

Мақалада мемлекеттік секторларды басқару жүйесі, нарықтық элементтерді бөлу механизмдері, ҚХР-да жабдықтау тізбегі шеңберіндегі қызметтер жүйесі, әлемдік өзгерістерде ашылған жаңа жолдар мен мүмкіндіктер қарастырылған. Қытай Коммунистік партиясының «14-ші бесжылдық» жоспарынан алынған кесінділер бар, онда нақты мақсаттар көрсетілмеген, бірақ дамудың басым бағыттары көрсетілген, мысалы, ҚХР – Еуропа КП менеджменті мен жұмысының сапасын жақсарту сияқты, сонымен қатар оны ҚХР аумағында және бүкіл әлемде жылжыту, бұл теміржол саласына да, жалпы ел экономикасына да көмектеседі.

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INVESTIGATION OF INNOVATIVE DEVELOPMENTS AND ALTERNATIVES IN THE PEOPLE REPUBLIC OF CHINA FOR CHINA – EUROPE BLOCK TRAINS DURING THE "14TH FIVE-YEAR PLAN"

Abstract

Block trains from China to Europe (hereinafter – China – Europe BT) is an exemplary project of China to promote the "One Belt, One Road" initiative. The article examines the system of management of public sectors, mechanisms for the distribution of market elements, the system of services within the supply chain in China, new ways and opportunities that have opened up in world changes. There are clippings from the Chinese Communist Party's "14th Five-Year Plan", which does not indicate specific targets, but outlines priority areas of development, such as improving the management and quality of work of China – Europe BT, as well as its promotion, as in the territory of China and all over the world, which will help the railway industry and the country's economy.

Key words: block trains from China to Europe, position, innovation, alternatives, research, "14th Five-Year Plan", China.

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THE DEVELOPMENT OF COMPETITION IN THE ELECTRICITY MARKET

Abstract

The paper addresses the problem of development of competitive electricity markets in relationships that were formed by the enactment of the law "On electric power industry", according to which it is prohibited to combine the activities of the transfer and sale and purchase of electricity. The author considers types of violations of antitrust laws in the retail and

wholesale electricity market, and draws conclusions on the further development of competition in the electricity market.

Various schemes of corporatization, privatization, consolidation with high-yielding types of industries (e.g., aluminum production), expansion of the production chain by including the production of equipment for the power industry were proposed as the main reform ideas.

Most of these projects were rejected due to infringement of the interests of private shareholders or contrary to the interests of the company.

Keywords: *electricity, sectoral legislation, the development of competitive market structure, non-metered electricity consumption, well balanced policy.*

Introduction.

Nowadays, the development of the industry is mostly associated with the improvement of competition in the markets. So, the Federal Law "On Electric Power Industry"¹ stipulates the measures of state regulation shall be applied if there is: – shortage of electricity within the boundaries of any territory; – technologically isolated regional electric power systems. In case the energy systems fail to meet these conditions, measures for the development of competitive relations are applied. Electricity markets are constantly monitored by the antitrust authorities as the demand for electricity is inelastic, that may be the cause of establishing and maintaining economically unjustified high tariffs for electricity or arranging conditions to limit an admission to networks.

Research methodology.

The problem of the development of competitive relations in the retail electricity market in order to improve the efficiency of the Russian electric power industry is considered. It is shown that the retail model formed today the market does not provide a sufficient level of development of competition in energy sales activities. The distinctive features of the organization of the retail electricity market in Russia are investigated. An assessment of the degree of development of competitive relations in energy sales activities and its impact on price dynamics is carried out for electric energy for end users. The factors hindering the development of competition in the retail electricity market are identified. Are given proposals to increase the level of competition.

Key research findings.

In order to further develop competitive relations in the retail electricity markets, which are a necessary element of increasing the efficiency of the electric power industry, it is necessary to solve the key problems that hinder the development of competition in energy sales.

In addition, it is necessary to simplify as much as possible a mechanism for the transition of consumers between the last resort supplier and independent energy sales companies, as well as to provide conditions for the development of direct contractual relations between consumers and producers of electric energy in retail markets, in particular, on the basis of long-term contracts for the supply of electricity with various options for tariff menus.

