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"The Political Economy of Russian Energy Policy:
Evolution and Performance After Market Transition"

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THE POLITICAL ECONOMY OF RUSSIAN ENERGY POLICY: EVOLUTION AND PERFORMANCE AFTER MARKET TRANSITION

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Abstract

The present study examines the transformation of Russian energy policy ad its performance after market transition. On the basis of historical policy review, it reveals that environmental conservation in energy industry has been repeatedly specified in Russian energy policy after the 1990s whilst its focus has still descended to quantitative expansion of hydrocarbons. In this context, this paper explains this situation from the perspective of coordination mechanism such as market and government. Despite a series of liberal policies during market transition, it becomes clear that Russian energy market has not been completely liberalised in terms of price and privatisation and retained control of the government, whilst the process of energy policy formation and implementation has been highly politicised, especially since the 2000s. This paper also derives some characteristics of Russia in those circumstances, such as an existence of strong state monopoly, recognition of energy as public goods, and environmental incompatibility with the existing growth model, which are raised as propositions given to Russian energy policy and challenges to be overcome for its future sustainable growth.

Keyword: Russia, energy policy, market, government, transition

JEL classification: P28, P52, Q32

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Introduction

Russia is one of the largest countries in terms of its surface area and natural resources. When it comes to oil and natural gas production and export, Russia has occupied one of the top places and has been regarded as an important player in international energy markets. Given this specific background, it can be considered that an importance of energy resources such as oil and natural gas as a policy tool is extremely high, compared to other industries in Russia.

Meanwhile, energy industry - a core part of the Russian economy - is also a leading source of environmental pollution, which accounts for 50 percent of domestic air pollution, 20 percent of surface water pollution and 70 percent of CO_2 emissions[1] (Ministerstvo Energetiki RF, 2009). On the back of this situation, it has been repeatedly pointed out that environmental preservation in energy industry is not negligible in Russian energy policy after starting transition towards a market economy in the 1990s. However, main axis of Russian energy policy has still been on quantitative expansion whilst environmental protection in energy industry has almost been ignored.

Similarly, although it has been well recognized that energy production and consumption are one of the main causes of global environmental problems, energy and the environment were rarely linked within the analytical framework of studies on Russian energy policy. In this regard, this paper is based on the perspective of policy analysis that connects the

[1] GHG Emissions of Russia have been the fourth largest in the world, but even if economic scale is equalised, emissions per unit of GDP in Russia are also at the worst level. For the details, see the following link; *https://ria.ru/20190904/1558266864.html*. (in Russian)

above two[2] and examines the transformation of Russian energy policy and its performance after market transition in the 1990s.

Also, previous studies on Russian energy policy have so far focused on the perspectives of microeconomics, macroeconomics, and geopolitics. However, as Strange (1988) indicated 'Government, companies, markets; there are the three key players in the oil business game. For the most part, in political economy, it is legitimate – and certainly convenient – to simplify the concept of an authority-market nexus by talking in shorthand of the state-market relationship (Strange 1988, p. 194)', this paper analyses Russian energy policy from the perspective of political economy, with a specific focus on the market and government.

. Throughout the political economy analysis of Russian energy policy, this paper then then explains what factors make Russian energy policy quantity-oriented whilst environment-disoriented. Finally, this study also examines some characteristics of Russia in those circumstances, which are propositions given to Russian energy policy, in other words, challenges to be overcome for its future sustainable growth.

1 Literature review on Russian energy policy

Energy and its policy are in principle discussed in the area of public policy, but quite a few studies have been conducted from various disciplines such as economics and politics. Though more details are described later, this paper

[2] It has become the international trend that combines and balance energy and the environment. For instance, Economics of Energy & Environmental Policy (EEEP) - one of the relatively newly born journals published by the International Association for Energy Economics (IAEE), which is the world's largest energy economics society- set its target on policy analysis in the interface between energy and the environment.

takes a position to analyse energy policy with a specific focus on coordination mechanism (market and government) and its influence on energy policy in Russia.

A fundamental feature of Russian energy policy is 'development expansion policy' (Oxensherna 2012, p.96), which has consistently been at the centre of Russian energy policy system since the Soviet era, especially after the 1950s.Simultaneously, domestic and international situations of each era have also been reflected in its energy policy. In this context, there exist three approaches to analyse its energy policy, as detailed in this chapter.

First, approaches from geopolitics and international politics put focus on energy exports and insist that the Russian government implements energy policy with the aim of gaining diplomatic power through its export (Bligin 2011, p.126). For example, Stulberg (2007) emphasises the influence of Russian diplomatic strategy and energy industry on its foreign economic policy. Shiobara (2007) also analysed cross-border pipeline in the framework of diplomatic strategy and international politics and pointed out that Russian energy exports through the pipelines has enhanced its geopolitical status. Generally, this type of Russian energy export has been evaluated as a tool of acquiring foreign currency and thus boosting Russian economy since 2000 (Nekrasov and Danilina, 2004).

Second, there are research groups approaching Russian energy policy from a macroeconomic perspective. These studies explained that Russia's economic growth model and its federal budget severely dependent on energy resources had its macroeconomic structure more vulnerable to external conditions such as changes in global energy market conditions (Kuznetsov, 2013). On a related note, development of other industries such as information technology (IT) and biotechnology (Fetisov, 2008) and increase in renewable energy in its total primary energy supply (Kozlova, 2015) are listed as measures to reduce its dependence. It has also been indicated that

rent revenue to governmental budget tends to be used less efficiently than consumers' additional income through a relative decrease in energy prices (Volkonskii and Kuzovkin 2001, p. 86), and Skripnikova and Postanogova (2015) also pointed out that capital inflow concentrated into its hydrocarbon resources industry rather than manufacturing sectors was an unsolved issue in terms of economic structure reform.

However, Kuboniwa (2011) noted a strong correlation between oil prices and Russian domestic manufacturing industry, which he called not Dutch disease (expansion of resource export leads to soaring local currencies and rising wages, which results in weakening domestic manufacturing sectors), but Russian disease. On the same point, Gaddy and Ickes (2005) pointed out that Russia's abundant resource rent contributed to the development of its manufacturing industry, using the word - addiction (Tabata 2012, p. 145). Here in other words, resource rents are regarded as a positive economic effect which are distributed to domestic manufacturing companies and consumers in the form of subsidy like cheap energy prices.

Third, there is a group of studies that capture energy policy from a microeconomic viewpoint, which tries to deciphering an efficiency of energy-producing companies with a particular focus on the relationship between the government and enterprises. This pays attention to, as Goldman (2008) implied, 'a story about discovery, conspiracy, corruption, wealth, wrong judgement, greedy, concession, relatives and power (p. 16)' of the government and companies over energy resources in Russia. For example, Goldman (2008) and Grace (2005) focus on reorganisation and industry trends of Russian oil and gas industry during its transition period towards market-based economy, whilst Lane (1996) and Hoffman (2002) analyse changes in the formation of rulers and systematic transformation.

Also, Hellman, Jones and Kaufmann (2000) highlighted a large influence of private interest groups on the government (a characteristics of Yeltsin era), using illegal methods like changing rules of the game, and a rent-

seeking behaviour of transferring resources from the government to individuals and corporate groups, which is called ‘state capture’. - Alternatively, after the Putin administration's first period (early 2000s), the government tends to use power beyond the law, and this is called ‘business capture’ in which rents are illegally acquired by the government (Hanson and Teague, 2005). Here, a particular focus has been put on changes in rulers of Russian energy industry, their interests in energy rents, and utilisation of private companies by the government for strengthening its fiscal base. In this context, it has often been mentioned the low efficiency of energy production companies, especially its state-owned ones[3].

However, these previous studies have not put enough focus on coordination mechanism related to energy policy in Russia. These studies were also limited to analyse and evaluate only a part of the Russian energy policy, since they could not grasp its whole picture and transformation during the transition process. In other words, these previous studies have not been fully explainable for questions why the quantitative expansion in energy production is always prioritised over environmental protection, which has become more obvious as an outstanding issue in its energy policy. To fully unveil the above situation, this study then focuses on how coordination mechanisms such as market and government influences on Russian energy policy, after closely examining long-term dynamics of its energy policy and system changes.

