To my father

ABSTRACT

The present work aimes to examine Enel's expansion path within the Russian market. This analysis is based on a two-phase study of the Russian electricity market. This assumption is based on the recognition that Enel's strategies can only be understood if we look at the history of the Russian market, since it is important to understand how the presence of multinational corporations, in some countries, can help focus the growth of value-generating macroeconomic levels. The first and second chapters of this thesis provide an overview of the historical transition of the Russian electricity market towards a market economy. Firstly, it is denoted how such transition has accelerated in recent times in view of changes in the way of producing electricity. Secondly, the thesis deals with the current structure of the Russian market, which is still strongly influenced by the reamining oligarchies. In this sense, the third chapter assesses how Enel's strategy and, ultimately, the investment in renewable resources can be deemed as the result of years of expansion in a closed market, which still remains in need of investment and, above all, skills.

INTRODUCTION

The supply of electricity is one of the most important issues that every nation must endure. The larger the territorial extent of a country, the greater the difficulties in terms of both supply and distribution. Reaching the most remote corners through network infrastructures is a problem of empirical nature, but also concerns investments and financial resources. This type of problem is exacerbated when any progress in the field of energy is not taken into account. The scenario becomes even more complicated when the cost of producing electricity, or even the cost of supply, become more substantial because it is linked to the availability of raw materials and crosses over into geopolitical uncertainties which might be related to the exploitation of natural resources.

For instance, the challenge of intercepting foreign demand as a vector of growth is inescapable for a country as mature as Italy, when public spending stops increasing and when the cost of natural resources has to be borne. With the exception of problems related to the availability of fossil fuels, the Russian energy market has historically faced all the aforementioned issues. The natural resources existent in Russia are very abundant. Gas, for example, is widely used to produce energy and is also associated with nuclear power. Indeed, remembering the Chernobyl disaster, the consequences of which are still perceptible today, Russia's thirst for energy has never faded. The Soviet system had created a very large network infrastructure, with cracks everywhere. It can be said that it was precisely the low level of development

that has characterised the post-World War II communist era that allowed Russia to survive. Yet its backlog production and a very large, but insufficient, electricity grid is impossible to manage in a centralized and unified way. In Russia there has been no economic boom comparable to those that have taken place in capitalist States. It was only the fall of the communist regime that has led to some form of change. This change, at the end of the last century and also in the first years of the new millennium, has not produced significant upheavals in terms of innovation and capacity of the Russian electrical system. On the contrary, the paths of opening up to the free market have been spoiled by the presence of oligarchs directly connected with the central power. It has been more of a progressive liberalization, remaining mostly closed. However, the progressive transition to a market economy and the economic growth triggered precisely between the end of the twentieth century and the beginning of the new millennium has led to a more radical change that has provided the entry of foreign capital into a market that, nonetheless, remains characterized by an oligarch system. The fiscal year 2007/2008 was important for the Russian electricity market, marking an expected peak in demand. Yet production came at the expense of the economy, in the sense that it was based on the availability of huge deposits of natural gas. A gas that, apparently and according to President Putin, would be almost infinite, yet that in terms of resource deposits is under pressure every day. This helps account for the need for change. Enel's entry through Enel Green Power is due to the awareness

that the accumulated delay in terms of renewable production would be intolerable for a country who projects into the future.

The first and second chapters of this dissertation are dedicated to the historical explanation of the evolution of the electricity sector and the Russian electricity market. The intention is to give an idea of how much the investments made by Enel are vital for Russia. The first chapter makes economic considerations regarding the evolution of the same market, discussed more in depth in the second chapter, which are valuable to understand the conditions within which this Italian company has operated. The third chapter is in-depth account of Enel's entry into the Russian renewable energy market, explaining the result of a very broad expansion project of Enel that exploits its subsidiaries and especially EGP to extend its presence in foreign markets.

In the last years, renewable energy markets have witnessed profound changes in terms of investments, industries and policy landscapes. The importance of renewable energy has increased tremendously, in merit also to the grid parity achievement in many countries. Indeed, many renewable energy companies are implementing internationalization strategies either through greenfield projects, mergers and acquisitions, or co-development agreements. Prompted by the increasing global attention and by favourable policy interventions, renewable companies are converging to the international markets with new perspectives and greater expectations for future growth. Considering this

situation, EGPE's strategies for the short-medium run are characterized by the repowering of old plants, improving their capacity and load factor.

The most important substitute is characterized by fossil fuel and nuclear generation, the conventional energy products. Concerning individual consumers, self-generation made through solar panels or other means can be considered as a substitute for renewable energy providers. On the one hand, such a self-generation phenomenon is rising because of the incentives of consumers to reduce their carbon emissions, and on the other hand it is the result of the possibility to sell back the excess electricity generated to the utility companies. Enel aims to become an important point of reference both in grid management, applying the paradigms of digitization of energy distribution, as well as in the alternative or renewable energy production in Russia.

CHAPTER ONE

The Russian economic model and the transition to the market economy: the privatization processes of the strategic sectors of the economy

1.1. The modernization of Russia's economic model: the post-Soviet transition to the market economy

In the first decade of the 21st century, the evolution of Russia's economic structure continued to be affected by the post-socialist transition process begun in 1992, following the dissolution of the USSR. In particular, this evolution has unfolded throughout two presidential mandates of Vladimir Putin (appointed ad interim by President Boris Yeltsin on 31 December 1999, then elected in March 2000 and re-elected in 2004) and also during his appointment as Prime Minister under the chairmanship of his successor Dmitrij Medvedev (since 2008). To this day, Vladimir Putin's political power as President continues to remain unquestioned. This is further emphasized by the fact that Putin's Russia is about to make a further opening towards the paradigms typical of the new market, thereby creating a new procedure in the privatization of companies that are concerned with managing public services, including those related to the management of electricity services[1].

[1] FLORIO M., Stabilizzazione macroeconomica e privatizzazioni nell'Est Europeo, Economia Pubblica, 1992,II, 258 e ss

Broadly speaking, the history of Putin's Russia is characterised by various waves of privatisations that have affected a wide range of economic sectors. These processes of privatizations have often been hastily undertaken, pursued as a means of last resort when in time of need[2]. Such haste has resulted in the management of Russia's electricity market to remain largely inefficient, characterised by the faults in the past. In fact, the origins of this management problem are historical in nature and critically linked to the errored ways that followed the disintegration of the Soviet regime[3].

The 1990s were the symbol of a new era of transition for the Russian Federation: overwhelmed by the collapse of the Soviet Union, the country had to rebuild both its political and economic institutions. After the collapse of the USSR in December 1991, the then President of the Russian Federation, Boris Yeltsin, was determined to initiate a process of *radical reform*. He aimed to achieve the creation of a democratic society, free from enforced ideologies and the ruling of a single party government, and an economy based on the capitalization of markets and safeguard of private property[4]. However, these

[2] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018

[3] ÁSLUND A., How Russia Become a Market Economy, The Brookings Institution, Washington, D.C. 1995

[4] ZASLAVSKY, Dopo l'"Unione Sovietica, La perestrojka e il problema delle nazionalità, Il Mulino, Bologna, 1991, p. 125 e ss.

liberal values and democratic principles have collided and, will continue to collide, with the internal problems that afflict the reality of post-Soviet Russia.

Russia binds its fortune to its domestic energy policy. It owns rich deposits and its economy is profoundly dependent on these resources. Yet, the income derived from the commercialization of Russia's energy sources has more often than not ended up in the hands of its oligarchs and the ruling elite. For a long time, the abundance of Russia's natural resources has acted as a buffer from from the system's inherent corruption, as highlighted by the fact that the domestic development that took place during the first decade of the twenty-first century is particularly attributable to the high presence of natural resources. This continued high existence enables Russia to balance its resources and therefore not having to suffer economically in terms of electricity price or quantity. The establishment of this contemporary structure can be traced back to the policies enacted by the very same managing elite of the 1990s[5].

At the time, Boris Yeltsin had decided to focus on introducing a series of radical economic reforms, also known as "shock therapy". Economic reform was indeed considered more urgent, in fact, resulting in the postponement of reform of the political system. The economic policies initiated were aimed at

[5] ÁSLUND A., How Russia Become a Market Economy, The Brookings Institution, Washington, D.C. 1995

introducing a market economy. These inaugurated an ambitious macroeconomic stabilisation programme and an accelerated withdrawal of the state from the economy. However, the transition to a market system would not come automatically, it required the dismantling of the previous Soviet institutions and the creation of a new institutional structure to accommodate and operate the market properly. In 1997, President Yeltsin's new term of office aspired to complete all those economic reforms that had not been successful between 1991 and 1993. A new group of young reformers part of to the President's inner circle was instituted, among whom, in addition to the former Deputy Prime Minister Anatolij Čubajs, Yeltsin appointed Deputy Prime Minister Boris Nemcov. The ultimate goal of this group of reformers was the elimination of the Soviet legacies from society and the start of a modern and more genuine market economy, taking the shape of "people's capitalism". However, confidence in the policies of Yeltsin had reached an all-time low by April 1992 and the apex of Yeltsin's success quickly became a distant memory. Within this context, internal conflicts between the legislature and the executive infused, further restricting Yeltsin's political power.

After the launching of the liberalisation of prices, the second reform policy that most concerned the young group of reformers was that of privatisation. Yeltsin's Russia had no experience with the process of privatisation and its institutionalization was deemed so intricate to the point of requiring a special

comission of experts to analyse and assess the topic. The State Commission for the Management of State Assets was set thus established and Anatolij Borisovič Čubajs, an old friend of Gajdar's, with whom he had always shared many ideas of economic policy, was in charge of its management[6].

The team of Čubajs were tasked with drawing up a complete inventory of all the properties owned by the State, obtaining a total value of the assets that had to be privatised. Subsequently, economists divided the total value of public property by the number of inhabitants. The final amount obtained, 10 thousand rubles, was what every Russian citizen was entitled to and receive. Thus, in the autumn of 1992, the distribution of such vouchers, worth 10 thousand rubles each, began. With these vouchers it was possible to purchase a number of shares from any former Soviet industry which, in the meantime, would be transformed into a limited public company[7].

This privatisation procedure via the voucher system, however, was not deemed a success and the Russian leadership, urged by the need to monetize state property in order to finance the budget, instead decided to proceed in an auction-like manner by directly selling to the highest bidder. The sale was also opened to foreign capital, in the hopes that more offers could help reach the

[6] ZASLAVSKY, Dopo l'"Unione Sovietica, La perestrojka e il problema delle nazionalità, Il Mulino, Bologna, 1991, p. 125 e ss.
[7] ÁSLUND A., How Russia Become a Market Economy, The Brookings Institution, Washington, D.C. 1995

required figures that would significantly cover the value of the assets sold. Yet, this second attempt at privatisation also proved to be disastrous. Prices remained low and covered averaged 10 percent of the real value of each individual industrial complex sold.

Nonetheless, these two waves in the privatisation process eventually created a class of owners, as Čubajs and Gajdar had eagerly anticipated, but this new class was much smaller than originally expected: capital was concentrated in a the hands of a few and the new rich belonged to specific social strata that, in the moment of transition to the market, garnered a position of particular advantage. What happened immediately after the disintegration of the Soviet regime highlights the weaknesses in its democratic and economic transition. The choices relating to liberalization were disappointing: foreign capital was dawdled in coming. It ended up creating a class of privileged subjects that benefited, through corrupt mechanisms, from the cost-effective benefits of opening up to the free capital market. In addition, the State, still too present in the economy, had initiated a privatisation process where a private individual could not operate freely. It would appear that investors were called upon to contribute to the financing of a service that remained essentially managed by the State in its entirety. Above all, services such as the distribution of electricity, were also very difficult to privatize.

“Liberalising” can be defined as making the structures of the market "contestable"[8]. Such an objective could be achieved in different ways. For instance, it could be possible to adopt public tenders or to fix "ceilings" on the quotas of the various operators, or to open up the monopoly chains so as to allow most operators to be present in the various segments of the market business. Of course, liberalising public services "on the network" is adifferent issue, given the fact that the presence of a fixed structure cannot be duplicated, for example gas pipelines or electricity grid. This diversity would also concern the liberalisation of non-networked services, such as oil distributors, where each operator has free access to the market and therefore has a choice between several operators. However, it should be noted that this practice is also difficult in countries with a highly developed market economy. Nevertheless, in Russia the historical foundation and domestic conditions for achieving this type of structure were noticebly lacking[9].

[8] HAMMONS, T.J. “Power market Restructuring in Asia: Russia, China, India and Japan”. UPEC 06. Volume 1 6–8 September 2006. pp. 26–35

[9] ZASLAVSKY, Dopo l‟Unione Sovietica, La perestrojka e il problema delle nazionalità, Il Mulino, Bologna, 1991, p. 125 e ss.

