The Green Menace : Unraveling Russia's elite discourse on enabling and constraining factors of renewable energy policies

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Working Paper prepared for the first Ghent Russia colloquium "EU-Russia Relations: How to get out of the 'midlife' crisis?", 22 September 2017

> "*Frankly speaking, in the field of innovative renewable energy technologies, we are lagging behind states that have an education level far below ours. Far below ours !*"
>
> (Medvedev, 2014)

Abstract

On the background of a global energy revolution, resource-rich Russia embarked on renewable energy policies (REPs). Having set a renewable goal of 4.5% in the electricity mix (2009), Russia's elite introduced support schemes on the wholesale (2013) and retail (2015) electricity markets. The question arises how Russia's elite explain this rollout of REPs as renewables may threaten fuel exports and common drivers, security of supply and ecological considerations, seem to be less convincing given Russia's substantial fossil fuel reserves and rather pragmatic participation in international climate change negotiations.

Building on a self-compiled database of 396 Russian texts dealing with renewable energy, this article maps Russia's elite discourse through argument comparison between actors, audiences and over time. By doing so it critically assesses resource-geographic, financial, institutional and ecological enabling and constraining factors.

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The article concludes that the elite's main enabling factors of REPs attempt to avert the green menace through establishing a Russia-based RE industry. This would ensure the country to catch up with global technological development and enables Russia to remain an important energy power through diversification towards RE exports. Climate change argumentations are mainly used abroad in order to demonstrate Russia's efforts in meeting international obligations.

1. Introduction[2]

Many energy dependent countries, among which EU member states and China developed renewable energy support schemes during the last two decades (IEA, 2016-404). Politicians of these countries often argue in favour of renewable energy policies (REPs) on the basis of security of supply and ecological considerations (Chang and Bruyninckx, 2011; EU, 2009). Expanding indigenous renewable energy sources may not only reduce import dependence (Valdés Lucas et al., 2016), but also greenhouse gas (GHG) emissions (Capros et al., 2011).

In 2009, Russia (finally) joined this global shift towards renewable energy sources (RES) by setting a quantitative 4.5% share of electricity production and consumption originating from RES by 2020 (Russian Government, 2009a). In 2013, the Government launched a capacity-based support scheme (CRESS) with regard to solar, wind and small hydro power plants in order to achieve this quantitative goal (Boute, 2013b). In 2015, an additional support scheme at the retail electricity market has been installed (Boute, 2016). Russia's energy elite, however, have more difficulties in framing REPs in light of import dependence and ecological concerns given Russia's limited energy import dependence (Smeets, 2014b) and pragmatic position in

[2] Abbreviations used : REP : Renewable Energy Policy ; RES : Renewable Energy Sources ; UPS : United Power System ; CRESS : Capacity-based Renewable Energy Support Scheme ; GHG : greenhouse gas ; IEA : International Energy Agency ; IRENA : International Renewable Energy Agency ; MNRE : Ministry of Natural Resources and Ecology ;

international climate change negotiations (Henry and Sundstrom, 2012). This raises the question how policy makers of an energy-endowed country as Russia frame REPs.

In order to obtain an exhaustive overview of plausible enabling and constraining factors, a self-compiled database of speeches by Russia's energy elite has been systematically scrutinized on the basis of an interdisciplinary coding scheme. The social structurationist approach to energy studies (Aalto et al., 2014) offers such an interdisciplinary model by looking into resource-geographic, financial, institutional and ecological enabling and constraining factors of energy policies. A *critical* discourse analysis (Fairclough, 2006) is applied to the database in order to weigh factors by frequency of appearance and test them on consistency between actors, audiences and over time. A fifth critical control factor to probe for sincerity of a particular argument is the juxtaposition of discourse with actual policy.

This methodological innovation is complemented with theoretical and empirical contributions. Theoretically, this article connects the social structurationist approach with a critical discourse analysis of a broad range of policy actors dealing with four structural dimensions. Framing REPs within one or more of the four dimensions is one way agency is introduced in Aalto's et al. (2014: 7) interactive model. Looking deeper down the political hierarchy within the Government and ministries, the critical discourse analysis avoids the trap to overemphasize the president as a dominant actor. Depending on the policy field, other actors may be more relevant in finding policy explanations.

Empirically, this study seeks to identify enabling and constraining factors of REPs in Russia as a case of a major energy exporting country. These may differ (in importance) from consuming countries such as the limited ecological impetus to developing REPs in Saudi-Arabia (Depledge, 2008). Russia's policy makers also face serious constraining factors of REPs that energy-

dependent countries may not experience such as low import dependence, relatively inexpensive gas and nuclear energy production and a solid oil and gas lobby (Smeets, 2014a).