[3] Energy state-owned enterprises (SoEs) such as Stat Oil (Norway) and Petronas (Malaysia) show its high efficiency. As Sokolov (2015) specified, however, government ownership does not adversely affect corporate efficiency, but Russia's problem is that 90.2 percent of total hydrocarbon resource production is occupied by vertically integrated enterprises whilst the United States, where the ratio of SMEs to total production accounts for 40 percent.

2 Energy policy and its performance in Russia

This paper takes a bird's-eye view of what Russian energy policy targets and what kind of result it has generated. Then first, this paper touch on the Soviet era as an initial condition of present Russian energy policy.

2.1 Energy policy in the Soviet Union

Soviet and Russian energy resource development dates back to the Baku oilfields at the Imperial Russian era where energy resources were added to the list of important commodities as a means of achieving further development of Tsarist Russia. Simultaneously, however, there was a considerable lack of energy development technology and capital (Gudrich and Lantemann, 2013). Then, the Russian Empire encouraged an entry of Western energy companies through softening foreign capital restrictions, which resulted in a rapid increase in crude oil production during the 1870s to the 1980s.

After that, production volume fell sharply due to the influence of nationalisation of Baku assets in 1921[4] when Vladimir Lenin launched a new economic policy and occupation of the Baku oil field by German army around the time of WWII. With the development of the Volga Ural oil field and the Romashkino oil field discovered in 1948, however, oil production recovered in a stead manner. It is to note that domestic production at that time was only enough to meet the demand of its domestic refining industry[5], and that coal and hydropower were considered important as primary energy sources whilst contribution of oil and gas was not giant.

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[4] Confiscation (nationalisation) of private property by the Bolsheviks led to the repulsion of foreign oil companies such as Royal Dutch Shell and Nobel family.

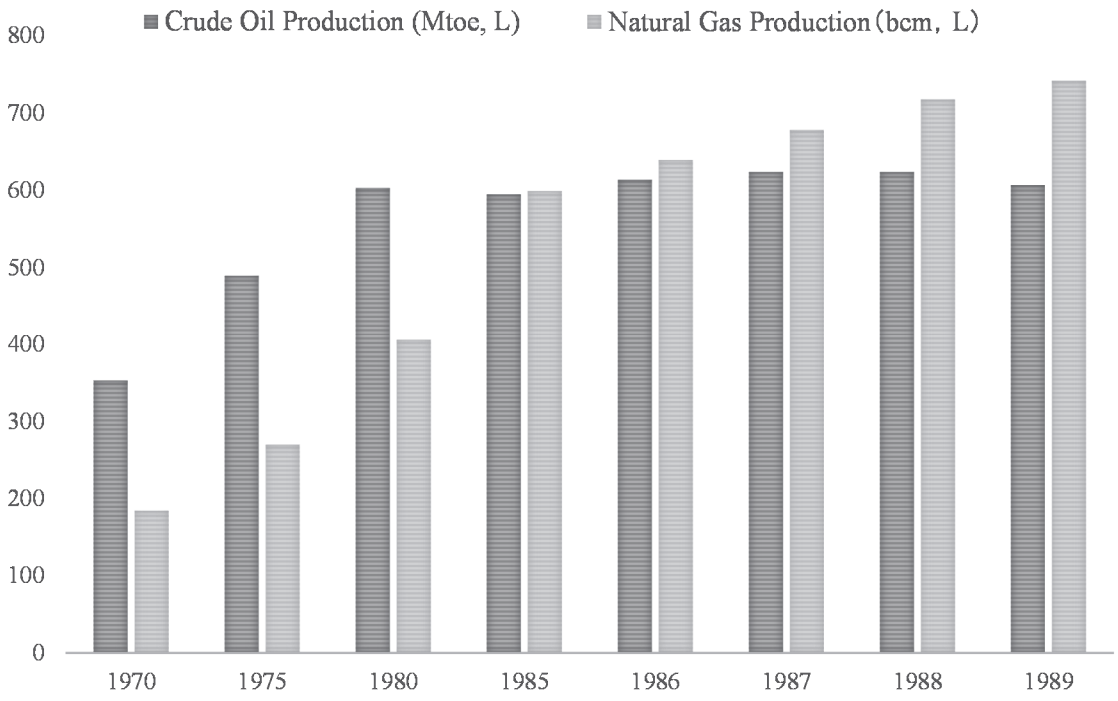
[5] In fact, the Soviet Union was a fuel importer from the perspective of the energy trade balance until around the 1950s.

In fact, oil and natural gas came to the spotlight from policy makers of the Soviet Union in the late 1950s, when energy resources were deeply embedded in the centre of the Russian economy. There was an energy revolution on this backdrop from coal to oil that occurred in other developed countries where motorisation and development of heavy chemical industries occurred immediately. This resulted in rapid production and export of oil and gas as a main target of Soviet energy policy.

There, industrial investment for further expansion of production and the establishment of new factories went far beyond the technological innovation. During the implementation of the Fifth Five-Year Plan from 1955, the infrastructure of heavy industry, especially the petroleum industry was prioritised for development purposes. Brezhnev, who took the position of the first secretary of the Soviet Communist Party in 1964, also described energy resources as 'a panacea to solve major problems of the Soviet Union such as strengthening military power, maintaining/improving living standards of residents, improving relations with the West and stabilising the Soviet area' (Fujisawa 2019, p. 4) and turned to further production and export expansion. Thanks to this continuous quantitative expansion strategy with the explicit aims to maximize energy production and then export for profits, new commercial fields were discovered in Western Siberia one after another in the 1960s[6], and then a subsequent increase in the production of these fields was materialised from the mid-1970s to the late 1980s (Figure 1).

[6] In 1954, the first oil field in Western Siberia was discovered in Kolpashevo of Tomsk Region, and in the same year the Soviet Union became a net oil exporter to Eastern European countries. Then, the Ust-Balyk oil field was discovered in 1961 and the Samtrol oil field in 1965.

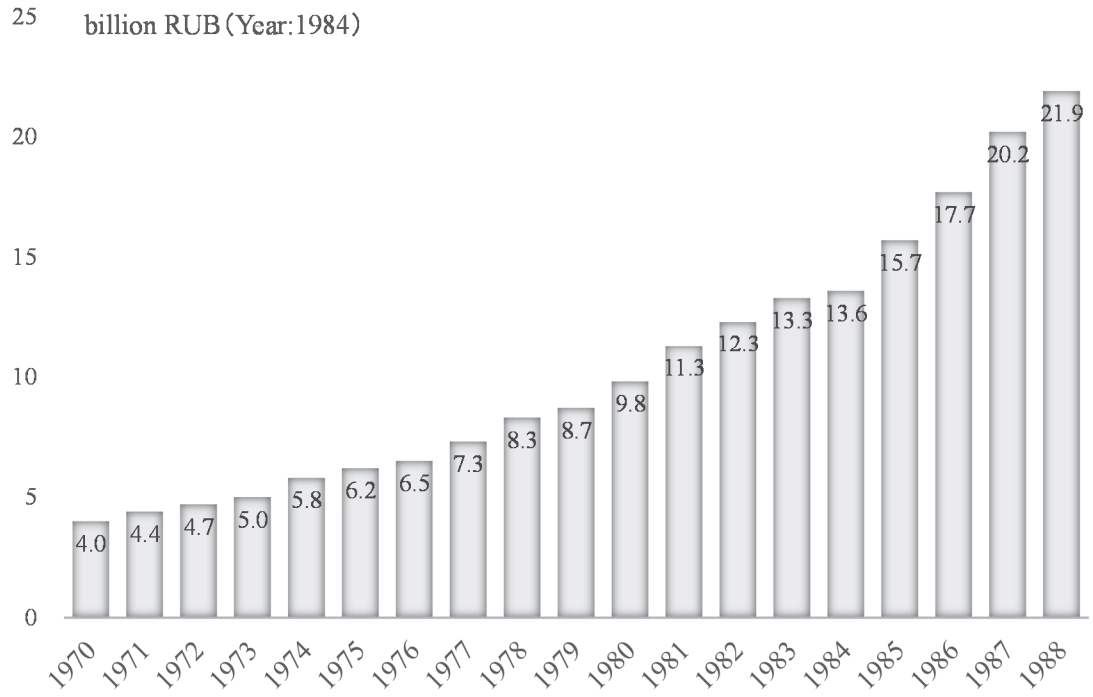
Figure 1. Crude oil and natural gas production in the Soviet Union



Source: compiled by the author with reference to U.S. Department of Commerce, State Commission on Statistics of the USSR and Information-Publication Centre (1991), pp.66-67.

