 49-52% in 2035, replacing it by relatively cheaper natural gas via pipelines (the share

increase from 27.2% to 33-41% and in the reduced form up to 9-10%).

As a result, the energy exports revenue will continue to grow till 2035, and then it will be stabilized at more than twice reduction of its share in the GDP. At the same time the contribution of the Fuel and Energy Complex (FEC) to the production of the GDP will be reduced almost threefold from 14.1% to 5% - and by the end of the period it will only slightly exceed the share in the GDP of capex on its development (taking into account the decentralized energy and the costs for the energy saving (table 1) (Makarov, 2012).

Table 1. The role of the export of the energy resources and the FEC in the GDP of Russia, billion USA dollars

Indicators	2010	2015	2020	2025	2030	2035
The gross domestic product (GDP)	1468	1810	2280	2830	3495	4280
The revenue from energy exports	269	315	331	337	338	336
the customs payments	104	126	133	136	136	134
the companies' export revenues	165	189	199	201	202	202
The share of the export revenues of the fuel and energy resources (FER) in the GDP, %	18.3	17.4	14.5	11.9	9.7	7.8
The share of the FEC in the produced GDP, %	14.1	12.7	11.4	9.2	6.8	5.0
The share of the capex in the energy supply in the GDP (according to five years), %	6.5	4.9	4.5	3.8	4.8	4.2

The author and his colleagues also consider that there are great risks that the demand for the Russian gas in Europe will be up to 25% lower by 2035, and the network gas export to China will be twice less than accepted. Then the revenues from energy exports will decrease by 10%, what will affect the dynamics of the Russian GDP. The forecast has revealed the causes and rates of the manifestation of this already visible tendency of the loss by the Russian FEC of the role, it has been playing for almost 20 years, which was initially the role of a locomotive of the maintenance, and further the development of our economy and an important tool of geopolitics (Makarov, 2012).

#### 4. Results: The energy and fuel production from renewable sources

Therefore, in order to solve the problems of a perspective development of the energy, the efficient mechanism seems to be the reorientation of the industry on energy-efficient and energy-saving technologies, as well as the development of the energy production and biofuels from renewable sources (Batyrsheva, 2013).

Analyzing further problems of the innovative renewal of the energy industries, it should be noted that the key factors contributing to the need for further modernization changes in their development are also the aging infrastructure and the decrease of the reliability of the centralized power supplying system, the expected growth of the electricity consumption by

2-3% per year at the increase of requirements to the quality and continuity of the supply, constantly changing energy prices, a small number of solutions based on modern technologies, a weak development, amid a worldwide trend, of renewable energy sources (RES) in Russia. By 2030, their share in the fuel and energy balance of the country will be about 3% (Glushchenko, 2013).

Meanwhile the problem of using non-traditional and renewable sources of energy becomes more than relevant. The shortage of oil and gas increases the interest in the use of coal, the nuclear energy, the hydropower and the solar energy, the wind energy, the energy of the agriculture and industry waste disposal. There is another circumstance which stimulates the developed countries to transfer from the hydrocarbon energy sources to the others (Savchenko, 2013). It is a complicated environmental situation in the world, the climate change, the wasteful and inefficient use of natural resources. All this has the most direct relation to Russia, as the deficit of investments and a financial support for the restoration and the development of the infrastructure, the improvement of natural objects over the past 20 years have led to the deterioration and ageing of its technical state, accompanied not only by the lack of a simple reproduction of fixed assets for the development of the nature exploration sectors, but also by a significant reduction of a safe functioning of the relevant environmental facilities (Ushakov, 2011).



As to the use of renewable energy sources, in some western countries to a certain extent the so-called biofuels have spread, which is produced from food grain products - sugarcane, corn, wheat, sugar beets, soybeans, rapeseed, palm oil and other sources. However, in the conditions when in the world there is an acute shortage of food, it is hardly rational to direct them to the fuel resources production. In Russia before the known campaign of the struggle with alcoholism there was the full production of ethanol based on the hydrolysis of wood wastes, which are formed in large volume. It seems that such a method of producing ethanol is the most acceptable and rational, because the problem is urgent, and the reduction of oil and gas stocks in Russia is an obvious thing and it is not so distant.

Therefore, the researches in the resource economics convincingly demonstrate, at first, the importance of policy of preventing the exhaustion of natural resources in order to maintain not decreasing indicators of a social welfare, secondly, the permanent long-term consumption in the conditions of decreasing oil revenues to zero for a finite time should be ensured by the investments in the non-oil capital and financial assets abroad (Bazhanov, 2011). We believe that the first part is a very important condition, but it is not fulfilled in Russia, and the second though is fulfilled, but does not bring real results for the country's economy.

At the same time, we must take into account the fact that resources maintenance must be considered as a complex multifactorial process, for the optimal and effective realization of which a set of tasks from the point of the process approaches is actualized: the estimation of the initial resource base and the redistribution extent; accumulation, mobilization, production, redistribution, the complexity of using domestic and foreign resources, the estimation of supply and demand, etc. (Dovbiy, 2013).

