

Implementation of international
climate and clean energy treaties in Russia

Barriers and opportunities of the Paris Agreement Implementation



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Preface

This research project is conducted from September 1, 2020 to November 30, 2020 within EcoLaw Fellowship hosted at Ecologic Institute and ClientEarth in Berlin, Germany. EcoLaw Fellowship is part of the project “Strengthening environmental law instruments in Russia” implemented by the German-Russian Exchange (DRA) in partnership with the Environmental Rights Center BELLONA and the Russian-German Office for Environmental Information, and funded by the German Foreign Office and Bread for the World.

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Abbreviations

BAT	Best available techniques
CO ₂ -e	CO ₂ -equivalent
COP	Conference of the Parties
ESS	European Social Survey
ETS	Emission Trading System
EU	European Union
FOM	Foundation of Public Opinion
GHG	Greenhouse gas
IEA	International Energy Agency
INDC	Intended Nationally Determined Contribution
IISD	International Institute for Sustainable Development
IPCC	Intergovernmental Panel on Climate Change
LULUCF	Land-use, land-use change, and forestry
NDC	Nationally Determined Contribution
NGO	Non-governmental organization
PA	Paris Agreement
RE	Renewable energy
REDD	Reducing Emissions from Deforestation and Forest Degradation
RES	Renewable energy sources
RSPP	Russian Union of Industrialists and Entrepreneurs
GOST	State Standard
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organization

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I. Introduction

Climate change is one of the most acute global problems that the world faces nowadays. It is a long-proven scientific fact that the global warming for a large part is caused by anthropogenic greenhouse gas (GHG) emissions (see e.g. Bernauer & Schaffer, 2010; Club of Rome, 1972; IPCC, 2018; Kiss & Shelton, 2007) resulting from burning carbon-based fuels. However, despite the fact that the Club of Rome warned against the risks of climate change already in 1972, almost no meaningful steps were undertaken towards the fight against it till the early 1990-s. Only at the United Nations Conference on Environment and Development (UNCED) held in 1992, the problem of climate change was explicitly addressed for the first time and was directly and indirectly connected with human activity. Adopted there, the United Nations Framework Convention on Climate Change (UNFCCC) became a cornerstone for global climate governance laying a basis for its institutionalization.

Being a framework document and establishing only general obligations, the UNFCCC needed extending through subsequent specifying international agreements. As such, the Kyoto Protocol was adopted in 1997 setting the minimum level of commitments required from its Parties to reduce the GHG emissions against 1990 levels. It was thought to establish a permanent regime that would become even more stringent and cover more GHGs over time (Tynkkynen, 2014). However, years later, many Parties to the Protocol *inter alia* Russia became less ambitious about it and did not agree to renew the treaty after the end of its first commitment period.

As a response to the urgent need for concluding a new international treaty, in 2015 196 Parties agreed on signing the Paris Agreement (PA) that substituted the Kyoto regime. Broadly speaking, this new treaty sets the following general goals: reduction of the GHG emissions, increased adaptation and resilience to climate change, and allocation of the financial flows in accordance with low-GHG and climate-resilient development (Article 2, paragraph 1). A remarkable fact about the PA is that it “came into force in record time and with record global commitment” (WMO, 2016).

Russia being one of the major actors in global climate governance accepted the PA three years after its signature, in September 2019, thereby expressing its consent to be bound by it. Russia’s importance in this field can be explained mainly by two reasons. Firstly, it is the world’s fifth-biggest GHGs emitter (provided the European Union (EU) is considered as a single actor) by 2018 and the second-biggest methane emitter globally by 2017 (Climate Watch, 2016; Fleming, 2019). Moreover, according to Rocha et al. (2015), Russia is the fourth largest Kyoto GHG emissions contributor to climate change with 6.2% of the overall contribution which is also an indicator of its historical emissions responsibility. Secondly, Russia is among the world’s main exporters of fossil fuels the combustion of which constitutes the source of GHGs to the largest extent. For example, the biggest shares of crude oil, natural gas and solid fossil fuels are imported in the EU from Russia (Eurostat,

2019). On the other side, the Russian economy is respectively based on the export of commodities and, hence, is highly dependent on them: Russian fossil fuel revenues account for around 39% of the federal budget income in 2019 (Ministry of Finance, 2020) and fossil fuels themselves amount to more than 63% of Russian total export (Federal Custom Service, 2020). As a result, the energy sector is responsible for almost 80% of the total GHG emissions produced in Russia (UNFCCC, 2018).

A high dependence on the export of fossil fuels being a core of the Russian economy may hinder Russia's progress in the achievement of low-emission and climate-resilient development established as a PA goal. This factor is arguably one of the obstacles for the effective implementation of the recently accepted PA in Russia. The question arises what are the other barriers hindering the effective implementation of the PA in Russia? Are there any preconditions already existing in Russia, *inter alia* in its legal system that could enable the implementation of international climate and clean energy agreements, in particular the Paris Agreement?

Due to the fact that Russia's acceptance of the PA took place in 2019, there has been little research since then addressing these questions from the perspective of a new legal status of Russia in the Paris regime. Moreover, as Solntsev (2018) notes, in general, the Russian legal doctrine does not encompass such an extensive number of climate-related scientific articles and monographies as particular foreign legal doctrines do. Meanwhile, as Safonov (2016) points out, the input from legal experts is no less crucial than the contribution of politicians, environmentalists or economists. So, in order to contribute to filling the stated research gap, this research report addresses *the barriers and opportunities of the Paris Agreement implementation in Russia*. In particular, while answering this research question, the study considers political, legal and social obstacles and preconditions for the achievement of the emission reduction target of the PA without belittling the importance of other aspects and targets. The study of legal aspects would not be comprehensive without elaborating on domestic politics since both fields are deeply intertwined and shape each other. Moreover, law is also closely tied to societal processes that, on the one hand, create and put law in practice, but on the other hand, are substantially affected by it. Finally, the author elaborates more specifically on the energy sector and in particular energy industries as they are the main contributors to the total GHG emission in Russia. Energy efficiency and renewable energy measures, which are considered the most effective ways to mitigate the emissions in the given sector (Vasiltsov & Yashalova, 2018), are also closely studied.

The research report comprises six additional sections respectively covering the research methodology, the history of Russia's position in international climate negotiations, the barriers to the PA implementation, the opportunities for such an implementation, the recommendations for Russian law-makers, and, finally, conclusion.

II. Methodology

For the purposes of this paper, qualitative research methods were utilized. In order to ensure the validity of research, method and data triangulations were used. The former implies applying three main methods to collect the necessary data which are listed below. The latter refers to the usage of various data sources such as academia and news articles, conference and organizations' reports, interviews, lectures, video recordings, surveys, etc.

1. Literature Review

In order to provide the basis for the research and support the arguments with the existing scientific findings, a literature review of numerous empirical studies was conducted. In the legal field, the works of both international and Russian scientists in international and national environmental (climate) law were studied, among which there are e.g. A. Kiss, E. Louka, D. Shelton as well as D. Garafova. In the policy sector, the studies of such experts as T. Bernauer, R. Falkner, A. Korppoo, L.M. Schaffer, etc. as well as of A. Kokorin, G. Safarov and others were investigated. Moreover, multidisciplinary reports of various international organizations such as the Intergovernmental Panel on Climate Change (IPCC), International Institute for Sustainable Development (IISD), UNFCCC Secretary were also examined in this research report. The review covers articles and reports published since 1987, however, most emphasis is put on the time frame from 2015 till 2020.

2. Empirical socio-legal research

Empirical legal research allows tracking law in action and discovering how it is applied in practice (Langbroek et al., 2017). In particular, socio-legal research allows looking into interrelations between a society and legal phenomena; it involves a multidisciplinary approach since law is tightly connected with policy, economy and society (Singh, 2011). This approach of the stated method seems especially relevant when conducting research on climate change since the latter affects almost every aspect of human lives (Yang et al., 2020). Moreover, sociological part of legal research is especially significant when there is a need of a new legal instrument or an improvement of the existing ones (ibid.).

Such an analysis shows the effect of the current Russian climate and energy legislation on the society and tries to predict the general societal impact of the improved Russian legislation.

1.1. Analysis of the qualitative data

Using this method and carrying out an analysis of various legal and political documents is needed to form an understanding on the general context of the research and on Russian foreign and national climate policy. The policy documents were also

included in the analysis since they may lay the basis for (Garafova, 2017) or, on the contrary, hinder the further development of the national climate legislation.

Among the documents analyzed are official statements of Russian authorities, political acts, e.g. the Climate Doctrine approved by the Presidential Order of 17.12.2009 N861-RP, and national branch legal acts such as Federal Law of 10.01.2002 N 7-FZ on the Protection of the Environment, the Federal Law of 04.05.1996 N 96-FZ on the Protection of the Ambient Air or the Governmental Decree of 28.05.2013 N 449 on the Mechanism for Stimulating the Use of RES in the Wholesale Market of Electric Energy and Capacity.

1.2. Qualitative expert interviews

This method is aimed at gathering the relevant knowledge from the interviewee, in the case of this study from a sectoral expert, through the process of a conversational interaction (Given, 2008; Mason, 2002). Qualitative interviews consist of numerous consecutive steps as follows:

- *Selecting of respondents*: interviews were held with experts in climate law and policy specializing in Russia and its participation in international climate negotiations. For this research project, six interviewees were approached and three interviews were conducted;
- *Interview planning*: this stage includes the design of a semi-structured set of questions in a clear and unambiguous way and the practical preparation for a conversation such as choice of a place and time, definition of the main topic and sub-topics of the discussion;
- *Conducting interviews*: the way of conducting interview was not strictly fixed. It was carried out in a form of an online videocall and written communication via email;
- *Data processing*: the interview conducted in the form of audio call was transformed from a recording into a written form;
- *Data analysis and interpretation*: statements of interviewees are used as relevant evidence and summarized in the report.

3. Comparative legal method

To a lesser extent, a comparative legal method is used. This method has numerous applications, however, for the purposes of this research report, the focus is on law reform and policy development (Paris, 2016). In addition, it allows applying a multidisciplinary perspective to reach its goals (ibid.).

Firstly, the comparison of the existing Russian climate and energy legislation with the commitments expressed in the PA is conducted. It was necessary to investigate to what extent Russian legislation and policy are aligned with the obligations stated under the PA and, hence, to reveal contradictions between the

claimed and factual political course. Importantly, the term “legislation” is used in a broad sense in this research report referring both to legal instruments of the legislative branch and to sub-laws adopted by the federal bodies in charge, so-called “secondary legislation” or “delegated legislation”.

Secondly, the comparison of Russian with German legislation was undertaken in this report. The choice of such a legislation for a comparison was determined by both practical and strategic factors. On the one hand, German law – like Russian law - belongs to the Romano-Germanic legal system, which allows for a comparison between them. Then, the familiarity with German language enabled examining national legal acts in the original. On the other hand, Germany is comparable to Russia in terms of the amount of annual CO₂ emissions. It takes the sixth place in the list of the main annual carbon emitters while Russia takes the fourth place (Union of Concerned Scientists, 2018). Furthermore, its historical responsibility for the global warming is also comparable to Russia since Germany contributes to the total temperature rise with 3.9% of the total contribution (Rocha et al., 2015). Finally, Germany relies on national fossil fuel extraction, namely on the lignite production; Germany is the world’s largest producer of this type of coal (Federal Ministry for Economic Affairs and Energy, 2017). For these reasons, the choice of the state for a comparison is justified.

While conducting the comparative analysis, it was taken into account that German legislation is subject to the general provisions, including reduction GHG emission targets, established by the EU directives, decisions and regulations such as a so-called Effort-Sharing Decision (Decision 406/2009/EC), for instance. In addition, Germany as an EU Member State is part of the EU Emission Trading System (ETS), the world’s biggest carbon market covering around 45% of the total EU’s GHG emissions (European Commission, 2016). These differences between Russian and German legislation were respectively considered.

III. History: Russia in international climate negotiations

The following section provides a brief overview of Russia's and partly the Soviet Union's position in the international climate negotiations from their beginning to the establishment of the Paris climate regime. This section does not pursue the goal to critically elaborate on the pros and cons of the adopted international climate treaties but rather aims to provide a better understanding of the context in which the negotiations have been taking place. The last sub-sections narrow down the focus to national policy responses to the changing climate regime and the position of the domestic researchers on Russia's ratification of the PA.

1. Before the adoption of the UNFCCC (1960s-1991)

The adoption of the first convention addressing climate change, namely the UNFCCC, was preceded by the growing concern of the international community related to the problem of global warming (Louka, 2006). The first international debates on anthropogenic climate change emerged in the late 1960s and were followed by a number of milestones. The Soviet Union, the predecessor state of the Russian Federation, was already present in these climate debates being represented mainly by Soviet climatologist M. Budyko (Oldfield, 2018). In his works, Budyko made first attempts to realistically prognose an upcoming global temperature rise as a consequence of human activity using a paleo-analogue modelling approach for this purpose (ibid).

Soviet presence in the initial climate activities became even more notable when Soviet academics began holding high-level positions at the World Meteorological Organization (WMO). For example, Professor E. Fedotov served as WMO vice-president in 1963-1971 and Professor Y. Izrael was first and second vice-president in 1975-1987 (ibid.). Then, in 1979, the First World Climate Conference was initiated also by Professor Izrael and held under the auspices of the WMO. The general aim of the Conference was to give a boost to the further development of the climate science (WMO, n.d.).

However, despite the emerging understanding of the issue, there was a need to shape as well as to assess and validate the knowledge about the possible implications of climate change around the world (Hulme & Mahony, 2010). As a result, the WMO and the UN Environment Programme (UNEP) established the IPCC at its first meeting in 1988 (ibid.). The USSR actively took part in the activities of the IPCC from the day of the institution's foundation. The Soviet Union and later Russia were represented by Professor Izrael who now served as a national coordinator of IPCC-related questions in the mentioned states and simultaneously as a Chair of Working Group II appointed at the first IPCC meeting in 1988 (IPCC, 2014; Roshydromet, 2016). In Moscow, Working group II that dealt with the vulnerability of socioeconomic and natural systems to climate change finalized its report "The IPCC Impact Assessment" which was partly featured by Budyko's and

Izrael's works and which became an integral part of the First IPCC Assessment Report (IPCC, 2014; Oldfield, 2018). After all, these findings laid a scientific basis for concluding the UNFCCC three years later (Louka, 2006).

In the end, before the adoption of the UNFCCC and the establishment of the international climate regime in 1992, Soviet involvement in the climate change activities was mostly scientific. A number of Soviet climatologists including Budyko and Izrael contributed extensively to understanding climate change both by publishing their works and by collaborating with foreign scientists for a more global scientific contribution such as IPCC reports. Moreover, the high-level position of Soviet academics in such international institutions as WMO and IPCC provided the opportunity for Soviet's constant involvement in the latest climate activities and for delivering Soviet's approaches to the international community.

2. The UNFCCC regime (1992-1997)

After the publication of the IPCC First Assessment Report in 1990, the international community gathered in Rio de Janeiro, Brazil at the UNCED in 1992. The Conference was attended by 117 heads of state and 178 representatives of nations, which turned out to be the largest gathering of high-level representatives by that time (Encyclopaedia Britannica, 2020). As one of the UNCED outcomes, the UNFCCC was signed by 154 states and the European Economic Community; it established the basic legal structure for further development of the international climate agreements and set general goals in the climate policy (Bernauer & Schaffer, 2010). More specifically, Article 2 sets forth the goal to stabilize GHG concentrations in the atmosphere "at a level that would prevent dangerous anthropogenic interference with the climate system" (UN, 1992). The Convention does not set binding time or reduction targets and does not provide an enforcement mechanism, either, allowing Parties to decide on this issue individually. Nevertheless, the UNFCCC includes the principle of common but differentiated responsibilities and respective capabilities thereby binding developed states to play a leading role in the fight against climate change. The application of this principle also implies the provision of financial and technical support by the developed for developing countries.

Russia signed the UNFCCC in 1992 and ratified it in December 1994 after the Convention entered into force in March 1994. During the negotiation process, Russia did not actively participate in debates, unlike the USA, the European Economic Community and a number of developing countries that shaped the Convention (Andonova & Alexieva, 2012; Louka, 2006). Such a passive position in the international negotiations at that time can be explained by the shift of Russian authorities' attention to the domestic challenges such as legal, political, economic, demographic problems occurred after the Soviet Union collapse a year before (Andonova & Alexieva, 2012). For instance, as a successor state of the Soviet Union, Russia had to bear all the treaty obligations and debts that previously belonged to

the predecessor state. As a consequence, the climate agenda was not the main focus of Russian authorities at the beginning of 1990s. Meanwhile, the signature and the subsequent fast ratification of the UNFCCC characterizes Russian foreign policy as aiming for positive involvement in the activity of international conferences and organizations which could serve an arena for reaching other international objectives and needs (ibid.). Such a feature of Russian political course, so called two-level politics that implies making particular commitments at the international level while concentrating on other spheres of interests at the domestic level (Andonova & Alexieva, 2012; Korppoo, 2020), arguably appeared during the UNFCCC debates and only developed in the process of following climate negotiations.

Since 1995, the Parties to the Convention have been meeting in Conferences of the Parties (COP) annually to review the implementation of the UNFCCC and further extend it through subsequent elaborating international agreements (Bernauer & Schaffer, 2010; Louka, 2006). The first COP milestone was reached already in 1997 when the Parties agreed on the adoption of the Kyoto Protocol.

3. The Kyoto regime (1997-2015)

After 2.5 years of climate negotiations, in December 1997 at COP-3 in Japan, the international community reached a consensus regarding the adoption of a new international treaty operationalizing the UNFCCC provisions. This agreement named the Kyoto Protocol established the minimum level of GHG reductions against 1990 levels which averaged 5.2% (Pattberg & Widerberg, 2017). It had to be reached in the first commitment period between 2008-2012 by Annex-I states, i.e. developed states and countries in transition. The Protocol also set forth a market-based approach for reaching the UNFCCC targets for the first time. The introduction of such an approach represented an attempt to establish a global carbon market which after all did not succeed (ibid.). The Kyoto Protocol was thought to have established a permanent regime that would become more stringent and cover more GHGs over time (Tynkkynen, 2014).

During the Kyoto negotiations, Russia's engagement became more active than during the UNFCCC process. Since the Kyoto Protocol was about to become the first international climate agreement to establish precise legally binding commitments, the active participation would be crucial to outline its position in front of the international community and to negotiate most beneficial conditions corresponding to the national interests.

Firstly, Russia as well as Ukraine pressed for setting forth 1990s level as a benchmark against which GHG reduction should be counted (Henry & Sundstorm, 2007). Such a position is explained by the following circumstances: against the background of the Soviet Union collapse in 1991 and subsequent industrial and economic decline, Russia's emissions dropped significantly (Henry & Sundstrom, 2007; Korppoo, 2015). The establishment of such a baseline meant that Russia

would not need to reduce its emissions since their decrease accounted for 34% against 1990 levels already by the Kyoto adoption in 1997 (Andonova & Alexieva, 2012). As for the declared reduction target, Russia committed to reach the 1990s levels emission *de facto* providing itself with an opportunity for emission growth or for selling a share of its emission allowances to such actors as the USA under emission trading mechanisms (Andonova & Alexieva, 2012; Henry & Sundstorm, 2007; Korppoo, 2015; Tynkkynen, 2014).

Secondly, Russia paid attention to language of the treaty trying to negotiate a more favorable wording (Henry & Sundstorm, 2007; Rowe, 2009; Yamineva, 2012). As a result, paragraph 6, Article 3 provides Parties with an economy in transition listed in Annex I “a certain degree of flexibility” while complying with their obligations under the Kyoto Protocol (UN, 1997). Thus, Russia falling into this category from the beginning of the 1990s onwards gained more room for shaping its climate policy than most of the other Annex-I states. Russia also highlighted the need to differentiate Parties’ obligations depending on their differing domestic climatic, economic, and other circumstances. Such an attentiveness to the wording has been dominant over other topics in the Russian delegation’s approach since then and is still present in the post-Paris negotiations.

Finally, Russia happened to play a decisive role in ensuring the viability of the Kyoto Protocol which required its ratification and entry into force. In 1999, Russia signed the Protocol but then delayed its ratification. The first possible reason for postponing this procedure lay in doubts expressed by the Russian scientists including Professor Izrael regarding the anthropogenic nature of climate change and the overall effectiveness and economic expediency of the Kyoto Protocol (Andonova & Alexieva, 2012; Henry & Sundstorm, 2007; Louka, 2006; Tynkkynen, 2014; Yamineva, 2012). After the USA’s decision to withdraw from the Protocol, Russia was accidentally provided with another opportunity to increase its bargaining leverage. Although the USA were considered Russia’s biggest partner for buying emission allowances (Andonova & Alexieva, 2012; Louka, 2006), with their withdrawal Russia turned into the only single state with sufficient GHG emissions to satisfy of the clauses for Kyoto Protocol’s immediate entry into force. As Protocol’s Article 25 provides, at least 55 Parties to the UNFCCC, “incorporating Parties included in Annex I which accounted in total for at least 55% of the total carbon dioxide emissions for 1990 of the Annex I countries” had to express their consent to be bound by the Kyoto Protocol. From that moment onwards, Russia had a chance to push its domestic economic interests ahead while negotiating on the conditions under which it would ratify the Protocol. These interests boiled down primarily to doubling the volumes of carbon sinks assigned to it and to gaining the EU’s support for the membership in the World Trade Organizations (WTO) (Andonova & Alexieva, 2012; Tynkkynen, 2014; Yamineva, 2012). As a result, after reaching a consensus on the mentioned matters, Russia made a decision to ratify the Kyoto Protocol in 2004 bringing it thereby into force in 2005.

During the further climate negotiations, the main cornerstone of Russia's official position was the need for participation of the major emitters as well as for the emerging economies to also make own commitments (Andonova & Alexieva, 2012; Tynkkynen, 2014). Based on the non-participation of, *inter alia*, the USA and China, Russia announced at COP-16 in Cancun, Mexico, that it would not renew the Kyoto Protocol beyond 2012 considering the treaty at its current state "scientifically, economically and politically ineffective" (Goldenberg, 2010). The idea to prolong the Kyoto Protocol with the second commitment period from 2013 until 2020 was set forth in the Doha Amendment adopted at COP-18 in Doha, Qatar which finally reached the necessary number of ratifications in October 2020 to enter into force in December 2020 (UN Treaty Collection, 2020a).

The other areas of Russia's focus over the following years included keeping 1990s levels as a baseline for GHG reduction estimations, taking into account its forests' carbon sink capacity as well as regrouping the Parties according to the latest scientific findings rather than Convention Annexes. One of these proposals, namely the inclusion of forests as carbon sinks, was finally approved and included in the final text of the PA. This aspect was of strategic importance for Russia since the inclusion of forest sinks releases the pressure of drastic emission reduction in the energy sector (Rowe, 2013). Russia also insisted on keeping its Kyoto permits surplus, so-called "hot air", for the usage under further agreements, which blocked progress in one of the working groups in June 2013 (Pavlenko, 2017; Tynkkynen, 2014). Nevertheless, overall during the 2004-2015 timeframe, Russia's participation with an exception of COP-16 was characterized as passive and cautious about new strong commitments (Andonova & Alexieva, 2012; Henry & Sundstorm, 2012; Korppoo, 2015). For example, at COP-15, the Russian delegation did not express any position on Reducing Emissions from Deforestation and Forest Degradation (REDD) or on financing schemes for policy efforts which led to an opinion that the delegation was not actively supported by the Government (Henry & Sundstorm, 2012). Russia did not participate in the drafting of the Copenhagen Accord, either although it expressed some of its concerns in provisions to the document (*ibid.*). All in all, Russia preferred to support the statements of the other Umbrella Group states while reacting in a more restrained way to positions of other negotiation partners.

Thus, during the climate negotiations, Russia aimed at agreeing on more beneficial conditions especially in economic terms rather than on ambitious goals for the fights against climate change (Andonova & Alexieva, 2012; Henry & Sundstrom, 2007; Tynkkynen, 2014). Such a strategy is partly aligned with the neorealism theory according to which states conclude international treaties as far as the latter correspond to their own interests, as Henry & Sundstrom (2007) note. However, climate change mitigation being an example of a common problem has features of a global public good (Bernauer & Schaffer, 2010). To address this problem, the global cooperation is needed. However, at least at the beginning of the 2000s Russia did not consider itself to be one of the main victims of global warming and therefore largely followed its domestic and bureaucratic interests.

4. The Paris regime (2015-2020)

a. From the PA adoption to its acceptance by Russia (2015-2019)

An attempt to adopt a new global legally binding agreement on climate that would include all major GHG emitters and substitute the Kyoto regime was firstly undertaken at COP-15 in Copenhagen, Denmark, but failed. Still, the Copenhagen Accord approved at that Conference laid the basis for the new agreement to be adopted afterwards (Falkner, 2016). At COP-17 held in Durban, South Africa in 2011, the Parties set a goal to conclude such a treaty by 2015, which was reaffirmed at COP-18 in Doha, Qatar, a year later. The adoption of a new agreement was also supposed to rebut the opinion expressed by a number of observers that multilateral climate negotiations had reached a dead end (ibid.). As a result, on the 12th of December at COP-21 held in Paris, France, the Paris Agreement was adopted after four years of international negotiations and described as historic breakthrough for global climate change cooperation (Keohane & Oppenheimer, 2016).

One of the main novelties introduced by the PA was the acceptance of the primacy of domestic climate policies in the form of Nationally Determined Contributions (NDCs) that substitute the system of mandatory emission reductions (Falkner, 2016). This approach is regarded as both an advantage and a disadvantage of the new treaty as, on one hand, such a feature enabled the participation of the record number of Parties and allowed its entry into force in record time, but on the other hand, could provide the room for low ambitions and non-compliance (Garafova, 2018a). By establishing ambitious NDCs, Parties aim to reduce their emissions in order to prevent 2°C temperature increase above pre-industrial levels while “pursuing the efforts to limit ... [it] ... to 1.5°C”, as Article 2, paragraph 1 (a) sets forth. According to Article 14, Parties are required to periodically report on their progress in the relevant activities aimed at achieving Paris goals, which is then assessed on a five-year basis using a global stocktaking approach. Moreover, Article 2, paragraph 1 (c) encourages Parties to direct finance flows to low GHG emission and climate-resilient development. In addition, the PA establishes the necessity for a provision of financial resources as well as for a new technology framework and improved capacity-building thereby supporting activities undertaken by developing countries and the most vulnerable countries. Finally, the PA for the first time dedicates much attention to the adaptation goal, i.e. adaptive capacity enhancement, the strengthening of resilience and reduction of vulnerability to climate change while contributing to sustainable development, which are set forth in Article 7.

The PA, opened for signature in April 2016, reached twice as many instruments of ratification, acceptance, approval and/or accession for deposition as required for its entry into force already by November 2016. It was mostly connected with the US-China decision to both join the PA announced on the eve of the G20 in China in September 2016. This move of the two largest economies in the world facilitated the subsequent ratification of the PA by numerous states. As of 30th of

November 2020, 189 Parties to the Convention have expressed their consent to be bound by the PA (UN Treaty Collection, 2020b).

The major merit of the Russian delegation in the PA development was the inclusion of “the sinks and reservoirs of GHGs, including forests” in the final text of Article 5 dedicated exclusively to forestry issues. Moreover, due to Russia’s efforts, there is no distinction between tropical and boreal forests so there are similar forest regulation for all Parties (Nemova, 2016). However, during the actual Paris negotiations in December 2015, Russia was not actively involved in the debates. In general, this Agreement did not represent much interest for it since the PA mostly dealt with financial and technological flows for combatting and adapting to climate change directed to the category of developing and least developed and island states to which Russia does not belong (Kokorin, 2020, interview). In its turn, the Russian delegation expressed its readiness to make voluntary financial contributions to the Green Climate Fund (Kokorin, 2016b) which was later established in the Governmental Order of 03.04.2018 N 2394-r. After all, Russia did “not block a climate deal backed by major countries” as had been promised by the President of Russia, Vladimir Putin, earlier thereby allowing it to pass (Harvey & Taylor, 2015).

At the COPs since 2015, Russia has been refraining from active participation in the negotiations. The reasoning for such a silent participation could be connected with the long domestic process of the PA ratification as the activity in the international negotiations depends on the activities undertaken at the state level (Interviewee 2, 2020). Russia primarily continued to push forward its well-known proposal to amend the UNFCCC Article 4.2(f). The proposal suggests specifying the need for a periodic review of Annexes I and II while a number of economic and technological developments have taken place since the UNFCCC adoption. This proposal implies reinterpreting of the principle of common but differentiated responsibilities and replacing some developing countries from non-Annex I list in the category of developed nations and *vice versa* “in the light of the most up-to-date scientific information, objectively reflecting the dynamics and reality of the current socioeconomic development of the Parties” (UNFCCC, 2011). This proposal can be regarded as an attempt to be counted as a Party entitled to receive financial support. However, this suggestion of Russia has been held in abeyance, i.e. pushed to the next meeting while COP Presidency holds informal consultations trying to solve the issue in the background, at every COP till present (IISD, 2015-2019).