Simultaneously, the ratio of crude oil export to its production, which was only 5.2 percent in 1955, exceeded 20 percent in 1960 and continued to rise thereafter. There was a dual purpose behind such energy export growth. On the one hand, energy exports at that time were rather political like keeping influence over communist zone whilst weakening ties of Western countries, than earning economic profit (Gudrich and Lantemann, 2013). Alternatively, the Soviet Union had a chronic shortage of capital and equipment for developing energy resources, so the Soviet Union aimed to earn foreign currency through exporting energy resources to industrialised economies with high demand for energy. This ended up making the Soviet Union affordable to purchase relevant facilities and invest for further production (Figure 2).

Figure 2. Energy investment in the Soviet Union



Source: compiled by the author with reference to U.S. Directorate of Intelligence (1990), p.17.

Under the planned economy, oil and natural gas development were expanded since the 1950s, but after nationalization of the Baku oil field in 1921, this type of exploration was conducted in the oil industry sector by the “Ministry of Geology (Mingeo)” and “State Geological Committee (Gosgeolkom)”, whilst development, production and transportation by the “Ministry of Oil and Gas (Minneftegazprom)”, refining by “Ministry of Petrochemical Industry (Minneftekhimprom)”, sales by “State Supply Committee (Gossnab)”. Energy resources-producing companies were obliged to achieve quantity norms given by the Ministry of Oil and Gas, and refineries by the Ministry of Petrochemical Industry as well. Such top-down involvement of government succeeded in achieving its policy objectives to increase energy production and exports by reflecting political intentions.

Additionally, energy was considered as a kind of public goods in the socialist economic system, and thus its production, transportation and related labour costs were also kept low, which enabled the Soviet Union to supply its energy abroad at a lower price than international market price. In fact, the Soviet Union exported to communist countries and Europe at approximately a half price, compared with the Middle East (Gudrich and Lantemann, 2013).

As described, under the Soviet socio-economic system, the quantitative expansion policy based on the five-year plan made it possible to increase energy production, and through its export the Soviet foreign could acquire foreign currency. This cycle could support the mechanism of further production and export whilst environmental costs continued to be ignored.

2.2 Energy policy and its performance in Russia after market transition

With the start of market transition after the collapse of USSR, Russian economy fell into the midst of economic chaos. The transformation from the centrally planned economy to the market-oriented economic system was started in the hand of the shock therapy led by the West, generated hyperinflation and crash of its national economy. During its economic turmoil due to the transition, budget constraints of Russian domestic companies became harder[7], which fell into arrears of their payments to energy-producing companies.

Additionally, a decrease in new investment by domestic companies and their industrial output reduced energy demand itself, which also diminished

[7] Russian central bank tightened its monetary policy to regulate inflation associated with price liberalisation, but financial constraints of domestic companies increased, coupled with the reduction in subsidies.

the willingness of domestic oil and gas companies to invest for further energy development. As described above, Russian oil and natural gas sector has been at the core of its economy since the Soviet era, but oil production in particular fell to about 60 percent of the 1980's level (Figure 3).

Under these circumstances, Russia's first energy strategy after its system change was devised and then implemented. The Resolution of the Government of the Russian Federation No.26 '*Russia's basic policy on energy policy under the new economic conditions'* was approved in September 1992, followed by the adoption of the decree of the President of the Russian Federation No.472 *'Basic policy of structural reform and the energy strategy of Russian fuel and energy complex up to 2010'*.. Based on both decisions, *'Energy strategy of Russia until 2010 - basic provisions'* was formulated.

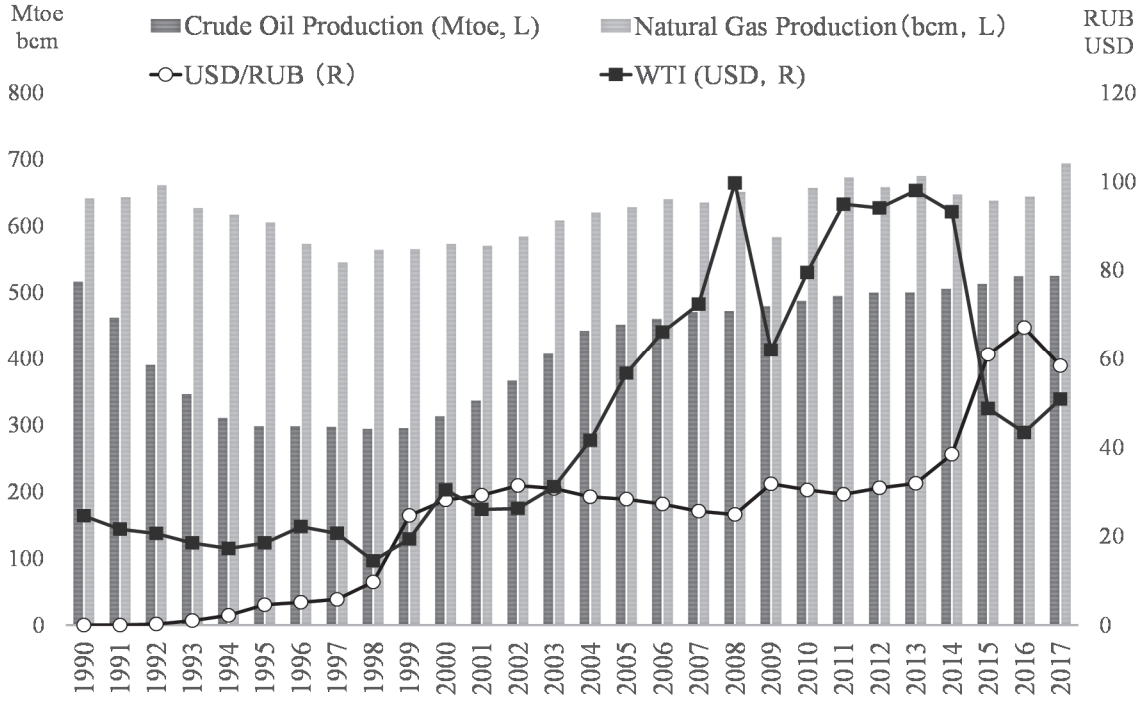
This first long-term strategy of Russia only pointed to the direction of its energy policy with no concrete numerical targets specified for production and export. However, there was a clear awareness of further energy production expansion, where one of the most important policy issues was to eliminate the lack of investment in its domestic energy sector, which had continued after the transition process started. Simultaneously, priority was given to an item for increasing efficiency of energy consumption[8], which was formulated in April 1996 as the Russian Federation Law No. 28 *'On energy saving'*. Unfortunately, the law remained declarative whilst most contents were ignored (Millhone, 2010).

[8] 1992 Basic concept, which forms the basis of this strategy, included several national programmes (natsionalinaia programma), which mainly focused on improving energy efficiency, energy saving and improving the quality of energy supply. For instance, *'National Programme on Energy Saving'* aimed to save 500 to 700 thousand tonnes of oil equivalent per year until 2010.

However, situation surrounding Russia's energy resources and policies drastically changed within a few years. A growth trend in global crude oil prices since the early 2000s and a relative decrease in dollar-valued production costs due to the devaluation of rouble could restore the Russian energy production (Figure 3).

Surrounded by rising international energy prices, *'Basic energy strategy regulations by 2020'* was formulated on 23 November 2000 and then on 28 August 2003, the Resolution of the Government of the Russian Federation No. 1234 *'Russian energy strategy until 2020'* was adopted. Priority was given in this strategy to new development of Yamal Peninsula, Eastern Siberia, the Far East and Barents Sea continental shelf, and realisation of economic growth through increasing energy exports. In other words, Russian energy policies kept its primary characteristics to seek further quantitative expansion after starting transition towards a market economy.