Electricity market in a competitive environment Electricity market features a constant production and consumption process that can cause vertical restraints limiting access to the grid for customers beyond the agreements with suppliers. This problem is particularly relevant in the case where the power of the wholesale electricity supplier is not enough to cover current needs. In this case there is a situation when the electricity seller has a possibility of price discrimination on the residual demand.

The structure of modern energy market is in the process of transformation for the time being. Thus, according to the Law on features of electric energy functioning from April 1, 2006 legal entities and individual entrepreneurs are prohibited to overlap activities of electric power transmission and dispatching management in electric industry with the activities of production as well as sale and purchase of electricity. This Law having entered into force the following markets were established on the basis of the electricity generation industry: 1) market of electricity transmission services; 2) wholesale electricity market; 3) retail electricity market.

From the perspective of competitive relations development, the activities of wholesale and retail electricity market are the most promising.

The power industry has historically developed as a natural monopoly industry. The purpose held in the early 2000s. reforming the industry was the introduction of competition in those segments electric power industry, in which it is possible and expedient (in particular, in the production and sale of electricity) while developing quasi-competitive mechanisms in the regulated segment (transmission of electricity), and ensuring non-discriminatory access for market participants to the power grid infrastructure.

Development of the retail electricity market has more competitive opportunities for relationships development than the wholesale market, as barriers to this market entry are smaller. So, nowadays independent power companies appear in some regions. They sell electricity bought on the wholesale market in the retail market, along with guaranteed suppliers.

The liberalization of the electric power industry took place with an eye to the successful experience of reforming Western countries and was carried out according to the energy market model with deregulated wholesale and retail trade in electrical energy. As a result of the structural transformations of the Russian electric power industry in the field of electricity production, a wholesale electricity and capacity market (hereinafter – the WECM) was formed, and in the field of electricity sales - retail electricity markets.

Energy at the level of subjects. Such changes were ultimately supposed to ensure a reliable energy supply to consumers, as well as contribute to reduction of electricity tariffs for end users, mainly due to the development of competition between electricity producers (in the wholesale market) and electricity suppliers (in retail markets).

Economic restrains of competition development are caused by the following costs the consumer incurs through transition from one guaranteed supplier to another: – recovery of losses suffered by the guaranteed supplier. In this relation it is economically inexpedient to renegotiate the supply of electricity in the retail markets during the calendar year with another supplier; – establishment of a new automated system for commercial accounting of electricity needed to enter the wholesale electricity market. Retail electricity market defects having an indirect impact on the competitive environment of the market include: – late payment by some electricity consumers in general, and an increase of utilities debt in some regions in particular: – high level of losses due to non-contractual or non-metered electricity consumption, large technological (according to the company "McKinsey" – 9-11% compared with 7% in Europe) and commercial losses (according to the company "McKinsey" – 4% compared to 0.4% in Europe) 4; – the need for major investments to modernize the industry's assets in order to increase competitiveness, in particular – on the development of an automated system for control and accounting of electricity that is required to enter the wholesale electricity market; – Lack of markets' information "transparency" that can arrange unequal conditions for buyers of electricity. These limitations can be partially remedied only in the long term, for the time being markets must be constantly monitored in terms of the compliance with the antitrust laws. In particular, the Russian FAS: – investigates cases of the antimonopoly legislation violation; – monitors electricity prices; – checks the information transparency of the wholesale and retail market entrants in terms of the conditions for admission to electricity; – controls economic concentration in the markets of production, transmission and sales of electricity to meet the requirements of the law "On Electricity".

The final transition to a competitive model of the electricity market took place on 01.01.2011.

To date, the formal functioning model formed as a result of structural transformations creates conditions for the development of competitive relations and allows consumers to choose an electricity supplier, but in practice it does not provide the necessary the level of development of competition in energy sales. As a result of the reform of the electric power industry, formed at the level of the constituent entities of the Russian Federation (with the exception of regions in

which, for technical reasons, the development of competition is currently impossible), which is due to the legacy of the pre-reform structure of the Russian electricity industry – from the sales divisions of unpacked regional vertically integrated energy companies in 2006, the first guaranteeing electricity suppliers.

The current legal model of competition in the retail electricity market energy (capacity) is based on the separation of functions of guaranteeing suppliers of electrical energy and independent energy sales organizations. Guaranteeing providers perform a social function, acting as backbone actors who are responsible for ensuring power supply of any consumers (buyers) of electrical energy who have applied to them, located at the border of their area of activity. This means that guaranteed suppliers are not free to choose consumer of electrical energy.