The remainder of the article is structured as follows. The next section delves into the literature on drivers of REPs in energy-endowed countries, while the subsequent section introduces the social structurationist model that is operationalized into a coding scheme. Section 4 further elaborates on the methodology of the critical discourse analysis. Section 5 maps Russia's elite discourse along the four structural dimensions, actors involved and audiences addressed which is followed by a dimension-wise discussion of particular enabling and constraining factors as expressed by Russia's energy elite. The final section draws conclusions on the weighted enabling and constraining factors as proclaimed by Russia's energy elite and their policy implications.

2. Literature review : enabling and constraining factors of REPs in energy-endowed countries

A lot of obscurity remains on the enabling and constraining factors of Russia's REPs as a case of an energy-endowed country. Some authors assume that the same factors driving REPs, climate change and security of supply, apply to Russia (Kozlova and Collan, 2016; Lombardi, 2016). However, energy-endowed countries such as Russia may have different drivers and barriers of REPs.

Why would an energy-endowed country want to develop relatively[3] more expensive renewable energy sources (Wittmann, 2013) that globally may threaten its own oil and gas exports ? Moreover, different than countries relying on energy imports, they have less incentives to develop indigenous renewable energy resources in order to decrease import dependence (Chang and Bruyninckx, 2011; EU, 2009). Environmental drivers may also be less

[3] Relative to domestic substitution goods : gas and nuclear electricity generation.

straightforward in oil-rich countries with vested business interests (Atalay et al., 2016; Tynkkynen, 2014) and the rather pragmatic approach of Russia within international climate change negotiations (Henry and Sundstrom, 2012). This raises the question what factors enable and constrain Russia's REPs.

Various studies focus on Russia's legal breakdown of concrete REPs (Boute, 2011, 2013b, 2016), the degree of implementation (Smeets, 2017), their risk reduction effect on investments (Kozlova and Collan, 2016) and their limited impact on electricity prices (Vasileva et al., 2015). Several resource-geographic and financial arguments in favour of REPs have been suggested (Belyi and Overland, 2010; Willems, 2014), however, the question remains how Russia's energy elite themselves explain why they would want to develop REPs in the first place. To fill up this gap, the article extensively scrutinizes Russia's energy elite discourse as to identify proclaimed resource-geographic, financial, institutional and ecological enabling and constraining factors and their relative weight.

3. Framing factors within four energy policy dimensions

In order to meaningfully map elitist discourse in terms of a wide range of factors enabling and constraining REPs, the social structurationist approach is most appropriate. The manner in which policy actors engage with structural dimensions takes place through cognitive framing. As Aalto (2012: 15) puts it "*The model is built around the idea that energy policy actors (…) need to make sense of their policy environment in order to create viable policies. To do so they adopt different cognitive frames guiding their policy choices. With the help of these frames they assess the various dimensions of their policy environment: resource geographic, financial, institutional and ecological.*" This social structurationist model bridges the structure-agency debate by allowing actors to possess agency, while at the same time being limited by structural

dimensions. This bounded agency concept is translated into the actor's freedom to frame enabling and constraining factors within one of the four dimensions.

The resource-geographic dimension deals with the material characteristics, as well as the means of production and technology used to extract, develop and transport them within a particular geographical environment (Aalto et al., 2014: 8); the financial dimension comprises "*all financial transactions, incentives and constraints pertaining to energy*" (Aalto et al., 2014: 9); the institutional dimension ranges from informal norms and 'rules of the game' to formal sectoral interests and decision-making capacity (Aalto et al., 2014: 9); and the ecological dimension deals with the environmental externalities of energy production, transport and use (Aalto et al., 2014: 10).

This model selection as a basis for analyzing actor's arguments of REPs is underpinned by theoretical, empirical and methodological considerations. Theoretically, Aalto's model allows for looking beyond the state as a unitary actor and attributes agency to these actors' engagement with four structural dimensions. An operationalization of the theoretical question of frame selection (Kotzian, 2007) is to identify the conditions (actor, audience, time) under which Russia's elite select a resource-geographic, financial, institutional or environmental frame. Empirically, Aalto's social structurationist approach has been developed to explain Russia's energy policies as a major energy exporter, whereas competing analytical operationalizations such as energy security find their origin in energy importing states.