1.2. From communism to neo-liberalism: the process of privatizing public services and strategic sectors of the economy

The reform process of the Russian economy in the post-Communist era had been designed across well-defined lines. In the microeconomic field, the transition policies had to focus on the creation of a market and price system through privatizations. In order to create such a domestic market based on private property, it was necessary to transfer the capital of state-owned enterprises in private hands and to define the rules and institutions that would prevent the redistribution of capital from benefiting a small group of already wealthy and influential individuals –a condition that the Russian Government, to this day, has not been able to reverse. Contemporarily, in the macroeconomic area, government policies had to focus on the creation of a banking and monetary system, as well as on financial stabilisation, bringing the current account budget closer to balance and implementing close credit control[10]. This step was then followed by the gradual entry of private companies into public services, including energy services, in order to modernise the efficiency of public services and generate significant profits on which to build a robust domestic policy of public spending.

[10] SUTYRIN S.F, Russia's accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012

From a social policy perspective, it was necessary for the government to create a social network to protect the weakest members of society from the repercussions of the transition process by guaranteeing the provision of medical services, unemployment benefits and pensions. Such "gradualism" suggested that a more measured and planned transition would allow the formation of both democratic institutions and a market system and, at the same time, facilitate the adaptation of Russian companies to the new economic environment, preventing the proliferation of corrupt behaviour and income hunting. In practice, however, the processes of change that were undertaken, widely viewed as *mass* processes, affected the Russian economy in a cripplingly manner and, most signficantly, privatizations were carried out too hastily.

The privatisation process took place in three phases. Between 1990 and 1991, there was the spontaneous privatisation of some companies (prichvatizacija), through which several members of the 'nomenklatura' took over the shares of some State-owned companies. From 1992 to 1994 there was the mass privatization regulated by the State. Finally, from 1994 to 1996, as later explained, there was the privatization of large strategic enterprises (loans-for-

shares privatization), which benefited a small circle of businessmen close to power, the oligarchs[11].

In 1992, the Russian Government, under the direction of the State Property Committee, headed by Anatoly Čubajs, launched the *mass privatisation programme*, the largest privatisation programme ever attempted. In this second phase, the government wanted to privatise 240,000 small, medium and large enterprises that belonged to the State and municipalities. The main aim of this privatisation was to improve business efficiency, create a competitive market and a large private sector. In July 1992, the small service sector enterprises (shops, restaurants) were first privatised. The process of "mass" privatisation involved around 90% of small and medium-sized enterprises and 70% of large enterprises. The phase was ultimately completed by 30th June 1994. Initially, this de-stabilising plan appeared to be fruitful because Russia had managed to change the ownership structure of its economic system rather radically and within a particularly short period of time.

Nonetheless, this mass privatisation was ultimately not able to generate the industrial restructuring originally desired, contributing, instead, to the consolidation of former Soviet mal-practices. For starters, the State had not completely renounced control of the economy and, in most cases, maintained

[11] HAMMONS, T.J. "Power market Restructuring in Asia: Russia, China, India and Japan". UPEC 06. Volume 1 6–8 September 2006. pp. 26–35

for itself a majority share or "golden shares" of the companies. These participations allowed the State to have power of veto, a power often used against other shareholders. Secondly, the purchase privilege granted to the "internal actors" led to the preservation of the company management to remain unchanged from that of the Soviet era. Particularly, the lack of the much need restructuring and redistribution of income spurred towards greater domestic inequality. Lastly, these privatisations were accompanied by illegal practices. Among the most frequent were the irregularities committed by local authorities in the privatisation of small businesses, the extortion of rights by force and the organisation of auctions in remote locations on Russian territory in order to exclude potential external buyers[12].

After a decade of economic decline culminating in the severe financial crisis of August 1998, Russia experienced what appears to be a strong economic recovery thanks to the devaluation of the rouble, as a result of the crisis, the growing flow of foreign direct investment and –until mid-2008– the rise in oil and gas prices. Despite the contained rise in oil and gas prices in the first four months of 2009, their consequent drastic and equally rapid reduction, together with the more general socio-economic impact of the global financial crisis, reduced Russia's economic development to the point of bringing its economy into negative budget grounds in 2009, thus significantly worsening its future

[12] SUTYRIN S.F, Russia's accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012, p. 147 e ss.

prospects. This systemic unfolding in the first decade of the twenty-first century was accompanied by a real growth of GDP at a continuous rate of about 7% per annum, with an improvement in the levels of well-being of the Russian population which saw its disposable income increase annually by more than 8% (also thanks to the improvement in the terms of trade until mid-2008)[13]. Contemporarily, the State's share of the oil industry has increased from less than 20% in 2004 to more than 50% in 2007. State control has increased in banks up to 38%, as well as in the mechanical and defence-related industries. State holdings have been acquired in the automotive, aerospace, shipyards, pipelines and railways sectors[14]. Moreover, there is an officially stated intention to 'Russianise' or nationalise strategic sectors, although which ones have not yet been specified. Overall, sovereign wealth funds own capital shares not only in Russia and the CIS, but also globally.

[13] SHURCHKOV, O New elites and their influence on entrepreneurial activity in Russia, Journal of Comparative Economics, Vol. 40, 2012, pp. 240-255

[14] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018

1.3. The process of expanding privatization in the strategic sectors of the economy in recent years

The process of rapid privatisation did not create the sufficient conditions for the emergence of a class of entrepreneurs capable of promoting a healthy and sustainable growth for the Russian economy. On the contrary, in the absence of an appropriate institutional and regulatory framework, the redistribution of the companies' ownership structures assisted Soviet-era politicians to enrich themselves disporotionally with a great many misappropriations. Indeed, with the third phase of privatization throughout 1995, the rise of the oligarchs, as influential owners of industrial giants, banks and the media, could be said to have been completed. In Russia, a corruptive prototype of capitalism –a clientelary, oligarchic capitalism– has thus become institutionalized. This capitalism is based on the self-interested relations between a narrow circle of businessmen who were not very transparent in their decisions, especially when it comes to the energy sector.

In light of the fiscal deficit and the need for funds for the 1996 presidential elections, the government launched the "loan-for-action" programme in 1995. Auctions of the shares of large companies in the energy and raw materials sectors began between November and December 1995, immediately after President Boris Yeltsin signed the decisive decree of 31 August 1995. The 'loan-per-action' programme was to consist of an annual loan of shares, since the State was the majority owner of the companies and had the power to take them

over at any time, to repay the buyers. However, neither the loans nor the shares of the companies were repaid on time, which turned the privatisations into an expedient for the sale of low-cost and non-transparent shares. Financial stabilization, the devaluation of the rouble after the Asian crisis of the late 1990s, the increase in world prices of raw materials –especially gas and oil–, the launch of a series of structural reforms and a prudent use of public finances became the main catalysts of the rapid and sustained growth of the Russian economy. Russia began to grow at an average annual rate of 7% in the period 2000-2008, placing it among the major emerging economies that came to be known as BRICS[15].

More significantly, however, Putin's never-ending rule has favoured the creation of an authoritarian and strongly centralized system: a vision far from the idea of liberal democracy that characterized the presidency of Boris Yeltsin. First, the dialogue between state and entrepreneurs, expressed by the Russian Union of Industrialists and Entrepreneurs (RUIE) has turned in favor of the State –as had occurred during the Soviet era. A reform programme was adopted from 2000 to 2003, known as the "Gref Programme" –from the name of the reforming economist, German Gref, who was appointed by Vladimir Putin as Minister of Economic Development and Trade in May 2000[16]. This

[15] SHURCHKOV, O New elites and their influence on entrepreneurial activity in Russia, Journal of Comparative Economics, Vol. 40, 2012, pp. 240-255

[16] MALLE S, The impact of the financial crisis on Russia, Rome, NATO Defense College, 2009

"Gref Programme" was different from previous economic reform agendas; it was, in fact, a comprehensive and detailed programme of about 200 pages long, which aimed to stimulate economic growth at a rate of 8% per year through tax reforms, banking reforms, liberalization, privatization, social reforms, membership of the World Trade Organization (WTO), judicial reforms and, ultimately, State reforms. In practice, however, the installation of the programme resulted in a significant increase in State interventionism in the economy. Although Putin, as President, had always shown an inclination towards a free market economy and private enterprise, the State, together with small interest groups, returned to holding the greatest power in all spheres of action, moving towards a harmful model of controlled capitalism. The State returned to intervene heavily in the economy, controlling the prices of goods and trade, imposing tariff barriers on imports and taxes on exports, essentially causing an increase in political uncertainty and a distortion of property rights.

This new-form of nationalisation has proceeded step by step. First, Putin's men have taken over the largest State-owned enterprises in the energy sector[17].The goal of this still ongoing electricity market reform is to create a well operating competitive wholesale electricity market in Russia. The reform includes the division of the electric power industry into natural monopoly and competitive

[17] UDALTSOV, 'Critical challenges and strategy for facing the power sector reform transition'. Presentation at World Bank workshop 'Russian Electricity Reform', Moscow, 14 July 2005

sectors. At the beginning the electricity market reform, all vertically integrated joint-stock companies were first divided according to their function. The result was a sectorial separation between electricity generation, transmission networks, distribution networks, electricity sales, maintenance and other companies. These newly-divided companies were later combined into a set of new companies. Putin's reform includes a privatization plan concerning most companies that operate in the competitive sectors, for instance heat production, electricity selling, and construction of electricity networks and power plants. However, the most strategically important assets, such as nuclear and hydro stations, have been privatised only partially ensuring the preservation of government control. Full control of the natural monopoly companies (i.e. electricity network companies) was then implemented by the government[18]. The original coordinator of the reform program, known as RAO UES, was disbanded after the main steps of Putin's reform were completed, and after all of the assets of RAO UES were allocated to the horizontally integrated companies.

In 2007, the Russian Ministry of Economic Development and Trade, in collaboration with the Centre for Strategic Research and other State organizations, formulated the concept of "proekt", in other words a plan for the long-term socio-economic development for the Russian Federation, with

[18] SHURCHKOV, O New elites and their influence on entrepreneurial activity in Russia, Journal of Comparative Economics, Vol. 40, 2012, pp. 240-255

objectives of modernization and diversification projected to be achieved by 2030. Despite the rosy forecasts, these plans have come to an early hault in the face of the financial crisis of 2008/2009, which involved the Russian economy in a very substantial way, and which was pressured by the economic blockade generated by the strong State participation in the energy sector.

Several analystis have taken the view that Russia, despite having undertaken many reforms and transformed its economic system in little more than twenty years, is to be considered an "abnormal" model, especially given its management of certain key sectors of its economy, such as the energy sector[19]. The resulting inequality in "traditional" capitalist models depends mainly on the entrepreneurial success and the costs of price efficiency. Instead, in Russia it depends mainly -as earlier explained- on the plundering of national resources during the post-Soviet transition phase. Russia can therefore be regarded as an inefficient form of generated inequality[20]. To a large extent, the degree of capitalist mechanisms working in Russia is a growing function of the price of oil and gas and electricity.

More recently, budgetary problems and the excessive dependence of the Russian economy on the energy sector have forced the Russian Government

[19] UDALTSOV, 'Critical challenges and strategy for facing the power sector reform transition'. Presentation at World Bank workshop 'Russian Electricity Reform', Moscow, 14 July 2005

[20] NUTI D M, La transizione nell'economia russa, XXI secolo, 2009 http://www.treccani.it/enciclopedia/la-transizione-nell-economia-russa

to open up towards new privatisations. Among the State-owned shares of the largest companies bidding for the sale, there are: Rostelekom, the main Russian operator for telephony, internet and pay-TV channels, Transneft, the monopolist for the transit of energy products through Russia and CIS countries, Rosneft, the world's largest public company for volume of oil extraction whose plan provides for the transfer of State control from 69.1% to 50% plus one share, Bašneft, one of the largest oil companies in the country, and Sovkomflot, which in owning a fleet of 1.6 million tonnes forms one of the world leaders in the maritime transport of energy products. According to the president of Rosimuščestvo (Russian State-property), Olga Dergunova, there were plans to privatize Sovkomflot by 2016, from which could have been derived about 12 billion rubles. However, it would appear that its sales in 2014 only produced 8 billion rubles and in 2015, these only reached 5 billion[21].

[21] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018

1.4. The chosen privatization's model: the liberal approach and openness to foreign investors

The difference between a Soviet economy and an open market economy is the most evident in international trade –apart, of course, from property rights. Yet in Russia, as in all countries undergoing political and economic transitions, it was exactly the potential to benefit from the international trade regime that the greatest and fastest progress towards a capitalist market economy was forced. Soviet Russia had already directly experienced foreign trade, even entertaining relations with some market economies. Generally, the experience of having trading partners reveals opportunities for product exchange, while also creating the urge to take initiative and introduce the necessary institutions for international trade to proliferate. Such policies include: the legalization of foreign commercial operations without the need for authorizations and licenses, the abolition of quotas, the reduction of tariffs, the convertibility of currency itself (through the instant legalization of transactions in foreign currency). In Russia, all of the above were very quickly established, from one day to another, by a simple decree[22].

There can be no denying that Russia has made an immense progress both towards democracy, towards a market economy and towards its reintegration into the global economy. Producers and consumers have a considerable say in

[22] OXFORD INSTITUTE FOR ENERGY STUDIES, Market liberalization and decarbonization of the Russian electricity industry: perpetuum pendolum, May 2018

the allocation of resources, on the type and scale of production, selection of techniques, employment, choice of suppliers and buyers, and prices. The banking system is no longer monolithic and instrumental in planning in physical terms. However, Russia remains afflicted by the costs of the presence of monopolies, unemployment, inflation (although open it is not such as to destroy the roles of the currency), the lack of regulation and corporate governance and by widespread corruption.