Independent energy sales organizations are called upon to act as the basis for the formation of a competitive retail electricity (capacity) market, which in the struggle for the consumer (buyer) of electricity, they offer the market the best terms of delivery. In Western countries, the competitive model of the retail market provides for restrictions to combine activities for the sale and transmission of electrical energy. However, if in a number of Western countries thresholds are set for grid companies, upon reaching which it is necessary to legally and functionally separate the transmission of electricity from sales and generation of electricity (for example, in Finland, Great Britain), then a strict prohibition has been established that does not allow combining transmission and the sale of electrical energy (except for a short period of time from the moment of deprivation of the status of the last resort supplier of one power supply company and its assignment to another, during which the network the company takes over the energy supply responsibilities).

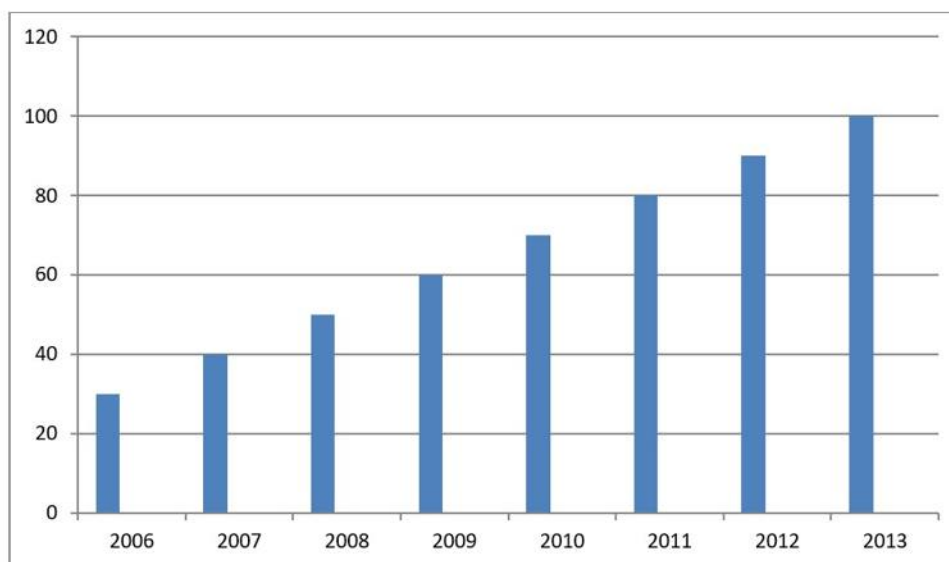
By aggregating the experience of Western countries, a competitive retail market model is provided to consumers (buyers) of electric energy the possibility of choosing a model of interaction with other participants in the retail market. In particular, the consumer (buyer) of electrical energy has the right to decide whether it is more expedient for him to build direct relationships only with the supplier of electrical energy, acting as an intermediary between him and the electric grid company (by concluding an energy supply agreement), or to interact as with the supplier of electrical energy (by concluding an agreement for the supply of electrical energy) and with the grid company (by concluding an agreement for the transmission of electrical energy). Choice by the consumer (buyer) of electric energy of the model of interaction with participants market determines the procedure and procedure for concluding an agreement for the supply and transmission of electrical energy.

The concept of the deregulated model provided for the development of competition directly between independent energy sales companies, assigning guaranteeing suppliers the role of insurance market agents who provide energy supply to consumers who have lost electricity supplier. However, in practice, competition in energy sales activities is extremely limited and is observed between guaranteeing suppliers and independent energy sales companies (when delivering to certain categories of consumers, not to the population). The guaranteed suppliers themselves do not compete with each other, since the areas of responsibility of the guaranteed suppliers do not overlap.

The dynamics of the price of electricity for end users. The development of competition did not provide for the abandonment of state regulation of prices for electric energy for consumers (with the exception of the population and categories of consumers equated to it).

In general, we may say that the position of antitrust regulation features a well-balanced policy, focused on arranging conditions to reduce losses of consumers, with industry-specific being taken into account. For example, the electric energy industry is the only sphere of the real economy, where, taking into account the ability of producers to discriminate on the residual demand, the boundaries of dominance are established – 20% instead of 50% (in some cases 35%) are established in the Law "On Protection of Competition".