An additional strength of the model concerns methodology. The energy literature is fragmented along disciplinary lines. Although this specialization has its merits, interdependent relations among disciplines might perish. Aalto's model suggests an interdisciplinary approach, integrating material and ideational aspects, between energy engineering (resource-geopgraphic), economics (financial), politics (institutional) and environmental studies

(ecological). Especially in the case of political discourse that draws upon data from different scientific fields, this social structurationist approach better reflects the multifaceted nature of energy policy. Through the application of this interdisciplinary model, each statement on energy politics may be coded along one of the four dimensions, thereby minimizing selection bias. A disadvantage might be that these broad categories reduce detailed information on how Russia's elite formulate statements. To avoid such information loss, each statement has been coded inductively in *Nvivo® (QSR, 2016),* whereupon they have been aggregated underneath the four structural dimensions. This allows for a detailed qualitative assessment of specific enabling and constraining factor argumentations.

4. Data selection, description and analysis

In Russia, energy policy makers mainly consist of executive power officials and major energy business actors (Romanova, 2014). In order to gather a wide range of speeches on REP from these influential policy actors, the search engines of the presidential (kremlin.ru) and governmental (gov.ru) websites, as well as the two most relevant profile ministries, the Ministry of Energy (minenergo.gov.ru) and the Ministry of Natural Resources and Ecology (mnr.gov.ru), have been used. The result is an exhaustive database of Russian language texts that deal with REPs during the period 2009-2016.[4]

This data selection seems to overlook the importance of business actors and international institutions, yet these documents often include dialogues with representatives of Russia's main energy companies and international institutions as IRENA and IEA.[5] Importantly, energy policy

[4] Keywords (stems) used within the search engines: 'vozobnovlayem*'['renewables']; 'gidro*' [hydro], 'soln*'[solar], 'vetr*' [wind]. Other relevant ministries such as the Ministry of Finance and the Ministry of Industry and Trade have been considered, however too little statements have been found that deal with renewable energy within the time frame. Moreover, rather than exhaustive stenographic reports, they publish narrative press releases with selective quotes or the search results are limited to legal texts.

[5] The selection of texts from these institutions of executive power does cover a far wider range of actors, including international organizations and business actors, as the president and ministers often meet with

documents and laws have not been included to distinguish between framing of policy choices and actual policy. Thus, the database mainly consists of speeches, press-conferences, interviews and stenographic reports of domestic and international meetings.

This data gathering method resulted in 396 texts between 2009-2016,[6] of which 104 presidential, 132 governmental documents, 119 texts originate from the Ministry of Energy and the Ministry of Natural Resources and Ecology produced 41 documents related to renewable energy resources.[7]

As concerns the coding procedure, in a first stage every statement that relates to REPs has been coded inductively during a text-by-text reading. In a second stage, these statements have been grouped under argumentations why Russia should (not) develop REPs. Finally, these grouped arguments have been categorized underneath one of the four structural dimensions (resource-geographic, financial, institutional and ecological) during a third stage.

Additionally, each statement has been coded on the actor (president, minister, energy company,…) and every text makes reference to the exact point in time[8] along the 2009-2016 continuum. To account for the reach of an argument, each document has been coded as mainly addressing a domestic or a foreign audience.[9] This allows us to discriminate between

major energy companies and other stakeholders. It are exactly these business actors with access to the executive that have the most influence on policy making. The textbook example is Igor Sechin, CEO of Rosneft who also fulfills the function of secretary of Russia's main energy policy making institution, the Presidential Commission on Strategic Development of the Fuel and Energy Sector and Ecological Safety.

[6] Texts have been collected from the websites of the Kremlin, Government, Ministry of Energy and Ministry of Natural Resources and Ecology. The latter two ministries do not always publish the exact stenographic report and in some cases remain limited to quotes and secondary texts. Therefore, wherever possible, the primary source has been identified and used in the discourse analysis. The author transcribed radio and television interviews to texts whenever the source was exclusively available in audio or video format.

[7] The Nvivo® database which offers a link to each and every coded statement under these nodes is available upon request.

[8] The day during which the speech has been delivered, coded as dd.mm.yyyy.

[9] The following decision tree has been applied consistently to discriminate between internationally and domestically oriented texts: if a text has been generated abroad, it has been categorized as 'internationally oriented', if a text has been produced within Russia, then a text has been coded as 'internationally oriented' in

statements made by different actors and oriented towards diverse audiences to check for quantitative and qualitative discrepancies, as well as trace evolutions over time.