## **5. Results: Energy balance sheets of the country and the regions**

From these positions the analysis of the RF energy balance sheet for 2011 can be of a considerable interest for the goals of our research (Russian Yearbook, 2013). It implies that the natural fuel extraction in 2011 was 1736.3 million tons of reference fuel, what is above a level of the previous year by 42.3 million tons or by 2, 4%, of which the oil and gas condensate amounted to 732.7 million tons, what is by 10.1 million tons or by 1.4% more than in 2010, the natural gas is 774.1 million tons or by 21.6 million tons - 2.9% more than in the previous period, coal is 224.8 million tons or by 4.4% more. There were generated 363.4 million tons of electricity of the reference fuel equivalent and 198.2 million tons of the thermal

energy. Thus from the total volume of fuel and energy resources the boiler-furnace fuel amounted to 1106.5 million tons.

The allocation of resources in 2011 was done as follows. 1080.3 million tons or 62.5% of the reference fuel from the total number of the year resources were directed to the consumption, what is more than in the previous period 37.2 million tons, 646.3 million tons or 37.4% of the resources were exported, what is more than in the previous year by 7.7 million tons.

The oil and the gas condensate were sent for export by 3.4 million tons less and coal was sent by 3.5 million tons less, but gas of the reference fuel equivalent was sent by 14.8 million tons more. Thus, it should be noted that the volume of the natural fuel consumed in the industrial production was 76.5 million tons, what is larger, than the previous period by 4.3%.

Thus, the analysis of the regular energy balance sheet of the country shows that, firstly, the fuel and energy resources still remain the main feature of exports, moreover, export volumes are increasing for all indicators. Secondly, the energy consumption in the economy sectors is increasing, despite the declared goals of reducing the energy consumption for the production purposes.

Moreover, the specific energy consumption and the consumption of the reference fuel for the production of some types of products continue to increase or decrease very slowly (Russian Statistical Collection, 2013).

For example, for the last two years represented in the statistic reporting (2011 and 2012.) the specific consumption has increased in the oil production by 3.3%, in the rolled ferrous metal production by 2%, the specific energy consumption has increased by 0.7 kW/h per ton at the oil processing, the specific energy consumption has decreased slightly at the coal extraction, at the eliquation of electrical furnance steel, but has increased by 186 kW/h per ton at the production of rubber. These indicators characterize a total federal energy consumption. As to the regional level, these costs remain practically without accounting and control.

Examining in more detail the problem of the formation of fuel and energy balance sheets there should be noted that the Order of the Ministry of Energy of the Russian Federation approved (Order, 2011) the procedure of the preparation of fuel and energy balance sheets of the subjects of the Russian Federation and the municipal formations. The executive authorities of the RF subjects were responsible for the procedure of the formation of balance sheets. It would seem that a very important step has been made, and now there will be a possibility to have an objective picture of the production and consumption of energy resources in the country.

However, in reality all turned out to be much more difficult. In the regions of Central Federal District on the websites of the administrations we have managed to find only an energy balance sheet of the city of Moscow - for the year 2010. This period seemed to be quite natural, because the balance sheet formation is complex and lengthy. Another thing bothered: only in one region – the Vladimir region had a draft resolution of the Governor about the formation of such a balance sheet. In other territories such information is absent at all. So we decided to perform a qualitative comparison of relative values, characterizing the balance sheets of the Russian Federation (Russian Statistical Collection, 2012) and Moscow (Balance Sheet, 2010) according to the following parameters:

$$1) \quad I_{er} = \frac{C_{er}}{V_r}$$

where  $I_{er}$  is a specific fuel consumption for the production of the Gross Regional Product;

$V_r$  is the Gross Regional Product;

$C_{er}$  is the final consumption of energy resources.

$$2) \quad R_i = \frac{C_{er}}{I_n}$$

$R_i$  is the ratio of the annual volume of the final energy consumption to the investments in the fixed assets;  
 $I_n$  is the investments in the fixed assets of the region per year.

$$3) \quad S_i = \frac{C_{er}}{I_t}$$

$S_i$  is the energy efficiency of innovations - the ratio of the final energy consumption in the region per year to the costs for technological innovations

$I_t$  are the costs for technological innovations.

$$4) \quad N_r = \frac{C_{er}}{B_N}$$

$N_r$  is the energy consumption of the population;

$B_N$  is the population number of the region per year.

$$5) \quad H_r = \frac{C_{er}}{W_i}$$

$H_r$  is the energy maintenance of domestic costs for the research and developments;

$W_i$  are domestic costs for the research and developments.

$$6) \quad E_r = \frac{V_r}{C_{er}}$$

$E_r$  is the energy efficiency of the territory.

In the result of these calculations the following data was obtained (table 2).