Lastly, in 2018-2019, Russia took part in negotiations concerning some wordings of the recent IPCC report. At COP-24, Russia together with Saudi Arabia, the US and Kuwait refused to accept the “welcoming” of the IPCC Special Report on 1.5°C. Notably, the resistance was expressed by the main fossil fuel exporters. Such a refusal aroused dissatisfaction with the developing and especially least developed and island nations since that meant “continued sidelining of the issue of loss and damage” (IISD, 2018). According to the IPCC (2018), the achievement of 1.5°C would help prevent the most dramatic climate change consequences that are

expected to be borne mostly by developing countries. However, to reach this target, the cut in GHG emissions by 45% by 2030 will be necessary. The acceptance of the “strong” word “welcome” would mean a decisive commitment to the recommendations expressed in the Special Report and facilitate a change in fossil fuels use not in exporters’ favor. In the end, at the COP-25, the mentioned Special Report was only “noted” which reflected the prevalence of, *inter alia*, Russia’s position on this issue.

b. Russia’s acceptance of the PA and steps towards implementation (2019-2020)

After signing the PA in April 2016, Russia announced that it would decide on the ratification of the new climate treaty in 2019-2020 after Parties had agreed on the Work Programme containing guidelines and regulations for the PA operationalization (Bliznetskaya, 2019). Moreover, Russia had to assess its internal risks caused by a possible execution of the PA. So, in November 2016, the Government of Russia adopted Decree N 2344-r thereby approving a plan on the preparation for the PA ratification that required the assessment of socioeconomic risks of the PA execution. The comment provided on this Decree acknowledges the necessity to amend some existing and adopt new documents constituting Russia’s climate policy (Government of Russia, 2016).

At COP-24 held in December 2018 in Poland, the Katowice Climate Package was adopted by the Parties including Russia, which did not find any of its provisions unacceptable (Bliznetskaya, 2019). After that, the public discussion on the ratification of the PA involving governmental and non-state actors evolved more extensively at the beginning of 2019. In February 2019, having analyzed socioeconomic consequences, the Ministry of Natural Resources and Environment prepared and filed the document justifying the expediency of the PA ratification by Russia (Ministry of Natural Resources and the Environment, 2019a). In July, Deputy Prime Minister Gordeev gave the Ministry of Natural Resources and the Environment together with the Ministry of International Affairs an order to file a draft Federal Law on the Ratification of the Paris Agreement on Climate to the Government by the beginning of September 2019 (Government of Russia, 2019b). The aim was to launch the process of ratification before the World Climate Action Summit that was to take place on the 23rd of September 2019 (*ibid.*). According to the governmental statement of the 5th of July, “the PA ratification could enable Russia’s participation in all international negotiations and protect its interests in the international arena that determines the rules for CO₂ emission reduction and work on relevant documents” (*ibid.*).

Despite the preceding discussions and orders on the PA *ratification*, the final governmental decision was to *accept* the Agreement. Although the majority of foreign and Russian sources declared Russia’s ratification (e.g. Bloomberg, 2019; Gazeta, 2019; Telegraph, 2019), the Governmental Decree of 21.09.2019 N 1228 on

the Acceptance of the Paris Agreement and UN Treaty Collection (2020b) prove that Russia chose “acceptance” as a form of a formal joining of the PA. According to the Vienna Convention on the Law of Treaties (1969), both ratification and acceptance equally serve as a means of expressing state’s consent to be bound by a treaty. The PA also acknowledges “acceptance” as a means of expressing Party’s consent to be bound by it (paragraph 3, Article 21), although the Agreement indirectly implies the necessity for a Party to amend its legislation in order to meet own obligations under the PA (Bliznetskaya, 2019). However, the main differences lie in the national legal system. In accordance with Article 15 of the Federal Law of 15.07.1995 N 101-FZ on the International Treaties of the Russian Federation, the conditions for the ratification of international treaties are as follows:

1. The enforcement of an international treaty requires amendments to existing federal laws or adopting new federal laws;
2. Subject matter of an international treaty are fundamental human rights and freedoms;
3. Subject matter of an international treaty is a territory delineation with other states;
4. Subject matter of an international treaty are the foundations of inter-State relations, in particular ensuring international peace and security, affecting defense capability of Russia, issues of disarmament or international arms control, as well as peace treaties and agreements on collective security;
5. Subject matter of an international treaty is Russia’s participation in international organizations and alliances, if such treaties foresee the transfer of some powers of Russia to such international organizations or alliances or make decisions of such organizations’ bodies legally binding for Russia;
6. The parties to an international treaty agree to implement it in the national legal system via ratification.

While the last four conditions do not apply to the PA *per se*, the first two condition are relevant for the PA. The procedural peculiarity differing the ratification from the other ways of expressing Russia’s consent is that ratification requires adoption of a relevant federal law by Russia’s Parliament. By contrast, treaty acceptance or approval are done by the adoption of a decree by the Government without the participation of the Parliament if a treaty does not meet requirement for the ratification, as Article 20 of the above mentioned Federal Law sets forth. According to the note given by the Russian Government to the Governmental Decree on Acceptance of the PA, the PA contains no grounds established in the Russian legislation for a treaty ratification so an acceptance was chosen as a way of joining the PA (Government of Russia, 2019b). The Government also claimed that Russia already made its commitments when it signed the PA in April 2016 (Digges, 2019).

So, in the first place, non-ratification means that Russia is not going to introduce changes into its federal primary legislation to align it with the PA. Another reason why ratification could have been used by Russia to join the PA is that the

human rights are one of issues covered in the PA. Despite the fact that the PA explicitly declares the connection between climate change and human rights, calls for respect, promotion and consideration of Parties' "respective obligations on human rights, the right to health, the rights of indigenous peoples [...], as well as gender equality [...]", the human rights aspect was not taken into account when deciding on the form of joining the PA. Hence, Russia's joining of the PA could be assessed as a formal process to show that Russia is on the same page with all the other states. Meanwhile, acceptance does not oblige the decision-makers to introduce amendments into the Russian federal primary legislation and to undertake urgent mitigation activities. Importantly, in the Decree on the Acceptance of the PA, the Government of Russia included a statement consisting of three paragraphs. The second paragraph is of special interest since it addresses "the importance of preserving and increasing the absorptive capacity of forests and other ecosystems, as well as the need to take it into account as much as possible, including when implementing the mechanisms of the Agreement". In other words, Russia plans to take account of forests and other ecosystems when calculating its GHG emission reductions against 1990 level. These intentions were reaffirmed in the recent Decree of the President of Russia of 04.11.2020 N 666.

So, Russia continued applying its "wait-and-see" or ostrich approach (Interviewee 2, 2020) that was already described previously (see Kokorin & Korppoo, 2017). This approach implies refraining from undertaking meaningful actions waiting for the respective responses from the major international climate actors such as the USA or the EU (Kokorin & Korppoo, 2017; Kokorin, 2020). So, until such strict measures, e.g. carbon border adjustment mechanism, forcing Russia to take climate issue more seriously, are introduced, Russia is likely to adopt new targets, including emission reduction ones, as formally legal but rather "soft" documents under the current national climate policy without formal connection to the PA provisions.

Currently, Russia has two valid emission reduction targets. The first GHG emission reduction target was established in the 2009 Copenhagen Accord (Russian submission for inclusion into Annex I to the Copenhagen Accord) and accounts for 15-25% of the 1990s levels by 2020 which was later reaffirmed in Governmental Decrees N 752 in 2013 and N 504-r in 2014. The second target was initially set forth in the Russian Intended Nationally Determined Contribution (INDC) the submission of which was encouraged from all Parties with COP decisions 1/CP.19 and 1/CP.20. Russia submitted its INDC in advance of the COP-21 in March 2015 aiming at 25-30% GHG emissions reduction against 1990 benchmark by 2030 with regard to the maximum forests' sink capacity (UNFCCC, 2015a). In November 2020, the President of Russia adopted a Decree N 666 updating the 2030 GHG reduction target to a level not exceeding 70% against 1990 benchmark with regard to maximum forests and other ecosystems sink capacity (Decree of the President of Russia N 666, 2020). In comparison with the previously proclaimed 2030 goal, the updated Russian

target also considers the sink capacity of ecosystems other than forests. It became the new valid Russian commitment under the PA, i.e. NDC.

i. National climate instruments after the PA acceptance

Since Russia's acceptance of the PA, one national climate document has been adopted. There are additional legally binding and non-legal documents being developed and approved currently which are discussed in the following sections.

In December 2019, the Government of Russia published a Governmental Order, a formal legal document on operational and other current matters, affirming the National Plan of the First Stage of Adaptation to Climate Change until 2022 (hereinafter – the National Plan of Adaptation) (Governmental Order N 3183-r, 2019). This document establishes only general provisions and guidelines; more specific measures in different sectors of economy, forestry, agriculture, environmental and healthcare sectors are to be developed for the National Plan of the Second Stage of Adaptation to Climate Change for the timeframe of 2023-2025.

In Section I of the National Plan, the Russian Government confirms that on the territory of Russia, the average annual temperature has been increasing 2.5 times faster than the global average. The National Plan of Adaptation does not give a definition of climate change itself and does not acknowledge or mention its anthropogenic nature, although Section II of this document has a reference to the Climate Doctrine of 2009, which in its turn acknowledges the latter fact. Then, Section I lists the climate change disadvantages, among which there are increased health risks for the population, spread of infections and parasitic diseases, increased energy consumption used for conditioning purposes. Then, the possible advantages of climate change are listed which, *inter alia*, include an “easier access to the continental shelf of the Russia Federation in the Arctic Ocean”. This particular advantage was previously included in other climate documents as well, for example, in the Climate Doctrine of the Russian Federation adopted back in 2009. The Arctic shelf represents a significant strategic interest for Russia since it stores still undeveloped fossil fuel deposits. Additionally, Russian Arctic shelf provides almost one fourth of Russian export (Selin & Vishinskaya, 2015). As a result, the National Plan of Adaptation sets forth and reaffirms the ambitions for a further development of fossil fuels deposits in Russian Arctic sector.

Section II deals with the planning of adaptation measures. It explains the features of the National Plan of Adaptation which “represents a state system of political, legislative, legal, economic and social measures which are taken by the federal and regional executive bodies” to reduce Russia's vulnerability as a result of climate change and to use the beneficial opportunities caused by climate change (pp. 3-4). Furthermore, one of the aims for the adaptation planning is to use the scientific findings as the basis for the decision-making process and for climate prognosis. The emphasis put on the necessity of a strong scientific basis for official climate actions

is one of the advantages of this document. Moreover, Section II proclaims the fulfillment of international obligations incurred by Russia under the UNFCCC and other international agreements, of which Russia is a Party. The PA is therefore not mentioned explicitly although such a wording implies this climate treaty as well. Finally, the activities for the formation of a legal, methodic and institutional basis for the planning and implementing of the adaptation measures should be undertaken in the first place. This basis is supposed to facilitate the development of sectoral, regional, corporative adaptation plans. Overall, the National Plan of Adaptation establishes the distribution of the climate adaptation duties among the ministries and other public institutions, which is a strength of this document (Kokorin for RIA Novosti, 2020).

The adoption of the National Plan of Adaptation was not timed to the acceptance of the PA although it was released soon after Russia's formal joining. According to the Director of the WWF Russia "Climate and Energy" Program A. Kokorin, the choice of such a timing characterizes a rising awareness about the seriousness of climate challenges and about the necessity to urgently start acting (WWF Russia, 2020). Nevertheless, there are particular weaknesses to be found in the National Plan of Adaptation, besides the above-mentioned ones. For example, the document considers the incorporation of the information about climate change and human and economic adaptation to it into the federal state educational standards for general and vocational education, however does not set any deadline for this task (Kokorin for RIA Novosti, 2020). Concerning the deadline for the climate-related amendments of the federal educational standards, the document gives the following comment: «as the issues becomes more urgent». Such a note implies that the Government does not regard the current state of educational standards as lacking information on climate change and does not expect the urgency to occur at least until the end of 2022. This present approach is expected to negatively affect public awareness and consciousness of the climatic problems, which are also needed to achieve the Paris targets; this issue is elaborated on in more detail in the following sections.

c. Russia's researchers on joining the PA

The identification of researcher's position on the PA and its ratification/acceptance is of importance for the development of Russia's climate strategy. As Andonova & Alexieva (2012) claim, the Russian delegation showed a relatively high reliance on scientific findings during the Copenhagen negotiations at COP-15. Its degree of science-orientation was comparable with results shown by the other Umbrella Group states such as Norway or Japan (ibid.). Rowe (2009) came to a similar conclusion stating that scientific research tends to exert a higher impact on a Russia's decision-making process if problems to be decided on require scientific input. Environmental problems including climate change fall into the stated category. The significance of the role that scientific findings play in Russia's policy-making

process especially on climate change issues is proven by, for instance, the National Plan of Adaptation discussed previously.

Having examined 24 scientific articles by Russian researchers on the topic of Russia's participation in the PA published from 2015 to 2020 in Russian institutions and freely available for access, the following categories of scientific opinions are identified¹.

The first group representing a minority includes researchers who oppose any form of joining the PA. In the absolute majority of cases, this is based on the perception that the PA threatens the economy and national security of Russia (Mikhailichenko & Polintsev, 2018; Pavlenko, 2017; Roginko & Shevelev, 2018; Silvestrov & Roginko, 2016) as well as represents a risk for social stability, energy and food security (Institute of Natural Monopolies Research, 2016). According to the Analytical Report of the Institute of Natural Monopolies Research (2016), it is necessary to postpone the ratification of the PA until the main risks associated with its implementation are assessed. Until the completion of such assessments and analyses, it is recommended the government apply "soft measures" corresponding to the capability and interests of Russian economy (*ibid.*). Finally, this Report questions the human-induced nature of climate change and claims that the "radical" actions to cut anthropogenic GHG emissions are undertaken in order to make the fossil fuels exporters including Russia less competitive in the international arena. Pavlenko (2017) expresses a similar opinion stating that the PA undermines Russia's sovereignty and creates preconditions for Russia's economy dependency of the external control. In the author's opinion, this control could be exercised by subsidiary bodies the foundation of which is foreseen in Article 16, paragraph 4 (a) of the PA. The development of a different kind of guidance foreseen in Articles 26-28 of Draft Decision of the COP-21 is also considered as a means of external influence on the internal economic policy (*ibid.*). Although some other opponents (Roginko & Shevelev, 2018; Silvestrov & Roginko, 2016) are not so radical concerning the interpretation of the PA, the researchers draw attention to the existence of certain risks connected with compliance with the PA obligations, the assessment of such a compliance, the introduction of carbon tax, and technological gap. They also name threats related to revenues loss under the new market mechanisms, prospects of energy sector development and introduction of human rights agenda into the UNFCCC regime (*ibid.*). After all, Silvestrov & Roginko (2016) claim that the listed risks are of hypothetical nature and whether they become real depends on the final version of the PA and on Russia's climate policy shaped in accordance with the development interests of the Russian economy and society. Until all details of the PA are agreed on, Silvestrov & Roginko (2016) and Bikovsky (2017) recommend refraining from the fast ratification thereby safeguarding room for maneuver. In particular, Silvestrov & Roginko (2016) give more specific recommendations encouraging Russia to use the climate arena as a means for

¹ The researchers' positions are described in the present tense which corresponds to the tense of the narrative in the studied research articles.

strengthening the relations with the US against their recent PA withdrawal announcement. Finally, the authors call for a cooperation with the US to “dispel climate myths as well as political and financial schemes associated with them” (ibid., p. 43).

As a result, opponents of Russia’s ratification of the PA argue that by calling for emission reduction, the PA may cause numerous risks for Russia including a threat to Russian national security, which is, *inter alia*, based on the oil and gas industry. Revenues of this sector account for around 39% of the federal budget income in 2019 (Ministry of Finance, 2020); fossil fuels amount to more than 63% of Russian total export (Federal Custom Service, 2020). Moreover, it is often claimed that the current climate regime aims to reduce Russia’s export competitiveness in foreign markets and undermine its sovereignty. The cornerstone of these positions can be linked to two beliefs common in Russia, namely consideration of Russia as great-power state and inclination to conspiracy theories (Korppoo, 2020).

The second group of researchers consists of experts who explicitly or implicitly encourage Russia’s formal joining of the PA, approved of it or suggest ways of implementing the PA (Garafova, 2018b; Grachev et al., 2019; Goryunova & Ogunlana, 2017; Kokorin, 2016b; Kuzminikh & Griaznov, 2017; Magomadov, 2018; Makarov et al., 2018; Makarov & Stepanov, 2018; Mitrova & Melnikov, 2019; Nemova, 2016; Nosko, 2017; Pshenichnikh, 2020; Safonov, et al., 2020; Solntsev, 2018; Vasiltssov & Yashalova, 2018; Zhavoronkova, 2017). Numerous of them addressed the possible risks connected with ratification and low-carbon development such as widening technological gap, increased competition for buyers of energy sources and subsequent decrease in demand for Russian energy carriers (Grachev et al., 2019; Magomadov, 2018; Makarov et al., 2018; Makarov & Stepanov, 2018; Vasiltssov & Yashalova, 2018). Meanwhile, Makarov et al. (2018) suggest ways of mitigation of these risks so that Russia can adapt to a new energy reality. Indeed, the PA is not the cause of the challenges that Russia is going to experience in the following years, but rather a signal of the near occurrence of such. The PA expresses the consensus reached by the international community regarding the future development trends including low-carbon development (Makarov & Stepanov, 2018; Nosko, 2017; Vasiltssov & Yashalova, 2018). As the Director of the WWF Russia “Climate and Energy” Program A. Kokorin mentioned in the interview (2020), various states, especially European, developing and island countries, decide to further develop in a climate-neutral and low-carbon way not because it is established in some international treaty, but due to the understanding of a real necessity to undertake actions in order to prevent crucial consequences for themselves and other states. Unfortunately, there is still a lack of such climate consciousness and awareness observed in some of the major polluting states such as Russia, Brazil, the USA (ibid.). After all, Russia’s formal non-participation in the PA would result in much more negative implications for the country since it would mean the refusal to follow a low-emission path and the subsequent widening

technological and economic gaps between Russia and other more climate active states (Makarov & Stepanov, 2018; Pshenichnikh, 2020). Moreover, a delay in ratification is claimed to negatively affect the preparation of the Russian participants for the activity under the PA cooperation mechanism (Kuzminikh & Griaznov, 2017). Another group of Russian stakeholders whose interests were supposed to be strongly affected by the delay of the ratification are the exporters of energy-intensive products (Makarov et al., 2018; Makarov & Stepanov, 2018). According to the authors' opinion, the longer Russia hesitates to formally join the PA, the less time Russian energy products exporters have to adjust to the low-carbon direction climate policy takes in the rest of the world.

On the contrary, ratification of the PA and the low-carbon course is claimed to have numerous positive implications for Russia both internally and externally. Firstly, the ratification would facilitate the diversification of the national economy through the active deployment of the renewable energy sources thereby benefiting the GDP (Makarov et al., 2018; Makarov & Stepanov, 2018; Nosko, 2017; Goryunova & Ogunlana, 2017). It is also supposed to stimulate the development of a new economic growth model since it will not be possible to sustain the current one in the future anymore (Makarov et al., 2018; Makarov & Stepanov, 2018). The problems of human rights connected with climate change as well as of health issues caused by the global warming are supposed to attract more political, legal and social attention when the PA undergoes a process of ratification and thereby becomes an integral part of Russian legislation (Grachev et al., 2019; Solntsev, 2018). Finally, Nemova (2016) draws attention to the important fact that the forest topic was included both in the PA and in Russia's INDC. The author characterizes the PA as an essential basis for national measures and policy in relation to forests, especially boreal ones (*ibid.*).

Secondly, the ratification of the PA is claimed to highlight Russian authorities' readiness to contribute to a global fight against climate change. This step together with the significant role Russia plays in international climate governance will provide room for a further cooperation with the other major players in the international climate arena (Garafova, 2018b). A formal joining would also place Russia at the same level with environmentally responsible states such as Germany, for example, that is going to positively affect Russia's reputation (*ibid.*). Moreover, the ratification of the PA may ensure not only high-level political involvement but also scientific participation and leadership in global scientific community and sociopolitical initiatives (Grachev et al., 2019).

In conclusion, the position of the ratification advocates lies mostly in the following arguments. To begin with, the international energy landscape is currently undergoing drastic changes connected with low-carbon and clean development for climate neutral and resilient future. This process is going to take place and increase its scope in the following decades, which is declared in the PA. With or without PA ratification, Russia has to follow the global trend of climate-friendly development

otherwise it risks to end up lagging behind the rest of the world. Still, the non-ratification would have caused more negative implications both for Russian stakeholders and for the economy than positive, if any. After all, despite the opinion common among the PA ratification opponents, climate and economic interests do not contract each other and are not mutually exclusive; the main task is to set the priorities correctly (Porfiriev, 2019). Confirming this opinion, many advocates of the PA ratification claim that treaty's implementation in Russia can facilitate climate-friendly changes in multiple sectors. Remarkably, none of the studies considers an opportunity of Russia's formal joining the PA in any form other than ratification.

Finally, the last category of studies deals with the content analysis of the PA and its provisions relevant for Russia but does not express the recommendation whether it is necessary for Russia to express its consent to be bound by the PA. For example, Soloviyarov (2017) describes the risks and losses that may be caused to Russia by the PA ratification, however, does not come to the conclusion that Russia should refrain from formally joining it. Then, Garafova (2017) compares the particularities of Russian and Japanese national legislation in relation to the implementation of the international climate treaties such as the UNFCCC, the Kyoto Protocol and the PA. The author points out that it is inherent to Russian approach to take much time between signing and formal joining of a treaty, as it happened to the PA. Finally, Kuvaldin (2016) discusses the prospects of the usage of nuclear energy for the achievement of Paris targets and touches upon a role of Russia in the relevant discussion at the global level.

As can be witnessed, Russian researchers tend to express their position concerning the PA ratification rather than stay neutral and discuss general provisions of the PA connected to Russia in any way. The majority of the researchers whose articles were studied take the positive view of Russia's ratification of the PA.

IV. Barriers of the PA implementation in Russia

The following section elaborates on the political, legal and sociocultural barriers existing in the Russian reality and hindering the effective PA implementation in regard to its GHG reduction targets.

1. Political barriers

1.1. General description of the Russian domestic climate policy

Russian climate policy started to develop as a separate policy field relatively late in comparison with the progress of other states. For instance, Germany started developing its climate strategy already in 1990 (German Environmental Agency, 2008). Until the Climate Doctrine of the Russian Federation (hereinafter – the Climate Doctrine), the cornerstone of the Russian climate policy, was adopted in 2009 by then President of Russia Dmitry Medvedev with the Presidential Order N 864-rp, little attention was dedicated to the climate policy in general and to mitigation measures in particular (Henry & Sundstorm, 2012). A few national documents that defined the climate policy before 2009 were such legal instruments as the Federal Law of 04.11.1994 N 34-FZ on the Ratification of the UNFCCC and the Federal Law of 04.11.2004 N 128-FZ on the Ratification of the Kyoto Protocol to the UNFCCC. Climate policy and legal acts of that time included, e.g. the Governmental Order of 20.02.2006 N 215-r on the Russian Register of Carbon Units adopted to comply with the obligations under Article 7 of the Kyoto Protocol (Garafova, 2018b). However, the overall implementation of the Kyoto Protocol was considered weak due to that fact that Russian authorities were slow in working on the further policies that would enable participation in the Kyoto flexible mechanisms (Henry & Sundstorm, 2012).

There were also other legal documents indirectly addressing the climate problems while primarily dealing with the overlapping areas such as energy, e.g. the Order of the Government of the Russian Federation of 08.01.2009 N 1-r on the Adoption of the Guidelines for a State Policy in the Sphere of Energy Efficiency of Electricity Energy on the Basis of Renewable Energy Sources until 2024. To a larger extent, this document addresses the economic rather than environmental implications although it touches upon the current state of the renewable energy sources (RES) in Russia which is connected with mitigation of anthropogenic emissions (Garafova, 2018b). However, a unified and consistent position on the climate problem was lacking in Russia before 2009 (Yamineva, 2012).

The Climate Doctrine changed the climate policy landscape in Russia turning into the most politically and socially significant national act on climate change (Korppoo, 2015). Firstly, it is the first national unified document to set general principles, goals and ways of climate policy implementation in Russia although the Climate Doctrine as well as the Comprehensive Implementation Plan subject to it do not set forth specific goals or measures for emissions mitigation or

climate adaption. Still, Rusakova (2015) concludes that thanks to the Climate Doctrine, Russia's strive for solving global climate problems is now aligned with the national interests with consideration of Russia's geographic and geopolitical position, socioeconomic and sustainable development. Secondly and most importantly, the Climate Doctrine acknowledges two fundamental scientific facts: first, it regards climate change as the most crucial international problem of the 21st century of a multidisciplinary nature which requires solutions from different fields of science; second, the Climate Doctrine says that "anthropogenic activity, primarily connected with GHG emissions as a result of fossil fuels burning, has a noticeable effect on the climate" (Climate Doctrine, 2009). Exactly in this circumstance, namely in the lack of acknowledgement of the anthropogenic nature of climate change, the first policy barrier for the effective PA implementation lies.

1.2. Domestic framing on the nature of climate change

Russia has been known for its doubts concerning the anthropogenic origins of climate change. One of the main opponents of the anthropogenic theory of global warming was the previously mentioned Professor Y. Izrael. Holding high-level positions both at international bodies, i.e. the WMO and the IPCC, and at national organizations, namely the Russian Academy of Science and the Federal Hydrometeorology and Environmental Monitoring Service (Roshydromet), he questioned the major role of anthropogenic emissions in causing the global warming (Henry & Sundstorm, 2007). At that time, he was regarded as President Putin's most influential scientific advisor (Mundt, 2006) who, *inter alia*, recommended revoking the signature of the Kyoto Protocol (Henry & Sundstorm, 2007). Such a position on the nature of climate change was relatively common in the Russian scientific community. According to Rowe (2009), it was inherent to the opinions of Russian scientists' expressed in numerous interviews between 2000 and 2007 to characterize the process of climate change as natural, caused by the alternation of the warming and cooling periods.

However, the reference to the anthropogenic causes of climate change included in the Climate Doctrine in 2009 signified a step towards the recognition of this scientific fact. Roshydromet also addressed the anthropogenic climate change shortly before the adoption of the Climate Doctrine in Assessment Report of Climate Change and Its Consequences in the Russian Federation published in 2008 and afterwards in Assessment of Macroeconomic Impact of Climate Change in the Russian Federation for the period until 2030 and beyond published in 2011 (Yamineva, 2012). The Climate Doctrine as well as the Comprehensive Implementation Plan that covers the timeframe until 2020 are still valid; in 2020, the latter is to be revised. Internationally, Russia has acknowledged the anthropogenic nature of climate change both implicitly by signing the relevant international treaties and explicitly in its statements, e.g. at COP-17 in Durban, South Africa made by Bedritskiy (2011).

Nevertheless, despite the apparent recognition of the anthropogenic role in causing climate change, the overall domestic position on this issue has not drastically changed because of the adoption of the Climate Doctrine (Korppoo, 2020; Tynkkynen & Tynkkynen, 2018). Both independent researchers such as the Institute of Natural Monopolies Research (2016), Grachev et al. (2019), etc. as well as public authorities at the national level tend to question the origins of climate change. Korppoo (2020) reveals that studies completed by Russian non-climate researchers are supposed to be influenced mostly by Russian domestic policy rather than by international framings and hence may reflect a broader cultural understanding of the basis of Russian climate policy. Having interviewed 106 experts who were likely to represent the domestic position on climate change, Korppoo (2020) finds that 26% of the interviewees explained the cause of climate change exclusively by natural processes; 45% of respondents connected the occurrence of climate change to both anthropogenic and natural reasons; only 19% of interviewees named anthropogenic activity as the main cause of climate change and the rest refused to recognize the existence of climate change at all.

One of the main doubters of the human-induced nature of climate change is the current President of Russia Vladimir Putin. Paradoxically, the Russian first ever unified national act on climate change was approved by the Order of the *President*, while Putin questions the anthropogenic role in causing global warming. Arguably, such a contradiction in a position on the causes of climate change may be connected with the fact that the Presidential Order of 2009 was approved by then President Medvedev while Putin served as a prime minister from 2008 to 2012. So, the Climate Doctrine technically does not express Putin's point of view although it naturally reflects the approach of the President of Russia regardless of the person holding this position at that moment.