This is the first ever Electricity Market Report produced by the International Energy Agency (IEA). Designed to complement other reports in the Market Report Series on energy efficiency, renewables, coal, natural gas and oil, this report focuses on developments in the world's electricity markets amid the Covid-19 pandemic. It includes an assessment of 2020 trends and 2021 forecasts for electricity demand, supply, capacity and emissions – both globally and by country. Starting in 2021, the IEA will publish a new edition of the report on a half-yearly basis with the latest updates on key developments in global electricity markets.



Dynamics of the price of electricity supplied to various categories of consumers in the retail market electric energy for 2006-2013

Global electricity demand in 2020 is projected to fall by around 2%. This is the biggest annual decline since the mid-20th century and far larger than what followed the global financial crisis, which resulted in a drop in electricity demand of 0.6% in 2009. The contraction this year is a result of the Covid-19 pandemic and its impact on economic activity – the assumed 4.4% decline in global GDP in 2020 is significantly larger than the 0.1% reduction in 2009 – and the measures taken to prevent the further spread of the virus.

China will be the only major economy to see higher electricity demand in 2020. However, projected demand growth of around 2% in the People's Republic of China (hereafter, "China"), which represents about 28% of global electricity consumption, is still significantly below its average since 2015 of 6.5%. After implementing strict health measures early in the year and experiencing subsequent drops in electricity demand in the first quarter, China has seen year-on-year demand growth every month since then. Although demand recovered in many economies during the Northern Hemisphere's summer and autumn, major consumers including the United States, India, Europe, Japan, Korea and Southeast Asia are all set to experience declines for the year as a whole.

Renewable electricity generation is projected to grow by almost 7% in 2020, squeezing conventional generation. Long-term contracts, priority access to the grid and sustained installation of new plants are all underpinning strong growth in renewable electricity production. The decline in electricity demand combined with a rise in renewable supply has accelerated the squeeze on coal, gas and nuclear power. Coal-fired generation is estimated to fall by around 5% in 2020, the largest decrease on record, bringing it back to levels last seen in 2012. Nuclear power generation is set to decline by around 4% in 2020, affected both by the pandemic and

lower capacity availability, especially in the first half of the year. China was the main exception to this: its nuclear output increased by about 6% thanks to new capacity coming into service. Gas-fired electricity generation is projected to fall by 2%, its decline cushioned by lower natural gas prices enabling it to take market share away from coal, particularly in the United States and Europe. Overall, electricity generation-related CO₂ emissions are expected to fall by 5% in 2020, a much bigger decline than the forecast decline in global electricity demand.

Wholesale electricity prices have plummeted in 2020. Falling demand, lower fuel prices and the increase in renewable generation units with zero marginal costs have dragged down prices. The IEA's wholesale electricity market price index, which tracks price movements in major advanced economies, shows an average price decline of 28% in 2020, after having already fallen by 12% in 2019.

Following the shock of 2020, we expect a modest rebound in 2021. With the recovery of the global economy in 2021, global electricity demand is expected to grow by around 3%. This rebound is rather low compared with 2010, the year following the global financial crisis, when electricity demand grew by 7.2%. The increase in demand is expected to be driven by emerging and developing economies, particularly China and India.

The growth of renewables should remain the lead story in 2021, but coal is expected to bounce back. Electricity output from renewables, particularly wind and solar PV, is expected to continue to set new records in 2021, expanding their market share to 29% from 28% in 2020. Nuclear power is also set for growth of 2.5% owing to a rebound in France and Japan and new plants coming online in China and the United Arab Emirates. In advanced economies, the growth of renewables and nuclear will continue to shrink the space remaining for fossil fuel generation. Natural gas is likely to be impacted more than coal as a result of an assumed rise in natural gas prices. In emerging and developing economies, demand growth is projected to outpace increases in renewables and nuclear, leaving some room for coal and gas generation to expand. The expected net result globally is that coal-fired generation increases by around 3%, while gas-fired plants increase output by roughly 1%. This would lead to a rise in CO₂ emissions from the power sector of around 2% in 2021.

Conclusion.