This critical discourse analysis consists of three steps. First, a quantitative exploration of all relevant statements by dimension, actor, audience and time has been executed on the basis of Nvivo®'s matrix coding query. After this quantitative mapping, a second step of qualitative deepening followed to unveil the actual arguments behind the counts and percentages. In some cases a third step, in the form of an additional quantitative analysis has been performed in an attempt to generalize qualitative findings to the population of texts on renewable energy by Russia's energy elite.

The weights to each explanation are based on the frequency of appearance of a particular explanation and the place the actor takes in Russia's political hierarchy, ranging from the president, over the prime minister, vice-prime minister, ministers and vice-ministers. In addition, consistency over time may further strengthen a factor and the audience addressed gauges the reach of an argument. In particular, it may check whether an argument was mainly with a domestic purpose, or limited to a foreign audience.

5. Mapping renewable energy policy factors along the four structural dimensions

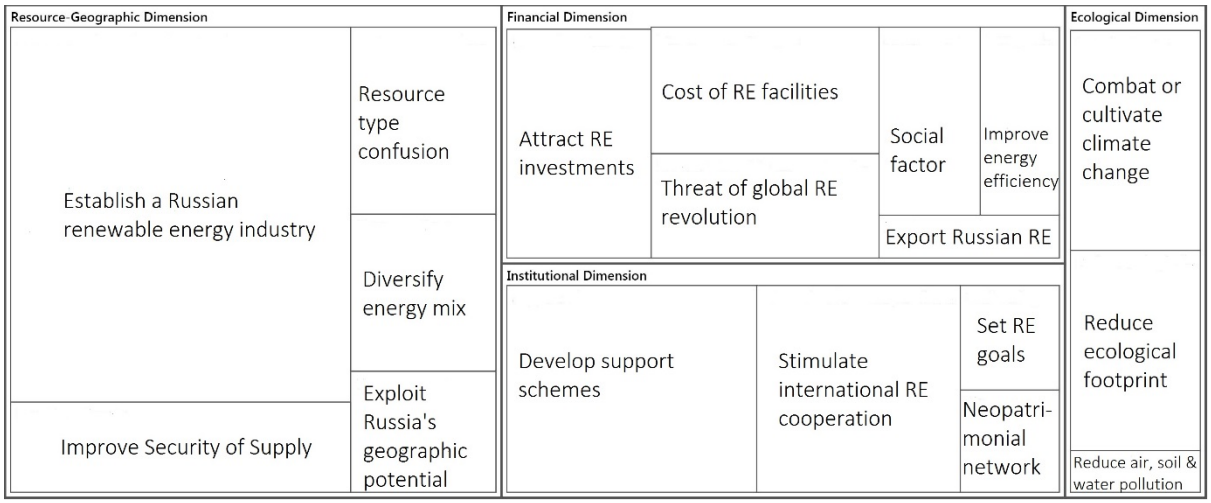
The methodology as described in the previous section results in a mapping[10] of enabling and constraining factors of REPs by dimension as framed by Russia's energy elite during 2009-2016

case the partner is a foreign country or company, or when the audience consists of international actors. In all other cases, a text is coded as 'domestically oriented'. Therefore, the Saint-Petersburg International Economic Forum is coded as internationally oriented, although participants convene within Russia's borders. A discussion between the president and Gazprom, or an interview of the minister of energy to the Russian newspaper Kommersant' are coded as mainly 'domestically oriented'. The international dimension has been subcoded to represent the following regions: Europe, USA, Middle East, CIS, Africa to allow for further refinement in discriminating between Western and non-Western audiences. In Nvivo®, the matrix coding query has been applied to generate the cross-tables between cases (audience type, actor) and nodes (four dimensions).

[10] By means of a hierarchy chart in Nvivo®

(Figure 1.). Figure 1. provides information on the relative attention to each dimension, as well as the concrete enabling and constraining factors[11] within each dimension.[12] Thus, most discursive attention has been attributed to the resource-geographic dimension, followed by financial factors, institutional settings and the least attention was paid to ecological aspects of renewable energy.

Figure 1. Hierarchy chart of Russia's elite discourse on enabling and constraining factors of renewable energy policies (Absolute number of coding references)



Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®'s hierarchy chart, sized by the absolute count of coding references).