The Russian President's skepticism on the origins of climate change was already mentioned in numerous studies (see e.g. Yamineva, 2012; Kokorin & Korppoo, 2017) and Putin continues to explicitly doubt the role of human-induced factors even after the signature of the PA. For example, at the Arctic Territory for Dialogue held in Russia in March 2017 President Putin claimed that global warming "may be related to some global cycles on the Earth or be of the planetary scale" and highlighted the need for adaptation (President of Russia, 2017). A year later, at the Russian Energy Forum, the President supposed that "so-called anthropogenic emissions are not the main reason of the global warming" (President of Russia, 2018a). At the annual presidential press-conference held in December 2019, already after Russia's acceptance of the PA, Putin stated again that "there have been both warming and cooling cycles in the Earth's history. This may depend on global processes in the universe: a small tilt of the Earth's axis of rotation or a tilt of its orbit around the Sun can lead and already used to lead during our planet's existence to very serious climate changes [...] it is very difficult, if possible at all, to assess what influence the humankind exerts on climate change. But there is no way not to do anything" (Zamakhina, 2019). So, President Putin shows a consistency in his denial

of the major role of anthropogenic activities in causing climate change rather than expresses opinion outlying from the previous climate course. In this context, the Climate Doctrine seems to be inconsistent with the current President's statements. The new edition of Implementation Plan of Measures under the Climate Doctrine could, *inter alia*, update the current framing of climate change nature.

The significance of the official position of Putin as the President of Russia could be explained by the following facts. Firstly, Putin enjoys strong support from the population which constantly shows its loyalty even despite the economic and other arising problems (Korppoo, 2015). The current level of public acceptance expressed in the share of votes received at the latest presidential elections officially accounts for 76.69% (Central Election Commission of the Russian Federation, 2018). At the same time, in October 2020, 69% of respondents approve the actions of Putin as the President of Russia (Levada Center, 2020a). Overall, the degree of approval as well as Putin's influence remains high even against the new coronavirus crisis. Moreover, being a representative of the Russian Federation within the country in accordance with the Constitution of Russia (Article 80), the head of the state delivers the official position of the country which now shows little confidence in climate science (Kokorin & Korppoo, 2017).

Secondly, the President of Russia exerts high influence on the decision-making process. Together with his political party "United Russia" that currently holds 76% of the seats in the lower house, State Duma, of the Russian Parliament, Putin enjoys a high degree of decision-making autonomy (Henry & Sundstrom, 2007; Korppoo, 2015). Such an autonomy provides Putin with room for maneuver and allows delaying ratifications and being inconsistent in his political positions (Henry & Sundstrom, 2007) which can be witnessed in the case of climate change topic. In 2021, the next legislative elections are to be held where "United Russia" is thought to receive a majority or supermajority of the seats again based on the outcomes of all legislative elections since 2007 and on the current relatively high rating of "United Russia" (WCIOM, 2020b). As a result, the climate skepticism expressed by President Putin in particular is going to further influence the federal decision-making process shifting the focus away from the climate issues.

Why is it important to recognize the anthropogenic nature of climate change after all? To begin with, the acknowledgement of the important role natural factors play in causing current climate change implies the recognition of little or no influence of human-induced factors. Hence, there is no need to emphasize the mitigation efforts and take the relevant mitigation responsibilities which, in the end, reduces the motivation for domestic mitigation policies (Korppoo, 2020). Such a pattern can be tracked down in the latest statements of the President of Russia (2017) when Putin pointed out the need for adaptation regardless of the climate change origin which is rather natural, in his opinion. The insistence on the inclusion of forests as carbon sinks in the final version of the PA is also aligned with the described approach to dealing with climate change and its consequences in Russia.

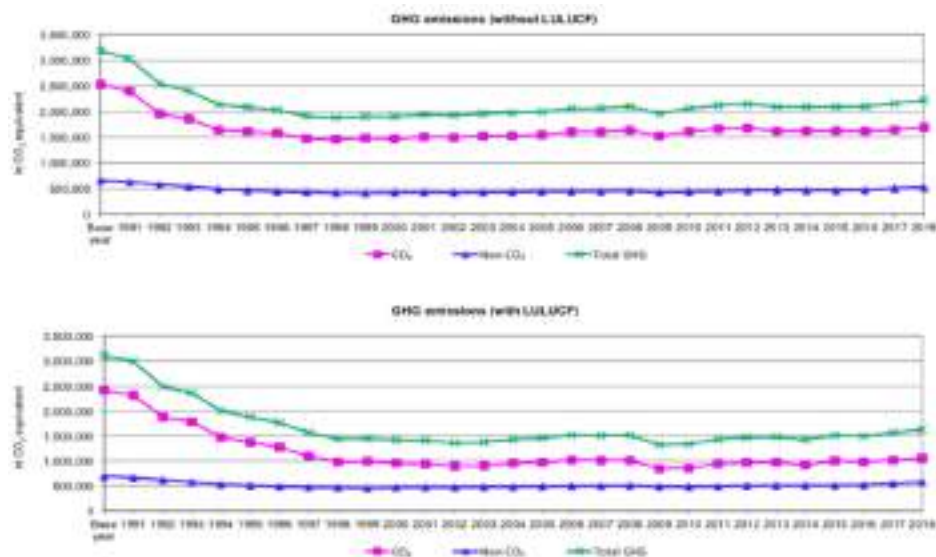
Furthermore, the acknowledgement of the human-induced role in the emergence of climate change is crucial for law-making. As is well known, the development of new legal norms has to be based on the relevant scientific outputs (Davis, 1986; Morozova, 2010). Hence, when making climate laws, the interpretation of climate change nature must rely on credible and reliable scientific findings, but not on the opinion and statements of the head of the state. This question is discussed in more detail in the “Legal barriers” section. Finally, due to a high level of recognition and approval of the President by the Russian population, the state-level proclamation of the natural causes of climate change negatively affects public perception of climate change and public willingness to lower anthropogenic influence on climate. This issue is elaborated on in the “Sociocultural barriers” section.

1.3. Unambitious targets

As mentioned before, Russia has two valid emission reduction targets: the first aims to achieve 15-25% of GHG reduction against the 1990 levels by 2020 while the second target sets forth ambitions to achieve 30% reduction against 1990 benchmark by 2030 with regard to maximum forests and other ecosystems sink capacity (UNFCCC, 2015a; Decree of the President of Russia N 666, 2020).

In 2009, when the first emission reduction target was proclaimed, the total GHG emissions of Russia amounted to 61.5% of the 1990s level, i.e. the reduction equaled 38.5% against the base year. The emission levels gradually grew from 2009 till 2012 when they accounted for 67.4% (32.6% GHG reduction) against 1990 levels. In 2013-2016, total GHG emissions remained stable with a minor variation within 65.65%-65.82% levels (34.18%-34.35% emission reductions) compared to the benchmark year. Since 2017, an increase in total GHG emissions level has been noticed which reached 69.65% (30.35% reduction) in 2018 which is by now the last inventory year. If the land use, land-use change and forestry (LULUCF) is also taken into account, the total GHG emission reduction reached 47.6% in 2018 (UNFCCC, 2018). In the end, the average annual GHG emissions increase without LULUCF from 2014 to 2018 was 0.79%. The above-described trend is depicted in Figure 1.

Figure 1. Total GHG emissions without and with LULUCF (UNFCCC, 2018)



The main contributor to GHG emissions in Russia is the energy sector. Since 1990, the share of the energy sector has slightly decreased by 1.64% and amounted to 78.94% of all GHG emissions produced in Russia in 2018; the emission growth compared to 1990 has taken place in the waste and manufacturing industry as well as the transport sector. Within the energy sector, almost a half of all emissions, namely 47.08%, results from energy industries in 2018.

The trend of GHG emissions mostly depends on the economic growth, but also on the energy efficiency and the carbon intensity of the fuel mix (Korppoo & Kokorin, 2017). Economic growth is, in turn, usually tied to GDP growth. Although Russia was supposed to reach around 3% of annual GDP growth (Presidential Decree N 204, 2018), the actual GDP growth accounted for 2.5% and 1.3% in 2018 and 2019 respectively (World Bank, 2020) and is expected to be even lower in 2020 due to the corona crisis. The current pace of the annual GDP growth is lower than estimated by numerous research agencies abroad and in Russia including Moscow Center for Energy Efficiency (CENef) which among others works with Russia's Ministry of Economic Development and Ministry of Energy (Korppoo & Kokorin, 2017).

Based on the slowly growing annual GDP as well as on a general trend of GHG emissions increase in the previous years, Russia is expected to reach its 2020 goal and even exceed the stated reduction target without supplementary mitigation measures and efforts which is also confirmed by Korppoo (2010), Korppoo & Kokorin (2017), Netherlands Environmental Assessment Agency (2016) and with the "Without measures" scenario developed by Russia itself for the UNFCCC Secretary (UNFCCC, 2019).

Concerning the recently announced 2030 target, which is the Russian updated NDC under the PA, Russia had already reached it by the signature of the PA in 2016. Back then, Russia's total GHG emissions with LULUCF, which Russia proclaimed to take into account, were 48.1% against 1990 levels; by 2018, this number increased by 4% and reached 52.4% (UNFCCC, 2020). So, Russia has a room to increase its GHG emissions by around 17.5% by 2030 to comply with the emission reduction target. Commenting on the possible approval of 25-30% reduction target as the Russian NDC, the Director of the Institute of Global Climate and Ecology of Roshydromet calls it a "profanation of Russia's participation in the PA" which is going to prevent the realization of Russian potential in the sustainable development sphere at least until 2030 (Romanovskaya, 2020). Importantly, the newly introduced 2030 GHG reduction target takes account not only of the forests but also of the sink capacity of "other ecosystems" which may lead to the increase of CO₂ share absorbed by the natural sinks and, hence, to the improved GHG reductions without additions policy and legal measures. Provided this is the case, the main stakeholders are thought to have even less impetus to undertake any climate-related actions.

Moreover, the Draft Strategy of Long-Term Development of the Russian Federation until 2050 with a Low Level of Greenhouse Gas Emissions (hereinafter – Draft Strategy of Low-GHG Development), which is supposed to implement Article 4 of the PA, confirms that at least 24% emission reduction is going to be achieved even without introducing any state climate measures (Draft Strategy of Low-GHG Development, 2020). Meanwhile, considering the implementation of the relevant state measures, the 2030 emission target is decreased by 3% accounting for 67% against 1990 levels with LULUCF. Still, in all scenarios presented, GHG emissions are expected to grow at least until 2030 while the proposed role of RES is minor. Roelfsema et al. (2020) estimate that current Russian national policy scenario hardly results in emission reductions in comparison with no new policy scenario. An official impetus for providing itself with a possibility to increase the GHG emissions over the next decades hides in the expectations of the economic growth which is set forth besides others in the Draft Strategy of Low-GHG Development. According to this document, the GDP is expected to grow by 45% and 141% in relative terms against 2017 level by 2030 and 2050 respectively. However, during the last few years Russia's economy has been stagnating due to the economic crisis as well as international and technological sanctions (Mitrova & Melnikov, 2019), so the feasibility of these GDP goals remains questionable.

In fact, these targets do not reflect Russia's "highest possible ambition" and are aligned with the ostrich approach described earlier. There is no intention to introduce any strict and ambitious mitigation measures until there is a strong pressure from the main international climate leaders such as the EU, for instance (Kokorin, interview, 2020). The introduction of carbon border adjustment mechanism imposed on carbon-intensive goods to be imported in the EU serves as an example of such pressure (Interviewee 2, 2020; Kokorin, 2020; Mitrova & Melnikov, 2019). Moreover, there is still a gradual modernization of the national economy observed in Russia even without significant governmental interference since the technical lifetime of many technologies installed back in Soviet time has expired (Interviewee 2, 2020). As emissions reduce "naturally", there is no need to undertake any measures beyond existing ones (ibid.). Russia authorities obviously prioritize other goals such as economic growth over environmental and particularly climate concerns which is also confirmed in the Draft Strategy of Low-GHG Development since it foresees the economic growth at the cost of a significant GHG emissions increase.

In conclusion, the currently stated emission reduction targets both for 2020 and 2030 are consistent with the business-as-usual climate policy and do not require stringent measures to be reached. Probably, for these reasons, the 2030 target was slightly improved in the Draft Strategy of Low-GHG Development since its achievement seems easily feasible for the state authorities. However, after the recent adoption of the new 2030 emission reduction target by the President of Russia, the Draft Strategy of Low-GHG Development has to be adjusted in accordance with the Presidential Decree N 666 so as not to contradict it. The newly established NDC

does not correspond to the “highly possible ambitions” set out in Article 4 (3) of the PA. Taking into account these circumstances, the independent scientific analysis assesses the current Russian climate policy as “critically inefficient” to achieve temperature targets established in the PA (Climate Action Tracker, 2020). After all, until there is a “signal” from the major economies to undertake new measures (Kokorin, 2020), Russia will enjoy its self-proclaimed international superiority as an emission reducer due to a drastic emission cut as aftermath of the USSR collapse.

However, there are still some domestic mitigation policies in place that refer to energy efficiency and renewable energy sources in particular which are discussed further.

1.4. Marginality of energy efficiency and RE policies

A number of studies point out an ambitious role of energy efficiency and renewable energy (RE) in cutting GHG emissions in the energy sector in Russia (Bashmakov & Mishak, 2013; Zhikharev, 2018) especially in the context of the PA implementation (Goryunova & Ogunlana, 2017; Malikova & Zlatnikova, 2019; Mitrova & Melnikov, 2019). Although energy efficiency and renewable energy policies *per se* contribute to the reduction of the anthropogenic GHG emissions and of the influence on climate, the Russian policies in this field do not address climate goals. While developing and implementing these policies, economic rather than environmental and climate goals are pursued (Garafova, 2018b; Interviewee 2, 2020).

The basis of the energy efficiency and renewable energy policies in Russia are the policy documents briefly described further. Firstly, the **Federal Law of 26.03.2003 N 35-FZ on Electricity** with the amendments introduced in 2007 developed a legal basis for RE facilities support in Russia and enshrined certain mechanisms for RE power generation. In the wholesale market, it established long-term agreements on RE power delivery after competitive selection; in the retail market, network companies were provided with a right of a primary purchase of electricity power generated by qualified RE facilities in accordance with established tariffs to compensate for losses in the electricity networks (Market Council, 2015). Moreover, the government provides subsidies for the qualified RE facilities to compensate the costs of technological connection (*ibid.*).

Secondly, the President of Russia adopted **Decree of 04.06.2008 N 889 on Particular Measures to Increase Energy and Ecologic Efficiency of the Russian Economy**. Most importantly, this document established the target to reduce energy intensity of the GDP, which is one of indicators of energy efficiency improvement, by 40% against 2007 levels by 2020. At that time, Russia took the sixth place globally in the rating of economies with the highest energy intensity (Enerdata, 2020). The RES deployment is mentioned once in the context of providing budgetary funds for stimulation of the RES projects 2009 onwards.

Thirdly, the Government of Russia adopted **Order of 08.01.2009 N 1-r on the Adoption of the Guidelines for a State Policy in the Field of Energy Efficiency of Electricity Energy on the Basis of Renewable Energy Sources until 2024**². As mentioned above, this document in particular puts emphasis on the economic rather than environmental implications although it touches upon the state of the RES. The present Governmental Order enshrines certain targets to facilitate RES deployment in Russia, namely the share of RE in electricity generation and consumption has to account for 4.5% by 2020 according to its previous version and by 2024 according to its current version of 18.04.2020. This share equals the capacity of 5 GW of solar and wind energy. The present document mentions the current share of RE in electricity generation which is less than 1% excluding hydropower plants with capacity more than 25 MW. Moreover, the targets for the installation capacity of RES are also enshrined in this Governmental Order.

Fourthly, the **Federal Law N 261-FZ on the Energy Saving and Improving Energy Efficiency and Amending Certain Legislative Acts of the Russian Federation** was adopted on the 23rd of November 2009 in order to implement the Presidential Decree N 889 discussed above. This Federal Law enshrined three types of measures, i.e. awareness, regulation, and economic (Korppoo & Kokorin, 2017). Awareness measures mostly related to gradual introduction of energy labelling, metering of water, heat, electricity in buildings, conduction of periodical energy audits. Regulation measures included requirements concerning energy consumption; economic measures encompassed particular opportunities to benefit from energy savings (ibid.). The later amending federal laws embrace three paragraphs on RES that include aims to increase consumption of energy received from RES without any further specifications on RES targets.

Then, on the 4th of October 2012, the Government of Russia adopted the **Order N 1839-r on Measures to Stimulate the Production of Electricity by Establishing Facilities Using RES**. The Governmental Order lists seven measures among which there are amendments into existing policy acts, such as Governmental Order N 1-r mentioned above, as well as tasks to develop rules for RES certificates, to support the usage of domestic technologies for RE facilities construction and to define price rates of RE facilities.

Moreover, there is the **Governmental Decree of 28.05.2013 N 449 on Mechanism for Stimulating the Use of RES in the Wholesale Market of Electric Energy and Capacity** which regulates the conditions under which power can be delivered to the wholesale market. This legally-binding act also establishes the legal basis for support mechanisms in the wholesale market and for main RES, i.e. wind, solar, large hydropower and waste-to-energy installations with a minimal installed capacity of 5 MW, in the domestic capacity market. Furthermore, it lists terms for the selection process of RES projects and the pricing system for RES power supply contracts. Selected suppliers are provided with funds on a long-term basis for the

² On the 24th of October 2020, the time period covered by the current legal instrument was prolonged until 2035.

capacity they add to the energy system; they also receive revenues from the electricity sold on the wholesale market. This mechanism guarantees 12-14% return of the investment used for a construction and operation of the RES facilities. The whole mechanism is called “capacity supply scheme”.

In addition, the Government of Russia adopted the **Decree of 15.04.2014 N 321 on Approving of State Program on Energy Efficiency and Energy Development** (currently named Energy Development). It encompasses five sub-programs on development and modernization of the electricity energy, restructuring and development of coal and peat industries, further development of the oil and gas industries, development of gaseous motor fuel market and, finally, ensuring of the realization of this State Program. As noted by Mitrova & Melnikov (2019), the present Program targets “promotion of innovative and digital development of fuel and energy complex” and new technologies in hydrocarbon production while low-carbon technologies are not addressed in any way.

Then, **Decree of the Government of the Russian Federation of 23.01.2015 N 47 on Amending Certain Acts of the Russian Federation Concerning the Promotion of the Use of Renewable Energy Sources in Retail Electricity Markets** defines mechanisms for the realization of the RES promotion on retail markets in the price and non-price zones of the wholesale market as well as in geographically isolated energy regions³. This legal act also obliges network companies to buy power produced by RE facilities, *inter alia*, biomass, biogas and landfill gas to compensate their projected grid losses.

Finally, the **Government of Russia has recently adopted Order of 09.06.2020 N 1523-r on the Energy Strategy of the Russia Federation until 2035** acknowledges the problem of climate change as well as the fact of the changing energy landscape in the world to which Russia will have to adjust. The Energy Strategy also includes provisions on the RES, to a larger extent hydropower, and their further deployment concentrating solely on the distant and isolated regions. The present document sets only cost-effectiveness targets regarding the RES not defining any targets for increasing the share of RES in total energy balance or consumption. So, there is an aim to increase RE facility cost-effectiveness by improving efficiency of the production 1 kWt/h by 6% and 17% against 2018 level by 2024 and 2035 respectively. At the same time, the document sets a task to provide a “stable and under favorable conditions increasing level of oil extraction” relying on a growing demand for fossil fuels at least till the end of the present decade.

These main documents together with numerous supplementary and specifying acts shape the energy efficiency and RE policies in Russia. A greater emphasis concerning GHG reduction measures is placed on energy efficiency,

³ Price-zones are areas of liberalized power market; these zones are included in the National Electricity Transmission Grid (NETG) covering densely populated areas and large cities in the European and southern parts of Russia. Non-price zones are the areas of regulated wholesale market covering particular remote areas.

especially on its economic implications, than on renewable energy policies that are overall slowly developing (Korppoo & Kokorin, 2017; Kokorin, 2016a; Malikova & Zlatnikova, 2019; UNFCCC, 2019). In the base scenario of Russia's low-carbon development until 2050, energy efficiency measures play the major role while the contribution of the RES is still insignificant (Draft Strategy of Low-GHG Development, 2020; Mitrova et al., 2020). However, the attention of the authorities can be often shifted away from and in prejudice of the whole topic if complications occur, for instance, policy misuse or domestic criticism (Korppoo & Kokorin, 2017). As a result, the main targets cannot be achieved even provided numerous implementation acts are in place.

For instance, one of the most significant energy efficiency targets, namely a 40% improvement in energy intensity against 2007 level by 2020, is not going to be achieved under any circumstances (Ministry of Economic Development, 2019b). According to the State Report on the State of Energy Saving and Energy Efficiency Improvement by the Ministry of Economic Development (2019b), at the current pace of energy intensity reduction, which equals average 1.1% per annum, the 2020 target will have been achieved by 2043. From 2000 to 2008, there was a clear tendency for energy intensity decrease, which amounted to 35% (ibid.). However, from 2009, energy intensity firstly increased by 4% by 2011 and then started to slowly fall till 2015 since when it has been remaining relatively stable at 9% reduction level against 2007. Although in the time period 2015-2018 energy intensity was slightly growing in absolute terms, these changes were compensated by the introduction of some energy efficiency policies which altogether made the level of energy intensity reduction stagnate (ibid.). As of 2019, Russia was the second most energy intensive economy in the world showing twice as high results as the world's average (Enerdata, 2020). In particular, in 2019, Russia's economy was three times more energy intensive than Germany's economy that has been accelerating its energy intensity improvements since the 1990s (ibid.).

Another reason for a little improvement in the energy efficiency and energy saving targets is the lack of budgetary funds directed for these purposes (Korppoo & Kokorin, 2017; Mitrova & Melnikov, 2019). Although the share of budgetary funds has been recently gradually increasing, it accounted for 32% of all investments attracted for these programs in 2018 (Ministry of Economic Development, 2019b). The total amount of investments in energy efficiency and energy saving programs accounts for 0.2% of the total Gross Regional Product (GRP) of Russia, which is inefficient for the achievement of the relevant targets (ibid.). After all, the Ministry of Economic Development (2019b) highlights the importance of the realization of Russia's potential in energy efficiency and saving field in order to "make the balance of consumed energy "greener", reduce emissions in the atmosphere, and improve quality of life" (p. 2). In the end, Russia has failed to achieve its objectives even despite a high potential in energy efficiency improvement that could reach 30% cut of primary energy consumption (Government of Russia, 2020; IRENA, 2017).

Regarding RE policies in Russia, their development started with a considerable delay in comparison with general global trends. For example, following the EU Directive 2001/77/EC Germany started actively facilitating the RES deployment already at the end of 1990s to achieve the target of 12% gross renewable domestic energy consumption by 2010. Meanwhile, possessing the hydropower plant heritage of the Soviet Union, Russia undertook first considerable actions at the end of 2000s by filing amendments in Federal Law N 35-FZ on Electricity: they introduced a legal basis for RES support and enshrined mechanisms for RE power generation. In the following years, numerous amendments and separate policy and legal documents developed provisions on new “green” technologies, however, those were often ambiguous and unspecific (Malikova & Zlatnikova, 2019). In 2013, the Governmental Decree N 449 enshrined mechanisms for RES support on the wholesale market which facilitated deployment of RE installations in Russia. The further policy acts specified the established support mechanism which entered its active phase of realization in 2017, when the final amendments were introduced. The main means of RES promotion in Russia is tenders for the RE installation. The remuneration is provided based on the payment per capacity (MW) which is a unique concept distinguishing the Russian approach from the European support method based on a remuneration per electricity output (MWh) (Eclarion, 2019). However, today, a problem lies in the expiration date of this mechanism: it is valid until 2024 (Mitrova & Melnikov, 2019). Currently, the regulation covering the timeframe after 2024 is under development which creates uncertainty regarding the future of RES in Russia.

Concerning the terms of RES support mechanism, the localization of the RES facilities and the cost of installed capacity are the defining criteria for choosing tender winners. The focus on localization of new technologies is justified since it is supposed to narrow a gap between the technological development of Russia and of technologically-advanced countries which is also confirmed by the Director of “Energy and Climate” Program, WWF Russia (Kokorin, interview, 2020). Although low-carbon technologies are not included as target of the State Program “Energy Development”, high degree of localization is a strict requirement for RES projects in Russia. Many RE experts regard it even too strict preventing a fast development of the RES sector in Russia (see e.g. Eclareon, 2020). Until 2020, at least 65% of equipment for wind turbines has to be produced in Russia, while for solar installations, this share equals 70% (Mitrova & Melnikov, 2019). The second criterion refers to the cost of installed capacity which may also hinder active deployment of RE facilities in Russia. Russia’s high reliance on fossil fuels and setting low prices for hydrocarbon make RES uncompetitive in terms of per-unit cost and together with strict requirements for localization provide little room for a significant improvement (ibid.). For these reasons, it is worth shifting the emphasis away from costs of installed capacity onto another criterion, for example, effectiveness of the RE generation (Kokorin, interview, 2020).

The present state of RES in Russia is as follows: the latest data of 2019 provide that the RE share without hydropower accounts for 0.18% of the total electricity generation in Russia with 0.09% share of solar and 0.03% share of wind contribution (Ritchie & Roser, 2019). The rest are geothermal, wave and tidal, and bioenergy sources. If one includes electricity from large- and small-capacity hydropower plants, the RE share in electricity generation becomes 17.55%. Since 2013, the share of RES excluding hydropower in total electricity generation has increased by 0.13% which represents an average annual growth of 0.026% in absolute terms and 11% in relative terms.

The 4.5% target of RE share in electricity generation excluding hydropower with capacity more than 25 MW was set by the government in 2009 for 2020 and was later postponed until 2024. It was considered modest by some researchers already soon after its adoption (e.g. Yamineva, 2012). If one compares Russia's RE targets with similar goals of other industrialized states, for example, Germany, the contrast becomes even more vivid. In 2008, Germany, as well as the other Member States, were bound by the EU Climate and Energy Package to reach 20% share of RE in total energy consumption in the EU (European Commission, n.d.). By 2015, Germany solely achieved 14.21% of renewables in final energy consumption while Russia's level remained relatively stable at 3.3% of final energy consumption. Today, the achievement of the current RE target by 2024 is regarded as unrealistic. In 2019, discussing the prospects of alternations in Russia's electricity generation, the Minister of Energy Alexander Novak noted that "the share of RE is going to reach around 4% until 2035" (Vedomosti, 2019). So, the existing target is going to be achieved with a 10-year delay while by 2024, only 1% of RES in the electricity generation is estimated to be reached (Kargina, 2020). The Director of "Electric Energy" Program in the Innovation Center "Skolkovo" Alexey Khokhlov regards the achievement of 4% share of RES as possible by 2035, however, believes that the realistic level will account only for 2% by 2035 (ibid.).

In conclusion, both energy efficiency and RE policies lack Russian authorities' attention which is expressed, e.g. in insufficient budgetary finance, poor implementation, and misplaced emphasis within existing policies. Often, these policies are implemented until they contradict to the main political agenda such as economic or technological development. In particular, the requirement for the localization of RES equipment represents a side consequence of the general technological policy aimed at preventing further technological lag and technological import dependency of Russia. As Korppoo (2015) notes, any considerable steps towards the decarbonization of Russia's economy will not be seen in a mid-term period.

1.5. Vested interests

In Russia, specialized organizations, business representatives or NGOs cannot influence the agenda-setting for particular policies as substantially as their

colleagues in other democratic systems do (Korppoo, 2015). Their contribution may only be expressed in delivering ideas to the official preparatory processes or in organizing relevant coalitions within the bureaucracy (ibid.). This contribution would be minimal if the demanded policy is of little importance for the decision-makers, though. Meanwhile, businesses and coalitions representing any significant interest, primarily strategic or economic, for the head of the state and his inner circle as well as members of such a circle themselves enjoy higher opportunities to enter into negotiations with the government and exert influence on the issue in question. However, these influential actors and representatives of the economically important industries generally do not promote GHG mitigation policies (ibid.) or even hinder them.

In particular, the most powerful business lobby group⁴ in Russia is considered to be the Russian Union of Industrialists and Entrepreneurs (RSPP). It represents the interests of the business community at local and international levels and mostly consists of companies of fuel and energy, defense, engineering and other sectors who altogether amount to over 60% of Russia's GDP (President of Russia, n.d.). In other words, the member companies form the backbone of the Russian economy (Gershkovich, 2019). This Russia-wide association actively participates in domestic climate discussions, usually trying to negotiate more favorable conditions for its members.