In conclusion we can say that the current level of competition allows market participants to commit violations of antitrust laws, with the means of market monitoring and administrative proceedings on the facts of violation being insufficient to work out this issue. So, investigation, prosecution and upholding decisions made by the courts require a significant amount of resources. Therefore, it is necessary to solve the issue by establishing an institutional framework that allows arranging the conditions of market entry for new entrants and limiting cases with abuse of dominant position in the markets. This requires the development of new and improvement of existing regulations in the electricity sector. Some progress in this area has already been achieved, so the FAS developed performance standards of network organizations in the technological connection sphere¹⁴ aimed at complying with consumer rights and legislation on electrical energy that will allow avoiding violations committed by natural monopolies by the implementation of technological connection to electric grids.

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ЭЛЕКТР ЭНЕРГИЯСЫ НАРЫҒЫНДА БӘСЕКЕЛЕСТІКТІ ДАМУ

Аңдатпа

«Электр энергетикасы туралы» заңның қабылдануы нәтижесінде қалыптасқан электр энергетикасы нарықтарындағы бәсекелестік қатынастарды дамыту проблемасы талқыланады, оған сәйкес электр энергиясын беру және сатып алу қызметін біріктіруге тыйым салынады. Автор электр энергиясының бөлшек және көтерме сауда нарығындағы монополияға қарсы заңнаманы бұзу түрлерін зерттеп, электр энергетикасы нарығындағы бәсекелестік ортаны одан әрі дамыту туралы қорытынды жасайды.

Негізгі реформалау идеялары ретінде акционерлеудің, жекешелендірудің, салалардың өнімділігі жоғары типтерімен консолидациялаудың (мысалы, алюминий өндірісі), электр энергетикасы үшін жабдықтар өндірісін қосу арқылы өндіріс тізбегін кеңейтудің әртүрлі схемалары ұсынылды. Бұл жобалардың көпшілігі жеке акционерлердің мүдделеріне нұқсан келтіру немесе қоғам мүдделеріне қайшы келу салдарынан қабылданбады.

Түйінді сөздер: *электр энергетикасы, салалық заңнама, бәсекеге қабілетті нарық құрылымын дамыту, электр энергиясын өлшенбейтін тұтыну, теңгерімді саясат.*

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РАЗВИТИЕ КОНКУРЕНЦИИ НА РЫНКЕ ЭЛЕКТРОЭНЕРГИИ

Аннотация

В статье рассматривается проблема развития конкурентных отношений на рынках электроэнергетики, которые образовались в результате введения в действие закона «Об электроэнергетике», согласно которому запрещается совмещать деятельность по передаче и купле-продаже электроэнергии. Автором рассматриваются виды нарушений антимонопольного законодательства на розничном и оптовом рынке электроэнергетики и делаются выводы о дальнейшем развитии конкурентной среды на рынках электроэнергетики.

В качестве основных идей реформирования были предложены различные схемы акционирования, приватизации, объединения с высокодоходными видами производств (например, производство алюминия), расширение производственной цепочки за счет включения производства оборудования для электроэнергетики. Большинство этих проектов было отклонено из-за ущемления интересов частных акционеров или противоречия интересам общества.

Ключевые слова: электроэнергетика, отраслевое законодательство, развитие конкурентной рыночной структуры, потребление электроэнергии, сбалансированная политика.

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КҮН ЭНЕРГИЯСЫНЫҢ ФОТОЭЛЕКТРЛІК ТҮРЛЕНДІРГІШТЕРІ БАР ҚОНДЫРҒЫЛАРДЫҢ ЭНЕРГИЯ ТИІМДІЛІГІН АРТТЫРУ ЖОЛДАРЫ

Аңдатпа

Бұл мақаланың негізгі мақсаты-фотозлектрлік панельдердің тиімділігін арттыру және қызмет ету мерзімін арттырудың бұрын жасалған маңызды әдістеріне шолу жасау. Сонымен қоса жұмыста күн тұрақтарында немесе жеке қондырғыларда орналасқан стационарлық күн фотозлектрлік модульдерінің көмегімен жүзеге асырылатын күн фотозлектрлік қондырғының тиімділігін арттыру туралы шешім ұсынылған. Күн фотозлектрлік панельдердегі сәулеленуді жоғарылату үшін ұсынылған