The latter finding seems not only to differ from the attached importance to environmental factors by energy-dependent countries but also from Russia's signature underneath the Paris agreement (UN, 2015). Likewise, Russian representatives explicitly engaged themselves in Copenhagen (Trutnev, 2009) and Paris (Bedritsky, 2015) to reduce emissions through raising the share of RES. However, past research demonstrated that Russia has a rather pragmatic

[11] As stated within the methodology section, inductively coded statements have been aggregated under these subcategories which have been labeled by the researcher as depicted in Figure 1.
[12] The more a statement has been coded under a dimension/factor, the larger the size of the rectangle. On the basis of absolute counts, the frequency distribution is as follows : Resource-geographic dimension : 41.2% ; Financial dimension : 24.7% ; Institutional dimension : 22.2% ; Ecological dimension : 11.9%

interest in climate change (Henry and Sundstrom, 2012) and faces significant constraining factors that impede ecological modernization (Tynkkynen, 2014). Indeed, ecology merely represents 0.7% of Russia's state budget expenditures (MNRE, 2015: 5), the Ministry for Natural Resources is also responsible for ecology,[13] environmental NGOs have been increasingly impeded by law (Putin, 2012a),[14] recognize their limited influence on policy making (Chuprov, 2014) and the oil and gas lobby is closely linked to Russia's policy makers (Smeets, 2014a).

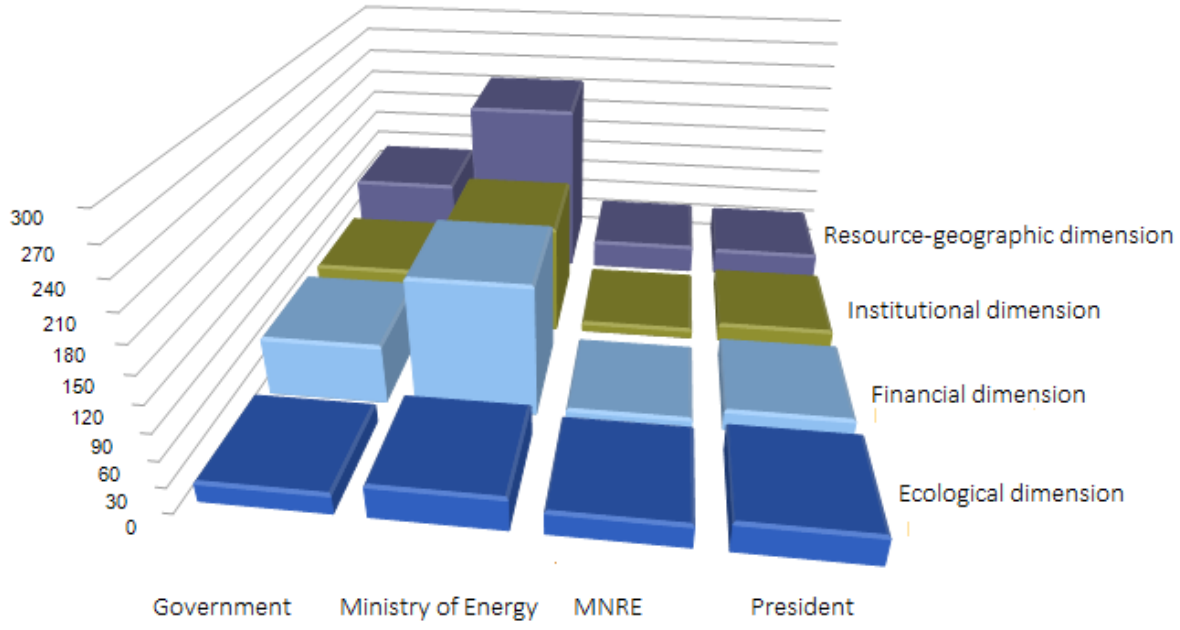
In order to gain a better understanding of the distribution over policy makers, Figure 2. breaks down the dimensions by main institutional actors.[15] This actor distribution first and foremost provides insight in the importance of REP as a policy field. Within the research time frame 2009-2016, the Ministry of Energy, followed by the Government most often make reference to REP, while the frequencies of the president and the MNRE fall behind. It supports the argument that depending on policy area, other actors than the president may be more relevant for study. Looking beyond the presidential discourse may be appropriate in less politicized fields as renewable energy.

[13] Hence the name "Ministry of Natural Resources and Ecology"

[14] In casu NGO 'Eko Defense', which supported the rollout of RES, had to close down its activities because it has been registered as a foreign agent.