The position of the RSPP regarding the climate change problem is not consistent. If at the beginning of the 2010s, the association together with Russian Aluminum (RUSAL) and partially state-owned energy corporation Gazprom supported the Kyoto Protocol's ratification (Henry & Sundstorm, 2007) and disapproved of Russia's non-participation in the second commitment period (Martus, 2018). However, when it came to the joining of the PA, the RSPP started opposing its sooner ratification. The RSPP's position was based on the claims about risks for the Russian economy that could emerge because of a subsequent reduction in industrial production (Davidova & Kryuchkova, 2016). The RSPP representatives also argued that implementation of the PA and regulation of GHG emissions would negatively affect socioeconomic development of Russia and undermine the competitiveness of its core industries (RSPP, 2016). The overall target of these arguments was to postpone the introduction of GHG reporting obligations and to ease future mitigation measures (Davidova, 2017).

In January 2019, the RSPP backtracked on their strong opposition to the PA ratification encouraging Russia to join the treaty (RSPP, 2019). The idea was to avoid an imposition of sanctions on Russian companies by introducing national obligations and state regulation of climate change activities (ibid.). Such a sudden support from the most influential industry lobby positively affected the domestic perception of the upcoming formal joining of the PA, which took place later in

⁴ Officially, lobbying does not exist in Russia since there are no legal instruments acknowledging or regulating such activity.

September 2019. However, already soon after Russia's consent to be bound by the PA, the RSPP blocked proposals for strict and meaningful measures which were supposed to be introduced for the main industry emitters in order to cut GHG emissions. Initially, the governmental plans included the introduction of a two-phase adoption of the first federal law on GHG emission reduction as part of obligations compliance efforts under the PA. The first phase implied the conduction of five-year audit to identify the level of GHG emissions by each company to set appropriate individual quotas for GHG emission reduction (The Moscow Times, 2019). The second stage was supposed to introduce a carbon cap on the largest domestic emitters as well as sanctions for non-compliance (ibid.). During the debates on a new climate regulation, the RSPP insisted on delaying any decisions on the second phase measures until the end of the first stage. Explaining its position, RSPP stressed that Russia had already fulfilled obligations concerning its 2030 reduction target (RSPP, 2019). After all, the Government of Russia indeed agreed on adopting only the legislation on a five-year stock-taking while postponing the negotiations on a carbon tax in Russia until the end of this period (ibid.).

In the following months, the RSPP went on speaking out against additional climate regulation in Russia as Russia had reportedly achieved 2030 target already by the time of the PA acceptance (Gershkovich, 2019). The RSPP's vice-president for corporate relations also expressed concern regarding Russia's plans to move towards RES development since it would result in growing utility prices and additional burden placed on ordinary people (ibid.). Such an opposition regarding the active deployment of RES in Russia is aligned with a general resistance expressed by the Russian key business stakeholders regarding decentralization as a concept (Mitrova & Melnikov, 2019). These actors usually consider low-carbon technological development to be a threat undermining the stability of the national security in general and national energy system in particular (ibid.). Notably, such a perception of climate and RE activities is mostly inherent to large business and industry players while leading climate experts and smaller enterprises tend to call for urgent actions to combat climate change (Gershkovich, 2019; The Moscow Times, 2020).

Finally, the latest round of halting environment- and climate-targeted activities took place in spring 2020. In the context of the coronavirus pandemic outbreak, the RSPP filed to the Government of Russia a 73-point request list to, *inter alia*, halt environmental audits, eliminate industrial pollutions fines, and postpone payments for the negative impact on the environment until 2021 (The Moscow Times, 2020). This approach to recovering is most likely to be witnessed across the energy and other industries at the times of and after the coronavirus pandemic.

1.6. Conclusion

Having analyzed various political barriers, the author re-confirms that Russia does not prioritize climate change activities in its general domestic policy. While similar conclusions were made already at the beginning of the 2000s (e.g. Henry & Sundstorm, 2007; Korppoo, 2010), the course of domestic policy has not changed after two decades. This fact is confirmed both by the interviewees (Kokorin, interview, 2020; Interviewee 2, 2020; Garafova, interview, 2020) and by the recent policy documents such as National Program “Environment” of 24.12.2018 which does not address climate change or GHG emissions problems.

On the one hand, Russia formally participates in the international climate agreements, *inter alia*, in the PA, and in the negotiations in the international climate arena, and self-proclaims itself as a leading GHG emissions reducer. On the other hand, Russia shows an unwillingness to undertake meaningful steps to fight against climate change and even acknowledge its human-induced nature at the domestic level. Together, these features of Russian climate policy clearly reflect the two-level game Russia plays. Regarding domestic climate policy only as a side activity, Russia sets quasi-ambitious climate goals under the PA to show its international commitment while in reality, these goals rather represent a business-as-usual trajectory. Energy efficiency and renewable energy policies, that could facilitate an essential energy system change and lead to significant emission reductions, also do not receive enough attention especially if they are not aligned with the policy directions important for the authorities. As a result, the targets set within these policies are not achieved by the given deadlines and will not be reached in the next decade, according to a number of climate and energy experts (e.g. Khokhlov for Vedomosti, 2019; Ministry of Economic Development, 2019b). Moreover, even after Russia’s acceptance of the PA, the most powerful business lobby representing oil, gas and coal companies, among others, succeeded to slow down the process of law-making on the introduction of carbon tax and national carbon trading system. All these circumstances altogether make Russia keep lagging behind actual frontrunners in the fight against climate change in terms of climate mitigation, energy efficiency, renewable energy policies and surely do not sufficiently contribute to the achievement of GHG reduction targets established in the PA.

2. Legal barriers

2.1. *General description of Russian and German climate legislation*

With Russia's acceptance of the PA, this international treaty became an integral part of the Russian legal system in accordance with paragraph 4, Article 15 of the Constitution of the Russian Federation. Then, Article 72 of the Constitution of Russia provides that environmental protection as well as environmental legislation are subject to the shared competence of Russia and its federal subjects. The broad term "environmental regulation" also includes climate regulation which, hence, is subject to the shared competence.

Historically, Russian climate legislation primarily consists not of federal laws but of sub-laws (Garafova, interview, 2020). This source of law is hierarchically one level lower than federal laws and comprises decrees and orders of the President, decrees and orders of the Government, and legal acts of authorized state bodies⁵; they are aimed at implementation of laws. While decrees of the President and of the Government have a normative nature, orders are adopted on operational and other current matters and do not have a normative character (Article 5, Federal Constitutional Law of 06.11.2020 N 4-FKZ on the Government of the Russian Federation). There are only a few legal instruments in the form of federal laws directly regulating climate issues, which are Federal Law of 04.11.1994 N 34-FZ on the Ratification of the UNFCCC and Federal Law of 04.11.2004 N 128-FZ on the Ratification of the Kyoto Protocol to the UNFCCC.

The core of the Russian climate legislation encompasses the following main sub-laws that regulate the relations connected with GHG emission reduction and are listed in a hierarchical order:

- Decree of the President of the Russian Federation of 30.09.2013 N 752 on Reduction of GHG emissions. It established a goal to reduce GHG emissions to a level not exceeding 75% against 1990 benchmark by 2020;
- **Decree of the President of the Russian Federation of 04.11.2020 N 666 on Reduction of GHG emissions⁶;**
- Order of the President of the Russian Federation of 17.12.2009 N 861-r on the Adoption of the Climate Doctrine of the Russian Federation;
- **Decree of the Government of the Russian Federation of 21.09.2019 N 1228 on the Acceptance of the PA;**
- Order of the Government of the Russian Federation of 25.04.2011 N 730-r on the Adoption of the Comprehensive Implementation Plan for the Climate Doctrine of the Russian Federation until 2020;
- Order of the Government of the Russian Federation of 02.04.2014 N 504-r on the Adoption of the Plan of Measures for Ensuring the GHG Reduction

⁵ Types of sub-laws are listed in a hierarchical order.

⁶ The legal instrument highlighted in bold are adopted as part of the PA implementation.

to a level not exceeding 75% against 1990 benchmark by 2020. It was adopted for the implementation of the Presidential Decree N 752;

- **Order of the Government of the Russian Federation of 03.11.2016 N 2344-r on the Adoption of the Implementation Plan for a Set of Measures on the Improvement of the State Regulation of the GHG Emissions and for the PA Ratification;**
- Order of the Ministry of Economic Development of the Russian Federation of 28.11.2014 N 767 on Approval of the Guidelines on the Development of the GHG Reduction Criteria Across Economy Sectors. It was adopted for the implementation of the Presidential Decree N 752;
- Order of the Ministry of the Natural Resources and Environment of the Russian Federation of 30.06.2015 N 300 on the Adoption of the Guidelines on Determining the Quantity of the GHG Emissions by the Organizations Conducting Economic and Other Activity in the Russia Federation.

Next, it is necessary to stress two federal laws regarded as fundamental for Russian environmental legislation which within its meaning includes the climate legislation: the Federal Law of 04.05.1999 N 96-FZ on the Protection of the Ambient Air and the Federal Law of 10.01.2002 N 7-FZ on the Protection of the Environment. The Federal Law on the Protection of the Environment does not refer to climate as to area of its protection while the Federal Law on the Protection of the Ambient Air addresses climate once in paragraph 8, Article 16 prohibiting “the design, placement and construction of objects of economic and other activities, the operation of which may lead to adverse changes in the climate and the ozone layer of the atmosphere”. Nevertheless, both federal laws aim at reducing the anthropogenic influence on the environment and the atmosphere which includes climate protection (Garafova, 2018a,b).

In addition, there are a number of legal instruments that are also of relevance to climate change, in particular energy efficiency and renewable energy legislation. The main legal instruments connected with a reduction of GHG emissions and the anthropogenic influence on the climate are listed in a hierarchical order as follows:

- Federal Law of 26.03.2003 N 35-FZ on Electricity;
- Federal Law of 23.11.2009 N 261-FZ on the Energy Saving and Improving Energy Efficiency and Amending Certain Legislative Acts of the Russian Federation;
- Decree of the President of the Russian Federation of 04.06.2008 N 889 on Particular Measures to Increase Energy and Ecologic Efficiency of Russian Economy;
- Decree of the Government of the Russian Federation of 28.05.2013 N 449 on Mechanism for Stimulating the Use of RES in the Wholesale Market of Electric Energy and Capacity;

- Decree of the Government of the Russian Federation of 15.04.2014 N 321 on approving State Program on Energy Efficiency and Energy Development (currently named Energy Development);
- Decree of the Government of the Russian Federation of 23.01.2015 N 47 on Amending Certain Acts of the Russian Federation Concerning the Promotion of the Use of Renewable Energy Sources in Retail Electricity Markets.

As can be observed, the subject matter of the federal laws directly regulating climate-legal relations is the ratification of the international climate treaties. The majority of the other legal instruments directly or indirectly covering climate-legal relations are adopted at the governmental level in the form of decrees and orders.

In the EU, the Union and its Member States have a shared competence in the climate and energy areas which implies that the EU and Member States “may legislate and adopt legally binding acts” on climate and energy issues (Article 2 (2), Article 4 (2) lit. e and i, Treaty on the Functioning of the EU). At the national level, Germany as a federal state (*Bundesrepublik Deutschland*) also shares competence with the states of Germany (*Bundesländer*) in the areas of environmental protection (Article 74, Basic Law for the Federal State of Germany), similarly to the Russian Federation.

As opposed to Russia, German climate legislation consists mostly of federal laws which are often adopted by the national parliament to implement the laws, i.e. directives, issued at the EU level⁷.

The core of German climate legislation encompasses the following acts:

- **Greenhouse Gas Emissions Trading Act** of 28.07.2011 and the Emissions Trading Decrees for 2013-2020 of 20.08.2013 and for 2021-2030 of 29.04.2019 on the basis of the EU Emissions Trading Directive (2003/87/EC in the edition of Directive (EU) 2018/410). EU ETS covers industry and power generation emissions in the EU Member States including Germany. Operators have to report an emission allowance for every ton of emitted CO₂ (German Emission Trading Authority, n.d.);
- **Climate Protection Act** of 12.12.2019. This national climate legal act was adopted as part of the PA implementation in Germany and is the first federal law anchoring climate protection goals of Germany, namely 55% emission reduction against 1990 level by 2030 and GHG neutrality by 2050. Additionally, the document established reduction targets for seven sectors including transport, industry, energy until 2030;
- **Fuel Emissions Trading Act** of 19.12.2019 on the basis of the EU Effort Sharing Regulation ((EU) 2018/842). It will introduce a national emission

⁷ Unlike EU regulations, which are self-executive and do not require transposition the amendments into Member State’s legislation, EU directives have to be transposed by adopting as a separate national act to ensure the implementation of the former.

trading scheme in the fields of transport and heating from 2021 (German Emission Trading Authority, n.d.). Unlike EU ETS, national ETS attribute emissions to a distributor when energy carriers are placed on the market (ibid.).

Strongly affecting Germany's emission reduction, the EU ETS establishes an emission trading market aimed at limiting overall emissions of the covered installations of certain industries such as iron, aluminum, cement production as well as civil aviation, etc. (European Commission, 2016). These installations have to possess an allowance for each CO₂ ton, otherwise they face sanctions. By 2020, the EU ETS aims to cut 20% of GHG emissions against 1990 levels; by 2030, it sets forth a reduction target at least 43% against 2005 levels (European Commission, n.d.).

The introduction of such a market mechanism at the regional and national levels distinguishes the German way to cut GHG emissions from the Russian approach. To date, there is neither a regional emissions trading system at the Commonwealth of Independent States (CIS) or the Eurasian Economic Community (EAEC) level nor a national trading system in place to put a limit on GHG emissions in Russia. The recent discussions on the introduction of the national carbon tax and emission trading system were postponed under the pressure of the main Russian lobby group, which was discussed in the previous sub-section.

Concerning the other climate-related legal instruments in the field of energy efficiency and renewable energy adopted in Germany, the following national acts have to be mentioned:

- **Renewable Energy Sources Act** of 01.04.2000 (revision of 21.07.2014), the **Renewable Energies Heat Act** of 07.08.2008, the **Biomass-Energy Sustainability Ordinance** of 13.10.2016 on the basis of the EU Renewable Energy Directive (2009/28/EC) which is to be replaced by EU Directive on the Promotion of the Use of Energy from Renewable Sources ((EU) 2018/2001) in July 2021. Under these legal acts, Germany is bound to achieve 18% of its gross total energy consumption from RES by 2020;
- **Energy Saving Act** of 01.09.2005, the **Energy Saving Ordinance** of 01.09.2005 on the basis of the Energy Efficiency Directive (2012/27/EU) and the EU Energy Performance of Buildings Directive (2002/91/EC). These legal documents set forth an obligation of around zero-energy standard to be applicable for all new public buildings from 2019 and to the other new buildings from 2021 (Federal Ministry for Economic Affairs and Energy, n.d.);
- **Act on Energy Consumption Labelling** of 17.05.2012, the **Ordinance on Energy Consumption Labelling** of 17.05.2012 on the basis of the EU Energy Labelling Framework Regulation ((EU) 2017/1369). These legal acts

are aimed at the market surveillance of products labelling and at the provision of the correctness of the consumers' information;

- **Electricity Tax Act** of 24.03.1999 and **Energy Tax Act** of 15.07.2006 based on the Energy Taxation Directive (2003/96/EC). Although Electricity Tax Act does not refer to climate directly, it facilitates the achievement of climate targets by encouraging reduced electricity consumption (Federal Ministry for Economic Affairs and Energy, n.d.). With Energy Tax Act, the state imposed taxes on natural gas, coal and oil products to incentivize energy efficient behavior and facilitate RES development (Climate Policy Initiative, 2011).

Unlike the Russian legislation, the German energy efficiency and renewable energy legal instruments explicitly address climate change, underpinning the relevant acts. So, a climate-energy nexus is clearly reflected and established in the German national legislation which is harmonized with the latest international and regional climate decisions.

2.2. Insufficient legislation on climate and GHG emission reduction

The overarching legal barrier present in the Russian legal system for the successful implementation of the PA is insufficient regulation of climate protection in general and GHG emissions in particular.

Firstly, climate protection is not subject to the direct regulation by the Russian federal laws. Besides the federal laws on the ratification of the international climate treaties, climate protection is not addressed in any other federal law. One can only imply within the meaning of the existing environmental provisions that they are applicable to the climate protection as well. At the regional and municipal level, the climate agenda is not a priority of local authorities who rarely adopt specific climate legal acts that would take into account the features of the locality. The capital of Russia and simultaneously a federal subject, Moscow, is the exception to this general rule since it is a member of the "C40 Cities Climate Leadership Group" aiming at tackling climate change (Mitrova et al., 2020). The other cities and regions are absent from the process of decision-making on the climate issues despite their significant role in implementing climate-related provisions (Korppoo, 2015). Here, it is relevant to draw a parallel to the German regions all of which adopt own legal instruments on climate-related questions and set region-specific climate goals. For example, the federal state Hamburg has numerous climate-related legal acts such as the Hamburg Climate Protection Ordinance Act of 2007, which implements the Law to Protect the Climate through Energy Conservation of 1997 (revised in 2013). Recently, the Hamburg Senate has adopted a new Climate Protection Act setting for this federal state the target to reduce its CO₂ emissions by 55% by 2030 and by 95% by 2050 (Hamburg Act on Climate Protection, 2020). Similar measures for climate protection are taken by the other federal states of Germany in the form of various climate laws, strategies, programs, etc.

Meanwhile, in Russia, a climate protection field is subject to the legal acts, such as decrees and orders, issued by the President, the Government and Ministries of the Russian Federation. As mentioned above, the cornerstone of the Russian climate policy and legislation is the Climate Doctrine of 2009. It is adopted as an appendix to the Order of the President on its approval thereby formally representing a legally-binding document. The Climate Doctrine does not anchor specific goals and obligations addressing only general targets and climate policy principles. So, in practice, this act is characterized rather as declarative than as *de facto* enforceable act. For this reason, it is mostly referred to as a policy act (Korppoo, 2015; Yakovlev et al., 2020; Yamineva, 2012) or as a non-binding instrument of “soft law” enshrining formally-defined but non-binding norms (Garafova, 2017; Garafova, 2018b). This approach is widely used by the Russian authorities to frame climate-relevant issues, which was also the case of the National Plan of Adaptation adopted in the form of a governmental order. So, the Climate Doctrine adopted by the formally legally-binding Order is the first and only act of such level to explicitly acknowledge the anthropogenic nature of climate change and has only declarative political nature. This fact leads to a conclusion that to date, there is no normative enforceable instrument simultaneously addressing climate as a subject to a legal protection and acknowledging an anthropogenic nature of climate change.

From a legal perspective, the acknowledgement of the human role in causing climate change is crucial for the improvement and further development of the Russian climate legislation. If one refers to the theory of law, the structure of a legal norm includes hypothesis, disposition and sanction. Hypothesis encompasses circumstances, conditions under which the legal relations occur and a norm will come into force; disposition describes rules of conduct, rights and obligations of a subject of legal relations and sanction includes the measures applied if a legal norm is violated. Climate change problem falls into the hypothesis element since it represents a context in which legal relations occur. Hence, the accuracy and clarity of further legal norms that include the climate change problem will depend on the precision of understanding climate change and its origins. Like any other question within law-making process, the understanding of climate change must be based on the credible and reliable scientific findings.

Secondly, regulation on GHG emission reduction is absent in the Russian legal system; the first federal law on this topic is currently undergoing final ministerial approvals. The latest edition of this new federal law on GHG emission regulation is considered ineffective and insufficient to reach domestic targets beyond a business-as-usual scenario and international temperature goals set by the PA (Yulkin for Bellona, 2020).

The aim to develop a legislation on the regulation of GHG emissions was established in 2014 with the Governmental Order on the Adoption of the Plan of Measures for Ensuring the GHG Reduction to a Level Not Exceeding 75% Against 1990 Benchmark by 2020. This Order represents another embodiment of a “soft law”

approach to climate and GHG emission regulation mentioned above. The deadline for the Ministry of Energy, the Ministry of Economic Development and the Ministry of Natural Resources and Environment to develop such normative legal acts was March 2015, however, since then the drafting of the legislation has been dragging on and the adoption of the relevant legal instruments has been postponed. Delaying the adoption of the climate protection acts is inherent to the Russian legal system, as Garafova (2017) finds. This was also the case with the acceptance of the PA, when it took various ministries more than three years to accept the Agreement due to long-term procedures connected with assessments of the ratification-related risks and impact (ibid.).

In 2015, a number of legal instruments were enacted in regard to the GHG emissions monitoring and reporting. First, the Ministry of the Natural Resources and Environment adopted an Order of 16.04.2015 N 15-r on the Adoption of the Methodological Recommendations on the Voluntary Inventory of the GHG emissions in the Federal Subjects of the Russian Federation. As can be seen by the name of this ministerial by-law, the conduction of the GHG emission inventory by the Russian regions has a voluntary nature only. A voluntary approach to the regional GHG emission inventory and reporting is reaffirmed in the Concept of GHG Emission Monitoring, Reporting and Verification System in the Russian Federation adopted by the Order of the Government of Russia N 716-r on 22.04.2015. This Concept contains recommendary norms for the federal subjects to set a benchmark year, conduct a GHG emission inventory for the previous 5-7 years, analyze the tendency of GHG emissions, set a GHG emission reduction target until 2020, 2030-2035 and 2050. Such a “soft” approach does not incentivize the regions to undertake the necessary actions, so only 11 out of 85 federal subjects took measures for a GHG emission inventory by 2017 (Council of Federation, 2019). As for the economic enterprises, the Concept recommends introducing the obligation to annually report the amount of GHG emissions for those economics operators whose emissions exceed 150 000 ton CO₂-equivalent (CO₂-e) per year. From 2017 onwards, such an obligation was to have been introduced for the enterprises with GHG emissions exceeding 50 000 ton CO₂-e per annum. By June 2015, the Ministry of Natural Resources and Environment issued an Order N 300 on the Guidelines on Determining the Quantity of the GHG Emissions by the Organizations Conducting Economic and Other Activity in Russia. This sub-law prescribes the organizations to conduct annual inventory of their GHG emissions, however, there is no obligation to report this information to any public authority body. Since enterprises are not bound to report their GHG emissions, only a small number of the targeted companies comply with such provisions which is ineffective from the perspective of the state GHG emission regulation (Garafova, interview, 2020).

Finally, in November 2016, the Government issued Order N 2344-r anchoring a more specific measure to prepare a draft *federal law* on the state regulation of the GHG emissions by June 2019, which entered into the active phase of the development in 2017. The latest freely available draft of the Federal Law on

the State Regulation of the GHG Emission and Absorption and on the Introduction of Amendments in Particular Legal Acts of the Russian Federation (hereinafter – Draft Federal Law on the State Regulation of the GHG Emission and Absorption) was published in March 2019 by the Ministry of Economic Development (2019a). This edition of the federal law included an introduction of a fund to support emission reduction and/or absorption projects, a national emission trading system with emission allowances, a carbon tax and sanctions for a non-compliance with established emission quotas. Overall, this edition of the Federal Law was positively assessed by environmental organizations and climate experts (Davidova & Shapovalov, 2018). However, after holding a parliamentary hearing on the draft federal law with various ministries and the RSPP, the initial measures were significantly watered down in favor of softer provisions. According to the results of the conducted parliamentary hearing, the Council of Federation, the upper chamber of the Parliament, recommended the Government of Russia accelerate the submission of the Federal Law in question to the State Duma (Council of Federation, 2019). The edition of the draft to be submitted shall foresee the “formation of an accounting system for GHG emission and absorption in Russia, regulation of voluntary projects aimed at reducing emissions and increasing absorption of GHGs” as well as address “issues related to accounting for the results of these projects in the Russian national register and the possibility to use the results of such projects by companies-initiators in their foreign economic activities” (ibid.). “Results of voluntary emission reduction and absorption projects” stand for carbon units each of which usually amounts to one ton of CO₂-e.

As a result, the new Federal Law on the State Regulation of the GHG Emission and Absorption will not contain strict legal provisions on GHG emission reduction and absorption and will postpone the introduction of national emission trading system with carbon quotas, a carbon tax and sanctions. This legal instrument is about to introduce a *voluntary* execution of GHG reduction and absorption projects as well as a four- or five-year GHG stocktaking and reporting for the chosen economic operators. After this period, the Government is supposed to decide on the carbon caps for each economy sector based on which corresponding carbon allowances will be allocated among emitters. However, the currently established approach is considered ineffective for significantly reducing GHG emissions and decarbonizing the Russian economy (Yulkin for Bellona, 2019). At present, such a soft Federal Law would provide fossil fuel companies with more freedom and little necessity to undergo any climate-related changes. However, it also creates risks for the Russian companies that export energy-intensive products to foreign partners that are frontrunners in combatting climate change such as the EU. The latter is now considering the introduction of a so-called carbon border adjustment mechanism within the EU Green Deal Package which sets forth an overarching goal for the EU to reach climate neutrality by 2050 as well as establishes a set of climate-relevant measures (European Commission, n.d.). Carbon border adjustment mechanisms are targeted at preventing a carbon leakage, namely the transfer of carbon-intensive production by a state with a stricter GHG emission regulation to regions with softer

GHG reduction legislation. Carbon leakage also negatively influences the competitiveness of domestic actors of the former state. In order to address a carbon leakage problem, the EU is considering to impose a carbon border tax on the states importing carbon-intensive products to the EU (European Commission, n.d.). As a consequence, Russia, as one of the main fossil fuels importers to the EU, is expected to face numerous economic challenges and losses unless stricter and more effective legislation on GHG reduction is developed prior to enacting of the relevant border tax by the EU.

After all, the new Federal Law on the State Regulation of GHG Emission and Absorption establishes only general principles and provisions to lay the basis for further climate course of Russia. In other words, the latest and nearly final edition of this document has a framework character (Gorshkov, 2020). Previously, the Council of Federation required to prevent drafting a new federal law as a framework legal instrument (Council of Federation, 2019). Moreover, in the current edition, the Federal Law does not relate the GHG reduction and absorption measures to the need to tackle climate change. Instead, the necessity to “ensure the economic development of the Russian Federation” is proclaimed as a goal of the given Federal Law. Then, it foresees the climate-related amendments into the Federal Laws on the Protection of the Environment and on the Protection of the Ambient Air. Specifically, both Federal Laws have to contain the following paragraphs: “the relations arising during the state regulation of the GHG emission and absorption are regulated by the legislation on the state regulation of the GHG emission and absorption” and “implementation of the measures on climate adaptation” is the competence of the state bodies of the federal subjects. In spite of introducing a paragraph on competences for climate adaptation measures, there are no definitions of climate change or adaptation in the federal laws. Taking into account the absence of a reference to climate change mitigation in the Draft Federal Law in question as well as the introduction of a single climate *adaptation* paragraph into the mentioned federal laws on environmental protection, one comes to a conclusion that the emphasis is once again shifted away from the climate change problem and its anthropogenic nature.

In order to implement the provisions on the introduction of a voluntary accounting system, in August 2020, the Ministry of Economic Development introduced a draft Order of the Government of the Russian Federation on the Concept of the System of Accounting, Registration, Release into Circulation, Transfer and Offsetting of the Results of Climate Projects Conducted on the Territory of the Russian Federation. This legal document is another example of a “soft” approach since it touches upon general aims, tasks and principles of the functioning of the Russian voluntary climate project system as well as lists some tasks necessary for the implementation of the given Concept. It has a rather declarative nature and does not create specific legal obligations for the relevant actors.

As of the 30th of November 2020, neither was the draft Concept reviewed by the relevant Ministries, nor was the Draft Federal Law in question submitted to the State Duma, in spite of the Council of Federation's recommendation to facilitate the adoption of the latter.

In conclusion, climate and GHG reduction legislation in Russia is insufficient for ensuring Russia's contribution in the fight against climate change, for achieving the temperature goals set forth by the PA and for facilitating the adoption of a low-carbon pattern by the Russian economy in the near future. In particular, climate protection is neither regulated by any federal law, nor addressed as a goal at the federal law level. This peculiarity distinguishes the Russian legal approach to climate regulation from German climate legislation, which explicitly addresses this problem and regulates it through federal legal instruments and other types of legal acts including regional ones. Then, there is no document of a "hard" law to provide a comprehensive and clear definition of climate change which is significant for the formation of the legislative foundation of further climate protection regulation in Russia. Moreover, the absence of a scientifically-based definition that would address the anthropogenic nature provides room for decision-makers to question the human-induced character of climate change and, as a result, concentrate less on GHG mitigation measures.