The privatisation process, previously explained, has now created a highly concentrated electricity market. From being liberalized, and therefore more competitive and seeking greater efficiency, the electricity market currently remains in the hands of the Russian oligarchy. Rosneff the oil giant, whose majority shareholder is the Russian government, at the end of the 1990s controlled only 4% of domestic production, as a result of the privatizations of the Yeltsin era that had stripped it of its best resources. The company was left with only the crumbs of the Ministry of Petroleum of the former Soviet Union, which other the private companies had rejected because of their inefficient productivity. As a matter of fact, in 1998 Rosneff was auctioned off by the Russian government not once, but three times: if it was not privatised then, it was only because nobody was interested.

Today, however, Rosneft is able to compete with the large multinational oil companies. According to measurements by the U.S. Government's Security

and Exchange Commission (SEC), its proven reserves, since 2012, amount to 33.9 million barrels of oil equivalent. To make a comparison, Exxon's are "only" estimated at 25.2 million and ENI's at 7.2 million[23]. In accordance with the Putinian belief in the strategic importance of the energy sector, Rosneft has been used several times as an instrument of the Russian Government in the service of its foreign and domestic policy priorities[24].

In recent months Rosneft has concluded several agreements that will also have a significant geopolitical scope. First of all, Rosneft signed an agreement with the Chinese company Beijng Gas Group that guarantees its access to the Chinese domestic market, in exchange for a significant share of Verkhnechonskneftegaz, one of its subsidiaries responsible for the exploitation of one of the largest deposits in eastern Siberia. The agreement represents an important extension of energy cooperation between Russia and China, which is the basis of trade relations between the two countries[25]. Privatisation, and in any case the Russian transition process, has generated a concentration of power for the political elite and contemporarily decreased any “fair” competitive structures on the economic side. Clearly, the Russian

[23] SUTYRIN S.F, Russia’s accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012
[24] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018
[25] JAKOVLEV A., SOBOLEV A., KAZUN A. Means of production versus means of coercion: can Russian business limit the violence of a predatory state?, PostSoviet Affairs, 2013

transition was, and continues to be, dominated by the elite's personal interests, prevailing over the interests of the community and the market. This situation has occurred as a result of the affirmation of the oligarchy, linked to politics, in the process of sharing business. Still, the electricity sector is essentially governed, like all sectors of the Russian economy, by a substantial abundance of natural resources that simplify the way in which electricity is produced[26].

[26] OXFORD INSTITUTE FOR ENERGY STUDIES, Market liberalization and decarbonization of the Russian electricity industry: perpetuum pendolum, May 2018, p. 14 e ss.

CHAPTER TWO

The Russian thermoelectric market and its relevance for foreign investors

2.1. The Russian thermoelectric market: the features and the main players

The process of modernising the electricity grid and, as of consequence, the Russian electricity market was based on imitating the structures present within the more established capitalist-type economies. Public discourse, especially at the end of the 1990s, was mostly centered on a need to transition the Russian thermoelectric market structure towards a very substantial liberalization. This market liberalization potentially guaranteed an increased value in production and contemporarily an equally progressive growth in demand. Similarly to the policies enacted in some capitalist-economic systems, most control remained in the hands of the State, initiating a type of liberalization procedure that was able to preserve the presence of the State in the existing hydroelectric plants (previously part of RAO-UES), which were in turn transferred to the company *RusHydro*, with the obligation of the government majority. Nuclear power-generation, instead, remained completely under the full ownership and supervision of the government through the *RusEnergoAtom* Company.

From the late 1990s until 2007, 48.5% of electricity, gas and water companies were private, contributing to 54% of the sector's total revenues and 34.5% of

employment[27]. A total of 1,469 companies had foreign participation (joint-shares) – making up 3.8% of the total number of companies in the sector - producing 13.5% of the total sector revenues and employing 5.2% of the workforce. A federal law had originally imposed a 25% imitation on foreign participation in UES company assests, however, the Russian government removed this restriction during the period of reform[28].

The first foreign entry into the electricity business was initiated when portfolio investors and private funds who bought shares in RAO-UES and then continued with demergers. Following in 2007-2008, strategic investors joined the company. Currently, EON (Germany), Enel (Italy) and Fortum (Finland) are the three largest foreign investors in Russian-generation assets. The restructuring of the Russian electricity market was initiated through the creation of a wholesale electricity market that has seen as a protagonist, and at its center, the Belgorod-energy system.[29] These novelties were then accompanied by the disposal of productive assets with the entry of foreign investors.[30] In all, it was precisely foreign capital that was able to take control of 17 300 MW of capacity. The Federal Grid Company (FGC, or FSK in Russian

[27] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future". 2008, p. 154 e ss.

[28] NUTI D M, La transizione nell'economia russa, XXI secolo, 2009 http://www.treccani.it/enciclopedia/la-transizione-nell-economia-russa

[29] OXFORD INSTITUTE FOR ENERGY STUDIES, Market liberalization and decarbonization of the Russian electricity industry: perpetuum pendolum, May 2018, p. 25 e ss.

[30] BALDASSARI M., PAGANETTO L., PHELPS E., Le privatizzazioni nell'est europeo, Sipi editore, 2012, p. 147 e ss.

acronym) was incorporated in June 2002 as an open-ended joint stock company, wholly owned by RAO-UES[31], whereas the transmission assets of its regional subsidiary, AO-Energos, were placed under the control of FGC in March 2003. As later discussed in more detail, FCG's network activities are distributed in 73 regions[32] of the Russian Federation, extending across an area of 13.6 million km. The distribution of Russian energy is also entrusted to other operators who are bound to the FCG and cannot leave the system without the approval of the same FCGcompany[33]. Indeed, the owners of the same company cannot leave without the approval of FGC's board, who collects the transmission fees on their behalf on the basis of the established fees and reimburses the company's owners.

On the other hand, the companies controlled by RAO-UES hold 85% of the distribution lines, and the remaining ones belong to four independent companies under AO-Energos[34]. Here, RAO-UES has coordinated the reform of its regional subsidiaries with the regional authorities. In April 2004, the energy distribution scheme based on a network architecture had been approved and 12 interregional distribution companies (IDGCs) were set up as

[31] TATENERGO 'Wholesale electricity market rules in the transition period: main features'. Powerpoint presentation. www.tatenergo.ru/download/presentation_02.ppt, accessed on 19 Februrary 2010, p. 14 e ss.
[32] CFR. Fig n. 1
[33] OXFORD INSTITUTE FOR ENERGY STUDIES, Market liberalization and decarbonization of the Russian electricity industry: perpetuum pendolum, May 2018, p. 25 e ss.
[34] NUTI D M, La transizione nell'economia russa, XXI secolo, 2009 http://www.treccani.it/enciclopedia/la-transizione-nell-economia-russa

spin-offs, holding over 300,000 shareholders, listed on the stock exchange and having a public majority of 53%[35]. The regulation and therefore the principles on which the different laws governing the electricity market in Russia are based start from a clear separation between those who distribute electricity and those who produce it.

Moreover, it is also possible for market players to operate in an unbundled manner. It should be pointed out that corporate structures within the electricity market are to be considered divided into different types and include entities that deal with: (1) distribution, (2) the commercial management of subscribers to the electricity service, and (3) conglomerates. In regard to the latter, these conglomerates may also perform the former two specified functions[36]. This activity must not be a principal activity but must be linked to other activities such as all the actions and procedures that need to be considered in the context of oil. Such unbundling has been carried out in a number of ways, including the transfer of network assets to another owner or the transfer of customer supply contracts to another distribution company or guarantor. In terms of competition and barriers to entry, it should be made clear that any new entry is permitted and that this competitive opening has

[35] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future", 2008, p. 125 e ss.

[36] BALDASSARI M., PAGANETTO L., PHELPS E., Le privatizzazioni nell'est europeo, Sipi editore, 2012, p. 147 e ss.

been made possible over time by the development of the wholesale electricity market[37]. New players have been able to take advantage of facilitated rules in order to develop new accesses to transmission lines. Independent producers with a total production capacity of at least 25 MW and 5 MW for each connection node may become wholesale market participants.

In terms of macroeconomic policy, since the early years of the new millennium, the peak in demand for which the entire sector has moved and opened up to the market has been met with the involvement of private operators[38]. Indeed, it had been anticipated that the development of a new generation capacity would be largely financed by private investors. However, the historical problem that Russian tariffs never allowed the stimulation of new investments, and therefore the renewal within the sector, continued to afflict the rapidity of evolution[39]. The characteristics of electricity markets include the long delay between the commitment to new capacity and supply capacity, the high cost of new energy compared to "old"/installed energy, the lack of certainty of future electricity prices and the presence of generation facilities with different cost structures. Yet tariffs have always been a problem and its establishment has often been miscalculated because the established

[37] STARK D., Le strategie di privatizzazione nell'Europa Orientale, Il Mulino, Bologna, 1992, p. 96 e ss.
[38] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018
[39] OXFORD INSTITUTE FOR ENERGY STUDIES, Market liberalization and decarbonization of the Russian electricity industry: perpetuum pendolum, May 2018, p. 25 e ss.

prices did not take into account certain costs, such as the costs due to the privatisation period throughout the nineties. For instance, Natural gas prices, one of the main fuels for thermal power plants, were regulated and its capacity level was low. This was to show that the electricity sector expected very low levels of return on investments which could have been acceptable exclusively to the State, but certainly not to a private investor. This also explains the need for a drastic change in pricing policy as well.[40] The lack of capacity and, as of consequence, the lack of profits to be made precisely because of insufficient exploitation of production capacity are the foundation of a state of 'backwardness' that partly remains present to this day.

Nonetheless, the Russian electricity market and the distribution networks are highly interconnected. In fact, those of the neighbouring economies operate in parallel with the Russian electricity grid. Such neighbouring economies extends across the networks of Belarus, Estonia, Latvia, Lithuania, Georgia, Azerbaijan, Kazakhstan, Ukraine, Moldova and Mongolia. The electricity grids of Uzbekistan, the Kyrgyz Republic and Tajikistan are also connected via the Kazakhstan grid. In particular, it is possible to speak, even for these neighbouring countries, of a single electricity grid. There are direct transformation links with the networks of Finland (through Vyborg), Norway

[40] NUTI D M, La transizione nell'economia russa, XXI secolo, 2009 http://www.treccani.it/enciclopedia/la-transizione-nell-economia-russa

(several generators of the Kolsk system supply directly), and the connection from the Far East to China.

In addition, the frequency of the operating system of the Russian national network is 50Hz. Peak loads occur in the winter months[41]. Power outages can occur during peak demand when spinning reserves are not sufficient to guarantee a normal frequency. Also, tariffs are present within Russian regulated market. Retail tariffs must follow the regulation so that residential customers can have their energy supply anchored at specific prices. However, outside the regulated market, some operators may sell electricity even at higher prices. Independent distribution companies - wholesale market participants - can supply any customer at unregulated prices. Free bilateral contracts allow wholesale market participants to cover the risks of future wholesale price increases. In the retail market too, however, there are contracts to cover for price fluctuations[42]. A similar approach has been followed in the methodology for setting transmission charges. An investment guarantee mechanism was briefly introduced to compensate for investments in a new capacity by imposing a premium on the carbon tax tariff. With specific reference to tariffs, the methodology used is that defined as the "Regulated

[41] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018, p. 25 e ss.

[42] BALDASSARI M., PAGANETTO L., PHELPS E., Le privatizzazioni nell'est europeo, Sipi editore, 2012, p. 147 e ss.

Asset Base" (RAB). This methodology formulated the rules for calculating the value of regulatory capital, the reporting requirements for new investments and a formula for allowing the rate of return for companies to be active in the thermoelectric market. The tariffs set for longer-term contracts have been adjusted on an annual basis. Operating costs are adjusted. Any efficiency gains due to the reduction of transmission/distribution losses and the reduction of operating costs remain with the company and are not taken into account in the annual review of tariffs. The permissible return on capital is set once for the entire regulatory period using the WACC formula. The investment plans of the regulated company are coordinated with the FTS and, with the approval of the regulatory authority, earn the rate of return. However, transmission assets that are entirely financed by the connection costs are not included in the calculation of the capital invested. The regulatory authority receives an annual update on the implementation of the agreed investment programme and adapts the RAB values and its performance and tariffs accordingly[43].

[43] OXFORD INSTITUTE FOR ENERGY STUDIES, Market liberalization and decarbonization of the Russian electricity industry: perpetuum pendolum, May 2018, p. 25 e ss.

2.2. The increase in demand for electricity by Russia: the criticalities of the distribution system

The Russian electrical system has a very complex configuration, characterized by a series of relationships between its different components. There is no one single point of connection, nor a single energy producer responsible for the management of all plants. The Russian electrical system is a multi-faceted system within which a plurality of producers and users interact.