[15] Institutional actors cover the following actors (Time frame of documents covered between brackets) : President : D. A. Medvedev (2009-2012), V.V. Putin (2012-2016), A.I. Bedritsky (2010-2016); Government : V.V. Putin (2009-2012), D.A. Medvedev (2012-2016), deputy prime ministers V.A. Zubkov (2009-2012), A.V. Dvorkovich (2012-2016); Ministry of Energy : S.I. Shmatko (2009-2012), A.V. Novak (2012-2016), (first) deputy ministers of energy A.Y. Inyutsyn (2012-2016), A.L. Teksler (2013-2016) ; MNRE : Y.P. Trutnev (2009-2012), S.Y. Donskoy (2012-2016).

Figure 2. Distribution of structural dimensions by main institutional policy actors (Absolute number of coding references)



Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®'s Matrix Coding Query : Node dimensions by institutional actor Case.

Secondly, Table 1. provides insight in the relative discursive attention each actor pays to the four structural dimensions. Resource-geographic explanations dominate in speeches of almost every actor, while ecological drivers find far less resonance at the governmental level and the Ministry of Energy. Surprisingly, the president proportionally pays most attention to ecological factors (31.25%). This may interact with the internationally-oriented position, whereas domestically oriented implementation bodies such as the Ministry of Energy focus on resource-geographic and financial factors.

Table 1. Distribution of structural dimensions by main institutional policy actors (Absolute number of coding references and column percentages)

	GOVERNMENT	MINISTRY OF ENERGY	MNRE	PRESIDENT
RESOURCE-GEOGRAPHIC	106 (40.8%)	212 (39.9%)	35 (41.6%)	33 (29.5%)
FINANCIAL	70 (26.9%)	152 (28.6%)	10 (11.9%)	25 (22.3%)
INSTITUTIONAL	60 (23.1%)	129 (24.3%)	12 (14.3%)	19 (17%)
ECOLOGICAL	24 (9%)	38 (7,1%)	27 (32.1%)	35 (31.25%)
TOTAL	260	531	84	112

Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®'s Matrix Coding Query : Node dimensions by institutional actor Case.

To critically assess the mentioned enabling and constraining factors, Table 2. displays an overview of factors by audience addressed. At the level of dimensions, it is clear that the majority of statements is made in front of domestic audiences, with the exception of the ecological dimension. At the level of the factors, climate change and international cooperation initiatives are the only factors that are dominantly discussed in front of foreign audiences. On the basis of this quantitative data, we may preliminary conclude that the highlighted factors are mainly oriented at convincing a domestic audience why Russia should develop REPs.

Table 2. Enabling and constraining factors by audience (Absolute number of coding references)

Dimension	Enabling and constraining factors	Number of references	Domestic audience	Foreign audience
Resource-geographic dimension	Establishment of national RE sector	278	208	70
	Improve security of supply	72	60	12
	Resource types other than RES	65	56	9
	Diversification of energy mix	56	39	17
	Geographic potential	44	29	15
	Dimension Total	**515**	**392**	**123**
Financial dimension	Attract RE investments	85	46	39
	Cost of RE technologies	72	67	5

	Threat of global RE development	64	44	20
	Socio-economic implications of REP	50	46	4
	Energy Efficiency	40	30	10
	RE exports	21	11	10
	Dimension Total	**332**	**244**	**88**
Institutional dimension	Support Schemes	123	106	17
	International RES cooperation	108	18	90
	Goal Setting	28	21	7
	Neopatrimonial networks	25	22	3
	Dimension Total	**284**	**167**	**117**
Ecological dimension	Climate Change	77	25	52
	Reduce ecological footprint	67	44	23
	Reduce air, soil, water pollution	15	8	7
	Dimension Total	**159**	**77**	**82**

Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®'s Matrix Coding Query : Node factors by audience addressed Case.

In what follows, the most often mentioned enabling and constraining factors will be qualitatively analyzed in order of overall dimensional attention (Figure 1.).

5.1 Resource-geographic factors

Out of the four dimensions, resource-geographic factors receive most attention (Figure 1.) and are widely shared among the most important policy actors (Table 1.). Moreover, these arguments are mainly used to convince a critical domestic audience why Russia seeks to invest in renewable energy development (Table 2.).

Within the resource-geographic dimension, most attention is paid to establishing a Russian renewable energy industry.[16] This enabling factor of REP may be broken down into four subnodes : construction of renewable power plants ; localization of manufacturing facilities of

[16] 'Renewable energy industry' in the article refers to the entire production chain, consisting of the manufacturing of turbine components and solar panels, as well as developers of solar, wind and hydro power plants and Russian renewable R&D companies.