Table 2. The results of the calculations of the indicators of fuel and energy balance sheets of the Russian Federation and Moscow

Показатели	$I_{er}$	$R_i$	$S_i$	$N_r$	$H_r$	$E_r$
The RF	0.0676 thousand tons/million roubles	0.2784 thousand tons/million roubles	6.359 thousand tons/million roubles	17.840 thousand tons/million roubles	1.333 thousand tons/million roubles	14.791 thousand tons/million roubles
Moscow	0.00345 thousand tons/million roubles	0.0394 thousand tons/million roubles	1.261 thousand tons/million roubles	2.5 thousand tons/million roubles	0.148 thousand tons/million roubles	289.497 thousand tons/million roubles
The relative value of the comparison	48.57	7.05	5.04	7.12	9.00	0.051

From this table it obvious that the compared values indicate an advantage of all parameters of the Russian Federation, with the exception of the energy efficiency indicator, which, in Moscow is in 19.69 times higher than in the whole country. However, this is not a sign of a really high level of the energy efficiency of the economy in Moscow. This circumstance is explained by the that the majority of large Russian enterprises have their central offices in Moscow, here they report on the volume of the produced product. Therefore at a relatively low level of the energy consumption in Moscow such high indicators of the regional product are possible. Therefore, we believe that it would be quite effectively, if the balance sheets of energy resources of the regions, with the exception of the ones formed in the RF

subjects, were tracked at the federal level through their publication in the national annual statistical collection in federal districts with a breakdown according to the regions they comprise to give the authorities and specialists an opportunity to objectively estimate the balances of the production and consumption of the resources and to foresee their development for a particular perspective.

This objective can be solved on the basis of the development of regional energy programs, too. Regional energy programs are one of the most important means of implementing the energy policy of the state in the regional context, of maintaining the balance of the interests of the participants of the FEC development and the energy consumers, of attracting the investment resources, of the formation of budgets.

The programs are a set of interconnected research, development, design, production, organizational and other arrangements aimed at solving the objectives of ensuring the effects of functioning and the development of the fuel and energy complex of the regions - the Russian Federation subjects, federal districts and other groups of regions (Selyukov, 2010).

The importance of such energy programs increases also because of the fact that the problems of the resource and the energy saving and the reduction of specific fuel consumption and materials for the production of a unit of the production are very closely connected with the problems of involvement in the turnover of the secondary sources of raw materials and fuel. The analysis of the indicators of the use of the secondary energy resources in the economy of the country for 2000-2012 (Russian Statistical Collection, 2013) allows to make a conclusion that the volume of actually saved through the use of secondary energy resources reference fuel is practically not increasing, what testifies on the lack of the attention of regional and municipal authorities to this problem. This indicator has changed insignificantly for the last five years. So, in 2007 it reached the level of 31.7 million tons, then three years running there was the reduction of 1 to 3.8 million tons, and only in 2011 it again achieved an increase of 31.6 million tons, and in 2012 to 32.1 million tons. Of course, this is influence of the economic crisis. Meanwhile, the volume of the used secondary resources both combustible and fuel in recent years also remains practically constant, ranging near volume 16-18.9 million tons of combustible materials and 75-80 mln Gcal.

Another important factor of solving the problem of the energy saving and the reduction of specific consumption of all types of raw materials and energy are the necessary comprehensive statistical data, characterizing the state of the resource consumption, what largely hinders the arrangement of the work on the quality resource maintenance of the interregional innovative integration.

Therefore they rightly raise the issue that the reporting statistical information describing the process of the involvement in the turnover of metal, chemical products, wood products, fuel resources, is currently limited mainly with the data on the domestic production, export, import. The data on the extent of use of production resources in certain fields and types of activity of the domestic economy are fragmented and do not allow constructing dynamic series of the metal-chemical-fuel capacity issue in any fractional industry nomenclature (Suvorov, 2013). Certainly, this fact does not contribute to the development of the energy saving processes.

## 6. Conclusion

Thus, the results of the research of problems of the resource maintenance of the interregional economic integration allow drawing some conclusions.

Sustainable resource maintenance of the processes of economic integration of socio-economic systems of the regions can be successfully achieved only under the conditions of effective ongoing work to reduce the specific energy and resource consumption for the production, what could serve as a condition to increase its competitiveness. This requirement may be satisfied only at the effective innovative maintenance of the reproductive development of the regional economies, taking into account the significant differences of their resource potentials.

This circumstance requires the efficient and economical use and the consumption of all kinds of resources, fuel, thermal and electric energy, at that putting the task of the implementation of innovative technologies of the production and the use of the energy-saving equipment. The rational nature management and the effective energy saving become the main objective for companies and require them to change their own production activity, as well as to improve it with innovative arrangements and to increase the appropriate financing.

The conditioning factor becomes the development of the production and the consumption of non-traditional and renewable energy sources, because in future the country will face a certain shortage of oil and gas, which should increase the interest to the use of coal, the nuclear energy, the solar energy, the wind energy, the energy of the agriculture and timber waste disposal.

The comparison of the indicators of the balance sheet of the energy resources of Russia for the recent years, gives the grounds to state that the fuel and energy resources still remain the main feature of the export and according to all indications their value increases and the energy consumption in the economy is increasing, despite the declared objectives of reducing it. The results of the analysis of the balance sheet give the grounds to conclude, that in order to increase the responsibility of the regional levels government for the processes of the reduction of energy and energy resources consumption it is reasonable not only to generate energy balances of the federal districts and their constituent regions and to make them available to the public.

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