Figure 3. Changes in oil and gas production in Russia, exchange rate and international oil price after 1990

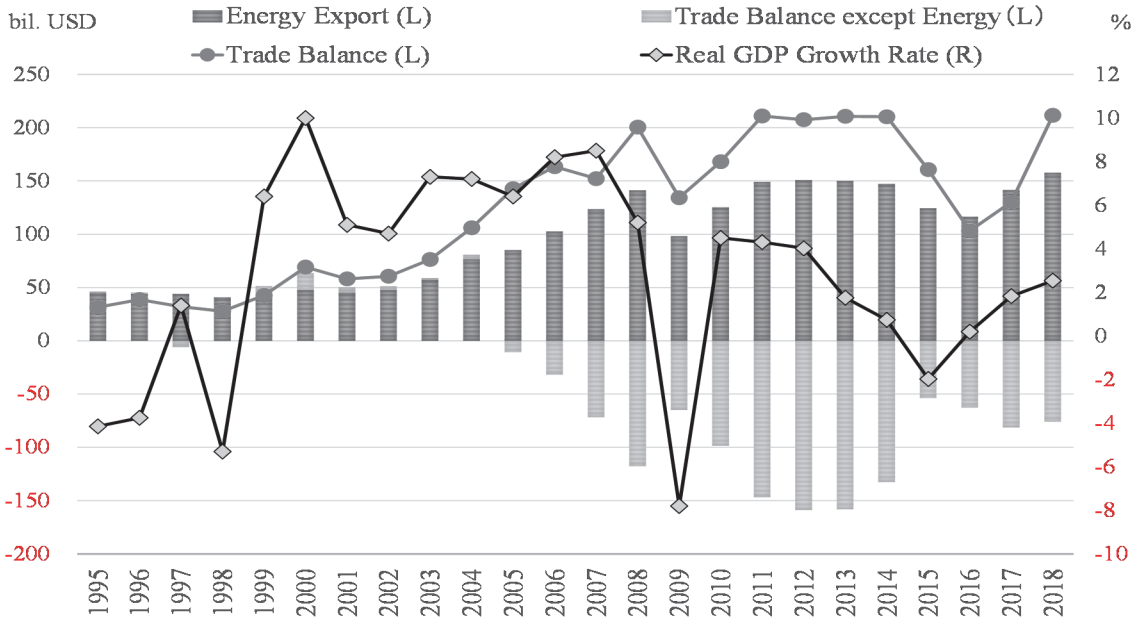


Source: compiled by the author with reference to Rosstat (2018).

In fact, energy export during this period increased significantly (Figure 4), which created a boom that had not existed during the transition period and became a driver of economic growth as the 2020 energy strategy aimed. Additionally, Russian energy companies imported machinery and equipment from Europe and the United States for further maximising its production, by using its foreign currencies acquired from its energy exports. Figure 4 also indicates that energy resources played a crucial role in compensating trade imbalance of the Russian economy.

Though there has been a need to transform its economic structure dependent excessively on energy resources, the occurrence of global financial crisis brought to Russia the need for economic modernisation more strongly. Russia's trade surplus narrowed due to a sharp drop in energy prices reflecting the stagnation of the world economy, and a sharp depreciation of rouble worsened domestic consumers sentiments. The decline in energy prices also accelerated capital flight from Russia, which hit its domestic economy from the viewpoint of consumption and investment.

Figure 4. Real GDP growth rate, trade balance and energy exports of Russia



Source: compiled by the author with reference to Rosstat (2018).

In fact, as Mizobata (2013) specified as one of the sources of modernisation policy in Russia, it was ‘a sense of crisis of Russia's weak competitiveness in the world economy...excessive dependence on hydrocarbon resources... vulnerable industrial structure (Mizobata 2013, p.21)’. Similarly, escape from its energy mix centred on hydrocarbon resources (in other words, conversion to renewable energy sources) was highlighted in Dmitry Medvedev’s administration ‘by promoting energy saving as one of the pillars for modernisation, which was explicitly linked with competitiveness improvement and climate change policy (Tokunaga 2012, p.183)’. In short, there became a stronger demand for modernisation as a measure to solve problems on energy, environment and economy and as a pathway towards the realisation of a low-carbon society.

New and comprehensive energy policy were formulated as *‘Russian energy strategy up to 2030’* in November 2009. The goal of 2030 energy strategy is to ‘improve the quality of life of people and strengthen their international economic status by maximising efficient use of natural resources and economic growth (Ministerstvo Energetiki RF 2009, p.1)’. The 2030 energy strategy took over the outline of the 2020 energy strategy (increased production/export volume and realisation economic growth), whilst added the following four prioritised areas; 1) energy security, 2) energy safety, 3) budget efficiency of energy sector, 4) environmental protection in energy sector) and target settings to be achieved for each item.

At the same time, In June 2008, the decree of the President of the Russian Federation No.889 *‘On some measures to improve energy and environmental performance of the Russian Federation’* was adopted in the context of economic modernisation, and its goal was set to decrease energy intensity in Russia by 40 percent, compared to 2005. In addition, Russian Federal Law No. 261 *‘On energy saving, energy efficiency improvement and a particular law revision of Russian Federation’* revised the above-mentioned law on energy saving in November 2009, and for its

implementation, the *'Plan for energy saving and energy efficiency improvement measures in Russian Federation'* was announced in December 2009 and '*Federal programme for energy saving for national energy efficiency improvement by 2020*' was formulated one year later.

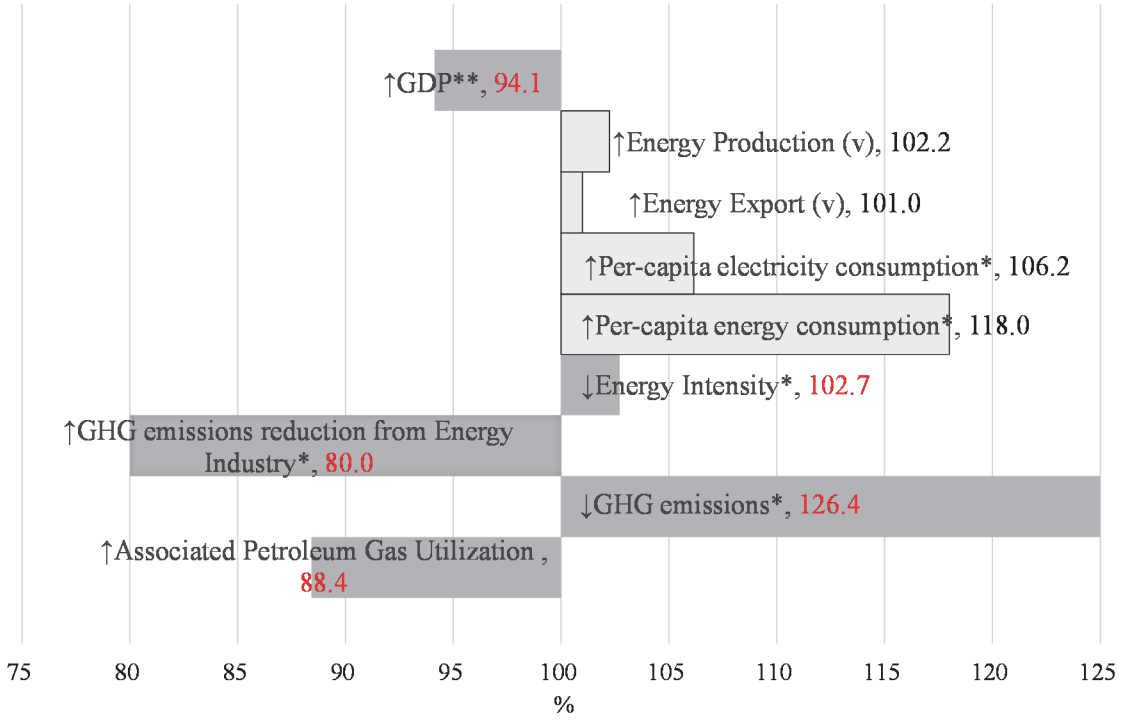
There, the goal setting of improving Russia's energy intensity by 40 percent compared to 2005 by 2020 was reaffirmed whilst new targets were also set for improving its energy intensity by 7.4 percent during 2011-2015, 13.5 percent by 2016-2020. Simultaneously, the goal to be achieved in the 2030 energy strategy was to de-hydrocarbonise its energy mix through increasing share of renewable energies up to 4.9 percent by 2030[9].