As for the GHG reduction legislation, it has been under development since 2014. The legal instrument to lay the basis for the whole GHG emission reduction legislation in the future is the Federal Law on the State Regulation of the GHG Emission and Absorption and on the Introduction of Amendments in Particular Legal Acts of the Russian Federation which has not been adopted as of November 2020 yet. Initially conceived as an ambitious federal law, it was considerably watered down by the Russian business lobby, which led to postponing decisions on all measures related to a carbon tax, carbon quotas and a national emission trading scheme. In its latest edition, the new federal law establishes the execution of voluntary climate projects, corporate GHG emission reporting and a five-year stocktaking, which is overall regarded as an ineffective legislation for reducing GHG emissions in Russia.

2.3. Complexity and dysfunction of the energy efficiency and RE legislation

There are certain features of the Russian legislation in areas related with climate protection regulation, such as energy efficiency and RE, that create obstacles for improving domestic climate protection and achieving the PA goals. In particular, the energy efficiency and RE legislation is often characterized as excessively complex, poor in quality and nominal (Korppoo & Kokorin, 2017).

The complexity of the energy efficiency and RE legislations is evident from the excessive number of the relevant sub-laws. For instance, in the energy efficiency

field, there are more than 85 legal acts fully or partially regulating the relevant issues (Ministry of Energy, n.d.). However, these excessive legal acts did not manage to provide a clear and specific guidance for the implementation of new measures adopted which often leads to a failure of the whole new tool (Gusev, 2013; Korppoo & Kokorin, 2017). In the RE field, the first tender for recently introduced waste-to-energy projects failed since the requirements placed on bidders to provide performance guarantees appeared too strict and excessive (Mitrova & Melnikov, 2019). Another example relates to the Governmental Decree N 449 on the RES stimulation mechanism. This legal instrument is characterized as lacking legal certainty and being rather opaque (Eclareon, 2020). The lack of a clear legal framework affects the regions the most because they are responsible for policies implementation (German Energy Agency, 2019; Gusev, 2013). Unspecific formulations of legal norms tends to lead to violation of the legal prescription and to an impossibility to achieve intended goals (Korppoo & Kokorin, 2017).

The excessive number of legal acts often leads to overregulation that is likely to block rather than facilitate the implementation of energy efficiency and RE measures. The reason for such an overregulation often lies in the lack of human resources to properly draft the legislation as well as in an excessive bureaucratic administrative control, which is traditionally in place in Russia (Korppoo & Kokorin, 2017). Bureaucratism implies the misuse of the administrative power to control the legislative and executive processes for maintaining this power in own hands. When the adoption of a legal instrument is an end in itself, such legal acts often remain unimplemented bearing a nominal character. In particular, an excessive bureaucratic control can be clearly seen in the renewable energy field, where administrative bodies are overrepresented in the law preparation and implementation stages (Korppoo & Kokorin, 2017).

Besides being adopted in excessive numbers, such legal acts are still mostly introduced with a delay which holds up the development of the targeted field (Gusev, 2013). For example, the slow adoption of a legislative framework for RE resulted in a delayed and slow development of this field in Russia, compared to the global trend for a decarbonization and an alternative technologies boost. Trying to address the widening technological gap, Russia seeks to advance its local technologies by introducing a strict requirement for high localization levels for the solar, wind, small hydropower and waste-to-energy installations. However, in 2013-2014, an unrealistically high localization rate was set for the very first wind energy tenders leading the auctions to a failure. In total, the chosen projects accounted for only 1/10 of the targeted installed capacity, i.e. 110 MW out of 1100 MW (Malikova & Zlatnikova, 2019). At that initial stage of the Russian wind technologies development, the level of the localization was regarded as too strict; in case of a failure to meet the localization requirement, the remuneration for power supply is significantly reduced (Barinova et al., 2016; Heidemann & Makarova, 2019; Korppoo & Kokorin, 2017). In the end, this tendency for a long-lasting and late

adoption of legal acts also applies to the new RE legislation that is supposed to cover the RES deployment beyond 2024.

Unlike energy efficiency regulation, the RE legislation does not include an overarching field federal law that would set forth proper definitions of the relevant terms, national targets of the RES development and their relevance for the climate targets, competences of the federal and regional bodies, state stimulation measures for RES deployment, etc. Nowadays, the RE legislation encompasses numerous sub-laws, i.e. mostly decrees and orders of the Russian Government, regulating different aspects of the RES relations. Moreover, separate articles and chapters on RES are also included in a number of federal laws, state programs, ministerial orders, e.g. Federal Law on Electricity or Energy Strategy of Russia until 2035. The former legal instrument beside others sets forth a definition of the RES. This definition represents an exhaustive list of the RES types that existed at the end of 2007, when this term was incorporated in the mentioned Federal Law. Such an exhaustive definition may complicate legal regulation of alternative energy sources that are not targeted by the Federal Law on Electricity but are in essence renewable.

Meanwhile, the boost of RES in Germany was arguably initiated exactly by a relevant German federal act, namely the Renewable Energy Sources Act. It has been in force already since 2000 establishing, *inter alia*, support mechanisms for RES deployment in the form of guaranteed feed-in tariffs, feed-in priority for RES, and shared costs among consumers (Waffenschmidt, 2017). In particular, feed-in tariffs are thought to have played a significant role in Germany's transition to RE (Barinova et al., 2016; Waffenschmidt, 2017). A feed-in tariff is a mechanism for encouraging RE generation by offering long-term contracts with a fixed compensation to RE producers. The 2014 revision of the RES Act aligned its aim with climate interests as well as introduced new expansion and final RE electricity consumption targets (Federal Ministry for Economic Affairs and Energy, n.d.).

In the end, the overall Russian system of RE acts is considered to be a patchwork, consisting of instruments of different legal force (Efimtseva et al., 2019). This can be connected with the lack of human resources to properly draft legislation which was mentioned by one of the interviewees for Korppoo & Kokorin (2017). As a result, there is no clear strategy for the RES development in Russia especially after 2024 (Efimtseva et al., 2019). So, the approach to the RE regulation is similar to the way of framing climate protection legislation while energy efficiency regulation is to a larger extent represented by "hard" law sources such as federal laws or enforceable governmental decrees.

In conclusion, the complexity and dysfunctionality of the energy efficiency and RE regulations often hinder the implementation of the set targets and a high-efficient and low-carbon development of Russia required for achieving the PA goals. The lack of clarity found in the legislation in question negatively affects the regions' ability to successfully implement new energy efficiency and RE measures.

Moreover, in the past, the delay in the adoption of the new legislation typical for Russia already led to a technological lag of the country and caused complications for the domestic renewable energy providers who had to meet newly introduced unrealistically strict RE requirements. At the present time, legal uncertainty concerning the regulation for the period after 2024 may create additional risks both for the RE providers and for investors (Mitrova & Melnikov, 2019). Besides unclarity regarding the new RE stimulation legislation, the existing regulation is characterized by a composition of legal documents of various legal force and requires both terminological improvements and a more structured and comprehensive approach.

2.4. Conclusion

As shown above, the climate-related issues are not sufficiently reflected in the Russian legislation and are addressed by numerous “soft” law instruments. Neither climate change itself nor its anthropogenic nature are explicitly enshrined in federal laws. Although a new Draft Federal Law on the State Regulation of GHG Emission and Absorption is aimed at reducing the GHG emissions and improving the absorption of the GHGs, the goal of this legal instrument is to ensure the economic development of Russia. In contrast to the Russian approach to climate protection and GHG reduction, the German legislation explicitly establishes a climate-energy nexus and is harmonized in accordance with Germany’s international and regional climate obligations. In terms of emission reduction, Germany both participates in the EU ETS and introduces its national carbon trading scheme to address the emissions, not covered by the regional scheme. Unfortunately, Russia has failed to promptly introduce a similar national market mechanism to regulate the amount of GHG emissions and it has not created the obligations for the main GHG emitters to implement carbon reduction projects, either. The new GHG legislation is not going to impose any strict obligations in the next few years, which is insufficient for reaching more ambitious national climate targets and for meaningfully contributing to the solution of climate change problem under the PA regime.

As for the energy efficiency and RE legislations, they are also not properly correlated with the climate targets. The regulations of both fields tend to be too complex and simultaneously lack specificity, which creates barriers for the implementation at the regional level. Excessive bureaucratic control is another factor negatively affecting law-making and implementation and hindering the targets achievement. In addition, a lasting delay in the adoption of a new legislation typical of the Russian law-making already resulted in Russia’s lagging behind more climate-advanced countries such as Germany and may cause further challenges when it is time to update the current RE support scheme. To date, there are strong differences found between Russian and German RE legislations, the latter of which follows a more systematic and “hard” law approach and introduces RE stimulation mechanisms based on electricity output rather than on installed capacity.

3. Sociocultural barriers

It is true to say that besides political unwillingness to act and subsequent disadvantages of Russian climate and climate-related legislation, there are also economic and sociocultural barriers to ambitious climate change mitigation (Kokorin, interview, 2020; Garafova, interview, 2020). While economic underpinnings are not addressed in the present research, the sociocultural aspects are discussed in detail in this sub-section.

3.1. *Lack of awareness of and concern about climate change*

Climate change represents a multidisciplinary and complex problem and, hence, it requires multidimensional solutions. Not only the state but also the society itself play an important role in building climate-resilient community (Muzykant & Muqsith, 2020).

Conventionally, Russia's population is not sufficiently aware of and hence, express little concern about climate change, despite the fact that on Russia's territory, temperature is rising 2.5 times faster than global average. The lack of awareness and concern is primarily connected with permanent economic difficulties experienced by Russia's population since the collapse of the Soviet Union. While the international community adopted the first legally-binding international treaty on climate change and the subsequent specifying Protocol, the Russian population faced numerous challenges such as an economic crisis, a high level of unemployment, poverty and high crime rates caused by the dissolution of the Soviet Union. The Russian population was preoccupied with its own survival at the expense of other aspects, such as environmental improvement (National Intelligence Council, 1999). It is a common pattern that at least at the early stages, economic growth is achieved by accelerating goods production and consumption which leads to increased environmental damages (Everett et al., 2010). At that point, Russia as a newly formed independent state was in the early stages of its economic development, so the population could not afford being worried about climate change.

At the beginning of 2000s, the GDP began growing substantially thank to the booming oil prices forming the basis of the GDP (Korppoo, 2010). Due to this trend, annual household income per capita started to increase considerably till the next economic crisis in 2009, when the GDP declined by 7.9% against 5.6% increase in 2008 (CEIC Data, 2020; Korppoo, 2010). During this period, people could have arguably been more susceptible to information on climate change since their needs were not limited by economic survival exclusively. However, the only widely available in Russia source of information on climate change and present debates on this topic were and are social media.

Generally speaking, social media deliver climate change knowledge, which is initially formulated in a difficult scientific language, in a simplified way to be clear for a general public (Poberezhskaya, 2014). Social media also help forming a

public opinion on the topic and serves as a mediator among society, business, scientific community and politicians (Poberezhskaya, 2014). Because of their important role, the government directly or indirectly influences social media despite their legally-established independence (ibid.). The state tends to use them to control public perception of climate change by limiting and directing necessary information on this theme or allowing social media to put a greater emphasis on climate-skeptical experts when necessary (Poberezhskaya, 2014; Korppoo, 2020). So, before 2009, the information on this topic was mostly limited. Having studied the publications of five Russia-wide newspapers, Poberezhskaya (2014) concludes that only 13 articles were dedicated to the topic of the COP-3 in Kyoto. In these articles, the journalists were prone to question the anthropogenic nature of climate change and criticize the Kyoto Protocol, which corresponded to the government's position (Poberezhskaya, 2014). As a result, when Russians were asked about climate change in 2007, only 34% of the respondents claimed to have sufficient knowledge on this topic, while 59% "heard something about climate change" (WCIOM, 2017). Moreover, 45% of the respondents were aware that the global climate had been already changing, while 21% of the population expected climate change to happen sometime in the future (ibid.). Furthermore, 17% of the respondents stated that the government should spend as much funds as necessary to combat climate change and every third respondent believed Russia should spend only a limited budget on this problem. Then, 45% of Russians thought no funds should be directed to the fight against climate change since it was inevitable or since there were other state programs to spend money on (ibid.). In general, the level of concern of the Russian population about climate change can be characterized as low with little awareness of details of this problem.

However, already from the beginning of the presidency of Medvedev in 2008, who was famous for a more climate-oriented course of policy (Andonova & Alexieva, 2012; Henry & Sundstrom, 2012; Korppoo, 2015; Yamineva, 2012), the media coverage of climate-related issues notably increased. During the Copenhagen Climate Conference, around 130 articles in five newspapers in investigation were dedicated to the COP-15 (Poberezhskaya, 2014). In the same time period, one of the studied newspapers, Russian Newspaper (*Rossiyskaya Gazeta*), which is considered to reflect state's view, published a few articles that covered international climate mechanisms and agreements and promoted them (Henry & Sundstrom, 2012). Nevertheless, by February 2010, still only a few people were knowledgeable enough of climate change (36%) and the majority of the population had only limited information on this problem (58%) (WCIOM, 2017). Moreover, 31% of the respondents named natural processes as a main cause of climate change; 51% of the population regarded anthropogenic activities as a reason for climate change (ibid.). Then, 52% of Russians believed that climate change would lead to an irreversible deterioration of the living conditions on the Earth, while one third of the population regarded climate change as an exaggerated problem invented to benefit from humankind's fear of natural disasters (ibid.). By the end of 2010, 55% of the population expressed concern about climate change which was rather connected

with extensive forest, farmland and bog fires in summer 2010 than with larger coverage of the topic by social media (Tynkkynen & Tynkkynen, 2018). After all, a short-term political shift towards a more climate-oriented policy and increased media coverage of the global warming did not significantly affect the public perception of this problem which remained mostly unaware and unconcerned.

In 2012, Putin was elected for the third presidential term which meant a continuation of the climate-skeptical position in the Russian domestic policy and little attention to the topic as a whole. The newly elected president did not question the policy objectives such as increased energy efficiency and economic modernization introduced by Medvedev (Tynkkynen & Tynkkynen, 2018). Putin rather stressed economic benefits of such policies and state sovereignty but not foreign policy gains, addressed by ex-President Medvedev (ibid.). As a result, a shift in media coverage also took place: almost 27% of the studied articles of the state-run *Rossiyskaya Gazeta* and arguably independent *Izvestiya* were identified as “denial of mainstream climate science” (ibid.). In addition, a significant proportion of the articles either denied the anthropogenic nature of climate change, pointed out less severe consequences of it for Russia or covered “interests of the West” hidden behind climate change fight (ibid.).

In 2013, the official Kremlin webpage reported the findings of the latest public survey related to climate change. Reportedly, 54% of the respondents are aware of the climate change problem and 36% of them heard something about it (Administration of the President, 2013). Then, more than a half of them consider climate change a problem for the future generations while one third of all respondents assess it as a present global challenge (ibid.). In addition, 33% of the population indicate the human activity as a cause of climate change while 42% of Russians claim the combination of the anthropogenic and natural factors caused global warming (ibid.). Finally, allegedly, 53% of the respondents supported the introduction of economic incentives to regulate GHG emissions, when every third doubted its necessity (ibid.). Overall, climate change still was no major concern for the population. Public surveys from 2012 to 2017 show that Russian society went on attaching less importance to global climate change than to more local and clearly tangible and visible problems such as water and air pollution or poor quality of drinking water (Levada Center, 2016; WCIOM, 2017). In 2016-2017, 61.8% of the population regarded climate change consequences as negative which is one of the lowest rate among the states researched by European Social Survey ERIC (ESS ERIC) (2018). Some indicators of climate change perception worsened by 2017 in comparison with earlier findings. For example, the share of the climate-aware respondents decreased to 20% compared to 34% in 2007 (WCIOM, 2017). ESS ERIC (2018) also indicates that Russians appeared to be least concerned about climate change among 23 countries researched in 2017. So far, the average Russian population prioritizes other problems such as energy affordability, which is their the most worrisome issue, and energy reliability, where Russians showed the highest concern among the other surveyed states – 30% (ibid.). So, economic incentives

(energy affordability) turned out to be more important for Russians than the security of stability (energy reliability) or safe future (climate change). The key indicators of climate change awareness and concern over a decade is summarized in Table 1.

Table 1. Share of respondents who answered “strongly or somewhat agree” (WCIOM, 2017; Administration of the President, 2013; Levada Center, 2016; ESS ERIC, 2018).

	2007 (in %)	2010 (in %)	2013 (in %)	2017 (in %)	2019 (in %)
Aware of climate change	34	36	54	20	x
Heard about climate change	59	58	36	71	
Concerned about climate change	46	55	21	12	20
Climate change is of anthropogenic nature	59	41	33	55	67
The consequences of climate change are negative	45	x		61.8	79

An increase in the media coverage of climate change is often connected with remarkable events at the international climate arena, e.g. the climate conferences at the international or EU levels. For instance, WCIOM (2017) and Muzykant & Muqsith (2020) reported a drastic increase in article publications on climate change appearing in social media at the end of 2015 which was related to COP-21 held in Paris. Then, the topic returned into the spotlight in March and June 2017 when the experts of the European Commission’s Joint Research Center predicted an increased cases of flooding in Europe and when US President Trump announced the US withdrawal from the PA (WCIOM, 2017). In 2019, a similar trend could be witnessed: throughout the year, the topic of climate change was not extensively elaborated on until Russia announced its formal joining the PA in September, which is depicted in Figure 2 (Muzykant & Muqsith, 2020). From September on, the share of articles published on global warming multiplied a few times; in comparison, in March 2019, only one news article of the studied publications addressed this problem while in November, the number of the relevant publication accounted for 65 (ibid.). After all, media coverage of the climate-related news has a volatile nature in Russia with limited and poor coverage of the climate change topic unrelated to the events in the international climate arena.

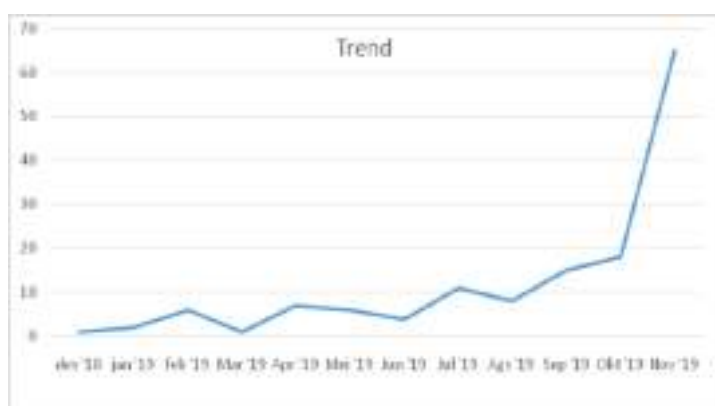


Figure 2. Trend of reporting on climate change in the social media in Russia (Muzykant & Muqsith, 2020)

By December 2019, after Russia's acceptance of the PA, the public perception of the seriousness of climate change did not change significantly: 34% of the respondents considered it the most important challenge of 21st century after environmental pollution, international terrorism and wars (Levada Center, 2020b). According to the Foundation of Public Opinion (FOM) (2019a), an even smaller share of the population, 20%, expressed their concern about climate change. So, the acceptance of the PA and media coverage of it did not result in an increased public concern. Furthermore, the new corona crisis negatively affected the public opinion regarding climate change so far: in April 2020, only 13% of the population regarded global warming as the most important challenge that Russia had to deal with (Ipsos SA, 2020). The stimulation of RES development gained 6% of public support in Russia which is three times less than the world's average and five times less than in Germany (ibid.).

Thus, throughout the last 15 years, the overall concern of the Russian population regarding climate change was assessed as low, so was "Russians "environmental culture" in general compared to the other ESS member states" (Kurbanov & Prokhoda, 2019, p. 357). As a concept, environmental culture is an integral part of the general culture defining moral values, norms and means of interaction with the environment (Tkachenko et al., 2018). Kurbanov & Prokhoda (2019) note that individuals more or less recognize the existence of such an interaction with the environment; "in this conjunction, the initial attitudes of individuals are expressed, reflecting the characteristics of the environmental culture of society" (p. 353). Elaborating on this concept in the Russian reality context, it is seen that there is still a large share of the society that believes in a natural cause of climate change or questions the intentions of the foreign partners in regard to climate activities. These are the views abundantly present in Russian social media. Although the state significantly influences the direction and quantity of provided information, the position of the state-run as well as independent social media naturally does not fully represent Russians' perception of climate change (Korppoo et al., 2015; Tynkkynen & Tynkkynen, 2018). However, it is proven that in the Russian reality, social media fulfill educational functions (Muzykant & Muqsith, 2020). The inconsistent, contradictory and selective coverage of climate change that has been present in Russia media space at least for the last decade provides fragmentary knowledge on the issue, occasionally contradicting the reached scientific consensus. Even environmental policy-makers often have fragmentary and contradictory climate-related knowledge (Kurbanov & Prokhoda, 2019).

Kvaløy et al. (2012) prove that the perceived seriousness of climate change is generally positively associated with the level of education. This correlation is not the case for Russia; both highly educated persons and people with little education show a low level of "environmental culture" which means that the current educational system does not provide enough knowledge not only on climate problems, but also on environmental topics in general (Kurbanov & Prokhoda, 2019). The Federal State Educational Standards for General and Vocational Education still

provide no information about climate change as well as about human and economic adaptation to it. Kurbanov & Prokhoda (2019) stress the necessity to also incorporate mechanisms of the formation of environmental and environmental legal competences to avoid qualitative differentiation of the learning outcomes across the educational institutions. Though the inclusion of such information is set as a task in the National Plan of Adaption until 2022, no deadline is provided for its completion. Meanwhile, education and public awareness lay the basis for a resilient society that is able to mitigate its influence on climate from the consumer side and to adapt to inevitable changes (Muzykant & Muqsith, 2020). Raising awareness on the interrelation between climate and health is also essential since the right to health is one of the fundamental human rights enshrined both in the international treaties, e.g. International Covenant on Economic, Social and Cultural Rights, and in the domestic legislation, e.g. in the Constitution of the Russian Federation. Moreover, the Climate Doctrine regards human life and health as one of the priorities of the Russian climate policy (Paragraph 19). Particularly, health issues are proven to be a topic of public concern in Russia (Korppoo, 2015) so they need addressing in the first place.

Postponing the introduction of information about climate change in educational standards lowers the chances of the population and local communities, especially the most climate-vulnerable such as indigenous peoples of the Arctic, to adapt to the negative consequences of climate change. But for now, the Russian authorities utilize the lack of education and awareness for the sake of consolidating their position by creating more wealth through fossil fuel extraction and export (Tynkkynen & Tynkkynen, 2018).

3.2. Little climate activism and behavioral change

Lack of awareness of and concern about climate change is not the only sociocultural obstacle for the PA implementation from a bottom-up perspective. Understanding of the seriousness of climate change is tightly connected with personal responsibility to undertake actions in the fight against climate change (ESS ERIC, 2018), i.e. climate activism and behavioral change. Besides this requirement, a person should also believe in his/her ability to change his/her behavior towards a more environmentally friendly one (personal efficacy) and that this behavioral change can lead to a desired outcome (outcome expectancy) (ibid.).

According to the ESS ERIC (2018), Russians have almost the lowest feeling of personal responsibility only behind the Czech population of all 23 participating European states and Israel. In addition, the Russian population has the lowest readiness to change its behavior towards a climate-friendly lifestyle (personal efficacy) despite the acknowledgement of the significance of the problem (ESS ERIC, 2018). Finally, the belief about a possibility to achieve a desired outcome, i.e. to slow down climate change by cutting household energy consumption, is unpopular in Russia (ibid.). This could be explained by the widespread perception

of climate change as a purely or mostly natural process. In the end, the Russian population does not feel responsible for undertaking personal actions to halt climate change; people believe that they would be able to change their behavior and reduce their energy consumption, however, they also believe that this would not contribute to the solution of climate change problem (ibid.). Overall, Russian citizens express a pessimistic and passive attitude to the topic of climate even when acknowledging its importance. What is evident here is a so-called value-behavioral dualism, i.e. a simultaneous recognition of the topic as important and an unwillingness to act for the solution of the problem (Korkiya et al., 2017).

Similar results are provided by the recent survey of FOM (2019a) which revealed that 42% of the population hold heads of states responsible for the environmental situation in the world, while 35% of the respondents assigned such responsibility on the society. At the same time, two third of the respondents excluded the possibility of their participation in environmental strikes which may be explained by a low level of belief in self-efficacy and outcome expectancy. As previously, it could be connected with the perceived irreversibility of particular environmental problems such as climate change which was confirmed by 37% of the respondents (ibid.). From a more general perspective, Russians are reluctant to take part in any civil activism claiming that “their opinion is of no importance” for public authorities or a civic initiative itself is of no interest for them (Levada Center, 2019). Comparing protests in Russia and in the Western states, 14% of the respondents regarded the presence of opportunities for the safe civic protest without a state suppression as another reason for a sufficient public engagement in the West, as opposed to Russia (FOM, 2020).

A meaningful peculiarity of the interrelation between income levels and climate-friendly behavioral patterns in Russia was described by Kurbanov & Prokhoda (2019) and Prokhoda (2018). In the large share of European states, there is a correlation witnessed between a high income level and high “environmental culture” and pro-environmental behavior. By way of contrast, Russia shows a negative correlation: the wealthier a person is, the less attention he/she pays to energy saving behavior (Prokhoda, 2018). Such a negative correlation is arguably connected with an absence of “environmental culture” and relevant values among the absolute majority of the Russian population (Kurbanov & Prokhoda, 2019). Moreover, the background of the population above 35 years of age, which is economically active today, could have played a role in a formation of this negative correlation. In the 1990s, after the Soviet Union’s collapse, people regarded wealth accumulation as a way out of the constraints experienced in the Soviet Union and the following economic crisis (ibid.). Since climate-related behavior implies imposing certain restrictions on a regular lifestyle, a person with a high income and of a post-Soviet background would oppose this proposal (ibid.). This hypothesis also arguably means that the younger generation born in the 1990s would not be devoted to such an approach so much having not personally experienced the economic aftermath of the Soviet Union’s dissolution, as opposed to the older generation. In

this case, the lack of “environmental culture” in general and climate topic in the personal agenda in particular would remain a major problem for the current and future generations.

Nevertheless, these personal or internal barriers are not the only ones influencing the behavior of the Russian society. Besides the already mentioned external barriers, such as the absence of educational standards or the marginality of the climate policies, the government tends to suppress or block the public climate activism of the minority who are environmentally motivated enough to personally contribute to the solution of the climate problem.

According to the Federal Law of 13.06.2012 N 121-FZ on Amending Particular Legal Acts of the Russian Federation on the Regulation of the Activity of Non-Profit Organizations Serving as a Foreign Agent, all Russian non-profit organizations that receive any funding from abroad or participate in “political activities” must officially register as a “foreign agent”. In Russian, “foreign agent” is a loaded term implying that such an entity is involved in treasonous activities. Non-profit organizations, recognized as “foreign agents”, are legally bound to include this term in anything published or distributed (Kireeva & Digges, 2019). The usage of such a term makes non-profit organizations stigmatized by the population, that feels suspicious and watchful of the former, and the public authorities, that often refuse to continue collaboration, which means little support as a whole (Jolkver & Ostapchuk, 2019). What falls into the “political activities” category is not explicitly defined so this term is commonly used for a wide range of activities. Since 2014, any attempt to influence public policy or public opinion in any area is also counted as “public activity” (Human Rights Watch, 2017). If an NGO refuses to register as “foreign agent”, it is imposed with unlimited fines while its heads could be criminally prosecuted.

The target entities of this Federal Law are environmental and human rights organizations; as soon as they are registered as so-called foreign agents, this fact is widely covered in social media (Kireeva & Digges, 2019). The Federal Law in question is used to eliminate or substantially restrain organizations standing up against state-funded development projects, such as construction of a new nuclear power plant, questioning the proposed state policies and filing petitions to release Russian environmental activists (Human Rights Watch, 2017). As a result, numerous environmental NGOs regarded as “foreign agents” had to suspend their activities, some of the heads of environmental organizations were forced to flee abroad from criminal prosecutions. This was the case of the head of Russian NGO “Ecodefense”, Alexandra Koroleva, who sought political asylum in Germany after being charged with five fines, each of which could have resulted in two-year prison term (Kireeva & Digges, 2019).

In addition to that, the public has little, if any, opportunity to demand certain policies and legal acts due to a high influence of President Putin and his close policy

circle on the decision-making. Although the Russian federal legislation and, in particular, the Constitution do not provide the population with a right to legislative initiative, certain legal instruments establish citizens' right to participate in public discussions or file an opinion relevant for decision-making. For example, Article 13 of the Federal Law on the Protection of the Environment enshrines an opportunity for the citizens to approve or disapprove of the construction of facilities the economic and other activity of which may negatively affect the environment. Public opinion must be "taken into account while making a decision on their placement". In practice, the real decision- and law-makers are mostly uninterested in public opinion on environmental issues and tend to ignore the public discussions (Korppoo, 2015; Zastupenko, 2013) sometimes creating only an illusion of the consideration of public needs. This is also facilitated by the broad and unspecific definitions of such terms as "public consultations" and "public discussions" which provides the policy-makers with room for maneuver (Zastupenko, 2013).