The Russian Federation has made significant progress in terms of progressive privatisation, restructuring, introducing competition and regulatory reforms of the electricity sector. In particular, various authoritative studies[44] have specified that the structure sought by the Russian electricity market is directly attributable to the British model. Following in the footsteps of the United Kingdom, and in applying the market design of the Pennsylvania-New Jersey-Maryland (PJM) model of the United States of America (USA), Russia has established an electrical system not very far from European standards in terms of organisational efficiency[45].

Nontheless, numerous bibliographic sources[46] have indicated that what appears to be the pursuit of electricity reform in Russia has not led to an

[44] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018

[45] OXFORD INSTITUTE FOR ENERGY STUDIES, Market liberalization and decarbonization of the Russian electricity industry: perpetuum pendolum, May 2018, p. 25 e ss.

[46] ROSS C, Putin's federal reforms and the consolidation of federalism in Russia: one step forward, two steps back!, Communist and Post-Communist Studies, Vol. 36, 2003, 29-47

effective competition within its market as energy prices appear to be not be affected by market logic. Still, despite its unpopularity, the endurance of Russian electricity and progressive, although slow, competitive growth is attributable to the strong commitment to the ongoing market reform on behalf of Russian leadership. Overall, Russia's reform path has successfully passed the first stage and is moving towards the gradual improvement of the wholesale market mechanism.

Russian policy reform and various attempts to align prices and incentives have come to witness competition policy, increases in energy efficiency and promotion of investment in modern technologies, both in the public and private sector. As a result, the Russian Federation is the fourth largest electricity producer in the world after the United States, China and Japan, with a production of 5% of the world's electricity production of global electricity[47]. In 2012 there were more than 700 generation plants in Russia with a total installed capacity of 211 846 MW. National electricity production was at 957.1 million MWh, while domestic consumption equaled 942.8 million MWh. Without a doubt, Russia is one of the largest exporters of electricity, with exports accounting for 2% of domestic supply and imports for 0.3%. The composition of installed production capacity in Russia by fuel type is 68%

[47] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future", 2008, p. 125 e ss.

thermal, 11% nuclear and 21% hydro. Siberia produces energy mainly through hydroelectric power plants. The North-East of Russia, on the other hand, is to be considered totally dependent on nuclear production, while the Ural area depends almost exclusively on heat production.

However, the unified Russian electricity system remains somewhat afflicted by the characteristics of the old Soviet network since the time of its institutionalization. The Russian electricity system, in fact, had been established during Soviet times as the backbone for economic growth in an industrially oriented and government-planned economy. Following the collapse of the Soviet Union, in 1992 the Government of the Russian Federation transferred most of its electrical assets to the open-ended joint stock company "United Energy Systems of Russia" (RAO-UES)[48]. At the start of the reform, RAO-UES owned 72% of the economy's installed production capacity and 95% of its transmission network. The historical problem at the backbone of the reform process has been tried to overcome by generating a progressive increase in demand from the Russian economic system. This 'forced' development was not particularly auspicable for population conditions and transparency of government action, but over the years it has helped strengthen industry and placed Russia together with the strongest and sturdiest developing countries in the world. The highly anticipated forecast of a peak in

[48] MALLE S, The impact of the financial crisis on Russia, Rome, NATO Defense College, 2009

demand, which was very difficult to satisfy with the electrical system of the 20th century, triggered a change that is still undergoing today. This change continues to be linked to the historical structures typical of a managerial economy that has become a market economy, but that has laid the foundations for an evolution, even if artificial.

With the beginning of the new millennium it was strongly believed that more energy would be required after the year 2007, that year marked the aspired threshold needed to materially overcome the structures that were afflicting efficiency at the end of the twentieth century. There was a physical attempt to replace fuels with natural gas and therefore the oil used to produce electricity[49].However, this forced change did not lead to a review of energy pricing mechanisms that were able to increase the profitability of producers and thus attract investment. As a result, the nodal pricing mechanism continues to be used in the Russian wholesale electricity market because of the differences in the generation costs in different regions and the insufficient transmission capacities between these regions that do not allow the prices to even out equally. For instance, the price of electricity in Siberia is always lower than the price in European part of Russia because of the large quantity of cheap electricity generated by Siberian hydro stations. Due to network congestions, it is impossible to transfer energy in desired volumes from one region to

[49] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future", 2008, p. 125 e ss.

another. Nodal prices are considered as high precision indicators of what it costs to use the electricity system because they include the costs of electricity generation, the costs of losses, and the costs of the limited capacity utilization. These nodal prices are calculated by the "market operator ATS for each hour of the trading cycle (the 24 hours of following day). Each GPD of the market participants is referred to as a node in the computed model used by the ATS, and the prices are determined for every node of the model"[50]. Presently speaking, wholesale electricity markets consist of the regulated and free sectors of trade and ATS uses data from various different sources in the nodal price calculation. For instance, the System Operator submits preliminary dispatching schedule of generating objects calculated on the basis of planned hourly consumption. The "System Operator also presents refreshed equivalent circuit of electrical network in European part of Russia for each hour of the following day. In addition to data regarding the regulated sector, the market participants also submit to ATS their bids for purchase/sale in the free sector of trade"[51]. On the basis of the data obtained, ATS determines nodal prices and forms the hourly schedule of trade for the participants of the wholesale electricity market.

[50] TREISMAN D., The Return: Russia's Journey from Gorbachev to Medvedev, Free Press, 2011, p. 189 e ss.

[51] KULESHOV D., Electricity Market Mechanism in Russia, Lappeenranta University Tecnology, 2008, p. 24 e ss.

The joint change in pricing mechanisms as well as in production sources has therefore made it possible to use oil for the transport sector and industry, while natural gas has been used to produce most of the country's energy demand. In this way, the peak demand of 2007 was met and exceeded[52].

Russia's energy strategy is still very focused on modernising its oil refineries and increasing the level of production of petroleum products, as well as increasing the quality of its fuels and, more recently, also in respecting the environment. The years of the Soviet Union had made the country a major world producer of oil, allowing it to reach high peaks in the production of the barrel of liquid per day. Yet at the same time as the collapse of the Soviet Union, oil production fell precipitously due to the depletion of the fields and the lack of maintenance and investment. Subsequently, due to both the privatisation of the sector and the rise in the price of the barrel on a global scale, the level of oil production increased again thanks to the renewal of old oil wells and the spilled-over know-how of Western technologies.

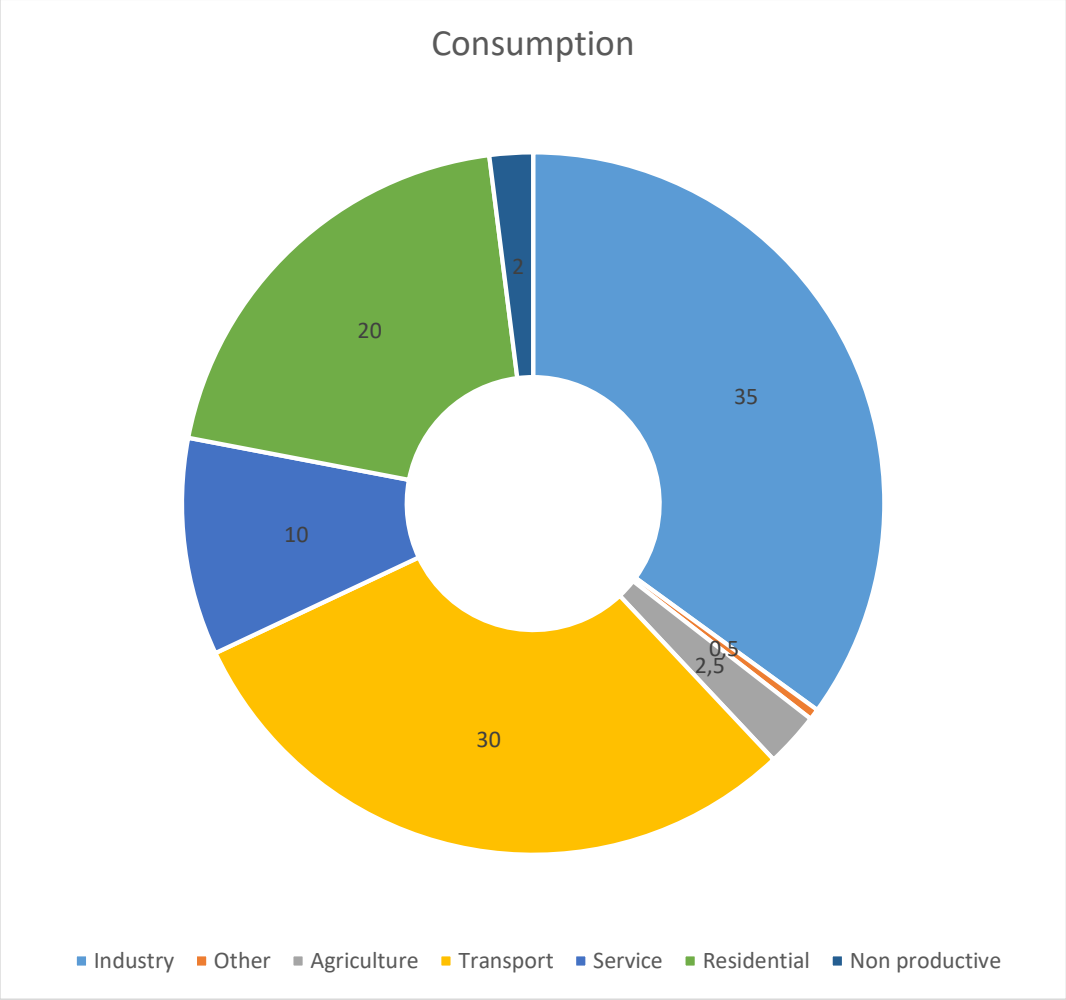
In the last decade, the situation of self-production is structural and has improved following the entry into operation of new plants, which has allowed an increase in exports compared to the previous ten years. This increased trend

[52] JAKOVLEV A., SOBOLEV A., KAZUN A. Means of production versus means of coercion: can Russian business limit the violence of a predatory state?, PostSoviet Affairs, 2013, p.369 e ss.

also shows that, despite the recent reforms of the electricity sector, which have decentralized state control of the market, the overall reorganization has not yet caused major changes and trends are not extremely differentiated[53]. The demand for energy that originates from a territory is closely related to its economic and social activity and is also a function of the infrastructures present in it. Historical analysis of electricity needs shows that Russia's electricity consumption has increased from 715 billion kWh in 1998 to 980 billion kWh in 2007. It is believed that the increase in demand for electricity is directly linked to the development of the manufacturing industry and the service sector, which have year after year increased their demand for electricity as well as for basic resources.

[53] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future", 2008, p. 125 e ss.

Graph, 1 Final consumption by sector Iea 2012



The graphed analysis on the consumption side shows that - apart from the industry - all other sectors have very similar consumption shares, accounting for about one third of the total. A large part of the demand for electricity comes from other strategic sectors of Russian industry, including oil and gas, metallurgy and metalworking. Although the distribution of consumption

among the final sectors has changed slightly in recent years, the industrial sector has always taken up the largest share.

In regard to the use of solid fuels, it should be noted that most of the consumption of solid fuels is concentrated in the production of electricity and heat, a figure that continues to be confirmed over the years. Russia is strongly committed to the development of the coal industry, given its large reserves, in order to increase the share of this fuel in the overall mix (and reduce the share of gas)[54]. Moreover, in the field of electricity production, the use of more advanced technologies for the treatment of fumes has significantly reduced the environmental impact of coal-fired power plants, which can now be fully compared with that of other thermoelectric power plants. Yet, it should be kept in mind that thermal power plants in Russia date back to the years when production technology was characterised by very low conversion system yields and inefficient and highly polluting combustion.

[54] JAKOVLEV A., SOBOLEV A., KAZUN A. Means of production versus means of coercion: can Russian business limit the violence of a predatory state?, PostSoviet Affairs, 2013

2.3. The role of private individuals and state prerogatives in the production of electricity: the gap between production potential and actual availability of electricity

As previously observed, the Russian electricity sector has been characterised by low prices with blocked tariffs. It was precisely the price reform that helped generate the change that was deemed necessary to modernise the whole system and, above all, to secure adequate profits for private and international entities that have wanted to enter into the production of electricity. The transition of Russian prices to world market levels has contributed significantly to the implementation of the reform program. Today, however, reaching market dynamics similar to those that are experienced in Western democracies remains far away for Russian standards[55].

Slower-than-expected growth in electricity consumption, including the impact of the global financial crisis, has delayed investments. This helps understand the gap in the market structures of this recently transitioned country from a market point of view. To take another real-life example, the case of California during the years of the electrical crises can shed light on *why* the structure of the Russian market is expiernecing echoing problems. In California there was also a kind of inability to sustain the demand for electricity and investments

[55] BALDASSARI M., PAGANETTO L., PHELPS E., Le privatizzazioni nell'est europeo, Sipi editore, 2012, p. 147 e ss.

were untimely because continuously low prices restrained any investment intention. This evidence has in fact hindered the possibility of proceeding with a more dramatic opening of the Russian market. The most recent clarifications on capacity payment mechanisms have generated the new conditions that could allow them to recoup fixed investments in new projects.