Such domestic policy trend is thanks to the fact that climate change countermeasures become of crucial importance in Russian energy policy framework. It was also around this time that the Climate doctrine (Klimaticheskaya doktrina) - the first-ever document to articulate the Russian government's view on climate change - was published. On this point, Saneev and Maysyuk (2010) pointed out that common environmental policies in Russian energy sector are one of important mechanisms to implement climate change countermeasures. Taking into consideration the fact that climate change countermeasures (originally under the jurisdiction of Ministry of Environment as an environmental policy) are ineffective, unless measures are taken from an energy policy side since its main cause is fossil fuels such as oil and gas (Takahashi, 2017), it can be evaluated that Russian energy policy has the same direction as an international environmental trend. Whilst its quantitative expansion target for energy production and export was maintained in Russian energy policy as before, the new element such as environmental protection was added and increased its presence within the policy framework.

[9] https://www.pv-magazine.com/2017/04/05/irena-russia-has-potential-to-double-2030-solar-target-to-5-gw/

However, policy review conducted five years after the implementation of the 2030 energy strategy demonstrated that most of its main targets on environmental protection were not achieved (Figure 5). It can be considered that policy targets such as energy production/export volume and GDP growth, all of which were inherited from the previous 2020 energy strategy, and newly added energy security was achieved though GDP fell below the target just because of a temporary factor. Unfortunately, it can be also seen that the difference between the target and actual value was quite big for all items in environmental protection in Russian energy sector.

Figure 5. Ratio of actual value to ES 2030 target (%)



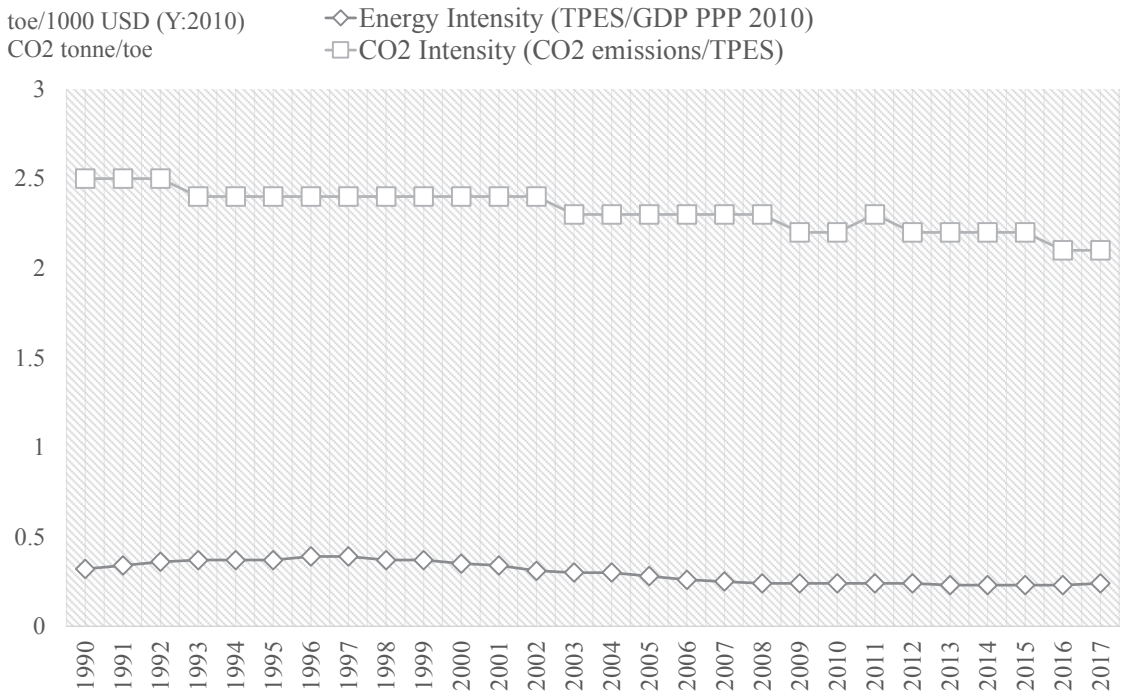
Note: *Reference year - 2005. **Reference year -2008. ↑ means improvement by 100 or more whilst ↓ describes improvement by 100 or less.

Source: compiled by the author with reference to relevant documents of Ministerstvo Energetiki RF, Rosstat (2018), World Bank (2016).

From a longer-term perspective, increase in energy efficiency (decrease in energy intensity) and conversion of its energy mix to be renewable-oriented were in a state of poor improvement, though these points have been repeatedly specified in Russian energy policy. For instance, there has been only a slight improvement in Russia for 30 years after transition started on energy intensity (total primary energy supply per unit of GDP) and CO_2 intensity (CO_2 emission per total primary energy supply), both of which are representative indicators of economic energy efficiency (Figure 6).

Besides, energy mix has not been converted to de-hydrocarbonised/ renewables-oriented, rather it can be stated that Russia's energy mix has hardly changed for 30 years after the start of its system change. Figure 7 shows that 90 percent of its energy mix continues to depend on hydrocarbons whilst renewable energies including wind, hydro, solar and biomass, also remains at around 3 percent of the total.

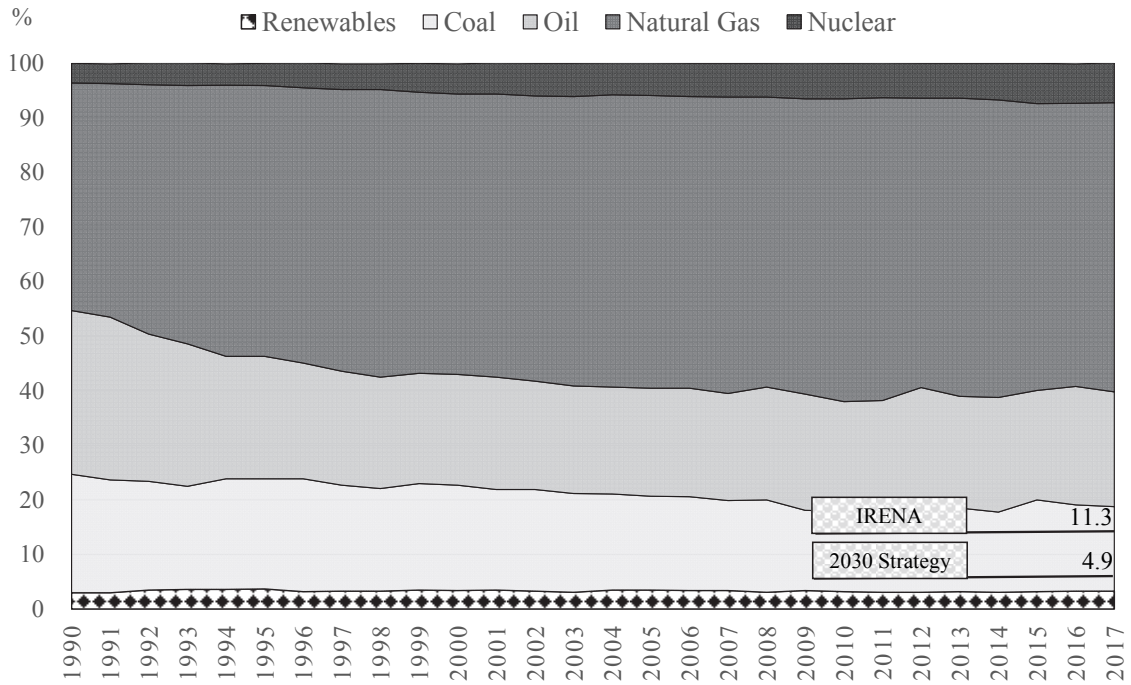
Figure 6. Energy and CO_2 intensity in Russia after 1990



Source: compiled by the author with reference to IEA (2020), UNFCCC (2020).