Besides these obstacles, the government also does not support climate activism expressed in mass strikes. Although Article 31 of the Constitution of the Russian Federation anchors right of man and citizen "to assemble peacefully, without weapons, to hold meetings, protests and demonstrations, marches and pickets", all mass gatherings have to be approved by public authorities in accordance with Articles 7 of Federal Law of 19.06.2004 N 54-FZ on Meetings, Protests, Demonstrations, Marches and Pickets. If an arranger of a mass gathering does not comply with this or other procedures for holding such events, Article 20.2 of the Code of Administrative Offences of Russia foresees sanctions from administrative fines to an administrative detention. The Russian authorities tend to misuse their right to authorize mass gatherings and reject protest applications even though the freedom of peaceful assembly is established in the Russian Constitution. Amnesty International's Russia Researcher Natalia Prilutskaya claims that the grounds for rejecting the applications are mostly spurious, e.g. another event being allegedly held in the place and at the time for which the protest arranger applied (Kimball, 2019). The situation worsened after the mass "unauthorized" opposition protests that took place in Moscow in summer 2019 and resulted in mass protesters' arrests and administrative and criminal prosecutions. If in March 2019, the authorities allowed a small-scale climate strike in one of Moscow parks far from the city center, after the summer protests, the applications for holding climate strikes by the "Fridays for Future" movement were mostly rejected by the Russian authorities (ibid.). For this reason, climate activists have to protest alone since individual pickets are the only form of demonstrations that does not require permit of the authorities by now. However, to lawfully express an opinion with an individual picket, it is obligatory to meet a low-age-limit requirement accounting for 18 years of age, according to the paragraph 1, Article 4 of the Federal Law on Meetings, Protests, Demonstrations, Marches and Pickets. For this reason, the "Friday for Future" movement cannot be rightly organized in Russia in its initial sense of a school climate strike. In the end, public authorities hinder any mass activism strikes either prohibiting them or limiting their scope and visibility which affects climate movements as well.

3.3. Conclusion

The Russian population is characterized by a low level of “environmental culture” and, hence, little concern and knowledge about climate change. Despite the fact that the Russian society acknowledges the existence of climate change and the seriousness of its consequences, it is not eager to undertake personal actions to contribute to the solution of the problem. The Russian population also lacks self-efficacy and has a low outcome expectancy which is most likely connected with the perception of climate change as a natural process by a large share of the population. Russians do not believe that their behavioral change can lead to the improvement of the climate crisis and prefer to impose the responsibility for undertaking meaningful actions on the government. The state in its turn uses the lack of climate awareness and concern to not undertake serious steps towards combatting climate change and tends to suppress climate initiatives that seemingly threaten its authority. Nevertheless, the government has to educate the population about climate change and the risks it poses for the people to be able if not to mitigate than at least adapt to the consequences of climate change in Russia. It is of definite necessity to create mechanisms for the formation of relevant climate competences to avoid situations when decision-makers have contradictory, fragmentary and unscientific information on climate change which leads to scientifically ungrounded decisions.

4. Conclusion to the “Barriers for the PA implementation” section

Having analyzed the political, legal and sociocultural obstacles for the PA implementation in Russia, the author comes to the following conclusions. Russia does not prioritize climate-related questions in its domestic policy despite claiming the opposite in the international climate arena, which reflects a two-level feature of the Russian policy. A formal participation in the international climate negotiations is necessary to have a chance to negotiate favorable conditions on climate protection or other related topics when possible. At the national level, there are no ambitious climate targets beyond the minimum measures ensuring Russia’s formal compliance with the PA provisions. Moreover, to provide more space for maneuver, Russia has tendency to adopt climate legal instruments in the form of “soft” law that often have declarative rather than *de facto* enforceable nature. This peculiarity of the Russian climate approach distinguishes the Russian climate legislation from the German regulation of the climate-related issues. The latter one has been developing for more than two decades by now and consists of numerous legally binding acts that are harmonized with the current international climate agenda. Germany also makes use of the regional and national emission trading schemes which proved to be effective and efficient for pursuing GHG emission reductions.

Due to a lack of officials’ attention to climate-related measures in Russia, any new serious legislation, such as GHG reduction regulation, is easily watered down under the pressure of the fossil fuel companies. Moreover, the overall climate-related legislation, i.e. energy efficiency and RE regulation, suffers from excessive

bureaucratic control, lack of legislative specificity, complexity or nominal character which leads to poor implementation. As a result, even national targets seemingly important for the public authorities, such as energy intensity reduction by 40% by 2020, are not achieved. Another factor leading to Russia's lagging behind the climate frontrunners is the constant delay in adopting climate-relevant legislation, e.g. the Federal Law on the State Regulation of the GHG Emission and Absorption, the whole RE legislation and the postponed ratification and acceptance of the international climate treaties.

Besides setting unambitious climate targets and adopting "soft" climate regulation, the political unwillingness to drastically alter the current climate landscape in Russia is expressed in manipulating the public understanding of climate change, its nature and other climate-related questions. Lack of climate knowledge and concern and the low level of the "environmental culture" in general characterize the current public attitude to climate change topic in Russia. Since climate knowledge is not included in the federal standards for general and vocational education, the main source of climate information are social media which are often controlled by the state. Due to the wide-spread perception of climate change as resulted from natural causes, the population does not believe in the effectiveness and necessity of personal behavioral change for mitigating climate change. The minority who participates in climate strikes or other activism or steps up against the climate passivity of the public authorities is often criminally or administratively prosecuted.

In addition, as can be seen, there are no purely "political", "legal", or "sociocultural" barriers as they all are intertwined and mutually affected. Political unwillingness to undertake meaningful climate actions influences the quality and legal force of the climate-related legal instruments. This legislation with all the gaps and complexities defines the climate-related behavior of the society. The public authority also exerts influence on the population by limiting and directing the necessary information in social media and suppressing activists potentially threatening for the regime. Although the population cannot participate in the law-making process or initiate it, there is a theoretical possibility to influence the legislation indirectly through an explicit expression of social demand for political changes.

Finally, the Russian way of dealing with climate change is often called an "ostrich" approach referring to the unwillingness to undertake any serious steps until there are strict requirements imposed by the main foreign business partners, e.g. the EU and Germany in particular. In other words, without pressure from the climate-active foreign partners, Russia applies high discount rate for climate change policy which implies low present valuation for the long-term benefits and high present valuation for the short-term costs (Harris & Roach, 2018). This approach imposes higher costs for tackling climate change on the future generations, which will have to experience and deal with even more negative consequences of climate change.

V. Opportunities for the PA implementation

While the previous section addresses the political, legal and sociocultural barriers to the PA implementation in Russia, one cannot deny that there are ongoing processes that could help mitigate the existing obstacles and ensure a meaningful Russian contribution to the PA targets. The following section addresses some of such opportunities for an effective PA implementation in Russia.

1. Political opportunities

1.1. *Way to the acknowledgement of the climate change human-induced nature*

In recent years, there is a gradual shift in climate change perception taking place at the governmental level. A certain role is thought to have played a non-restrictive and rather neutral position of the power elite regarding ministries' and state agencies' statements on anthropogenic climate change. As Interviewee 2 (2020) notes "there are no top-down restrictions to address climate change and its anthropogenic nature in the state reports" or in the statements of the public officials. Indeed, anthropogenic climate change has been frequently mentioned in a number of state reports. In particular, the Russian Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet) is worth mentioning; it is conventionally responsible for monitoring and scientific information on climate change (Yamineva, 2012).

Roshydromet is a federal service under the Ministry of Natural Resources and Environment which, *inter alia*, has the task of ensuring Russia's compliance with obligations under the UNFCCC (Roshydromet, n.d.-b). Despite the major influence of the Russian main climate-skeptical scientist Y. Izrael, who served as Director of the Institute for Global Climate and Environment of Roshydromet in 1990-2011, Roshydromet published official reports addressing *anthropogenic* climate change. One of these official reports, namely the Assessment Report of Climate Change and Its Consequences in Russian Federation, laid the scientific basis for the Climate Doctrine of 2009. The report stressed the importance of both adaptation and mitigation measures, encouraged energy efficiency improvement, RES deployment, Carbon Capture and Storage (CCS) development, and, finally, called upon international cooperation. Nevertheless, back then, this report pointed out numerous advantages of climate change for Russia, which corresponds to the position of Professor Izrael, in particular. Moreover, since 2009, Roshydromet has been publishing periodical booklets on recent news in the climate field to spread knowledge among academia, higher educational institutions, and the general public not only in Russia, but also abroad (Roshydromet, n.d.-a).

The Second Assessment Report of Climate Change and Its Consequences was prepared by Roshydromet in 2014. The authors confirm that the evidence in favor of a significance of the anthropogenic impact on climate has become more

solid since 2009. This reported dedicated much less attention to the possible positive impact of climate change and rather described various negative effects for ecosystems, food supply, infrastructure. In particular, the section on the negative consequences of climate change in relation to human health and to the worsening of the epidemiological situation in Russia is worth mentioning especially in the context of the spread of a new coronavirus infection in 2020. Importantly, while describing in detail the need for adaptation measures, the report also elaborated on the potential of RES deployment in Russia and highlighted the benefits from their utilization.

In addition, with a change of the head of the Institute for Global Climate and Environment of Roshydromet in 2017, the recently designated Director took a diametrically opposite position compared to the opinion of then-Director Izrael on climate change and Russia's climate ambitions. Commenting on the opportunities of the PA implementation in Russia, Director A. Romanovskaya criticized the public authorities for the lack of climate actions and ambitions, for constantly ongoing high-level debates on the causes of climate change and for the insufficient climate-related knowledge of decision-makers (Romanovskaya, 2020). Romanovskaya disapproved of the wide-spread classification of climate change consequences into "disadvantageous" and "advantageous" claiming that many of the listed "advantages" are highly doubtful, either from the scientific or from the environmental perspective (ibid.).

All in all, there is a notable shift in the positions of this Federal Service and some of its high-level representatives towards a greater focus on negative consequences of anthropogenic climate change as well as a promotion of RES and other "green" technologies.

Such a straightforward view on climate change is also held by the Ministry of Natural Resources and Environment, which is explained by the specifics of this institution itself. In its annual State Reports on the State and Protection of the Environment of the Russian Federation, the Ministry permanently highlights the link between climate change and anthropogenic emissions as well as refers to the Climate Doctrine and IPCC Assessment Reports, all of which recognize the major role of anthropogenic GHG emissions in causing climate change (State Report on the State and Protection of the Environment, 2017-2019). These Reports address only negative consequences of climate change and elaborate not only on adaptation, but also on prevention and mitigation measures (ibid.). Moreover, the State Reports of 2017 and 2019 stressed the necessity to legally regulate GHG emission reporting. Then, in 2019, the Ministry of Natural Resources and Environment forwarded the Government of Russia a proposal to ratify the PA and was about to prepare the relevant draft federal law together with the Ministry of Foreign Affairs (Ministry of Natural Resources and Environment, 2019a). So, the Ministry takes an official position on climate change that is based on the solid scientific findings of the foreign and Russian scientists and that does not provide room for skeptical debates. It also

encourages Russia not only to adapt to, but also to prevent and mitigate the negative consequences of climate change.

The Ministry of Economic Development has recently shown its support for proposing precise strict measures for climate change mitigation. While working on the Draft Federal Law on the State Regulation of the GHG Emission Absorption, this Ministry included in the interim draft editions of 2018 and of 2019 a carbon tax, a national emission trading scheme, reporting obligations and sanctions for non-compliance, which were supposed to be decided on simultaneously. The 2018 edition also provided a definition of climate change which was formulated as “change of climate, which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”. This definition is taken from paragraph 2, Article 1 of the UNFCCC and could represent Russia’s adherence to the fight against climate change with the help of its GHG regulation. However, this term was eliminated in the following editions under the pressure of other public stakeholders involved. Although the introduction of such measures cannot be called prompt, they are of absolute necessity for the Russian economy and for the achievement of the PA temperature goals. Despite the fact that the final edition of the Draft Federal Law does not contain strict mitigation obligations for the main GHG emitters, the content of the preceding editions reflected the perception of this Ministry regarding further pro-climate actions of Russia.

Finally, the sitting President’s Special Representative on Climate Issues, Ruslan Edelgeriev, has been recently actively participating in the debates on the state regulation of GHG emissions. Edelgeriev advocated against soft measures being introduced by the new Federal Law claiming that “without an introduction of the national emission trading system [...], the current Draft Federal Law is flawed for the state” (Davydova, 2020a). Moreover, Edelgeriev has several times expressed his approval of such fiscal measures as a carbon tax, which is “easy to administrate”, facilitates “an increase in the fiscal revenues, [...] provides investors with a stable understanding of the current and future situation” (Davidova, 2019). Unlike his predecessor, Edelgeriev stresses the necessity to decrease Russia’s dependency on fossil fuels due to the economic and social damage they cause (Kozin, 2020). Besides focusing on the state-level debates, the sitting President’s Special Representative on Climate Issues also pays attention to bottom-up initiatives. At COP-25, Edelgeriev had a meeting with the leader of the Russian “Fridays for Future” movement, Arshak Makichyan, and promised to deliver the climate demands of the movement to the President (Zotova, 2019). Then, in February 2020, Edelgeriev met the other representatives of the Russian “Fridays for Future” movement who now forwarded a letter with their demands for the urgent improvement of the Government’s climate agenda (Ryabko, 2020).

In the end, a shift can be witnessed in the official positions of the particular ministries, federal services, high-level public authority representatives concerning

climate change topic. This shift involves putting more emphasis on negative consequences of climate change, advocating against soft measures and calling for proactive and strict legally-binding regulation of GHG emissions. Although the influence and pressure exerted by these actors is still not high enough to push “hard” proposals through the block of the Russian fossil fuel lobby group, this positive change within the state structures and representatives is clearly taking place.

1.2. Growing stakeholders’ interest in RE projects and international cooperation

An increasing interest in RES deployment can be observed among particular influential state-controlled and private business stakeholders in Russia. The underpinnings of such an interest vary from organization to organization and often hide in stakeholder’s corporate reasons rather than in a willingness to solve a global problem of climate change. For example, due to the high costs of nuclear energy development, RosAtom, a state nuclear energy corporation, started investing in and developing RE and in particular wind energy projects “in order to exploit its production capacity” (Kokorin, interview, 2020). Nevertheless, regardless of the initial intentions, the greater emphasis placed on RES deployment facilitates the reduction of GHG emissions, which, from a global perspective, contributes to the achievement of the PA temperature targets.

There is a number of state-controlled corporations that contribute to RES development in Russia, for instance, **RusNano**. It is a hi-tech corporation that implements state policies in the field of nanotech-industry development acting as a co-investor in economically and socially prosperous projects (RusNano, n.d.-a). Besides others, RusNano has already created a nanotechnological cluster that includes nine RE and energy efficiency development projects (ibid.). One of these portfolio companies is Hevel Group (hereinafter – Hevel), which is now the Russian biggest full-cycle vertically integrated company producing photovoltaic solar panels and operating photovoltaic power facilities (Usachev, 2017). Founded as a joint venture by RusNano and Renova Group in 2009, Hevel started developing solar power industry in Russia even before the government launched its RE stimulation scheme (Vilkov, 2020). To date, this company controls 1.1 GW of solar power plants in Russia (Renova, n.d.). Moreover, partnering with the Finish public power organization Fortum, in 2017, RusNano founded a joint investment Wind Energy Development Fund with a capital of \$520 million. The investments have to be spent on local wind farms projects to stimulate the localization of the wind equipment production (RusNano, n.d.-b). This and the other international collaboration projects were launched as a result of introducing too strict localization rules for the wind energy tenders since the Russian manufacturers alone could not comply with those requirements (Mitrova & Melnikov, 2019). Another foreign company with which RusNano started cooperating to develop the local wind equipment production was the Danish Vestas Wind Systems A/S (hereinafter – Vestas). Due to Vestas’s contribution, three Russian manufacturers specializing in different wind turbine

components were launched by 2019 (RusNano, n.d.-c). Finally, RusNano claims to align its RE deployment activity with an urgent need to mitigate climate change and its consequences. Remarkably, in spite of the absence of climate-energy nexus in Russian legislation and despite the fact that all shares of RusNano are owned by the state, the founder and board chairman of RusNano, Anatoliy Chubais, has been openly acknowledging the seriousness of climate change and the decisive role of anthropogenic factors that resulted in this global problem (Skolkovo, 2020; RusNano, n.d.-c). Chubais also supported the idea of an earlier carbon tax introduction substantiating his position with the possible introduction of the carbon border adjustment mechanism by the EU (Filipenok, 2019).

Then, another state-controlled stakeholder, that has been recently dedicating more attention to RE development, is the above mentioned **RosAtom**. While there are conflicting views on sustainability and climate neutrality of nuclear energy, this sector is not expected to be substantially developed in Russia in the next decades mostly due to high construction, operation and maintenance costs (Kokorin, interview, 2020; Schneider & Froggatt, 2019). On the top of that, numerous RosAtom's projects for building nuclear plants both inside and outside of Russia, e.g. in Bulgaria, Vietnam, Jordan, have been cancelled at least since 2016 (Digges, 2018; Schneider & Froggatt, 2019). These circumstances became one of the drivers for RosAtom's investments in wind energy development.

In 2016, RosAtom entered the wind energy market seeking to construct wind power plants as well as to train professionals, manage a localization of production and stimulate research and development (R&D) activities (RosAtom, n.d.). For these purposes, RosAtom established a separate division, JSC NovaWind, which is responsible for RosAtom's wind strategy implementation (ibid.). In particular, JSC VetroOGK managed by NovaWind has been accountable for the wind power plants projects implementation and won the state tenders in 2016-2018. By 2023, all NovaWind enterprises have to install 1 GW of wind energy capacity (ibid.). Moreover, since 2017, RosAtom has been cooperating with the Dutch wind turbines manufacturer Lagerwey Wind B.V. (hereinafter - Lagerwey)⁸; one of the outcomes of their partnership is a joint venture Red Wind B.V. launched in 2017. Within this cooperation, Lagerwey is responsible for the technology and knowledge transfer as well as for staff trainings (NovaWind, n.d.). In its turn, Red Wind B.V. is accountable for a turnkey delivery of wind turbines and for their production in one of the Russian regions (ibid.). In 2019, Red Wind B.V. received its first state investment contract with the Ministry of Industry and Trade for the creation of an industrial production of wind plant components (Buren N.V., 2019). Since 2020, the first NovaWind wind power park with a capacity of 150 MW has been delivering wind power to the wholesale market of electric energy and capacity (NovaWind, 2020). There are four more wind power parks to appear in the Russian regions in the near future (ibid.).

⁸ Lagerwey is currently owned by the German company Enercon.

Another state-controlled actor initially specializing in RE is **RusHydro**, one of the leading “green” energy operators in the world. While originally focusing on hydropower energy solely, the company has been recently dedicating resources to other RES. Since 2013, RusHydro has introduced five wind energy installations as well as 20 solar power installations within its affiliated companies (RusHydro, n.d.). Moreover, RusHydro continues to develop the hydro power sector by installing small-scale hydropower plants with a capacity of 25 MW and less which are covered by the present state support scheme. As a result, in 2017, this company won the whole tender for the small hydropower plants with two its projects (Trading Administrator, 2019). Finally, as of 2020, RusHydro possesses a total of 38 GW installed renewables capacity including large-scale hydropower plants (RusHydro, 2020).

Finally, one of the main influential non-governmental stakeholders present in the RE field is **Renova Group** (Safonov, 2015). It is a Russian private investment fund with assets in energy, high-tech machine building, public utilities, financial and other sectors. One of the embodiment of the Renova Group’s influence is its membership in the lobby group RSPP. Then, the Renova Group is the main shareholder in the PJSC T Plus with 65% of assets and in the above-mentioned Hevel. In its turn, T Plus started developing its RE activity in 2015 when it launched its first photovoltaic solar plant with an installed capacity of 25 MW (T Plus Group, n.d.).

In conclusion, as can be seen, there are both state and non-state stakeholders that started to dedicate a bigger share of their resources to the deployment of RES in Russia. Being interested in this market, these actors are thought to be able to further contribute to the development of this field and resist digressive or halting proposals made by the other stakeholders. For example, RusNano and Renova Group already strongly disapproved of the recent ministerial proposal to halve the governmental support for the RES deployment for the period 2024-2035 (Volobuev, 2020). In the end, even though the RES targets are currently not aligned with the Russian climate regulation and the powerful stakeholders in the RE field rather pursue their commercial interest, the active promotion and involvement in RES development *de facto* facilitate a decarbonization necessary for the PA targets achievement.

Meanwhile, in recent years, joint projects have been implemented by Russian and foreign stakeholders which help to unleash high RES potential in Russia. Such a combination of powerful Russian stakeholders’, foreign investors’, and local participants’ efforts allows creating strong professional teams, that are able to overcome arising challenges (Heidemann & Bogdanov, 2020). Such international cooperation projects are expected to realize Russia’s potential in deep decarbonization (Safonov et al., 2020) as long as there are no further obstacles created by the government. For example, unrealistically strict localization requirements for production or reduced financial support are among the obstacles, which could delay a low-carbon transition in Russia.

Finally, it is necessary to mention that the current RE support mechanism based on a remuneration per provided capacity is favorable for these powerful actors (Kokorin, interview, 2020): from 2016 to 2019, the absolute majority of the RE tenders were won by the RusNano, RosAtom, and the Renova Group projects (see Annex I). However, such an approach may hinder the entrance of smaller stakeholders into the RE market and needs reconsidering.

1.3. Conclusion

In recent years, both particular governmental bodies and business stakeholders have expressed interest in and concern about climate change and RE development topics. As for the public authorities, nowadays, the Federal Agency Roshydromet, the Ministry of Natural Resources and Environment, the Ministry of Economic Development, the President's Special Representative on Climate Issues directly address the problem of climate change and refer to its anthropogenic nature and negative consequences. Some of them, e.g. the President's Special Representative on Climate Issues, encourage a proactive and strict legally-binding regulation of GHG emissions. With regard to this question, the founder and board chairman of the state-controlled corporation RusNano also called for the introduction of a fiscal mechanism for a stricter regulation of GHG emissions. However, to date, the influence of the fossil fuel lobby exerted on the legislative process is still too high to adopt strict GHG reduction measures.

Meanwhile, the state-controlled corporations and influential private business stakeholder have been lately known for their investment input in RES. Most of these above-mentioned business stakeholders collaborate with international partners for the technological development of Russia in general and RES sector in particular. This cooperation has already proven to be productive: most of the RE tenders are won by joint-ventures of Russian and foreign companies. Being at least financially interested in the further development of the RE field, these stakeholders may resist proposals aiming to reduce support for RES. But in the end, for decarbonization to finally take place, support for RE needs to be combined with strict carbon regulation, which would ensure the Russian contribution to reaching the global PA goals.

2. Legal opportunities

As discussed in Section IV, there are numerous legal instruments forming the legal foundation for the regulation of climate protection, GHG emission reduction, energy efficiency, and renewable energy in Russia. Although the majority of them has a declarative nature or insufficiently regulates subjects of legislation, these legal instruments often set forth the basic definitions of relevant terms or provisions upon which further regulation could be built.

For example, the Federal Law on the Protection of the Ambient Air in its latest edition of 26.07.2019 gives the definitions of “source of emissions”, “technical standards relating to emissions”, etc. The Federal Law on the Protection

of the Environment in its latest edition of 31.07.2020 provides the definitions of “negative impact on the environment”, “standards relating to maximum permissible anthropogenic impact on environment”, “standards relating to maximum permissible emissions”, “best available techniques”, etc. These terms could be used for future climate and climate-relevant legislation.

Special emphasis needs to be placed on the “best available techniques” (hereinafter - BAT) the application of which is aimed at achieving Russia’s long-term goals and at aligning its industrial and environmental policies (Garafova, 2018b).

2.1. Legislation on the best available techniques

The introduction and application of BAT play a significant role in energy efficiency improvement and, as a consequence, in the reduction of GHG emissions. Although GHG emissions are conventionally not regulated on the basis of BAT approach, actual GHG emission reduction can be achieved as a side effect of energy efficiency enhancement (Guseva et al., 2019). Meanwhile, the actual purpose of the BAT introduction is the technological regulation of enterprises for the improvement of the state of the environment (ibid.).

BAT legislation was introduced in Russia in 2014 with the Federal Law N 219-FZ and has been developing since then. Back then, the first provisions on BAT were incorporated into the Federal Law on the Protection of the Environment and addressed: the definition of this term; the application fields of BAT; the content of the BAT reference documents and the procedures for the development, update and publication of such documents; the procedures for defining technologies as BAT; the definition of the BAT introduction (Article 1; Article 28.1). This Federal Law defines BAT as follows: “technology of goods production, a performance of work, a services provision which is determined on the basis of modern achievements in science and technology and on the basis of the best combination of criteria for achieving environmental protection goals, provided there is a technical possibility of its application”. All the provisions on BAT included in this Federal Law are adopted with due regard for the EU norms on BAT, e.g. Directive 2010/75/EU of 24.11.2010 on industrial emissions (integrated pollution prevention and control).

Then, the amendments and new provisions were incorporated into the Federal Law on the Protection of the Ambient Air. According to subparagraph 4, paragraph 1, Article 30 of this Federal Law, legal entities and individual entrepreneurs controlling emission sources are bound to introduce the BAT in order to reduce the pollution level in the ambient air. 300 of the most polluting legal entities and individual entrepreneurs, belonging to the most polluting economic sectors in accordance with the Governmental Decree N 1029 (Category I)⁹, and new

⁹ The most polluting economic sectors are classified as Category I in the Decree of the Government of the Russian Federation of 28.05.2015 N 1029 on the Adoption of the Criteria Classifying the Facilities That Negatively Affect the

enterprises are required to introduce BAT. For those enterprises failing to comply with this provision from 01.01.2019 to 31.12.2022, the payment for the negative impact on the environment¹⁰ is recalculated based on an increased coefficient of 100, i.e. the payment to be made is multiplied by 100. Other, less polluting companies still falling into Category I, have to implement BAT by 31.12.2024.

A meaningful contribution in the sphere of the BAT introduction in Russia was provided by Germany, one of the Russia's main foreign partners. More specifically, on behalf of the Federal Ministry for Environment, Nature Conservation and Nuclear Safety, the Russian-German project "Climate-friendly economy: introduction of the best available (BAT) techniques in the Russian Federation" was launched in 2015. The Ministry of Natural Resources and Environment serves as an official partner from the Russian side, while the German Corporation for International Cooperation GmbH (hereinafter - GIZ) is a project operator in Russia (GIZ, n.d.).

The services provided by GIZ included improvement of the BAT legal framework, support of the institutional implementation, business consultancy and organization of training programs. Within its service on legal instruments improvement, GIZ provides the Ministry of Natural Resources and Environment with advice on draft laws and regulations concerning BAT and ensures "awareness-raising and capacity development for addressing regulatory needs" (GIZ, 2020a). Currently, GIZ deals with stimulating the harmonization of Russia's legislation related to an "integrated environmental permit", a document issued for an economic operator who negatively affects the environment but meets the relevant requirements for the BAT implementation (GIZ, 2020b). Moreover, GIZ has been participating in the actualization of the BAT reference documents in line with the existing EU regulations (ibid.).

By the end of the first stage of the project held in 2015-2019, GIZ prepared six expert opinions on draft legal instruments which regulated the introduction of BAT, three draft state technical standards (GOSTs) for cement industry enterprises as well as held three training sessions on the legal bases of the BAT implementation (GIZ, 2019). Overall, the first stage of this BAT project was claimed to be among the most effective and successful activities in the Russian-German cooperation on environmental protection (Belov, 2019). As Gusev (2013) noted "Germany [...] has a mature understanding of Russian trends and realities, and may be the one that can manage to develop appropriate solutions and approaches to existing problems" (p. 8) which appeared to be the case of the BAT regulation and understanding development in Russia.

Environment as Facility of Categories I, II, III, IV. Importantly, this Governmental Decree expires as of the 1st of January 2021.

¹⁰ The payment for the negative impact on the environment is a fiscal instrument imposed on pollutants for negatively affecting the environment and the ambient air in particular with their economic activity and emissions from it.