RE components (solar panels, wind turbines, hydroelectric turbines); development of R&D institutes ; and modernization of transmission grid infrastructure.[17]

Russia's policy makers agree that Russia lags behind in terms of renewable technology development, even when compared to their BRICS partners (Medvedev, 2014). In order to reduce dependence on foreign technologies, REPs should stimulate R&D on Russian soil. These hi-tech innovations have to be commercialized to Russian renewable component factories.[18] As energy minister Novak argued, "*Our main task [in the field of RES] is to localize the industry in Russia for the production of solar, wind and small hydro equipment (Novak, 2017)*." In order to offer stable demand for RE components, the Capacity-based Renewable Energy Support Scheme (CRESS) at Russia's wholesale market guarantees a 15% return on investment for the (timely) commissioning of solar, wind and small hydro power plants that are at least partially manufactured in Russia (Russian Government, 2013a).

Such renewable energy plants are also seen as a means to improve security of supply and diversify the electricity mix. These seemingly recognizable enabling factors of consuming countries, however, must be contextualized. In Russia, security of supply is not so much related to international import dependence than it is interregional (Boute, 2013a). The statements frame local renewable energy development as a means to reduce interregional electricity and fuel transport towards energy deficit subjects of the Russian Federation, rather than investing in (the maintenance of) long distance high-voltage powerlines that are sensitive to transmission losses and disruptions. Moreover, renewable energy generation should be preferably developed first in Russia's isolated regions as a solution to expensive and polluting

[17] As to facilitate the integration of intermittent renewable energy plants

[18] The modernization of Hevel's solar panel manufacturing plant in Novocheboksarsk is the textbook example for this translation of Russian R&D to manufacturing. The solar panel facility uses thin-film technology developed within the Physical Technical Institute, Saint-Petersburg, to upgrade its production process.

local diesel generation and recurrent blackouts (Medvedev, 2016; Teksler, 2016). Energy minister Novak (2016c) mentioned the case of Crimea's electricity deficit after the peninsula had been cut off from the Ukrainian power grid as an example of how locally available solar and wind capacity could help meet electricity demand at so called 'energy islands'.

The diversification strategy on the other hand does not so much apply to reducing import dependence from fossil fuels, but rather enables the reduction of the dominant role of natural gas in Russia's electricity mix (Ministry of Energy, 2017).[19] In particular, the goal is to increase non-fuel energy sources, amongst which RES, to trim down dependence on finite fuels. However, the Energy Strategy until 2030 also foresees in increasing coal generation (Russian Government, 2009a).

The main resource-geographic constraining factors remain the confusing framings of renewable energy sources and questioning Russia's geographic potential. Some actors continue to refer to large hydro power and hydrogen[20] as renewable resources although the former technology has substantial environmental impacts (Wang, 2013) and the latter technology may also be produced from fossil fuel resources (Singh et al., 2015: 625). Dmitry Medvedev considers nuclear energy as a renewable resource, although uranium ore is a finite energy resource : "*the use of peaceful nuclear energy has opened up new possibilities for the development of renewable energy (Medvedev, 2010).*" Putin highlighted hydrogen as the priority renewable energy resource, since solar would not be effective in a "northern country" (Putin, 2006). This not only shows the limited understanding of what renewable resources are, but also emphasizes the common believe that Russia would have limited technical solar power

[19] According to the Ministry of Energy, in 2016, 58.6 % of electricity has been generated by thermal power plants, mainly using natural gas as a resource.

[20] Hydrogen is not a renewable energy resource *an sich*, yet a potential carrier, a renewable fuel, on the condition that the electricity used to produce hydrogen originates from renewable sources such as wind or solar power plants. Personal communication with Dr. Jan Rongé, PEC cell research, KU Leuven, 30.03.2017.

potential (Putin, 2013), thereby overlooking Russia's solar-rich southern regions (Khafizov, 2016).

5.2 Financial factors

Second to resource-economic factors, financial factors receive most attention, mainly from the Ministry of Energy and governmental actors (Table 1.). Except for the internationally oriented goal to export renewable technologies and attract FDI into the renewable energy sector, financial factors are principally discussed in a domestic context (Table 2.).

Whereas traditional financial drivers such as potential energy efficiency gains, RE exports and attraction of new investments have been univocally identified as enabling factors of REP, a lot of debate exists around the costs, their socio-economic impact and the threat of global renewable energy development vis-à-vis Russia's traditional energy exports.