In short summery, as we have already seen, Russian energy policy was consistently aimed at maintaining its development expansion route after its system change. Also, the increase in energy efficiency (decrease in energy intensity) and energy mix transition to de-hydrocarbon resources/renewable energies continued to be set as policy targets, which has come to be focused especially in the context of economic modernisation.

Figure 7. Energy mix in Russia after 1990



Source: compiled by the author with reference to IEA (2020), IRENA (2017).

3 Russian energy policy from market and government perspectives

As reviewed performance of Russian energy policy in previous chapter, expansion of energy production and export as well as economic growth have basically been achieved, although policy targets on energy efficiency and energy mix have been underperformed. Then, this chapter analyses this

asymmetric performance of Russian energy policy, through putting a specific focus on how the coordination mechanisms such as market and government influences on the implementation of energy policies/strategies. At first, this chapter pays attention to price mechanism in the market, followed by the role of government in terms of domestic market opening/closure against foreign capital.

First, a drastic change in the way of using resources, including energy in Russia occurred due to its tax reform and reform of the planning system in the early stage of market transition, where state system and ownership relationship was changed, and especially in 'the concept of licence system for resource utilisation was introduced (Antonova 2008, p.2) [10]'.

In Russia, where economic transition started in the early 1990s, there also started the process of reorganisation of ministries and privatisation in the Oil, Gas and the Mining sector [11]. Concurrently, domestic crude oil

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[10] Law on underground resources enacted on 21 February 1992 provides legal and economic basis for the comprehensive and rational use of underground resources, and the concept of licences and mining areas was introduced for the first time.

[11] In the Oil, Gas and the Mining sector, relevant ministries and institutions were reorganised to Ministry of Fuel and Energy (Mintopenergo). Presidential Address to the Federal Assembly generated a lot of vertically integrated oil and gas companies Rosneft in 1991, Lukoil, Yukos and Surgutneftegaz in 1993, and finally their number reached to 14 in 1995. Using the scheme of Shares for loan auction, ownership of vertically integrated oil and gas companies transferred from government to oligarch. In the Gas industry, on the other hand, the Soviet Ministry of Gas Industry was integrated into the Ministry of Petroleum Industry in 1989 when companies of the Ministry of Gas Industry were also reorganized, and Gazkonzern (a predecessor of Gazprom) was established. Gazkonzern was demutuarised by the decree of the President of the

prices became to be basically decided by an international energy market after September 1992 and then were officially liberalised in 1995. However, natural gas price was maintained by the government.

Initially, Ministry of Energy (at that time) decided the price, but the authority was handed over to the Russian Federation Energy Commission in 1997 and then to the Federal Tariff Service, but it has been kept low compared to the international price. As mentioned above, however, as global energy prices continued to slump until the end of the 1990s, domestic prices that were kept cheaper brought about higher production costs, which led to depress energy producers' willingness for further investment. This was struck by Federal Law No. 147 '*On natural monopoly*' enacted on 17 August 1995, in particular gas prices were approved to be held at a lower cost than overseas by the government under this law.

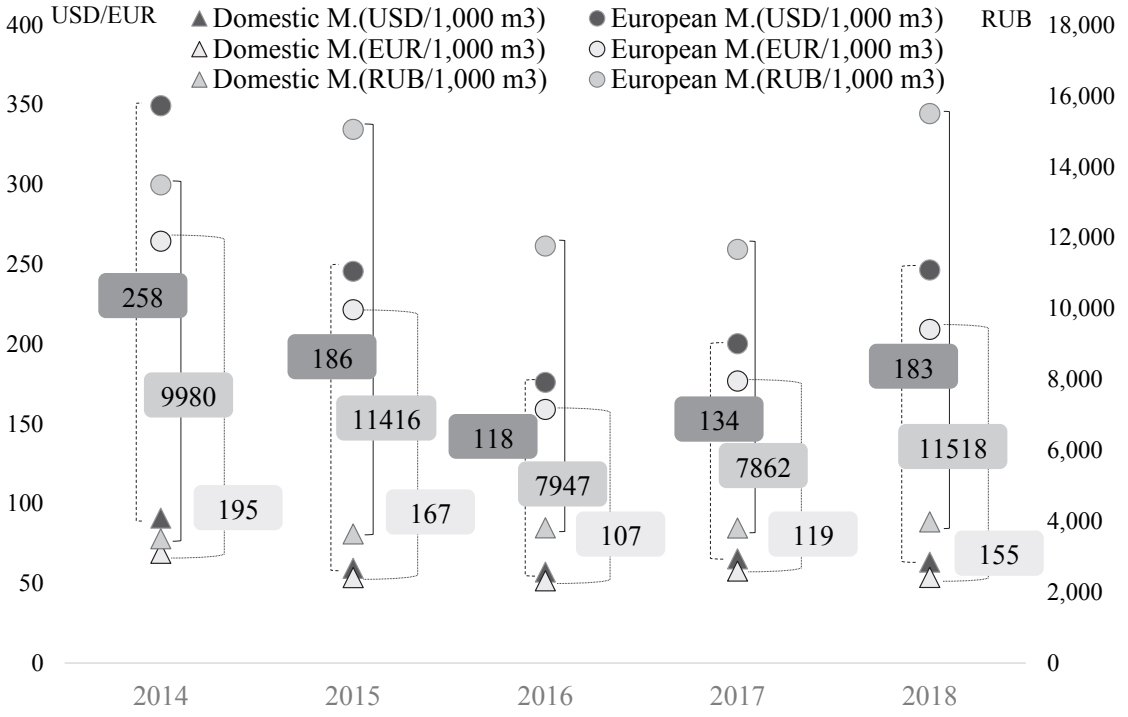
In fact, Russia's average domestic gas price for 1995-2011 was only about one-fourth of the international market price during the same period, causing a significant domestic and international price difference (Konno, 2012). Konno (2012) also pointed out that Russia finally joined the WTO in 2012 with the accession protocol in the previous year which needed final conditions for Russian government to fulfil the role of complementing future costs, profits, and investment funds for domestic gas price[12].

Russian Federation in November 1992 and the Cabinet decision of the Russian Federation in May 1993, and then privatisation started in 1995, like companies in the oil industry. However, Russian government still holds a position as the largest shareholder. This is a difference where a number of vertically integrated companies has sprung up in the oil industry and Gazprom monopolies almost the entire supply chain from exploration to sales and export.

[12] As stated above, domestic crude oil price in Russia was formally liberalised in 1995, but there was still a gap with international price. Not like domestic gas price, however, oil price was not taken as an issue because its ratio of Russia's

However, the latest data can be seen that gas price difference between Russia and abroad is not completely resolved and exists in a clear form (Figure 8).

Figure 8. Price differences in gas in Russian domestic and European markets



Source: compiled by the author with reference to Gazprom (https://www.gazprom.ru/).

The existence of such a cheap domestic energy price was an incentive measure to stop the progress of energy crisis during its economic turmoil at the time of the system change, and to promote exports for more profit with international prices in the mid-2000s when it continued to rise. Alternatively, cheap domestic energy prices did not encourage improvement of wasteful economic structure and switch of its energy mix to renewable

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total primary energy supply was small compared to natural gas and there did not exist any clear price regulation for oil in domestic market.

energies, which is generally inferior in price competition with hydrocarbons, but rather hampered these transformations. In other words, the Russian energy market after the transition of its regime was not completely liberalised in terms of price and privatisation, but rather was still under the control of the government to operate on its energy policy.

Next, this chapter focuses on the role of government in terms of domestic market opening/closure against foreign capital. As stated above, amid a sharp decline in the domestic economy and a sharp drop in energy production after its system change, a shortage of investment in the energy sector became an important policy issue. In this context, Federal Law No. 225 '*On product sharing agreement (PSA)*' was enacted on 30 March 1995. The PSA[13] stipulated by this law gave foreign investors the right to explore and develop resources in Russian domestic fields, and the product was distributed between the government and investors. After its enforcement, the situation of insufficient investment in energy sector has improved. In other words, it can be stated that the government played an effective role on the predicament of a sharp decline in energy production, reflecting its economic turmoil associated with the transition process and a shortage of investment in the country's energy sector.