Russian law-makers put special emphasis on the BAT for the energy efficiency enhancement in Russia. In 2017, several GOSTs on BAT and energy efficiency were introduced by the Federal Agency for Technical Regulation and Metrology. For example, GOST R 56828.24-2017 “Best available techniques. Energy saving. Guidance on the application of the best available techniques for increasing the energy efficiency energy saving” provides the guidelines for organizations active in the extraction, storage, transportation, transfer, technological transformation of traditional fuel and energy resources. Moreover, at least five other general and sectoral GOSTs have been adopted since 2017 that standardize provisions relevant for BAT and energy efficiency. The significance of BAT application for energy efficiency enhancement is also reaffirmed in the Draft Strategy of Low-GHG Development.

As a general rule, the application of GOSTs is voluntary unless otherwise established in the existing legislation. With regard to BAT, there are legally-binding requirements for certain enterprises to introduce these technologies which was discussed above. Hence, the enterprises subject to the BAT legislation have to follow GOSTs on BAT and energy efficiency, which are binding for these particular economic operators.

Due to the fact that the majority of the GOSTs on the BAT for energy efficiency were updated in 2017 and the process of the BAT introduction in the most polluting enterprises started in 2019, there are no published reports on the enhancement in energy efficiency as a result of the introduction of BAT yet. The recent energy efficiency improvements and the possible impact of BAT could be revealed in the next state report on energy saving and efficiency to be published by the Ministry of Economic Development in December 2020 and to cover the outcomes of 2019.

Finally, it is necessary to point out that the current Russian legislation on the protection of the environment on the basis of BAT is aimed at the reduction of pollutants contained, *inter alia*, in the air. The list of the pollutants subject to environmental regulation is approved by the Order of the Government of the Russian Federation of 08.07.2015 N 1316-r. Currently, the list of air pollutants includes some of the GHGs, for instance, methane (CH₄), nitrous oxide (N₂O), and sulfur hexafluoride (SF₆), which means that environmental legislation and the payment for the negative impact on the environment in particular are applicable for these GHGs. However, most GHGs do not belong to traditional air pollutants (Guseva et al., 2019). The latest available Draft Federal Law on the State Regulation of the GHG Emission and Absorption sets forth that the list of the GHGs subject to the state regulation is to be approved by the Government of Russia. In this regard, it is considered necessary to include all Kyoto GHGs into the relevant list and exclude the Kyoto GHGs classified as “air pollutants” from the Governmental Order N 1316-r to prevent the double regulation of particular GHGs and a double burden on economic operators.

2.2. Development of the RE legislation

Recently, gradual improvements have been observed concerning the development of RE legislation development both at the federal and regional levels.

At the federal level, the most meaningful recent modification in the RE legislation is arguably the introduction of the legal regime for RE microgeneration. The Federal Law N 471-FZ on Filing Amendments to the Federal Law on Electricity with Respect to the Development of the Microgeneration was adopted on the 27th of December 2019. This Federal Law introduces the concept of “microgeneration facility”, standing for the energy generation facilities owned or belonging to an energy user and which is connected to the local grid with voltage level up to 1000 volts. The amendments cover energy facilities (including those using RES) with a capacity of up to 15kWp. The aim of operating such a facility shall be fulfilling the energy demand of the household or other users or a supply for the own production needs. The owners or users of a microgeneration facilities are considered to be participants of the Russian retail energy market. The present law also enshrines the obligation of guaranteeing suppliers operating in corresponding a price/non-price zone and region to conclude contracts with microgeneration owners and to purchase the electricity surpluses from their facility. Meanwhile, owners’ income received after selling the energy surplus generated from the microgeneration facilities is exempted from the personal income tax at least until 2029, as Article 217 of the Tax Code of Russia is to set out.

There are a few provisions that led to reasonable questions and concern among RE experts (Eclareon, 2020). Firstly, a microgeneration regulation applies to private stand-alone houses and other users while apartment users are not classified as potential users. With this provision, the potential for spreading microgeneration across the population is considerably decreased. Secondly, the present amendments establishes that the price of the purchase of the electricity from the microgeneration facilities must not exceed the prices of electricity on the wholesale market. Due to this provision, the microgeneration owners will have to sell their energy surplus at a price that is from 1.5 to 4 times lower than the tariff paid by retail consumers per kWh from the grid (Eclareon, 2020; Polozov, 2019). For the mechanism to be widely used, there is a need for a state grant for investments (Eclareon, 2020). Initially, a more profitable option was considered, namely a net metering model allowing owners of the microgeneration facilities to “combine their self-consumption with net metering credits that are created when a bidirectional electricity meter turn backwards when surplus electricity is fed into the grid” (Eclareon, 2019). Thirdly, the order of a microgeneration facility’s connection to the local grid as well as the mechanism of energy metering are not established in the current edition of this Federal Law. In September 2020, these specific procedures were presented in the draft governmental decree developed by the Ministry of Energy and to be later approved by the Government. According to the expert of the Analytical Center for the Government of Russia, these provisions are expected to be simplified (Pominova,

2020). However, until the new specifying decree is adopted, there is no possibility to make use of this microgeneration regime.

Despite these weaknesses of the amendments on microgeneration, the establishment of the legal regulation on RE microgeneration facilities in Russia is generally positively assessed by RE experts (Eclareon, 2020, Polozov, 2019). Until these amendments were introduced, microgeneration facilities were disconnected from the local grid and were not reported in any way in official energy statistics (Eclareon, 2019). According to RE experts, the lately approved regulation on microgeneration may improve the public, private and social stakeholders' understanding of RE and stimulate an attitude change (Eclareon, 2020). The importance of the societal support of and demand for clean energy is highlighted by different experts since without public engagement, the progressive development in RE field will be hardly possible (Proskuryakova & Ermolenko, 2017).

At the regional level, certain tendencies for the development of region-specific RE legislation can be observed. For example, the Republic of Sakha - the Russian federal subject - was the first region to enact a law on RES in 2014 with a subsequent amendment in 2017. This law regulates the relations arising from the implementation of the state policy of RES utilization; moreover, it creates favorable organizational and economic conditions for the priority use of RES for improving the socioeconomic situation of the population, the environment protection and the saving of non-renewable energy sources (Bellona, 2014). The regional law establishes a list of state measures for RES development in the Republic of Sakha, namely the allocation of lands for RES power plants construction; investment preferences to legal entities, individuals, and individual entrepreneurs engaged in the design, construction, production, and operation of installations for the use of RES; and other measures not prohibited by law (Article 8). In addition, this regional law sets forth the list of state support measures and defines the obligations of the public and municipal authorities of the Republic of Sakha (Articles 5-7). This law represents one of the first steps towards RES development and support at the federal subject level (German Energy Agency, 2019). Unfortunately, to date, the Republic of Sakha is the only region of the Russian Arctic that adopted a law on RES promotion (Bochoeva, 2019).

Moreover, the Order of the Government of Russia of 17.06.2016 N 1257-r adopted the Concept of Creating a Territorially Separate Innovation and Production Center "Innocam" in the Republic of Tatarstan. This concept states that by 2020, a regional law on RES has to be developed and adopted in the Republic of Tatarstan (paragraph 4, Section VI). Such a law is to provide natural and legal persons with opportunities for connection to the local grid with their potential generators (ibid.). In addition, this RES law is to introduce preferential differentiated tariffs for electricity generated from renewable sources (ibid.). As of November 2020, the current edition of this draft regional law is not freely accessible.

Furthermore, some regions issue decrees of the local governments specifying and elaborating on the provisions established at the federal level. For instance, in 2017, the Government of the Republic of Bashkortostan enacted Decree N 124 which created a guidance to local public authorities and decision-makers as well as established a framework for companies to develop regional RES power plants (German Energy Agency, 2019). It was adopted in order to implement the Federal Governmental Decree N 47 of 2015 on RES promotion on retail markets at the regional level. Another example is a Decree of the Government of Ulyanovsk Oblast N 591-P of 18.11.2019 which was also amended to implement the Decree of the Government N 47. Among other things, it foresees the inclusion of RE generating facilities into the “scheme and program of the perspective development of energy sector of Ulyanovsk Oblast” (Eclareon, 2020). The inclusion of RES in such energy programs is significant for the RE promotion in any federal subject since such documents act as guidelines for the regional energy stakeholders (ibid.).

Finally, most of the federal subjects adopt long-term strategies for the socioeconomic development of the region which often address conventional and renewable energy development. For instance, such a “soft” legal document was enacted in the Republic of Altai in 2018 and covers the timeframe until 2035, in Krasnodar Krai in 2018 and covers the time period until 2030, and is to be adopted in Irkutsk Oblast in 2020 covering the timeframe until 2036. The latter draft document explicitly sets the target to diversify the sources of electric power by increasing the share of RES in it.

In conclusion, the RE legislation is evolving at both the federal and regional level. Legislative developments at the regional level do not have a Russia-wide character: the vast majority of the federal subjects still have not adopted the corresponding and sufficient legal instruments for the promotion of RE. Some legal barriers that the regions face are discussed in subsection 2.3, Section IV. Meanwhile, the steps undertaken towards RES support in particular federal subjects do play an important role for the development of RE at the regional level. At the federal level, the recent amendments to the Federal Law on Electricity introducing microgeneration represented a long-awaited shift towards the involvement of energy consumers in the (renewable) energy generation process. Despite the existing weaknesses of the legal regime on the microgeneration, this legislation may gradually lead to an increase in the share of RE in the final energy consumption. Ultimately, as often pointed out, any positive changes will not be as effective as intended without the support from the population.

2.3. Pilot project: low-carbon development of the Russian federal subject

Special attention needs to be drawn to the Sakhalin Oblast which has lately announced becoming a pilot region for the PA implementation in Russia (Rostovskaya, 2020a). In particular, this federal region is going to intentionally reduce its GHG emissions and develop its own RES capacities. The Sakhalin Oblast

is considered a unique region for conducting such a pilot project since it is isolated from the mainland, highly vulnerable to the negative impacts of climate change and does not have a region-wide power grid connected to the United Power System of Russia (ibid.). In 2020, the Governor of the Sakhalin Oblast presented a five-step plan for the low-carbon development of the region including:

1. “The drafting and adopting of a Federal Law on the Conduction of the Experiment to Establish a Special Regulation for Creating the Necessary Conditions in the Sakhalin Oblast for the Introduction of Technologies Aimed at GHG Reduction. The Sakhalin Oblast and the Ministry of Economic Development already started working on this Draft Federal Law, which is supposed to be submitted to the State Duma in the second quarter of 2021. This Federal Law will be accompanied by various sub-laws designed to regulate all the details;
2. The creation of a system of inventory and cadastral registration of GHG emission and absorption. The inventory is to be conducted annually. For this task, it will be necessary to establish a separate regional service, according to the Governor of the Sakhalin Oblast;
3. The approval of a Climate strategy until 2050 and its implementation plan until 2025. The deadline for their development is set for the third quarter of 2021. The targets for GHG emission reduction and absorption for the largest emitters and absorbers as well as the development of climate projects for the reduction of the anthropogenic impact on the climate are to be included in the mentioned documents. By words of the Governor of the Sakhalin Oblast, “projects for an accelerated transition to natural gas and methane-hydrogen mixtures, the use of hydrogen in transport and in other economy sectors, the development of clean energy based on RES” are supposed to facilitate the implementation of the low-carbon development plans;
4. The creation of a system for the implementation of climate projects and carbon trading. According to the announced plans, this step has to be completed by the third quarter of 2021;
5. The creation of a digital platform that brings all data on the listed projects together” (Yasko, 2020).

The decision to hold such a climate legal experiment in the Sakhalin Oblast is welcomed by environmental organization and by the representatives of the public authorities (RSEU, 2020). After all, even though not much information on this pilot project is freely available to date, this experiment could become a significant precedent incentivizing the other federal subjects to adopt climate-related legal instruments approving their own long-term climate strategies, the systems of inventory and cadastral registration of GHG emission and regional carbon trading. In the end, the active participation and support provided by the federal public bodies to the federal subjects are thought to considerably facilitate the low-carbon development of the Russian regions, as it is the case with the Sakhalin Oblast.

2.4. Conclusion

Besides the basic terms and general provisions established in the main environmental legal acts, there are a number of preconditions and opportunities for contributing to the achievement of the PA emission reduction targets.

Firstly, following the eco-industrial trends of the Western states, the BAT regulation was under development in Russia before the adoption of the PA. The BAT regulation is integrated into environmental legislation and is mostly aimed at the enhancement of resource and energy efficiency. Although initially the BAT regulation did not set a target to reduce GHG emissions, the actual emission reduction is nevertheless achieved as a side effect of the energy efficiency improvement. On the top of that, in the Russian environmental legislation, some Kyoto GHGs are categorized as air pollutants which means that the enterprises subject to the payment for the negative impact on the environment already pay for the emission of these particular GHGs. Moreover, the energy efficiency enhancement as a result of the obligatory introduction of BAT is expected to be more evident in the next years when this obligation covers more enterprises classified as the most polluting economic operators.

Secondly, a gradual development of RE legislation both at the federal and regional levels is seen as a positive tendency for supporting RES and promoting small-scale RES development. The introduction of the microgeneration legislation is supposed to arouse population's interest in RE and thereby stimulate the development of this field. At the regional level, the measures rather address the implementation of the federal legal acts and specifications of the RE support scheme. One region that stands out from the other federal subject is the Republic of Sakha that introduced the first regional law on RES in Russia.

Finally, the conduction of a regional low-carbon pilot project in the Sakhalin Oblast as part of the PA implementation in Russia may result in a meaningful precedent inducing the other federal subjects to adopt legal acts on their climate-neutral development.

3. Societal opportunities

3.1. Growing concern among a younger generation

As discussed in subsection 3.1., Section IV, the general Russian population lacks “environmental culture” as a whole and awareness of and concern about climate change in particular. Nevertheless, certain positive trends can be observed among the younger generation who are below 30 years of age.

According to the FOM survey (2019a,b), the population of the age group between 18 and 30 years old is more concerned about people's irresponsible attitude to the environment, the lack of environmental culture and education than the other age groups. In addition, in comparison with the other age groups and with the

population average, the younger generation is reportedly more convinced that climate change can be halted (ibid.). Such a position of the younger generation indicates that they are more aware of the major anthropogenic role in causing climate change than the older generations. Meanwhile, the younger age group was the least reluctant to provide the answer to the question about the possibility to stop climate change while the inability to respond to this question grew with age (ibid.). Finally, according to this survey, the younger generation expresses more readiness for participating in the environmental activism. For example, the age group from 18 to 30 years shows a greater willingness to vote for a political party bringing environmental tasks and goals to the fore in comparison with the population average (ibid.). Moreover, young Russians more often allow for the possibility to take part in the strikes, pickets or demonstrations under the environmental protection agenda (ibid.). Interestingly, this survey does not confirm that the younger generation is more concerned than the older generations about climate change itself. However, this outcome is explained by another poll conducted by WCIOM in August 2020.

According to the August WCIOM survey (2020a), 66% of the representatives of the older generation above 60 years of age consider climate change an actual problem for their locality. At the same time, only 52% of the representatives of the 18-24 age group regarded climate change as an urgent issue in their locality (ibid.). However, it is found that the older generation refers to climate change rather as a change of weather but not as a change in global climate attributed to human activity (ibid.). Moreover, the people above 60 years of age are the most skeptical concerning the human-induced nature of climate change which can also be tracked down in the FOM survey (FOMa,b, 2019; WCIOM, 2020a). So, the high concern about climate change found as a result of the given surveys is primarily caused by a misunderstanding and misinterpretations of the question posed. Then, the younger generation between 18 and 34 years expresses more readiness to cut personal consumption for the fight against climate change compared to the older respondents (WCIOM, 2020a). However, today, the younger respondents are not ready to refrain from air travel preferring to concentrate on the less “radical” restrictions such as cuts in energy and water consumption (ibid.). After all, the reason for youth’s greater awareness of the climate-related issues may lie in the differing sources from which they acquire new information. According to Levada Center (2020b), the youth receives new information primarily from internet sources while the older generation prefers conventional media such as federal TV channels or newspapers controlled by the state.

Another recent survey by WCIOM (2020a) revealed how Russians perceive the climate measures that are undertaken by the EU and that could affect the Russian economy in the near future. The following question was posed: “The EU proposes to introduce a so-called “carbon regulation” for the Russian industrial enterprises, so that Russian enterprises pay an “environmental” tax when selling products to Europe. Which opinion do you most agree with? ”. Despite the ambiguous wording of the question, the following pattern is revealed. Out of all respondents, 68% shared

an opinion that the EU is willing to get the financial resources from Russia to maintain the infrastructure of the EU, while only 19% of the respondents, i.e. every fifth citizen, believed in the EU's striving towards the environmental protection and fight against climate change (ibid.). Among all age groups, the largest share of the respondents, i.e. 44%, who believed in the EU's intention to combat climate change was in the younger generation at the age between 18 and 24. These survey outputs also show that the skepticism regarding the EU's pro-climate intentions grew with the age of the respondents. This finding is aligned with a general trend observed in Russia, according to which the younger generation is more positively and approvingly minded in regard to the Western countries and the EU in particular than the older generations (Levada Center, 2020b).

Importantly, these surveys cover only the youth of legal age. As a result, the opinions of the young Russians under 18 years are not reflected in the polls. Their concerns about climate change can be delivered to the general public via climate activism initiatives, e.g. climate strikes. As mentioned in subsection 3.2., Section IV, the "Fridays for Future" movement is not as widespread in Russia as in the other countries. However, both teenagers and young adults continue to organize individual pickets not only in the Russian capital, but also in the regional cities, e.g. Kaliningrad, Irkutsk, Arkhangelsk, Izhevsk, etc., even though the law prohibits the youth under 18 to take part in such public activity. The young activists also get noticed by the independent Russian and foreign social media such as The Moscow Times in 2019, DW in 2019, The Guardian in 2019, OpenDemocracy in 2020, Reuters in 2020, etc. Moreover, the leading climate activist in the Russian "Fridays for Future" movement, Arshak Makichyan, was included in the "30 under 30" nominees list of the Russian Forbes magazine which reflects an acknowledgment of his impact (Solomennikova, 2020).

In the end, the younger generation of Russians under 30 years tends to be more concerned about climate change, is prone to be more environmentally active and show its readiness to combat climate change with personal actions and behavioral change. This generation also is prone to think more critically while assessing the measures taken by Russia's foreign partners and is arguably less susceptible to the conspiracy thinking which is an immanent characteristics of the Russian population in general (Korppoo, 2020). Though in comparison with the situation in the other more climate-concerned states, the Russian youth does not take the lead in the climate bottom-up action, the analysis of the climate change perception within Russia solely reveals that the younger generation stands out from the older age groups in their understanding of the climate change issue.

3.2. Bottom-up awareness-raising initiatives

In Russia, knowledge on climate change and its negative consequences is poorly covered at the state level: such knowledge is not included in the Federal Educational Standards for General and Vocational Education and only voluntarily

reflected in the specialized university programs, as was discussed in subsection 3.1., Section IV. The lack of state measures to address low awareness of the climate-related issues has appeared to result in an increasing number of the bottom-up initiatives in Russia that aim to contribute to solving this problem. Prendeville et al. (2018) refer to such a process as a “bottom-up change” which stands for “social movements and social innovation such as initiatives and entrepreneurial activities initiated and run by civil society, NGOs, communities and businesses” (p. 176). The following paragraphs provide an overview of a few randomly chosen organizations addressing the insufficient knowledge on climate change.

First, LLC Environmental Rights Center “Bellona” (hereafter - Bellona) is one such bottom-up organization. Within its project “Eco-enlightenment”, this organization holds eco-classes and workshops on the state of the environment and environmental protection for schoolchildren and students (Bellona, n.d.). The given project was initiated in response to a request from teachers, schoolchildren, and volunteers who wanted to increase the awareness of climate, waste treatment, and other environmental problems (Titov, 2020). So, launching such an educational project was a direct response to the social demand on acquiring environmental knowledge. As a result, Bellona delivers integrated knowledge on environmental problems including but not limited to climate change. For example, Bellona prepared a number of school educational materials covering climate change, renewable energy, energy saving topics (Bellona, n.d.). Importantly, Bellona also organizes contests and workshops for acquiring or improving professional skills, e.g. the competition “Eco-lawyer” which is held among students interested in environmental law (ibid.). As a results of Bellona’s awareness raising activities in 2019, around 5500 schoolchildren and university students were engaged in the eco-events and around 1600 students took part in the “Eco-lawyer” contest (Titov, 2020).

Next initiative is the Russian project “Climate – Education – Youth” held from 2019 until 2021 and supported by the EU’s European Commission within its Program “Raising awareness of climate change among young people of Northern Dimension regions” (Climate-Education-Youth, n.d.). The goal of the project is to create partnership networks connecting NGOs, universities, students and active youth for raising awareness of climate change and finding ways for adaptation and resilience to such changes (Center of Independent Sociological Research, 2019). This project is implemented in Saint Petersburg and in the North-Western regions of Russia where it is planned to establish scientific and educational centers on the basis of the local universities and NGOs in order to spread the knowledge and research findings on climate change and adaptation to it (ibid.). So, despite being funded by the EU Member States, the project itself is implemented by the local communities, universities and NGOs which is a characteristics of a bottom-up approach. Moreover, the project participants, *inter alia*, aim to develop and verify solutions for the reduction of carbon impact, develop and spread the youth educational programs on climate change, develop the solutions for energy efficiency enhancement in the Northern regions (Climate-Education-Youth, n.d.). Lastly, within this project, there

are an annual International Summer Climate School and workshops organized for the youth, eco-activists, professionals and anyone interested in deepening knowledge and expertise on climate change (Climate Resource, 2019). Since the launch of the project in 2019, there have been six research outputs on climate change and resilience published by the project researchers (Center of Independent Sociological Research, 2019). Finally, as one of the project outcomes, the participants will present guidance materials which could be applied in the other Northern regions (Climate-Education-Youth, n.d.).

Another example of a bottom-up initiative is the NGO “Russian Social and Ecological Union” operating in Russia since 1991. Its goal is to protect the environment and the social and environmental rights of citizens as well as to support environmental solutions in all regions of Russia (RSEU, 2015). As part of its activity, the Russian Social and Ecological Union (RSEU) launched a program “Environmental Enlightenment” which aims at the formation of an enlightened public opinion on sustainable energy issues, public support for sustainable energy solutions and practical implementation of energy saving and RE at the local level (RSEU, 2019). The RSEU seeks to achieve its goal via an inclusion of sustainable energy topics in school education programs, youth involvement in practical activities for sustainable energy, development of a system for informing and supporting the population for the implementation of energy saving measures and the RES use (ibid.). The most meaningful project within “Environmental Enlightenment” program is the Russian “School Project for Application of Resources and Energy (SPARE)” within a self-titled international project (ibid.). So far, as a result of SPARE’s activity in Russia, more than 800 schools have become active participants of this project, and about 2600 schools use various SPARE educational materials developed on the interrelations between energy, climate and habitat, sustainable use of energy and natural resources, energy efficiency and RES, climate change and “climate-friendly solutions” (Rusecounion, 2017). Moreover, more than 2000 events have been held across the whole country by 2020, e.g. International Energy Saving Day, Earth Day, World Environment Day (ibid.).

In the end, the bottom-up initiatives, such as Bellona, “Climate – Education – Youth” project or RSEU aim to contribute to filling gaps in the education of the general population and the youth in particular. The RSEU is regarded as the organization with the longest operation period and the broadest population coverage in comparison with the other initiatives describes. At the same time, “Climate – Education – Youth” project delivers more specific knowledge on climate change adaptation applying a tailor-made approach for the Northern Dimension regions. Finally, Bellona makes use of a more comprehensive approach to environmental education without prioritizing climate change topic above other environmental problems. Although these and other bottom-up organizations facilitate population’s awareness raising, the integration of the climate topic into the federal educational standards is still essential in order to transfer the standardized knowledge and

competences to the general population and especially those unapproachable by the bottom-up climate organizations.

3.3. Conclusion

Summarizing the societal opportunities for the PA implementation in Russia, the following conclusions can be drawn. Firstly, the younger generation under 30 years stands out from the other age groups in their increased awareness of climate-related issues. Although the youth climate initiatives are not as wide-spread in Russia as in the other countries, exactly the younger generation is expected to undertake personal pro-climate actions in order to combat this global challenge.

Secondly, being aware of the existing gaps in the Russian education system, which among others include the absence of climate-related knowledge, the Russian non-state organizations, such as NGOs, businesses, etc., tend to step up to address this awareness problem. They often develop programs both for the youth and for the general population providing them with either comprehensive environmental knowledge or more specific information on climate change, energy efficiency and RE. Bearing in mind a positive contribution of such bottom-up initiatives to the raising of public awareness, it is nevertheless necessary to provide state support for spreading scientifically-proven information among the whole population and especially the communities most vulnerable to climate change.

4. Conclusion to the “Opportunities for the PA implementation” section

In recent years, a growing interest in climate-related topics at different levels can be observed in Russia. This tendency could form the basis for an effective PA implementation in Russia in terms of GHG emission reduction. For example, at the state level, some public bodies, whose activity is often directly connected with environmental or climate protection, advocate for more effective and strict policy and legislative measures in order to align the Russian climate-related policies and legislation with the current international climate agenda. However, to date, the influence of the RSPP, the powerful fossil fuel lobby, on decision- and law-making is still too high to push through measures proportional to the problem of climate change. Meanwhile, nowadays, particular influential state-controlled and private business stakeholders do get engaged in the development of the RES sector in Russia. Although they are arguably pursuing a commercial interest in the first place rather than the goal to combat climate change, RES deployment activity itself leads to a GHG emission reduction and a decarbonization of the economy. These stakeholders, i.e. RusHydro, RusNano, RosAtom, Renova, may be able to resist proposals negatively affecting or hindering RES development. Still, RES deployment solely is not sufficient to lead to the economy decarbonization, effective carbon regulation has to be implemented as well.

Though strict GHG emission regulation is still not in place in Russia, the emission of some GHGs is already regulated by environmental legislation. More

specifically, a number of Kyoto GHGs are categorized as air pollutants subject to the annual reporting and offsetting via the payment for the negative impact on the environment. Moreover, *de facto* GHG reductions take place as a side effect of the introduction of the BAT regulation which is mostly aimed at the resource and energy efficiency improvement. The work on the BAT legislation started prior to the PA and was supported by the Russian foreign partners with consultancy and educational services.

Recent development in RE legislation at the state and regional levels also creates a conducive environment for GHG emission reduction. A lately adopted federal legislation on microgeneration is supposed to arouse interest of energy end-users in the RE and thereby stimulate the development of this field. As for the regional level, most of the recent measures are targeted at the implementation of the federal RE sub-laws as well as the specification of the RE support scheme. However, special attention should be drawn to the Sakhalin Oblast which is going to serve as a pilot region for a low-carbon development as part of the PA implementation in Russia. The Sakhalin Oblast is to apply a comprehensive approach to a low-carbon development simultaneously addressing not only the RE field, but also climate and GHG emission regulation. This practice may serve as a nudge inducing the other federal subjects to adopt regional legal acts on their climate-neutral development.

As has been noted in numerous studies, the societal support is an essential element for a climate-neutral transition. Currently, the younger generation under 30 years in Russia is the one to stand out from the other age groups by showing an increased concern about climate-related issues. Compared to the older generations, the youth is more knowledgeable about climate change even without proper school education materials on this topic; it is also less reliant on the conventional state-run social media. Then, the youth is more positively-minded regarding the foreign partners' measures to combat climate change that could negatively affect Russia in a short-term period. In addition, the younger generation is aware of the gaps present in the school education programs which do not provide comprehensive environmental knowledge. In its turn, the lack of climate-related education is addressed by the numerous Russian bottom-up organizations, such as NGOs, businesses, etc. Depending on the profile of bottom-up initiatives, those focus on the youth exclusively or the general population, on comprehensive environmental knowledge or on more specific information on climate change, energy efficiency and RE, on a particular region or on a maximal regional coverage. Still, regardless of their contribution, these organization cannot fully substitute the degree of knowledge provided by the federal school and vocational education programs which have to comprehensively cover environmental and climate protection in particular.

Lastly, it is important to point out that the cooperation between Russian and foreign stakeholders has proven to be productive and contributed to forming the basis for an effective PA implementation. An intensive international cooperation in the RE sphere helped to overcome regulation barriers related to high localization

requirements by facilitating knowledge and technology transfer. Next, due to the Russian-German cooperation, the BAT concept is being developed and introduced in the Russian legislation based on Russia's experience and national peculiarities. There is an ongoing process of the alignment of the Russian BAT reference documents with the existing EU regulations. Finally, the cooperation with foreign stakeholders also takes place in the sphere of awareness raising. The foreign partners direct financial flows and ensure knowledge transfer for spreading the science-based information on climate change and other related topics in Russia.