At the start of the Russian electricity market reform, the activities of RAO UES were separated from each other. TGCs (Territorial generating companies) form the basis of the Russian regional systems and operate in both electricity and heat production. TGCs were formed by restructuring the previously existed AO-Energos. At present, there are 14 TGCs. The geographical areas of the TGCs are presented in the following table[56].

[5656] HAMMONS, T.J. "Power market Restructuring in Asia: Russia, China, India and Japan". UPEC 06. Volume 1 6–8 September 2006. pp. 26–35

Fig. 1. Allocation of TGCs. IEA 2013

The three biggest TGCs are TGC-3 (Mosenergo), TGC-7 (Volga) and TGC-1. The last one operates in the North-West part of Russia, in the regions of St. Petersburg, Karelia, Leningradskaya region and Murmansky. These regions are characterized by high economic growth rate and a corresponding growing demand for electricity. The Unified National Electrical Network forms the electrical system of Russia, gathering stations and nodes for parallel work, and maintaining electricity transfers between them. All objects of the electrical system are governed by the Federal Grid company (FGC). In addition to FGC, seven Interregional Main Grid Companies (IMGCs) have been formed in

2003[57]. The IMGCs operate as joint-stock companies, and they are named in accordance with their operating areas as follows: IMGC Vostok, IMGC Sybirea, IMGC Center, IMGC South, IMGC Volga, IMGC North-West, and IMGC Ural[58].

Although the transition to the privatisation phase managed by Chubais in the late 1990s has radically changed the Russian electricity market, it has also generated a great number of problems. The management of the electrical system became a critical issue because of its economic damage. Chubais himself predicted that the system could clearly not sustain, over the years, a growing demand for electricity if not supported by a very substantial modernisation process. This type of expectation could only be met with an ever-increasing growth in production which required substantial funding to be able to increase production capacity. The reform procedure was conceived around the idea of maintaining government regulation over the natural monopoly components of the sector, while introducing competition and private investment in the generating segment. The large-scale reform of the electric power sector was launched in 2001 and subsequently experienced the entry into the market of foreign investors, particularly in the renewable energy

[57] SUTYRIN S.F, Russia's accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012, p. 258 e ss.
[58] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future", 2008, p. 125 e ss.

sector in more recent years. The accidents and the continuous stops in the production and distribution of electricity have led the government to include more resources for the modernization of the system with investments that have come close to 550 billion[59].

Currently, the manufacturing and mining industries are among the largest users of electricity in Russia. Thanks to the changes that have occurred in the last twenty years and, therefore to the creation of a distribution network now very articulated, the electricity sector is moving towards a very important modernization phase and increasing its competitiveness. Energy saving measures are also becoming increasingly important and are even recognised in recent legislation. The share of renewable energy (excluding hydroelectric generators with an installed capacity exceeding 25 MW) in total production increased from 1.5% in 2010 to 4.2% in 2019. The new rules for capacity payments impose heavy penalties on generators withholding declared capacity or using a different mix of capacity from that approved by the System Operator. Generators operating in the markets with limited interconnection are subject to price-cap regulation by FTS and FAS. Base-load nuclear and hydro-generating assets remain fully/majority publicly owned, with the majority of private suppliers operating thermal plants with comparable cost

[59] HAMMONS, T.J. "Power market Restructuring in Asia: Russia, China, India and Japan". UPEC 06. Volume 1 6–8 September 2006. pp. 26–35

structure. As a result, all of these listed novelties in Russia make the occurrence of California-type changes to the market design less likely. With the liberalisation of the wholesale market that was scheduled in 2011, most customers were supplied at unregulated wholesale market tariffs. Residential customers were supplied at regulated tariffs until 2014, with the level of residential tariffs gradually brought in line with the full economic cost. Industrial and other users were supplied at market prices. Voluntary bilateral contracts between suppliers and buyers of electricity capacity allowed retail distribution companies to hedge their price risks and purchase contractual amounts at mutually agreed prices. Any price increase at wholesale markets could be passed on to industrial and other non-residential customers who were not subject to price gaps[60].

With regard to the use of solid fuels, it is important to note that most of the consumption of solid fuels is concentrated in the production of electricity and heat, a figure that continues to be confirmed in recent years. Russia is strongly committed to the development of its coal industry, given its large reserves, in order to increase the share of this fuel in the overall mix (and reduce the share of gas). In the field of electricity production, the use of more advanced technologies for the treatment of fumes has significantly reduced the environmental impact of coal-fired power plants, which can now be fully

[60] SUTYRIN S.F, Russia's accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012, p. 258 e ss.

compared with that of other thermoelectric power plants. However, thermal power plants in Russia date back to the years when production technology was based on very low conversion system yields and inefficient and highly polluting combustion. The energy policies and the role of the Russian oligarchies, which originated during the transition from the communist regime to the market economy currently plays a still too heavy role. In the past, the role of these players in the market has produced a system of energy production that is not very attentive to waste, with fixed prices and not open to international investment. Presently, the weight of the lack of effective freedom within the market is transformed into the conditioning of the production of electricity based on natural gas itself. Very strong interests on the part of energy producers are present in energy exports[61].

Current energy market conditions also block access to energy services. Access to energy services and adequate availability of energy are essential requirements for the socio-economic development of the market and of the country itself. As a result, the growth-oriented macroeconomic framework, despite the reversal of the trend of recent years, could lead to an increase in sectoral consumption of primary energy sources. The economic development of Russia has already been closely linked in terms of energy to a worrisome increase in internal energy consumption, while many EU countries, afflicted

[61] HAMMONS, T.J. "Power market Restructuring in Asia: Russia, China, India and Japan". UPEC 06. Volume 1 6–8 September 2006. pp. 26–35

by the international economic crisis, have provoked negative dynamics on the demand for energy - especially electricity. This constitutes a factor of great discontinuity with respect to Russia's past, whose increase has been in line with the tendency to pursue high levels of development and modernization[62]. The degree of growth in the consumption of all energy goods in recent years has, in fact, confirmed the impressive parallelism between the growing internal demand for fuels - particularly evident for natural gas - and the economic development of the Federation. A historical analysis of the market has shown that the rapid increase in demand for domestic energy is mainly attributable to the production of electricity and/or heat, which consumes most of traditional fossil fuels. In sectoral consumption, industry uses the highest rate and the expected increase in consumption also concerns the intensive energy activities of other sectors of industry - steel, chemicals, construction - which are major exporters to the world market[63].

Despite the increase in domestic consumption, the current scenario of high tension and rising oil prices - with natural gas recording similar dynamics - favours the Russian economy. The latter is constantly growing and

[62] TATENERGO 'Wholesale electricity market rules in the transition period: main features'. Powerpoint presentation. www.tatenergo.ru/download/presentation_02.ppt, accessed on 19 Februrary 2010.

[63] TATENERGO 'Wholesale electricity market rules in the transition period: main features'. Powerpoint presentation. www.tatenergo.ru/download/presentation_02.ppt, accessed on 19 Februrary 2010, p. 14 e ss.

increasingly based on exports, the federal energy policy accounts that the country sells profitably on foreign markets. Here, the interests of the oligarchies are therefore very pressing. Energy exports, which account for much more than half of total exports, make up a very large proportion of government revenue, since regulated and too low prices do not allow Russia - and Gazprom in particular - to gain from sales in the domestic market. For the Government, taxes and duties on energy products must be such as to support the entire economy of the country with cheap supply, sold at less than the marginal cost to domestic consumers. Considering the role played by gas exports in the federal budget, 40% of which is destined for export, and given the sharp rise in fuel prices in international hubs, it would be irrational for Russia to continue to increase domestic fuel consumption, which it could introduce into foreign markets to further raise the State budget[64].

2.4. The possible evolutions of the Russian energy scenario

The analysis presented in this chapter has tried to explain how the developments that have characterized the Russian energy market have been

[64] SUTYRIN S.F, Russia's accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012, p. 258 e ss.

mainly attributable to the progressive opening to foreign investors. At an evolutionary level, however, the market is still very much conditioned by the weight of the oligarchies that exercise their power by exploiting the still persistent hostility to complete liberalization and, therefore, Russia's openness to competition.

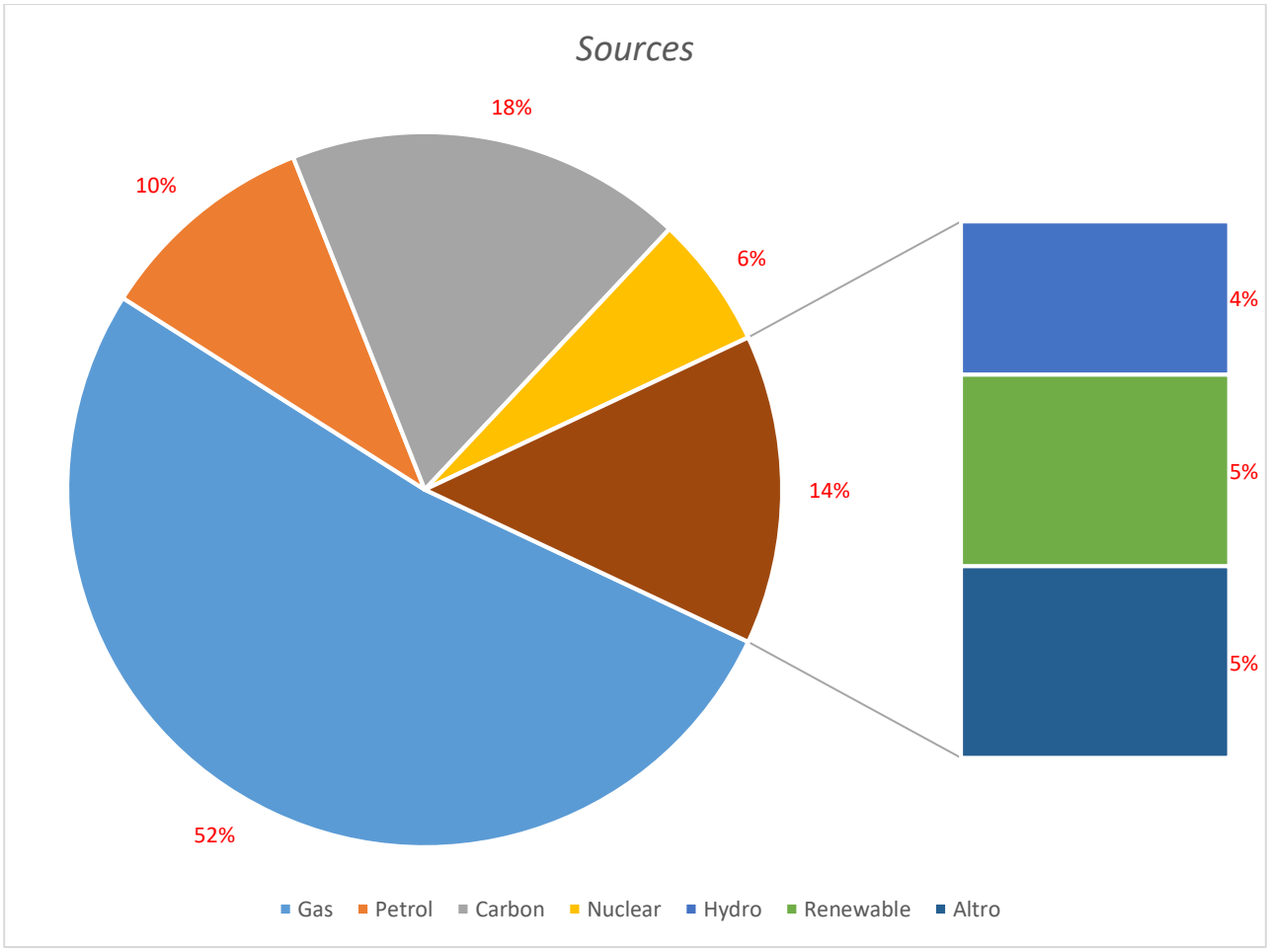
There are some important features of the current structure that make the market still too much ingrained. Recently, as discussed in the following chapter, the opening up to new energy sources and therefore to renewable electricity generation has brought important innovations to the Russian market that could actually pave the way for a radical change. The problem afflicting Russia, as would afflict any State with an abundance in natural resources, is the intensive and cheap exploitation of these resources[65]. Since these resources are abundant, Russia appears to be failing to take into full account the need to innovate the energy mix, renew distribution, allow the entry and investment of new capital that can strengthen the system. A change had occurred at the very time when there was expected to be a peak in demand which would have risked causing considerable damage. It was only in the face of fear that it was possible to create a flexible dynamic of market prices and thus increase profit opportunities for new investors. Currently the possible

[65] DI NAPOLI G., SENATORE A, La Questione Energetica e le Relazioni Russia - UE, consumi interni e scenari internazionali, Dicembre 2009

and future scenario sees a progressive replacement of fossil fuels used in power generation. The investments of multinational players such as Enel show that the objective is to go on to develop the energy production sector. From a technical point of view, the distribution network currently has considerable strengths: it is very interconnected and sufficiently competitive[66]. Russia's gross domestic consumption consisted mainly in natural gas and a smaller portion deriving from the domestic production of solid fuels.