However, the Vladimir Putin's administration, which was born with Boris Yeltsin's retirement, was to strengthen the government's presence in energy resources and its producers as the global energy price soared and domestic resource production recovered. Among them, in the Putin administration's second term (2004-2008) [14] , foreign capital access

[13] The system itself originated in Indonesia and was mainly aimed at attracting foreign investors in developing countries (Oda, 1999).

[14] Alternatively, a focus of the Putin administration's first phase (2000-2004) was on the dual key principle stipulated in the Law on underground resources. For more details, see Adachi (2015).

restrictions to energy resources were discussed, because they became more important for national security as resource prices continued to rise worldwide. A typical example of this was to set 'strategic deposits (strategicheskie mestorozhdeniia)'. The federal law on '*underground resources'* enacted on 21 February 1992, which was the basic framework for energy resource development in Russia after the system change, did not exclude entry of foreign capital into its energy sector. Therefore, restriction of foreign capital entry based on reserves was set up here, and the above-mentioned law was amended in 2008 to include rules on strategic deposits (oil: 70 million tons or more, natural gas: 50 billion m3 or more).

Concurrently with this amendment, a bill to restrict foreign investment in strategic areas defined by the government was developed. Under the Law on '*Concerning foreign investment procedures for enterprises important to security*', foreign capital regulations on the oil and natural gas industry as well as the nuclear and the military industry have been strengthened. At the same time, Russia's state-owned oil and gas companies, in short, Rosneft and Gazprom were exclusively provided for the development of its continental shelf including the high potential Arctic Ocean area.

Behind such a policy shift from the welcome of foreign capital through the PSA to restriction by setting the strategic deposit clause, there was the government intention to retain the right to grant licenses for development of auspicious deposits which are of crucial importance to national security, especially to give to its own companies (in particular, to SoEs) rather than foreign-affiliated enterprises[15]. Namely, the government intervention for controlling foreign capitals can be seen in an obvious manner.

[15] By the same token, state-owned companies such as Gazprom and Rosneft also hoped to obtain licences of auspicious deposits development without competing with foreign and other domestic companies.

In summary, throughout the analysis of coordination mechanism, it became unveiled that the market was distorted due to the government's arbitrariness reflected in price as well as the government's intention to emphasise national security was strengthened. Both characteristics led to the situation where Russian energy policy became highly politicised.

4 Consequences of Russian energy policy to be politicised

As unveiled in the previous chapter, energy policies haven been politicised[16] in Russia due to the fact that intensions of Russian government were reflected on energy price and thus distorted its market mechanism whilst energy security be also listed as a top priority. This chapter then focuses on what happens in Russia under such circumstance where market and government based on economy fall into dysfunction, which can be depicted as substantial explanatory factors for questions why quantitative expansion in energy production is always prioritised over environmental protection in Russia.

4.1 Existence of strong state monopoly

In general, energy policy and its planning/implementation exist on the basis of strong national monopoly[17]. As stated in previous chapter, privatisation

[16] The growth-focused will of the government and interests of monopolistic companies have a strong impact on policy choices, where its priority is given to quantitative expansion whilst policy implementation is restrained in terms of the environment.

[17] Simultaneously, economies of scale and scarcity of resources, both of which are characteristics of natural monopoly, are basically observed in energy industries. Especially, there appears natural monopoly in the gas and electricity sector where fixed costs are highly burial and large-scale production is more efficient.

of companies which started with market transition in the 1990s was partial and strengthened national intervention (or re-nationalization of ownership and establishment of the Strategic industrial law) during the time of President Putin since 2000 has left much of state monopoly in its energy sector (though there was a difference between oil and natural gas to a greater or lesser extent[18]).

In such a context, not only oil and gas related companies such as Rosneft and Gazprom but also many leading companies in Russian domestic markets tend to behave in accordance with state interests and lay source of growth on establishing relationships with the government (Mizobata, 2015). In addition, as Nakatsu (2019) also pointed out, Rosneft and Gazprom play a role as agents to build a fate community with the Kremlin for achieving the government's international foreign strategy. Indeed, achievement of national goals becomes corporate ones and interests of the government be prioritised over those of the market.

At least in its energy sector, therefore, as Bremmer (2010) pointed out, Russia is not a normal market economy, but rather state capitalism 'that bureaucrats operate skilfully, a mechanism in which the government leads the market mainly to pursue political interests (Bremmer 2010, p. 23)'. This type of phenomenon is really in contrast to the neoliberal ideology that swept the world during the transition period in the 1990s, and Cohen (2012) regarded Russia's economic system as a state- intensive model rather than a firm or household-intensive model. On this point, Mizobata (2015) also

[18] Although the proportion of private enterprises in oil production has risen since the system was changed, the proportion of Rosneft and other state-owned enterprises is still large, and the transportation pipeline is almost monopolised by Transneft (SoE). However, production and transportation of natural gas is monopolised by Gazprom barring some parts, and its network is spread to neighbouring countries by making full use of its export pipelines.

pointed out ‘Russia is an economic system that has a high degree of government intervention since the beginning of its system transformation, and state capital, its skill and quality as a player in the market characterise Russian capitalism (Mizobata 2015, p. 18)’, so no free-market adjustments were coordinated in Russian energy sector.

4.2 Energy as public goods

Although energy is not pure public goods in economics, it has a strong public nature as public supply goods. Especially for Russia where there are vast territories and cold regions, it can be regarded as a survival requirement to receive energy supply in an equal and cheap way. Therefore, stable and cheap supply of energy has been recognised by the government as a security requirement for its nations.

In fact, energy was treated as public goods under the socialist economic system (see Ch.2), and even after its collapse and change in the way of resources utilisation, energy continued to be provided at a lower price. Certainly, there was political consideration for domestic companies and citizens who were affected by the economic turmoil accompanied with the system change. Even after 2000, the situation continues to be difficult to increase the burden on Russian consumers and companies through energy price hike whilst international energy prices have increased. In this regard, Mitrova and Melnikov (2019) pointed out that ‘Russia still regards cheap energy as ‘public goods (p.75)’’, which would induce consumers (both individuals and companies) to use energy in a wasteful manner, due to their lack of recognition for its scarcity.

Such kind of recognition of energy as public goods in Russia has still causes addiction even in recent years. Gaddy and Ickes (2020) stated that Russia's addiction to oil and gas is like a physiological urge, and that the state understands that continuing its behaviour would lead to its own ruin, but cannot quit. Additionally, capturing energy as public goods could also

lead to justification of natural monopoly/oligopoly by SoEs, and discourage companies to improve efficiency through technological innovation and retrofitting existing infrastructure. (Borisovich, 2012) [19].

Under such circumstances, it can be said that domestic companies and consumers would not be able to reduce energy waste and improve energy efficiency in the economy, and that conversion of the energy mix (conversion to dehydrocarbon resources/renewable energies) is also limited nevertheless these goals have often been highlighted in the context of modernisation.

4.3 Environmental incompatibility with the existing growth model

This factor can be considered from the perspective of economic growth model adopted in Russia. As Kudrin and Gurvich (2015) pointed out, Russia strengthened its growth model to transform oil and natural gas income into domestic demand, which led to a rapid increase in energy production, wage increase across industrial sectors. Although this growth model was linked to macroeconomic stability of the country, its focus was primarily on expanding development, not on improving efficiency. In fact, higher government revenues from oil and gas were reflected in higher spending and wages in the public sector, which generated additional consumer demand and demand for industrial products (Kudrin and Gurvich 2015, p.32).