VI. Recommendations for law-makers for strengthening legal instruments in the climate-related field

1. Climate legislation

As shown above, the climate-related issues are not sufficiently reflected in the Russian legislation and are addressed by numerous “soft” law instruments. There are no federal legal acts covering climate protection while “soft” legal instruments aimed at addressing climate change are adopted in the form of presidential, governmental, ministerial sub-laws. For example, the GHG emission reduction targets are always adopted by *ad hoc* decrees of the President of Russia. Meanwhile, climate change represents a serious threat to Russia in particular and the solution of this problem at the state level needs a “hard” and systematic approach. The embodiment of such an approach could be the federal law on the climate protection. By its nature, federal law has a greater legal force than sub-laws and regulates the most important public relations unlike sub-laws; those are aimed at specifying the provisions of laws and are adopted within the competences of the corresponding executive bodies. Taking into account the crucial character of the climate problem in Russia, its negative influence on all spheres of social relations, the interrelation with fundamental human rights and freedoms, it is justified to adopt the federal law on climate protection. Moreover, such a measure is deemed necessary to provide the legal framework for the further climate protection, foresee climate responsibilities of the relevant actors and sanctions for non-compliance. This federal law shall, *inter alia*, provide:

- The relevant definitions, such as “climate change”, “climate change mitigation”, “climate change adaptation”, “adverse effects of climate change”;

Those climate definitions enshrined in the international climate agreements which Russia is a Party to shall be transposed into the new federal law. In particular, “climate change” shall be defined as “change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”. This definition was established by paragraph 2, Article 1 of the UNFCCC and was initially used by the Ministry of Economic Development of Russia in the Draft Federal Law on the State Regulation of the GHG Emission and Absorption of 2018 edition. Importantly, this definition would address the anthropogenic nature of climate change at the federal level and therefore would prevent climate-related rhetoric on the origin of climate change among the power elite and major fossil fuel stakeholders. Moreover, anchoring climate change as a challenge caused by anthropogenic activities is supposed to put more emphasis on the climate mitigation required, among others, from Russia. For those definitions, not explicitly anchored in the international climate treaties, the UNFCCC “Glossary of climate change and acronyms and terms” should be used. Such an approach to defining the most important concepts and terms would harmonize the Russian conceptual framework

with the one used in the international climate law. Finally, a precise definition of climate-relevant terms would lay the basis for the further development of accurate and clear legal norms regulating climate protection and would prevent the normative ambiguity present in the Russian legislation.

- Ambitious GHG emissions reduction targets;

As stated above, the GHG emission reduction targets are currently adopted by the *ad hoc* decrees of the President of Russia. To date, these targets are set only for a mid-term period and do not correspond to the global ambitions to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels”, as paragraph 1(a), Article 2 of the PA establishes. So, the corresponding federal law is necessary to move away from *ad hoc* Presidential decrees, as Interviewee 2 rightly stressed, and to set forth not only mid-term, but also long-term mitigation targets, e.g. for the year of 2050 or beyond, which have to correspond to a more ambitious mitigation scenario than the one pursued nowadays.

- Climate duties distribution across the federal and regional public authorities;

The distribution of the duties on climate-related issues is not clearly established in the Russian legal system. Although the National Plan of Adaption distributes the responsibilities for adaptation planning among certain ministries, not all of them are taken into account, e.g. the Ministry of Labor or the Federal Migration Service, as the Director of the WWF “Climate and Energy” Program correctly noted (Kokorin for RIA Novosti, 2020). As for the mitigation measures, the existing legal instruments do not provide a concrete list of the federal ministries and services and their responsibilities. The Draft Federal Law on the State Regulation of the GHG Emission and Absorption currently provides a general distribution of responsibilities on the GHG emission regulation among the Government of Russia, federal and regional executive authorities. So, the new federal law shall lay the basis for defining the responsible public authorities and distributing climate-related duties among them as well as for the cooperation between the federal and regional state bodies since the environmental legislation is the area of their joint competence. For example, the Government could be bound to, among others, annually report on achieving the GHG reduction targets. Following the example of Germany, the federal law on climate protection may set forth the obligations for certain public bodies to become climate-neutral in a mid- or long-term period. Then, the federal subjects shall be bound to inventory and report their GHG emissions and to develop their own climate legislation and action plans since the current soft approach of voluntary climate actions in the regions has failed to incentivize most of them to take climate-related measures. The deadlines and sanctions for non-compliance shall be foreseen as well. It is also essential to set out the obligatory involvement of the population, especially empowering indigenous and the most vulnerable communities, as one of the principles of planning climate protection measures by the Russian state authorities.

- The references to the existing climate-relevant legal instruments;

The federal law shall be properly integrated into the existing Russian legislation serving as overarching and systematically important legal instrument for climate protection. It shall refer to the Federal Law on the State Regulation of the GHG Emission and Absorption, e.g. in terms of GHG emission and absorption inventory and reporting or an establishment of carbon caps across the economy sectors. Moreover, it shall refer to the National Adaptation Plan as to the main present document describing the framework for planning adaptation measures in Russia. It may also contain references to the energy efficiency and RE legal instruments pointing out their significance for the GHG emission mitigation efforts. In this way, a climate-energy nexus would be legally established.

In addition to the above-listed proposals, it is necessary to supplement the conceptual framework used in the Federal Law on the Protection of the Environment and the Federal Law on the Protection of the Ambient Air. According to the amendments to be introduced by the Federal Law on the State Regulation of the GHG Emission and Absorption, “implementation of the adaptation measures” is to be added to the powers of the regional public authorities foreseen by both above-mentioned federal laws. For this reason, it is relevant to include the UNFCCC definition of the term “adaptation to climate change” into the federal laws in question to avoid a wide-spread lack of legislative clarity. Finally, the climate itself shall be explicitly included in the subjects of environmental protection, anchored in Article 4 of the Federal Law on the Protection of the Environment.

2. Legislation on GHG regulation

The forthcoming adoption of the Federal Law on the State Regulation of the GHG Emission and Absorption is a step towards decarbonizing the Russian economy and mitigating the negative anthropogenic impact on climate anchored as a global target in the PA. However, the current regime of the GHG regulation including the recent Draft Federal Law on the GHG regulation is insufficient for adequately responding to the global climate challenge and halting the temperature rise. For this reason, the following legal improvements need to be considered:

- Alignment of the terminology of the Draft Federal Law on GHG regulation with the internationally recognized conceptual framework;

The conceptual framework utilized by the law-makers in the Draft Federal Law on GHG regulation does not correspond to terminology used in the UNFCCC. For instance, paragraph 2, Article 1 sets forth the objective of the Draft Federal Law in question which is formulated as a creation of “conditions for reducing GHG, taking into account the need to ensure the economic development of the Russian Federation on a sustainable manner and in accordance with international obligations”. The term “development on a sustainable manner” neither defined, nor widely used in the

Russian policy and legal acts unlike the terms “sustainable development” or “sustainable growth”. This objective was partly transposed from Article 2 of the UNFCCC, although the significant parts of the Convention objective were omitted, e.g. the need to “prevent dangerous anthropogenic interference with the climate system” or to “allow ecosystems to adapt naturally to climate change” (Article 2, UNFCCC). So, in order to ensure the correspondence to the international climate agreements as well as to the current climate realities, the objective of the given Draft Federal Law has to include not only Russia’s economic concerns, but also its aspiration to combat climate change and prevent its dangerous negative consequences. For example, the objective of the present Federal law could be the aim “to create conditions for reducing GHG emissions in order to prevent and mitigate the dangerous effects of anthropogenic climate change taking into account the need to ensure the environmental, economic and social development of the Russian Federation in accordance with sustainable development and international obligations”.

Another definition failing to specifically reflect the relevant term in the sense used in the UNFCCC is the “adaptation to climate change”. The Draft Federal Law provides the following definition: “a set of measures aimed at increasing the sustainability of natural and socioeconomic systems, economy, population, state institutions and infrastructure of the state and their normal functioning in changing environmental conditions, including under conditions of unfavorable actual or expected climate impact or its consequences, or under conditions allowing the use of favorable opportunities for such impacts and consequences”. In its current edition, the definition is considered too broad since the term encompasses adaptation not only to climate stimuli, but also to any changes taking place in the environment. Moreover, based on this definition, it is unclear who is responsible for taking adaptation measures. Within the meaning of the following articles, the responsibility to adopt regional adaptation measures lies with the federal executive bodies of the federal subjects while nothing is said about the corresponding responsibilities of the federal state or enterprises. Based on Article 7 of the PA, adaptation is a global challenge that actors from multiple dimensions have to face, so such a multi-level nature of adaptation measures has also be reflected in the given definition. As was discussed in subsection 2, Section V, the existing Russian climate-related legislation already lacks specificity in many cases, so it is necessary to prevent this general trend from affecting further legal instruments. So, the definition of the “adaptation to climate change” could be improved as follows: “a set of measures taken by actors in local, subnational, national dimensions and aimed at increasing the resilience of natural and socioeconomic systems, economy, population, state institutions and state infrastructure and their normal functioning in response to actual or expected climate stimuli or their effects which moderates harm or exploits beneficial opportunities”.

- The list of the GHG;

In accordance with the Draft Federal Law in question, the list of the gases counted as GHGs is to be approved by the Government of Russia. The international climate treaty, in particular the Kyoto Protocol (Annex A), which Russia is Party to, names the specific gases classified as GHGs, i.e. carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆). These are the GHG subject to the annual inventories to the UNFCCC Secretariat by Parties, in accordance with Articles 4 and 12 of the UNFCCC. Moreover, the Ministry of Natural Resources and Environment adopted a number of ministerial sub-laws establishing guidelines for GHG inventory which includes the above-listed GHGs as well as nitrogen trifluoride (NF₃). So, the Government shall approve of a list of GHGs embracing these six types of GHGs applicable for Russia under the Kyoto Protocol but without being limited to them.

- Strengthening the provisions of the Draft Federal Law on the State Regulation of the GHG Emission and Absorption.

The latest available version of the Draft Federal Law in question was published in March 2019, however, since then, it has undergone numerous changes softening the state regulation of the GHG emission and absorption. It is known that the new Federal Law will not immediately introduce a carbon tax, carbon allowances, and a carbon cap set out in the edition of 2019. Establishing only an obligation to conduct GHG reporting and a right to hold voluntary climate projects, the Draft Federal Law provides the Government of Russia with a right to decide on supplementary measures on GHG regulation if GHG reduction targets are not achieved (Davidova, 2020a). However, such soft measures of the national GHG regulation are not proportionate to the threat that climate change constitutes for the world and Russia in particular. As a result, it is necessary to reconsider the state regulation of the GHG emission and absorption in favor of “harder” and stricter measures, including a carbon tax, carbon allowances, a carbon cap, and sanctions for non-compliance addressed in the previous editions of the Draft Federal Law in question. The decision on the introduction of such stringent measures of the state GHG regulation shall not be postponed until 2025 which was proposed before. On the contrary, their introduction shall be accelerated due to the seriousness of anthropogenic climate change and respective responses of the main frontrunners in the fight against this global challenge.

3. Energy efficiency legislation

Russia has a great potential of energy efficiency improvement, in particular in part of reducing energy intensity of GDP. According to many studies, the Russian energy efficiency potential is up to 45% of primary energy consumption of the 2005 level (see e.g. Bashmakov, 2009; World Bank Group, 2014). Although the realization of this potential is estimated to quickly pay back (World Bank Group,

2014), the government still does not dedicate enough attention and resources to enhancing energy efficiency in Russia. Particular legal recommendations for improving the current state of the energy efficiency regulation could encompass:

- Updating national energy efficiency targets;

In August 2020, the Ministry of Economic Development prepared a draft Governmental Order on approving implementation plan on improving energy efficiency of the Russian economy. This draft document proposes a new energy efficiency target, namely 35% reduction in the energy intensity of GDP compared to the 2017 level by 2030. To make it comparable to the existing energy intensity improvement target set for 2020, the new goal foresees achieving 57.2% (or 42.8% decrease) of energy intensity against 2007 by 2030. So, compared to the previous target, the newly proposed goal is improved by 2.8% and is to be achieved by 2030. Despite the failure to achieve 40% reduction in energy intensity by 2020 and seemingly little improvement in setting a new goal, the achievement of this 2030 target is considered feasible by experts in energy field (see e.g. Davydova, 2020b; Stepanova, 2020). This new, more realistic energy efficiency target, accompanied by new legal measures, corresponds to the estimations of the Russian energy efficiency potential, the realization of which is supposed to result in the considerable GHG emission reductions of 280 million ton CO₂-e (Ministry of Economic Development, 2020c). So, this target shall be adopted as Russia's main energy efficiency goal without being softened in favor of vested interests.

Moreover, the current edition of the Draft Implementation Plan covers the most energy intensive economy sectors, which are electric and heat power, processing industries, transport and residential sector, according to the Ministry of Economic Development (2020c). Extractive industries accounting for an average 7.5% of the fuel and energy resources consumption in 2015-2018 are not included the Draft Implementation Plan in question. In this sector, the consumption of energy intensive resources has steadily been increasing at least since 2015 while the efficiency of energy consuming equipment decreased in 2018. For this reason, it is recommended to consider including extractive industries in the above-mentioned Draft Implementation Plan to ensure a greater coverage of the Russian energy intensive economy sectors and prevent further increase in the energy consumption in this particular sector. As it is applied to the four most energy intensive sectors, it is necessary to set an energy efficiency improvement target for the extractive industries sector.

- Modifying the list of the air pollutants approved by the Order of the Government of Russia of 08.07.2015 N 1316-r;

As was discussed in subsection 2.1., Section V, the list of air pollutants currently includes particular GHGs, e.g. methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), which are regulated by the environmental legislation and are

subject to the payment for the negative impact on the environment in particular. As a result, while adopting the list of the GHGs subject to the state regulation of the GHG emission and absorption, the Government of Russia shall exclude the corresponding GHGs classified as “air pollutants” from the Governmental Order N 1316-r to prevent the double regulation of particular GHGs and double burden on economic operators.

4. Renewable energy legislation

Similarly to the climate regulation, the RES regulation does not encompass an overarching legal instrument with numerous specifying sub-laws, but rather consists of a patchwork of instruments of a different legal force. Meanwhile, the current RE support mechanism is also imperfect and needs improving. To address these problems, the adoption of the systematically important federal law on renewable energy sources as well as adjustments to the existing legal support scheme are recommended.

- Adoption of a federal law on renewable energy sources;

The Energy Strategy of Russia until 2020 adopted by the Order of the Government of Russia of 28.08.2003 N 1234-r set forth the goal to develop and adopt a federal law on the RES in order to “overcome Russia's lagging behind in the RES use, preserve depletable fossil fuel reserves for future generations, significantly improve energy supply to localities remote from power grids, and improve the environmental situation in environmentally vulnerable areas” (Section VI, p. 106). This goal has not been achieved by 2020 and is not reestablished in the Energy Strategy of Russia until 2035. However, a federal law on RES is supposed to play a significant role in establishing a strategy for the development of RES in Russia. So, firstly, it is necessary to complement the Energy Strategy of Russia until 2035 adopted by the Order of the Government of 09.06.2020 N 1523-r with a target to develop and adopt of the corresponding federal law reaffirming its strategic importance for energy development of Russia.

Secondly, the federal law on the RES shall, *inter alia*, include the following provisions. To begin with, it shall set forth proper definitions of the relevant terms; for example, the core definition of the “renewable energy sources” shall not constitute an *exhaustive* list of the RES since such an approach formally excludes the RES not listed in the current definition from the RES regulation as a whole. Next, the federal law shall set out ambitious national targets of RES development and their relevance for the climate and GHG reduction targets thereby establishing climate-energy nexus in the Russian legislation. Then, competences of the bodies of the federal state and federal subjects in the RES use and development have to be also described in detail in this federal law. Moreover, this federal law shall provide state stimulation measures for RES deployment, which relate not only to the electricity generation, but also to the other economy sectors, e.g. transport, not covered by the

existing RES regulation. To be well integrated into the existing array of the RE legal instruments, it is of necessity to incorporate references to the most important sub-laws, e.g. Governmental decrees and orders establishing the state support mechanism for RES development in the electricity generation sector.

- Improvement of the existing state support mechanism for the wholesale electricity market;

The current state support mechanism for RES development in the electricity sector is based on the tender approach, which imposes certain requirements on RE tender participants. As was previously discussed, these two criteria are the level of equipment localization and the cost of installed capacity. While the requirement for a high level of localization is justified in order to fill the technological gap between Russia and the rest technologically developed states, over years numerous experts admitted that the required level of the local content is unrealistically high, which prevents the RE field from a development boost (see e.g. Eclareon, 2020; Mitrova & Melnikov, 2019). Currently, the terms for a new state support scheme until 2035 are being agreed on by the Government of Russia. In terms of an equipment localization level, the recent Order of the Government of Russia of 24.10.2020 N 2749-r established a requirement for 87% and 102% of the local content in new wind power plants constructed in 2024-2030 and 2031-2035 respectively. Regarding solar power installations, this requirement accounts for 110% and 120% of the local equipment in new installations put into operation in 2024-2030 and 2031-2035 accordingly. Taking into account that the manufacturing industry for the RE equipment is still small and experiences difficulties complying with the current localization level rules, tightening requirements for the local content share at the current stage of RE development in Russia is not effective. For this reason, it is necessary to reconsider the requirements for the local content equipment for the period 2024-2035 in favor of their softening until sufficient production capacities are achieved.

The second criterion, the cost of installed capacity, is a unique approach applied in Russia, although its effectiveness is also highly questionable. Due to the artificially low hydrocarbon prices and high reliance on fossil fuels, RES are uncompetitive in terms of per-unit cost which makes the achievement of the parity of prices impossible in the short run, as Kokorin rightly notes (Kokorin, interview, 2020). At the same time, this criterion favors the most powerful RE stakeholders while smaller actors can hardly compete with such giants and receive state support. So, it is deemed necessary to reconsider the legal condition for providing state support based on the costs of installed capacity in favor of another criterion, for example, effectiveness of RE generation, i.e. the amount of electricity output, which is widely utilized in the RE-advanced states, such as Germany.

5. Ministerial acts on federal state educational standards.

Article 71 of the Federal Law on the Protection of the Environment sets forth the establishment of “a system of universal and comprehensive environmental education which includes general education, secondary vocational education, higher education and additional vocational education for specialists” in order to form an environmental culture and professional training of specialists in the field of environmental protection. However, as was found, the level of environmental culture of Russians is low while the system of environmental education does not correspond to the “universality” and “comprehensiveness” requirements providing no sufficient knowledge on climate change, its negative impact, climate mitigation and adaptation, energy efficiency or renewable energy. As a result, Article 71 of the Federal Law in question is not comprehensively implemented playing a nominal role to a large extent. Meanwhile, possessing sufficient climate-related knowledge is supposed to allow for a public involvement in and support of introducing new climate-related measures which is required for increasing effectiveness of such measures. In order to implement the provision of the given Federal Law as well as to address the problem of poor environmental education in Russia, it is of a pressing need to file amendments to the following ministerial legal acts approving of the Federal State Educational Standards for General Education:

- Decree of the Ministry of Education and Science of Russia of 17.10.2013 N 1155 on the Federal State Educational Standards for the Pre-School Education;
- Decree of the Ministry of Education and Science of Russia of 06.10.2009 N 373 on the Federal State Educational Standards for the Primary General Education;
- Decree of the Ministry of Education and Science of Russia of 17.12.2010 N 1897 on the Federal State Educational Standards for the Basic General Education;
- Decree of the Ministry of Education and Science of Russia of 17.05.2012 N 413 on the Federal State Educational Standards for the Secondary General Education.

The Federal State Educational Standards for the Vocational Education in the fields of mathematics and natural sciences, engineering and technical sciences, health-care and medical sciences, agriculture science, social sciences, humanitarian sciences, and art approved by the corresponding decrees of the Ministry of Education and Science have to be also amended in accordance with the most recent climate-related knowledge, which is of a special relevance for each particular field of vocational education. By doing so, not only the implementation of the corresponding article of the Federal Law on the Protection of Environment will be ensured, but also the realization of one of the adaptation measures foreseen in the National Plan of Adaptation will be ensured. After all, the standardization of the climate-related competences obtained as a result of general and vocational education is supposed to eliminate qualitative differences among such environmental competences generally and environmental legal knowledge particularly.

VII. Conclusion

Russia is an important actor in the international climate governance whose role varied from a decisive for some milestones in the international climate law, e.g. the signature and subsequent entry in force of the Kyoto Protocol, to passive and neutral in other international climate negotiations taking place after the signature of the PA, for instance. Despite actively or passively taking part in the international climate debates, at the domestic level, the Russian public authorities are unwilling to undertake meaningful actions to contribute to achieving the global climate targets set out in the PA. The lack of political will creates, maintains, and deepens the barriers found in policy, law, society for the effective PA implementation in general and GHG emission reduction for preventing 1.5°C or 2°C temperature increase above pre-industrial levels in particular.

As for political barriers, the Russian authorities still do not prioritize the fight against climate change topic among its national political interests. Doubting an anthropogenic role in causing climate change and proclaiming itself as a frontrunner in reducing GHG emissions, Russia sets unambitious climate goals corresponding to the business-as-usual scenarios and failing to facilitate the achievement of the PA temperature targets. The climate-related policies, i.e. energy efficiency and RE fields, also often do not receive enough political attention and resources, especially when not aligned with the policy courses important for the authorities. As a result, the targets within this policies are not achieved and their great potential for substantially reducing Russia's GHG emissions is not realized. On the top of that, RSPP, a powerful business lobby group consisting of, *inter alia*, oil, gas, and coal companies, influences decision- and law-making blocking stringent and costly measures supposedly imposed on their industries. These circumstances hinder Russia's effective implementation of the PA and contribution to the global climate challenge from the political point of view.

Nevertheless, it is necessary to stress the tendencies witnessed in the Russian political circles that show a growing concern about anthropogenic climate change. Certain federal ministries and officials have been repeatedly urging the decision-makers to undertake serious actions against climate change, however, so far, they have been unable to push ambitious climate proposals through the resistance of the vested interests. Another pattern observed nowadays is an involvement of the big state-controlled and private business stakeholders, e.g. RusNano, Renova, in developing the RE field. Having advantages in state tenders within a RE support mechanism and directing their investments into this field, such actors are thought to argue against proposals that may halt the RE sector development in Russia. Their influence in promoting RES measures at the decision-makers' level is yet to be seen.

Next, the legal barriers hindering an effective PA implementation are embodied in the insufficient legislation on the climate protection and GHG emission reduction and in the complex and dysfunctional legislation on energy efficiency and

RE. Currently, climate protection and GHG emission reduction are addressed by numerous “soft” law instruments; the first to be adopted Federal Law on the State Regulation of GHG Emission Reduction and Absorption does not enshrine stringent obligations for the main GHG emitters except for a periodical GHG emission reporting, either. Such a soft approach provides the state and fossil fuel companies with room for maneuver while formally complying with the international obligations and seemingly corresponding to the international climate agenda which is also proven by the form of joining the PA - acceptance. The present climate and GHG reduction regulation is not legally interrelated and does not encompass any national market mechanisms or fiscal instruments to regulate GHG emissions. As for the energy efficiency and RE legislations, which are also not correlated with the climate targets, they are often too complex and simultaneously lack specificity creating obstacles for the regional implementation. A lasting delay in the adoption of a new legislation in all above-mentioned fields as an typical feature of the Russian environmental law-making is not in line with the preventive approach necessary to tackle climate change. Finally, the current state of the legislations on the climate protection, GHG reduction, energy efficiency and RE does not respond to the urgency of the actions required from states for preventing and mitigating global climate change.

Nonetheless, there are certain legal preconditions favoring the PA implementation in Russia. First, the BAT regulation, introduced in Russia before the PA signature, is mostly aimed at enhancing the resource and energy efficiency and, as a side effect, reduces GHG emissions. Since some Kyoto GHGs are categorized as air pollutants, the reduction of which is also addressed by the BAT regulation, these particular GHGs are currently covered by environmental legislation. Second, a gradual development of the RE legislation both at federal and regional level is seen as a positive tendency for supporting RES and promoting small-scale RES development. The embodiments of such are the introduction of the microgeneration legislation at the federal level and the implementation of the federal legal acts and specifications of the RE support scheme at the regional level. Lastly, the example of the regional low-carbon pilot project in the Sakhalin Oblast as part of implementing the PA may nudge the other federal subjects to adopt legal acts on their climate-neutral development. Despite these legal preconditions and opportunities do take place, there is little federal support of the climate-related fields and RE in particular which limits the effect of these opportunities.

The final barrier studied within this research project is a sociocultural aspect. The population in Russia has a low level of “environmental culture” and, hence, little concern of and knowledge about climate change. Due to the wide-spread perception of climate change as resulted from natural causes, the population does not believe in the effectiveness and necessity of personal behavioral change for climate change mitigation. The minority taking part in climate activism or stepping up against the climate inactivity of the government is often criminally or administratively prosecuted. While suppressing climate initiatives, that seemingly

threaten its authority, the state uses the lack of general public alertness of climate change issues so as not to undertake serious steps towards combatting this global challenge.

However, the positive societal processes are also present in Russia and are mostly led by the younger generation. The youth stands out due to its increased awareness of and concern about the climate-related issues and readiness to take personal measures. Even though the youth climate initiatives are not so wide-spread in Russia compared to the Western states, exactly the younger generation is expected to behave in a climate pro-active way to contribute to climate change mitigation. In addition, minding the lack of state measures to increase the level of “environmental culture” and public understanding of climate-related topics, Russian bottom-up organizations tend to step up to address this awareness problem. They often distribute programs for the youth and general population delivering them comprehensive environmental knowledge or more specific information on climate change, energy efficiency and RE. Still, the state involvement is essential to spread the awareness across the whole population since the reach of such bottom-up initiatives is limited.

In the end, without a strong political willingness to support climate-related decisions, such are most likely to continue being watered down or rejected as a whole. While the inner, including bottom-up demand for climate-friendly decisions is necessary, it should be accompanied by the external, i.e. international demand. Here, strict climate-related requirements imposed by the other states on their trade partners and on Russia in particular are meant since the Russian economy depends on trade with them to a large extent. At the same time, the cooperation between Russia and its foreign partners in the climate-related field has already proven to be productive for improving Russian legislation and facilitating a decarbonization of the economy. So, putting aside conspiracy theories and hesitation, it is of urgent need for Russia to strengthen the cooperation with its foreign partners since when it comes to combatting global climate change, time is the main and common opponent.

Limitations

There are a number of constraints that influenced and shaped the present research project. Firstly and most importantly, this research project was conducted within a three-month timeframe which affected the research scope. While comprehensively discussing the topic within the chosen frames, the author did not address such aspects as economic barriers and opportunities; the realization of the PA provisions, other than emission reduction target; or the sink capacity of forests and other ecosystems for achieving the PA temperature goals. However, this does not belittle the importance of the above mentioned factors and provisions. Secondly, particular limitations were connected with the absence of necessary legal instruments on the Internet, in particular the latest version of the Draft Federal Law on the State Regulation of the GHG Emission and Absorption. The latest edition of the Draft in question, that was investigated for the purposes of this research project, was published in March 2019, however, this Draft has been significantly modified since then. Unfortunately, no later editions of this Draft have been published by November 2020, and any decisions regarding content changes had to be tracked down only in the reliable news sources.

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Annex I

The results of the tenders of the state support for RES projects, in particular wind, solar, and small hydropower installations, in Russia from 2016 to 2019. Companies highlighted in bold are not connected with the Russian business stakeholders discussed in this research project.

Table 2. The results of the 2016-2019 RE tenders (Trading Administrator, 2016-2019).

	2016	2017	2018	2019
Wind	VetroOGK (Rosatom) – 100%.	1. Fortum (RusNano) – 60.4%; 2. VetroOGK (Rosatom) – 35%; 3. Enel Russia - 4.6% (2).	1. WindParks FRV (Fortum & RusNano) – 92.5%; 2. VetroOGK (Rosatom) – 7.5%.	1.Enel Russia - 100% (1).
Solar	-	1. Green Energy Rus (Renova Group) – 65.4% ; 2. T Plus (Renova Group) – 11.5%; 3. Avelar Solar Technology (Hevel: RusNano & Renova Group) – 7.7%; 4. Silicon Technologies – 15.4% (4).	1. Fortum (RusNano) - 70%; 2. Avelar Solar Technology (Hevel: RusNano & Renova Group) - 30%.	1.Fortum (RusNano) – 100%.
Hydro	-	1. RusHydro – 100% (2).	1. LLC EnergoMIN 66.6% (2); 2. LLC Yuzhenergostroi 33.3% (1).	1.LLC EuroSibEnergyHydroGeneration – 100% (1).