[66] TATENERGO 'Wholesale electricity market rules in the transition period: main features'. Powerpoint presentation. www.tatenergo.ru/download/presentation_02.ppt, accessed on 19 Februrary 2010, p. 14 e ss.

Grafico 2. Energy mix. Source IEA 2016



Of the traditional fossil sources, the largest share of energy consumption is undoubtedly natural gas for about 60%; oil, although it has reduced its weight in percentage terms over the years, still accounts for almost 21%, with solid fuels at 16%. Electro-nuclear power, however, remains important. It can be seen that despite recent investments renewables are considered almost non-

existent[67]. Until the 1950s, coal contributed to satisfying Russia's need for energy, as its main source, yet it was replaced in the 1970s by oil and natural gas, which were obtained mainly from deposits in Western Siberia and the Volga-Ural belt. Since then, the energy share of coal and nuclear has remained fairly constant, while the percentage of oil used in the energy mix has decreased. In fact, in absolute terms, oil consumption has remained relatively static since 1970, but the share of oil in the primary energy mix has decreased significantly and has been constantly replaced by natural gas. This is mostly explained by the fact that natural gas is the most abundant resource and oil has been progressively used for other purposes[68]. The environmental impact is therefore decidedly very high, given that renewable resources are also used very little. A possible future evolution of the system could therefore lead to new substitutions in the energy mix. The intended direction is that of helping highly qualified investors to target the Russian electricity market.

The ideal conditions for Moscow would be to limit the presence of investors only to the renewable sector, which is the least developed. Investors with a high level of knowledge could therefore innovate and benefit from a change in the Russian energy mix, without exploiting a resource that until now has

[67] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future", 2008, p. 125 e ss.

[68] PACLYUCHENKO, A. "The Structure Of The Russian Power Industry And Competitive Relations: The Present And The Future", 2008, p. 125 e ss.

been decidedly very abundant[69]. In particular, for oil, after a slight decrease in the previous decade, production is recovering in recent years. With regard to coal and fossil fuels, production has fallen during that period, stabilizing only in recent years. The positive oil increase in recent years has increased the contribution of crude oil and petroleum products in the product mix, but is still significantly lower than that of natural gas. The end of the oil era, following the actions of OPEC countries afflicting barrel prices, as well as bad weather conditions, is undoubtedly one of the most relevant issues for the Russian context. This mirrors, more recently, the problems caused by Trump's disengagement from the Middle East region, made possible by the fact that the United States has become very recently a major producer and exporter of both gas and oil. Interesting in this regard is the rapprochement between Russia and China on the exchange of energy resources. In 2014 Gazprom and China National Petroleum Corp (CNPC) signed an agreement for the supply of natural gas amounting to 400 billion dollars, thus bringing Russia to enter the Chinese list of gas exporters with 38 billion cubic meters per year of guaranteed exports. It is interesting to note that the acceleration of the negotiations and consequent agreement between Moscow and Beijing came shortly after the imposition of Western sanctions against Russia for the annexation of Crimea. This temporal coincidence provokes the consideration

[69] SUTYRIN S.F, Russia's accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012, p. 258 e ss.

of whether the possibility that the tightening of relations with the European Union could push Moscow to look more outwards toward the East, with the risk of favouring the consolidation of a Russian-Chinese bloc threatening to Western interests and, above all, European interests[70]. In this rapprochement with Beijing, Moscow sees not only great opportunities for profit, but also a strategy for the defence of Russian interests in the area which, with Chinese activism in Central Asia and Europe, risks to be compromised in the coming decades if action is not taken. The announcement of the Belt and Road project, by Chinese leader Xi Jinping, stirs turmoil not only across the United States and Europe but also across Russia, who seeks to to turn the BIS project to its advantage and become a protagonist influence in the area that divides it from the Chinese giant, rather than be reduced to a supporting role and lose the influence gained in the area so far.

Overall, the domestic production of traditional Russian fossil fuels has been variable over time: the analysis of the trend shows a steady decline until the years 1998 and a subsequent, albeit moderate, growth. The investment in renewable sources is an obligatory step for the Russian oligarch interests, which are still too influential within the national electricity market. Renewable sources, however, contrary to what happens to natural resources to be

[70] OKSANEN M., KARJALAINEN R., VILJANEN S., KULESHOV D., Electricity Markets in Russia, the Us, and Europe, Lappeenranta University of Technology, 2018, p. 25 e ss.

considered reliable to produce electricity need to be managed with experience. Moscow's gradual opening up to foreign investors in this area shows that Russia is keen to achieve less independence from natural gas in the short term. The scenario shows that it is Russia's precise intention to directly acquire experience and be competitive by selling market shares to foreign investors in the field of renewables. Proceeding independently would mean reliving the problems that characterized the electricity market during the late 1990s and in the past decade. It should also be noted that the hydroelectric sector plays an important role since the greater weight of renewables used to produce electricity is determined exclusively by hydroelectric power. On the contrary, the contribution of other renewable sources remains marginal, even though trends show little growth over the years. The same consideration should be extended also to nuclear generation. Laslty, it should be noted that the contribution of solar energy, both thermal and photovoltaic, to electricity generation remains null, as well as that of tidal energy and other renewable sources. An opening to produce its effects should therefore be total and not too gradual to avoid the problems encountered at the end of the last century.

A comparison of the consumption and production trends of the individual types of energy sources reveals a number of conflicting aspects. On the one hand, the consumption of solid fuels is slowly decreasing, as is the share of oil and petroleum product consumption. On the other hand, if the production of

solid fuels is constantly reduced during the entire period considered, in line with the decreasing trend in consumption, this is not the case for oil.[71] Despite the lower domestic demand, Russia has increased the supply of oil and more generally of its energy goods, identifying the export of its energy resources as the sector of strategic importance for the socio-economic and political development of the country. The effects of the international economic situation on the rise in the price of oil per barrel have, therefore, favoured the development of the Russian oil industry in recent years. It has helped increase the production levels of this commodity to be exported to international markets.

The modernisation of the electricity system is primarily based on renewable energy sources. Here, the only renewable resource used is the one that is derived from hydroelectric power. The energy mix of electricity generation, despite the contributions of hydroelectric and nuclear power, remains virtually unchanged from the years of the Russian transition to a market economy. Indeed, it is the presence of very abundant natural resources which directs production towards the "simpliest" solution. Putin himself is reassuring the world about the presence of an almost infinite resource capacity of natural gas, yet its complete extraction appears to be unsustainable. To this

[71] TATENERGO 'Wholesale electricity market rules in the transition period: main features'. Powerpoint presentation. www.tatenergo.ru/download/presentation_02.ppt, accessed on 19 Februrary 2010, p. 14 e ss.

end is the added concern that about half of the extracted gas is intended for the production of electricity. Gas contributes more than 50% to electricity production and among the traditional heat sources, it constitutes about 70%. Although other renewables, particularly wind and geothermal, are growing at a fast rate, these still play a marginal role in the production mix.[72] As a result, thermoelectric generation in the medium-to-long term will remain most relevant and characterized by the strong dependence of natural gas for a long time to come, whereas the recent opening to renewables and foreign investment is remaining minimal. However, renewables are destined to play more and more a fundamental role, just think of how the excess production of natural gas in Russia has already led to a massive use of renewables in power plants over the last thirty years.

The significant growth in sectoral consumption of natural gas, mainly concentrated in the electricity sector, is also linked to demand from the industrial and civil sectors, as well as for solid fuels. Instead, demand for oil is maintained at a high level, mainly by the transport sector. The analysis of domestic energy production in recent years has shown a downward trend over the period, especially for the oil and coal industry, two of the most important national energy industries. Despite the recent increase in

[72] DI NAPOLI G., SENATORE A, La Questione Energetica e le Relazioni Russia - UE, consumi interni e scenari internazionali, Dicembre 2009

production trends, the values of current production do not match the peaks reached during the Soviet years, which was followed by a drastic drop in production. Growth in consumption trends, in recent years, is only partly due to the already unfavourable weather conditions and the expanding economic macroeconomic context. Rather, the increase in consumption can also be attributable to the failure to improve energy conversion systems as a whole, who remain characterized by obsolete technologies and low efficiency, thereby necessitating an increase in the know-how of modern technologies to make production more flexible and increase efficiency.

With regard to technological inadequacy, the most pressing problem is the fact that Russia's industry utilizes technologies that are lagging behind Western countries, with the exception of the aerospace sector[73]. The acquisition of new technologies and skills and the exchange of experience, markets, tools and methods aimed at energy efficiency measures, are the basic requirement to ensure the development of the energy sector in Russia. Here, EU interests are essential. In order to cover its energy needs, the EU needs Russia's export levels to exceed, thereby the EU not only has to offer its technologies, but also funds and investments. As with access to its transport networks, Russia, eager to control these processes, refuses to allow transnational companies access to

[73] DI NAPOLI G., SENATORE A, La Questione Energetica e le Relazioni Russia - UE, consumi interni e scenari internazionali, Dicembre 2009

its strong energy industry and prefers the formula of joint ventures involving shared risks in agreements for the distribution of production, as sought by Western investors. The increased participation of foreign investment could allow Russia, whose government still remains reluctant, to reach the levels of capital necessary to ensure the modernisation of both the energy and industrial sectors.[74]

[74] SUTYRIN S.F, Russia's accession to the WTO: major commitments, possible implication, ITC (International Trade Centre), San Pietroburgo-Ginevra, settembre 2012, p. 258 e ss.

CHAPTER THREE

Enel's investments in the Russian electricity sector

3.1. Enel Energia's entry strategy into foreign markets: the relevance of Eastern Europe

EGP's business model is based on the geographical and technological diversification of its activities, the consolidated technological knowledge, the substantial portfolio of installations and development projects. These elements compose one of the leading companies in the renewable energy sector. The process of organizational planning characterizing the entrepreneurial phenomenon has changed profoundly over recent years. The speeding up of economic processes, the instability of markets, the greater competition, the consequences of globalization, and the uninterrupted evolution of technologies and societies, have required the business world to become more flexibile and a capacity to reorient strategies, previously unthinkable[75]. This has forced companies to reinvent themselves and reorganise themselves. This request for change and modernization has led to refocus on the variables related to human resources and, therefore, on the individuals who make up the 'company which are required specific knowledge, problem solving skills, greater dedication and perseverance in the work.

[75] CHECCHI, C. "Energia: verso un mercato unico europeo", Ref-e, 2012, p. 2 e ss.

There are also companies that start the process of internationalization as a result of reactive behavior, to compensate for risks already present. In fact, these might enter the foreign market to expand their market share, because the domestic market might not allow growth, but call into question its own survival. In this situation, companies make their diversification decisions starting from a condition of weakness or crisis, which requires a careful assessment of the starting conditions in order to understand the real objectives of the company and the real prospects of success. The case of Enel Energia is emblematic, given that the propensity and choice to internationalize through the entry into foreign markets is to be considered precisely an attempt to expand its business model.

The case of Enel shows that the company undertakes the process of growth from a situation of strength, more specifically from its great experience as a monopoly in the energy sector and its propensity to develop alternative solutions to traditional sources of supply. In this context of the energy market, Enel's problem becomes its the development of an effective strategy to exploit its strengths.

Enel's choice to enter foreign markets is mainly aimed at keeping competition under control, with the threat of possible retaliation policies from various companies operating in the same countries. Here, Enel's market investments are motivated by the conquest of such markets to guarantee direct access to

outlet markets linked to the need to adapt the product/service to the specific needs of local customers. Often this is only possible through the use of localized resources and expertise, permitting better access to information and easier contact with customers.

Internationalization can be very advantageous in the case of Enel, helping its development, while obtaining knowledge, in sectors where technology and know-how are critical success factors for the growth and profit. In this context, the foreign direct investment made by the company that has a more technologica and competence advantage represents the most effective mechanism of access. A direct and local presence is beneficial for learning effects, imitation and even exploitation of technological synergies through the coordinated exchange of information and/or specialization on specific aspects of innovative activity. However, the benefits of internationalisation to facilitate access to new knowledge are not limited to the technological field. In the energy sector, choices aimed at seeking technological complementarities in many cases also offer the opportunity to seize significant market opportunities[76].

In some of the countries where it operates, EGP pursues its development programs through codevelopment agreements or joint ventures with local or

[76] Enel Green Power "9M 2012 consolidated results, November 12, 2012", p. 147 e ss.

international entities. The decision to enter into agreements with developers or third parties is generally motivated by the opportunity to benefit from the experience and the established presence in the local markets of such operators. Any non-compliance with international partners or local authorities regarding the manner and terms of project development or management could adversely affect the ability to develop certain projects. Therefore, the company may need to modify or reduce its development objectives in certain areas or technologies, resulting in negative effects on its economic and financial situation.

3.2. Distinctive features and Enel's competitive advantage in the international scenario

Enel is a company with well-defined strategic guidelines. The Italian company has for years been pursuing the path of innovation and production internationalization. The paths chosen for such realization has been that of collaborations, acquisitions (the case of Endesa is emblematic) and innovation. It is of no coincidence that, in Russia, the Italian company has always presented itself as a profound innovator in the electricity sector, both in terms of energy distribution and production[77]. As a matter of fact, one of the

[77] EGP, Enel entra nel mercato delle rinnovabili in Russia aggiudicandosi 291 MW di capacità eolica, disponibile su www.enel.com/content

operating arms on which the company relies, the absolute protagonist of the investment in Russian renewables, is Enel Green Power.