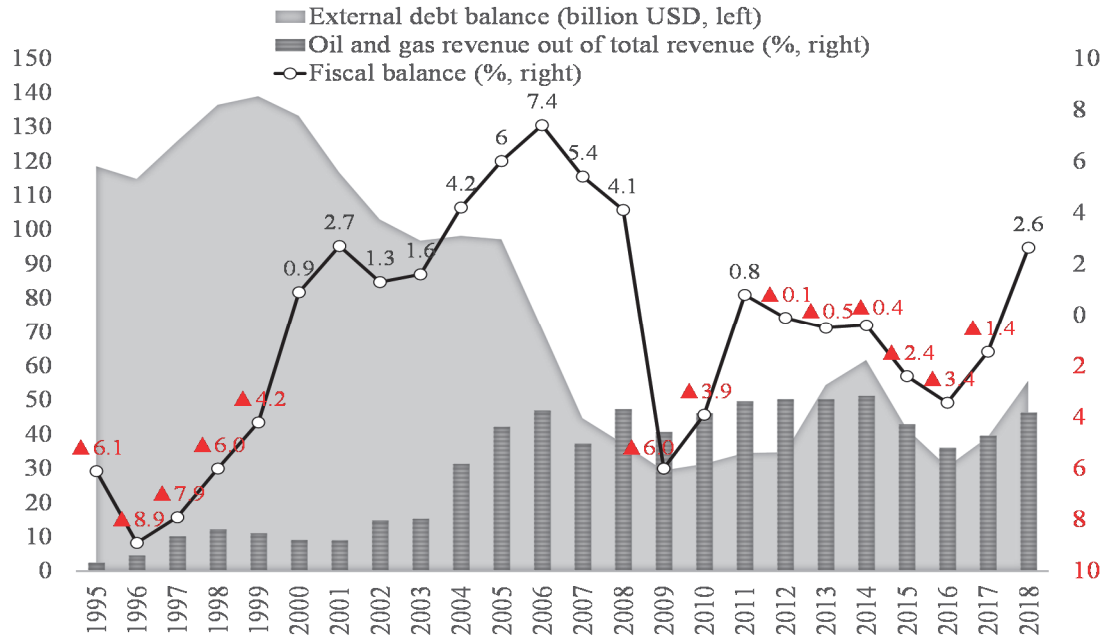
This was especially noticeable in the process of strengthening governmental involvement in energy sector through the tax system since 2000, which formed an energy resource-dependent growth model.

[19] Technological loss of energy resources in the production stage (more than 60 percent of oil-related gas was lost in the 1960s, and it remains a hot issue even today) and loss in processing and refining processes, and more than 75 percent of the high-pressure gas transportation network owned by Gazprom is 25 years old and more from the time of construction.

Immediately after starting market transition, Russian tax system for energy resources was extremely fragile. However, as the government increased its involvement with energy resources and production companies since 2000, the basic part of the tax system for energy resources gradually established. A representative example is the 26th chapter of the Tax Code of the Russian Federation, '*Mineral extraction tax* (NDPI)', which was introduced in January 2002.

Additionally, export tax for oil and natural gas, which was introduced in 1991 but later abolished, was again introduced in 1999. From February 2002, the tariff rate for crude oil exports was raised along with the rise in crude oil prices, and the natural gas tariff rate (initially 5 percent) was also raised twice up to 30 percent in 2004. With the success of these tax reforms, Russia's fiscal balance, which had suffered a chronic deficit in the 1990s due to the aftermath of the system change and the occurrence of a financial crisis, was significantly improved (Figure 9) before the global financial crisis in 2008-2009.

Figure 9. External debt and fiscal balance, and oil and gas revenue in Russia



Note: External debt balance-beginning of the year.

Source: compiled by the author with reference to OECD (2015), IMF (1999), Ministerstvo Finansov RF (2016), Rosstat (2018), Tsentral'nyj Bank RF (2008, 2016a, 2016b, 2016c).

Though Russian fiscal balance continued to record a deficit after 2008-2009 due to various facts (volatility of international commodity prices, sanctions from the West over the Crimean issue, etc.), correlative movement between its fiscal balance and oil/gas shares out of total revenue can still be observed until 2018. External debt balance in the last decade was largely improved, compared with its transition period in the 1990s, mainly thanks to increases in external assets.

As a fact, Russia's fiscal balance consistently posted a surplus during 2000 to 2008 before the global financial crisis occurred. Simultaneously, the proportion of oil and gas income to the federal government's revenue was about 3 percent in 1995, but it exceeded 30 percent in 2004 due to the above-mentioned tax reforms. As described in Figure 4, Russa's energy-dependent growth model also led to high economic growth rates and improved trade balances. Given this continuous sweet fruits, energy-dependent growth model took its root even deeper in Russia's economic structure, and thus it could not be changed just overnight, even after the global financial crisis required its fundamental review.

Additionally, as an understanding of sustainable development is increasing around the world and even the movement is being recognised in Russia as well, Russia could not escape from this 'unsustainable' growth model with depletion of resource capital. In this regard, Bobylev and Perelet (2013) pointed out it is environmental factors that do not fit well with Russian growth model itself. In fact, there are many sceptical views on

climate change from representatives of government agencies [20] and companies in Russia (Mitrova and Yuriy 2019, pp.75), since this green trend damage on its existing growth model. This is not unique to Russia and countries with a relatively high dependence on energy resources have a strong correlation with the number of sceptics of climate change[21] (Hornsey, 2018), but a specific feature of Russia on this point is an existence of the group who welcomes and expects positive economic effects from climate change due to the geographical distribution of the land. The majority of these arguments are that climate change would bring benefits to Russia in terms of reducing heat and electricity costs by mitigating its extremely cold climate (Timofeev, 2014) and improvement of shipping routes on the North Sea (Porfir'ev i drugie, 2017 / Katcov and Porfir'ev, 2012).

Based on the above, it is considered that resource-dependent growth model is unsustainable due to the exhaustion of its resource whilst Russia is still highly dependent on it and it also brings benefits for its economy.

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[20] A representative of climate change sceptics in Russia is Yuri Islairi (Director of the Institute for Global Meteorology and Environment), who is a leading figure in the Russian meteorological community. He provided advice to Putin for many years and his main argument is that there is no scientific evidence to support the cause of, so-called, greenhouse gases for climate change.

[21] According to a commentary published in Nature Climate Change magazine in February 2016, the number of papers that analysed scepticism and denial of global warming began to increase around 2010, and more than 200 papers have been published so far. An analysis concludes that most of the papers were produced through network relationships and financial flows of 4,556 individuals and 164 organisations allegedly engaged in negative activities. For more information, see Justin Farrell (2016) Network structure and influence of the climate change countermovement, *Nature Climate Change*, volume 6, pp. 370–374.

Rather, environmental protection in the energy sector is considered only as a factor that hinders existing growth models, and thus loses its priority in its energy policy.

As these three factors operate, energy production and export tend to be prioritised in Russia as goals to be achieved for realising such economic growth drove by energy resources whilst energy efficiency increases, and environmental protection of the energy sector comes to be the last items in its prioritised list. It can also be pointed out that these factors are path-dependent even after market transition in the 1990s, as its common features were observed in the Soviet era.

Conclusion

This paper examined transformation of Russian energy policy and its performance after market transition in the 1990s. Throughout the comprehensive policy review of energy, including one in the Soviet era as an initial condition, it was revealed that quantitative expansion has been put on the centre of Russian energy policy, whilst environmental protection in energy industry has been repeatedly specified, particularly in recent two decades. However, energy policies aimed at the latter area have not yet been fully achieved and in this context, this paper clarified how coordination mechanisms such as market mechanism and role of the government do influence Russian energy policy and what are behind them.

Then, it has been depicted in this paper that Russian energy market was not be completely liberalised in terms of price and privatisation and retained control of the government, and in other words, that free market mechanism did not operate on energy policy in Russia. In fact, the existence of low energy prices was useful to mitigate energy crisis during the economic turmoil and to promote energy exports for more profit when

international prices continued to rise in the mid-2000s. Alternatively, cheap domestic energy prices did not encourage improvement of wasteful economic structure or switch to renewable energies, which are generally inferior in price competition, but rather hampered them.

Additionally, this paper revealed the process of energy policy formation and implementation being highly politicised, especially through a series of strengthened governmental intervention since the 2000s. Also, some characteristics of Russia in those circumstances were derived in this paper, which were the existence of a strong state monopoly because of incomplete market transition, recognition of energy as public goods to fall its entire economy into a wasteful constitution, and environmental incompatibility with the existing growth model. These are influential factors that make Russian energy policy quantity-oriented, that is, energy resources, its production and export were prioritised as goals to be achieved for materializing its economic growth, whilst policy items such as efficiency improvement and environmental protection in its energy sector were subordinated. These points were also raised in this paper as propositions given to Russian energy policy, in other words, challenges to be overcome for its future sustainable growth.

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