Enel Green Power, the renewable energy division of the Enel Group, is dedicated to the development and management of renewable sources worldwide, and is present in Europe, America, Asia, Africa and Oceania. Enel Green Power is a world leader in the green energy sector with a managed capacity of 38 GW in a mix of generation which includes wind, solar, geothermal, biomass and hydroelectric. It is also at the forefront of integrating innovative technologies, such as energy storage systems, into the plants from renewable sources[78].

A clear example of Enel's desire to conquer foreign markets through innovation is its entry into the Russian market. From its outset, the construction of wind farms, and the general investment in renewables, is only the tip of the iceberg of a very complex business strategy. While the Spanish case (Endesa) has represented for Enel the realization of a very clear external growth plan, the entry into the Russian market should be regarded as the materialization of a much more complex need for the Italian company[79]. The Skolkovo technological centre is the Russian equivalent of the Silicon Valley and the Innovation Hub, which is managed by Enel and intends to research

[78] Emerging Energy Research (EER). "Global renewable power generation forecast: 2009-2020", p. 125 e ss.
[79] Enel Green Power "9M 2012 consolidated results, November 12, 2012", p. 147 e ss

and select the most interesting Russian technologies, particularly in the energy and IT sectors. These are two key areas in which the country's startups stand out. Innovation is a great challenge for all established companies operating in sectors that have historically enjoyed natural development due to inherited technologies. The opening of an Innovation Hub in Russia is, therefore, a great opportunity for Enel, who works hard to maintain its position as an operator at the forefront of the undergoing technological evolution in Russia. In addition, there is an ongoing search for partnerships with other Russian companies. In 2018, a strategic cooperation agreement was signed and the partnership with Russian Railways (RZhD) was extended, including an extension of the energy supply contract that has linked the two companies since 2008. Enel has signed through Rusenergosbyt, the Russian joint venture with ESN. The two companies will thus be able to plan interventions and investments over long-term scale. The objective is to ensure a stable and reliable supply to the Russian railway company, committing to significantly increase energy efficiency in all segments of the transport sector through the use of renewable energy, while promoting the automation and digitization solutions aimed at conquering new markets, technological modernization, and reduction of environmental impact. Yet, the Russian market depends substantially on natural gas and energy production, which is strongly

conditioned by the simplest production strategy and capable of guaranteeing immediate profits[80].

The delay of the Russian government over the years in favouring investments in renewables has forced a recent opening to private investors[81]. The history of the Russian market has a tendency to repeat itself: peak demands or external shocks lead the government to be more inclined towards an unprecedented liberalisation policies or the result of specific choices. The two main pillars of EGP's industrial strategy are the technological and geographical diversification. In particular, the latter falls within a context characterized by processes of integration and the merging of the most important energy utilities. Such increase in size is explained by the objectives of boosting the technological and geographical profiles of energy utilities, with the aim to leverage synergies and support future investments.

Due to the geographical and technological diversification of its activities, the consolidated technological knowledge and the substantial portfolio of installations and development projects, Enel Green Power stands as one of the leading companies in the renewable energy sector. In particular, EGP is leader in the energy production and is second in installed capacity. The multi-technological positioning (hydro, geothermal, wind, solar and biomass) gives

[80] Enel Green Power "9M 2012 consolidated results, November 12, 2012", p. 147 e ss
[81] PIANO STRATEGICO 2019-2021, Decarbonizzazione e clienti per promuovere la crescita e creazione di valore, disponibile sul sito internet https://corporate.enel.it

Enel Green Power advantages in terms of growth options, better use of resources in the geographical areas of interest and mitigation of variability in production. The vast geographical location of EGP's activities (16 countries spread across 3 geographical areas) leads to advantages in improvements of the risk/return profile on investment, oversight of new high-potential markets, mitigation of seasonal/variability production and of regulatory risk. Since the EGP foundation, the company's top management has decided not to focus on incentive schemes, but rather on long-term sustainability. Most of the renewable companies worldwide are characterized by a heavy dependence on incentives, whereas EGP is more limited in its dependence on incentive schemes as one of the main operating KPI's, representing a fundamental competitive advantage[82]. The factors that lead a company like Enel to seek to expand its production and sales activities in foreign geographical areas can be classified into different categories. One connected to the development of the competitive position and the other connected to the exploitation of the stimuli coming from the relevant environment[83]. It is precisely the exploitation of such stimuli from the competitive environment that constitutes the international expansion of the company. The international evolution is, however, a passage that is articulated in different phases towards new geographical areas. There

[82] EGP, Enel entra nel mercato delle rinnovabili in Russia aggiudicandosi 291 MW di capacità eolica, disponibile su www.enel.com/content

[83] PIANO STRATEGICO 2019-2021, Decarbonizzazione e clienti per promuovere la crescita e creazione di valore, disponibile sul sito internet https://corporate.enel.it

are various reasons which arise at a given time and which lead to the choice of extending the scope of action to foreign markets. Dunning[84] lists the reasons behind the internationalization of companies into three macro-categories:

1. The possession of relevant skills that give rise to a competitive advantage
2. The presence abroad of favourable conditions for the development of its activities that allow to enhance the specific skills
3. The company can exploit its predisposition to international competition and thus exploit its position of advantage.

Enel's expertise in the Russian market will certainly be linked to the attempt to ease the dependence of the Russian electricity system on fossil fuels and gas. The experience in the field of renewable energy certainly provides a new impetus to the reorganization of the structures of the entire Russian system. As a matter of fact, in the specific case in question, the possible internal thrusts to foreign expansion can be summarized in a grid that holds, on the one hand, the mode of entry into foreign markets and, on the other hand, the degree of foreign presence already achieved by the company[85] The same willingness to possess other knowledge about the characteristics of a given service or

[84] DUNNING J., International production and the multinational enterprise, Allen, London, 1981, p. 124 e ss.

[85] PIANO STRATEGICO 2019-2021, Decarbonizzazione e clienti per promuovere la crescita e creazione di valore, disponibile sul sito internet https://corporate.enel.it

production method leads companies to export their goods. This can be decisive for companies that are already present at an international level as it acts as an important determinant in the attempt to expand their commercial presence.

EGP has technical knowledge across of technological sectors in which it operates. With regard to geothermal energy, Italy Enel Green Power inherits more than a century of experience in the field of high enthalpy, with strong skills in all key stages of the value chain. In the hydroelectric energy field, the company is the first operator of hydroelectric power plants of small and medium size in Italy and has expertise in all key stages of the value chain. With regard to the solar energy, Enel Green Power has chosen to enter the entire supply chain (including the manufacture of photovoltaic panels) through top technological partners worldwide. Enel Green Power is active in the development, implementation and management of large photovoltaic parks property in the geographic areas in which it operates. Finally, in the wind sector, the company has the opportunity to exploit, through Enel Green Power España, the consolidated experience of Endesa Generación in the different stages of development of this sector of activity. The internationalization strategy implemented by EGP aims at strengthening the presence in those geographical areas characterized by a significant market growth and by the existence of incentive policies to support the production of renewable energy.

Depending on the nature of the business development model adopted by the company, the investment may be made in three different ways: (1) greenfield projects, (2) co-development agreements and (3) acquisitions.

3.3. Entry strategy in Russian market

in the framework of the tender launched by the Russian Government in 2017 for the construction of 1.9 GW of wind capacity in the country, Enel, through its subsidiary PJSC Enel Russia has been awarded two wind projects for a total capacity of 291 MW. The two projects are developed and built by Enel Green Power, Enel's Global Renewable Energy Division. Enel's investments are part of a complicated geopolitical framework in Russian government's race to gain important competitive advantages in the renewable energy sector. This is because the Baltic Republics such as Lithuania, Estonia or Latvia are pushing the accelerator of energy production from renewable sources. The reasons are, of course, a focus on the energy transition and environmental issues affecting the world[86]. Enel is the leading Italian investor in Russia and has been present

[86] The race towards the renewables of the three republics depends very much on the desire to cut the umbilical cord that still holds them attached, from the energy point of view, in Moscow. Not to end the Ukraine with which Russia passed from the 'gas war' to the real war until the annexation of the Crimea in 2014. The geopolitical objective of the Baltic States is

in the generation and sale to end customers sectors since 2004 with four thermoelectric power plants. It is also relaunching its presence in Russia by bringing its experience gained in the world in the field of renewable energy, with this new wind of energy projects, and in giving birth to a new industry, new jobs and investment in innovation. Investments in renewables are made through Enel Russia. The latter is supported by Enel Green Power via its knowledge of internationalisation markets, its excellent familiarity with the ability to activate public and private finance/facilities, through the organization of on-site production and logistics resources, the ability to acquire materials, raw materials, and through the training of human resources, in terms of skills, capacity development and organization[87].

Enel's strategy for boostering his presence into the Russian market is strongly based on the possibility of increasing the appreciation of its specific skills in the field of electricity grid management and, above all, in the generation of energy from renewable sources. Its strategy in Russia is that of acquiring, through collaborations, unprecedented skills that have strongly paralyzed the Russian system in terms of innovation. The overabundant gas from a resource is becoming a problem because it has blocked the search for new sources of energy production for years. Russia, therefore, wants to open up to new types

therefore to be self-sufficient in energy by 2025 by connecting to the European grid and breaking away from the Russian grid.

[87] EGP, Enel entra nel mercato delle rinnovabili in Russia aggiudicandosi 291 MW di capacità eolica, disponibile su www.enel.com/content

of energy production. For Enel, Russia's context represents the possibility to stimulate the change in its business model via productive internationalization. From a manager's point of view, internationalization refers to the company's ability to generate value through international activities.

Enel's investments in Russia are to be considered an important opportunity for Russia and in general able to generate value. The aspects characterising the production systems, i.e. the different ways of combining the resources and support activities necessary to complete the transformation, depend mainly on the complexity of the process. The decision on the combination of resources in the electricity market calls into question both the technical and economic aspects of production previously referred. The two fundamental requirements to be verified are, firstly, the assurance that the process guarantees the obtaining of products/services that comply with the characteristics in terms of performance and quality required by the level of competition and, secondly, that the rules of economic convenience in terms of estimated costs and volumes of revenue are adhered to. The constant nature of the cost of the company's investments, constitutes one of the main sources of risk for the combination. Investment decisions are therefore closely linked to the correct way of identifying a financial strategy and planning[88]. Production is characterized by the uniqueness of the product, generally very complex, of

[88] PIANO STRATEGICO 2019-2021, Decarbonizzazione e clienti per promuovere la crescita e creazione di valore, disponibile sul sito internet https://corporate.enel.it

high size scale and not subject to handling once completed. Some examples can be the construction of large civil works and aerospace programs or, more relevantly, the investments made in renewable energy by Enel in Russia. In a country where oil and gas are the masters of electricity production, Enel has invested about 405 million euros. This is an important growth opportunity for Enel and, contemporarily, it denotes a very important development for Russia, who has chosen to start a process of strong modernization of its electricity sector.

Recently Enel has started work on the construction of the 90 MW Azov wind farm, located in the Rostov region of southern Russia, which is the Group's first renewable energy plant in Russia. The park, which is also the first renewable plant in the Rostov region, is owned by Enel Russia, a subsidiary of the Enel Group, while construction activities are entrusted to EGP, which has also completed the development phase. Enel Russia's total investment in the Azov wind farm amounts to about 405 million euros. The project is expected to be operational by the end of 2020 and once fully operational will generate about 320 GWh of clean energy per year, avoiding the emission into the atmosphere of about 260,000 tons of CO2. The wind farm will comprise 26 turbines, spread over 133 hectares[89]. Enel Russia has been awarded the Azov wind farm, together with the Murmansk wind farm (201 MW), for a total

[89] EGP, Enel entra nel mercato delle rinnovabili in Russia aggiudicandosi 291 MW di capacità eolica, disponibile su www.enel.com/content

capacity of 291 MW, following the same public tender launched by the Russian government in 2017 for the construction of 1.9 GW of wind capacity in the country. Also for Murmansk findfarm Enel Green Power is responsible for the development and construction of the plant, which will require a total investment of about 273 million euros.

Enel Green Power has established an effective development model that sets the basis for a growth modulated on the characteristics of each different technology in the portfolio. First, the focus is on the absorption of cash related to the costs and to the duration of investment periods. Subsequently, the cash generation ability is valued based on the production profiles, the economic lifetime of the plants for each technology and the prices to which the electricity can be sold. This business development provides different ways of development and the joint use of these modes allows Enel Green Power to increase its market penetration and to extend the growth options available. With this possibility to have a pipeline with a large number of projects geographically diversified, Enel Green Power could be able to adapt its presence according to the resources available and to the different economic and regulatory geographical areas, mitigating the portfolio risk and modulating its investments and growth through an appropriate combination of projects according to the development time and the risk/return profile of the same.

Another point of interest for the development of Enel presence in Russia is the agreement reached a few years ago with Rosseti for the improvment of energy networks. The two-year agreement aims to build partnership relations between Enel and Rosseti through the exchange of information, the sharing of best practices and technological solutions in the work areas outlined in the agreement –such as those of smart meters and network digitization.

Digitization is one of the pillars of Enel's 2017-2019 Strategic Plan, which in 2001 was the first utility in the world to implement smart metering technology, replacing the conventional meters of Italian customers with digital smart meters, now being replaced with second-generation meters. The group is also installing smart meters in Spain and has started pilot projects in Romania, Chile, Brazil and Colombia. In addition, it has numerous smart city projects in Santiago, Chile, Buzios, Brazil, Malaga and Barcelona, Spain. Rosseti manages 2.3 million km of power lines and 496,000 substations with transformers for a total capacity of over 773,000 MVA. It is the Russian market leader in the application of innovative technologies to transmission and distribution networks[90]. This construction of smart electricity grids is fundamental considering the impact on the lives of people generated by the production of energy. Infact recent studies that have been conducted on the ecosystem indicate that emissions linked to the production of electricity in some parts of

[90] PIANO STRATEGICO 2019-2021, Decarbonizzazione e clienti per promuovere la crescita e creazione di valore, disponibile sul sito internet https://corporate.enel.it

the world are increasing. This will certainly have a negative impact worldwide and lead to imbalances that will radically change the current state of our ecosystem. This helps explain the willingness of states and manufacturers to move forwards and avoid running into processes of limitation.

An electricity grid enables producers and distributors to optimise the production and distribution of electricity. Costs are optimized, demand peaks are managed, strategic and marketing planning is changed. Consumers are more attentive and satisfied as they can achieve savings on their bills without giving up the possibility of obtaining energy when and where it is needed. Here, “optimisation” is the term used to describe changes in the management of the electricity grid. In order to implement such changes, the most important change must stem from the strategic mentalities of managers who do not have to face the problem from a purely "hardware" point of view. The skills, the use of big data and any other type of innovation of the organizational, productive, managerial and commercial modus operandi are necessary. Enel's strategy to penetrate the Russian market has undertaken such path. The conditions for developing this type of technology exist in Russia to a great extent, given the technological advances in the field of communications but technologies remain currently used mainly for military purposes. Therefore, it is only with a strong integration of concepts, skills and investments, the theme of smart grids can still find new approaches, gradually and progressively offering new

business opportunities to companies and multinational corporations. Although there are already many ways in which these changes can be used to create value in the most diverse sectors, research shows that humanity is only at the tip of an iceberg full of innovations, productivity and growth that will emerge strongly soon.

3.4. External growth as a driver of value for Enel in the Russian market

The recent Enel's expansion, through Enel Green Power in Russia, represents the materialization of a growth-oriented strategy. An endogenous growth for Enel considering its propensity to develop innovative technologies and persistent acquisitions over the years in Spain and now Russia. It is a growth of an international scale, searching spaces on which to base any production of value. The entry into the renewable Russian market can be interpreted as a sort of pioneering choice for the Italian company. The Russian market is strongly controlled, and its investment strategy should be seen as the result of years of work, oriented to create contacts in the field and at the same time acquisition of knowledge and the dynamics of power within the Russian market. In fact, it would not have been possible to make the investment in

renewables without the growth path that was initiated, roughly fifteen ago, in Russia.

Enel's growth strategy derives from a mix of internal and external factors and, moreover, the way in which external factors are interpreted within the company. Russia has historically been a market for Enel to conquer. It may seem strange that even a decade ago Enel always saw the Russian giant as a potential market. Enel's interest in Russia is certainly not linked to renewable energy alone: Russia is rich in natural resources and placed in an advantageous position.

Enel’s investments and development strategy, due to the intrinsic characteristics of the reference market, constitutes a formal procedure governed by methodologies and carried out through precise procedural supports. Enel's planning should, therefore, not be seen as a procedural ritual that risks increasing the degree of rigidity of an organization, but must be designed and conducted according to the specific needs of strategic processes and flexibility, allowing objectives and strategic tools initially defined, to adapt and alter in the face of changes in strategic assumptions and scenario. However, strategic quality planning does not eliminate all the risk factors typical of corporate life. Rather, it constitutes a system for dealing with corporate risks, aimed at reducing such effects and putting the company in a position to anticipate, adapt and translate them into opportunities.

Enel Green Power operates in a constantly growing sector, characterized by an increasing degree of competitiveness and an extended number of new entrants. The intensification of the competitive pressures affects EGP strategies and objectives, impacting the availability of plants' sites, electricity prices and incentives. The possible implementation of an electricity grid interconnected between European countries represents a huge opportunity for the entry of new firms. The period of consolidation of large energy companies has ended and many of these are implementing deleveraging and divestment strategies. In this context, there could be a "prey and predator" situation, in which the companies that will emerge consolidated will be able to gain significant market shares. Furthermore, the players' difficulty to differentiate the renewable energy leads to a competition based mainly on price and on reliability and customer service. With regards to the European renewable energy context, the possible competitors are those companies that can be regarded as potentially comparable to EGP, as these are active in the same field of power generation from renewable sources – albeif is operating across varying geographical, technological and regulatory environments.

Enel's presence in Russia aims to position the company as a point of reference within the Russian market's desire to open up to new technologies that are not limited to the production of renewable sources. The Russian energy network, as explained in the first and second chapters of this dissertation, is in stable

conditions but still remains anchored to old paradigms. In the age of smart grids, Enel wants to conquer the Russian market through its expertise and take advantage of the country's willingness to grow rapidly. Thus, investments are only one aspect of Enel's internationalization strategy in Russia.

3.5. Investments in the electricity production sector and the role of private investors

The opening of the Russian electricity market to the intervention of private investors has witnessed several phases over the last fifty years. Since the fall of the Soviet regime, attempts to open up to private investment have been rather limited, mostly being granted in favour of the oligarchies that still de facto control the energy sector. It is also important to underline that attempts to modernise the electricity market and electricity production methods have always been conditioned by Russia's energy independence, given its abundant natural resources that allow it to produce its own energy using natural gas. Enel Green Power has always targeted the Russian market. As previously discussed, Enel's propensity for innovation and internationalization haved allowed it to reach Moscow more twenty years ago. Enel's investment strategy in Russia consistutes one of the many made over the years. Currently, the

Russian government's opening up to renewable sources responds to the need to modernise the electricity production, the need to satisfy any peaks in demand and at the same time make consumers feel that they are securing environmental standards. However, the strong presence of oligarchic interests, this international opening up of the electricity sector remains severely limited.

The Russian government has recently tried to open up to renewable sources, but the historical rationale for its oligarchic control resounds across the secot. In the case of EGP investments and in the light of the evolution of Russia's electricity market, recourse to foreign capital is often considered obligatory in case of emergency. This fundamental delay, that has accumulated over the years in the generation of energy from renewable sources, has led Russia to choose the fastest way to acquire the technologies and skills necessary for its modernization. Russia sees private investors as bearers of technology and skills capable of generating change. Here, Enel has played a crucial role in providing innovative skills. Special characteristics are also required of the workforce, which must be employed on a case-by-case basis in specific development projects. Workers who are not available with a high degree of specialisation in the relevant market are trained by enel in the workplace. This allows the dissemination of specific knowledge with added value distributed at a social level and within the working context. For Enel, it is very important

to manage the flow of information as a fundamental element of the progress of its work. This expertise has led the Italian company to excel in Europe and to spread new investment and production practices[91].

In the case of Enel's investment in renewable energy, it is clear that the development and activation of the synergies of the various players active within a given territory will allow the training and circulation of knowledge. This constitutes one of the reasons behind Russia's opening up to international investment in a sector very much linked to the production of energy derived from natural gas. Learning by imitation or local benchmarking processes can also be included in collective learning processes. These processes, who are based on a local imitation of the behaviour of successful companies, have represented one of the main internal drives for the extensive growth of industrial districts. In fact, the activation of emulation processes has determined the growth of entrepreneurial fabric, often animated by a spirit of cooperation and competition. The role of the institutions at the regional level is fundamental, as they guarantee the promotion and formation of synergistic networks capable of promoting regional development, who currently do not existent in Russia. Here, the company's future strategies will focus on

[91] EGP, Enel entra nel mercato delle rinnovabili in Russia aggiudicandosi 291 MW di capacità eolica, disponibile su www.enel.com/content

leveraging and managing a well-diversified portfolio of geographies and technologies.

CONCLUSION

Enel's strategy in Russia is an important example of its desire to innovate its business model through important strategic practices. Enel has a patient outlook towards the Russian market, seeing it as a very complicated market, but able to ensure secure profits in a not-so-distant future. Fossil energy production is not intended to produce long-lasting results. Wars, instability and progressive depletion of resources could generate tensions that could plunge the electrical sector into insecurity. Russian political decision-makers are aware of these dynamics and, as of consequence, a path of openness has been chosen, albeit this is a development of only ten years. Russia's delay in the renewables market notorious and Enel's awareness of this problem denotes its position as that of a future-oriented Italian company. Despite the problems faced by Enel in the Russian market, the company has kept faith in its long-term strategy. Enel finances investment projects in renewable energy, betting on the future evolution of the Russian electricity market. Moreover, it cooperates with Russian companies, such as the State railway company, thereby delineating its guidelines of an international expansion. Various collaborations, acquisitions, and financializations of modern and future-oriented initiatives are making Enel an essential presence in Russia.

Not only Russia, but the European continent in general has become the targets of the futuristic vision of the Italian company. This last horizon is certainly

represented by the processes of digitalization of distribution. This process is also perceivable in Russia's future, as it would allow significant energy savings, but especially a monopoly in terms of skills within the electricity market.

Global macro trends such as decarbonisation, electrification, urbanization and digitisation are transforming the world of energy into a new ecosystem that is progressively changing the traditional business model of utilities. Renewables, grid infrastructures, and new energy services are the basis of the transformation of the sector and, contemporarily, drive the innovation and sustainability behind Enel's strategy that is strongly focused on the customer.

Enel's new strategic plan aims to maximize the opportunities created by the energy transition and to minimize the risks associated with unpredictable factors. Decarbonisation opens the way to value creation. Renewables are expected to generate a cumulative EBITDA increase of €1 billion between 2018 and 2021. This focus of investments in markets and in mature economies, where Enel has an integrated presence, will allow the company Group to increase profitability and achieve its decarbonisation targets. In 2021, 62% of the energy generated by the Enel Group is expected to have zero emissions, compared with 48% in 2018. These statistics highlight Enel's clear outlook towards its highly anticipated success.

According to the above targets, Enel Russia is currently committed to realise the described energy transition.

In fact, in the next weeks the sale of Reftinskaya power plant can be finalised by the General Shareholders meeting of the company, phasing out the coal fuel and focusing his thermal generation fleet only on gas power. The 3,800 MW Reftinskaya GRES facility is the biggest coal-fired power plant in Russia, owned by Enel Russia and located in Reftinsky settlement, Sverdlovsk region. The power plant consists of six 300 MW units and four 500 MW units, while the installed thermal capacity amounts to 350 Gcal/h. Reftinskaya GRES can meet around 40% of the total electricity consumed in the Sverdlovsk region.

At this regards, one of the those, Nevinominskaya gas power plant, has been recently awarded in the remunerative modernisation tender. According to the results of the decision adopted by the Government Commission on the electric power development, Nevinnomysskaya was selected among the projects for modernization of thermal generation following the results of the first competitive selection for 2022- 2024.

The projects were selected on the basis of the framed criteria developed by the Ministry of Energy, which takes into account solutions for environmental problems, importance of the plant in the heat supply, efficiency of the project in terms of cost for consumers, technical condition of the power plant, and innovative technical solutions in the project.

Furthermore, in the same week, Enel Russia was awarded a new wind project in 2019 Russia Government renewable energy tender. This award marks the birth of the third wind farm, a 71.25 MW facility which will be commissioned in 2024 close to Nevinnomysskaya gas power plant in the Stavropol region.

Once operational, due in the first half of 2024, the wind farm is expected to generate around 220 GWh per year while avoiding the annual emission of around 180,000 tonnes of CO2 into the atmosphere. The plant will sell its energy output in the Russian wholesale market and will be supported by capacity payments.

The Russian renewable energy tender for the 2020-2024 period took place from May 28th to June 10th for the awarding of approximately 314 MW of renewable capacity, 78.1 MW of which dedicated to wind projects, the remaining 229.8 MW to mini-hydro and 5.6 MW to solar. The Russian government started launching these annual tenders in 2013 to achieve targets of 4.5% of energy generation from renewables and 5.4 GW of installed renewable capacity by 2024.

The renewable energy installed capacity will total 362 MW in 2024 and the company plans to be a strong contender in the expected next renewable energy tenders.

This achievement takes on an even stronger meaning, when looked upon together with the above-mentioned possible sale of the coal power plant at

Reftinskaya, on which the shareholders will vote in the coming weeks. This is truly a landmark moment in the history of the presence of Italian Group in Russia, a moment when the strategy to fundamentally transform Enel business profile in Russia will effectively materialize.

At the end of this project the Enel Russia will be more diversified, leaner and greener and will strongly contribute to the energy transition and decarbonization strategy and goals of the Enel Group. An important sign of sustainable commitment also for the benefit of the Russian energy system.

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