The cost of renewable energy sources as a driver or a hurdle has been subject to fierce debate. 23 references[21] claim that renewable energy technologies are too expensive given Russia's relatively inexpensive gas and nuclear electricity generation. Energy minister Novak even asserts that renewables cannot survive without state subsidies in any country as these technologies are more expensive than their fossil fuel counterparts (Novak, 2016b).[22] Another group of 49 statements make reference to steeply declining costs of green technologies, yet they identify conditions under which renewables could be developed in Russia. 25 out of these 49 statements underline that renewables may reduce transmission and fuel costs thanks to local availability, minimization of transmission losses and low operating costs. In Russia,

[21] Out of the total 72 statements that deal with RE costs as a factor of REP. See Table 2.
[22] This statement ignores the substantial state subsidies to the fossil fuel sector that by far surpasses renewable energy subsidies.

however, this would only be economically viable in isolated areas[23] with long and expensive transportation routes and costly diesel oil (Lombardi, 2016).

Related to this cost price debate are the expected socio-economic implications of REP. As Novak warned, "*According to the current system of tariff formation, additional subsidies for the development of renewable energy sources lead to an increase in prices for end users, requiring a delicate approach in setting the volume and growth rate of renewable energy sources (Novak, 2013).*" Dvorkovich strengthens this discourse by associating Germany's leading European renewable energy position with the support of 25 billion euro of subsidies that increased electricity prices to the highest in Europe.

This scarecrow framing is used to explain to a domestic audience why Russia should not go too fast in developing renewables : "*Russia in this sense has taken a different path [in comparison with Germany], as a hydrocarbon producer (...) we are advancing very gradually, we do not want consumers to pay a very high price for renewable sources (Dvorkovich, 2016).*" Russia's CRESS in contrast keeps price increases within bounds by setting annual capacity limits (MW) that may receive preferential investment guarantees. Such absolute boundaries cap consumer contributions and raises their predictability (Smeets, 2017).[24] This difference between energy consuming and producing countries positively frames a constraining factor on REP : Russia is able to gradually switch to renewable energy thanks to its enormous gas reserves that may be provided at low cost to its population.

[23] Within remote regions, renewable energy solutions are cost effective, as it reduces operational costs of diesel installations, whereas in Russia's centralized electricity market, less expensive gas and nuclear generation outcompete renewable power plants.

[24] For instance, in 2017, a maximum of 250 MW of solar power plants may receive investment guarantees under the CRESS tender. These guarantees entail a return on investment guarantee of minimum 12% during 15 years.

Another polarized debate centers around whether or not global renewable energy development endangers Russia's fossil fuel exports and Russia's role as an energy power. On the one hand, 27 out of the 64 statements (Table 2.) suggest that renewables currently do not pose a threat given their relatively high price and the inability to provide baseload electricity due to their intermittent nature. Following this logic, they emphasize that renewables are reliant on backup power from natural gas to ensure stable electricity supplies. Gazprom's CEO Alexei Miller for instance argues that although Germany is the leading European renewable energy investor, the country is the largest importer of Russian gas that continues to raise its gas imports and supports new gas pipelines such as Nord Stream I and II. Moreover, he continues, 20% of Germany's electricity price is on account of RES subsidies (Miller, 2016). The Ministry of Energy adds that if global fossil fuel prices remain low, it will curb investments in switching to RES and sustains oil as the main transport fuel (Novak, 2016d). Although this group of statements conveys the expectation that oil and natural gas will remain the main energy sources, and demand will not decline in the coming 20 years, most do take into account that the share of renewables in the global energy mix will sharply rise. These optimistic statements conclude that Russia will be ready by 2035 to adapt to this change as outlined in Russia's Energy Strategy (Ministry of Energy, 2014) and economic forecasts (Novak, 2016d).

On the other hand, 37 statements explicitly recognize that renewables will reduce demand for Russian fossil fuels. Igor Sechin (2013), CEO of Rosneft, explained Vladimir Putin that natural gas exports to the EU have been declining, amongst others because of immoderate subsidies to renewables. Minister of Energy Novak (2014) underlines that Russia's energy exports not only face increased competition from energy efficiency measures and renewable energy investments in Europe, but also on prospective Asian markets. Russia's Energy Strategy provides for increased oil, gas and coal exports to Asia, and especially China (Russian

Government, 2009a). China's brisk development of renewable energy plants not only presents a risk to Russia's gas exports, but also its coal industry. As Deputy Minister of Energy Yanovsky (2016) remarked, "*the world's leading coal consumer, China, (…) reduced its coal imports by 31%*". Novak (2016a) notices how another BRICS partner, Brazil, reduces oil demand in the transport sector as the country expands its biofuel production. The most important risk to demand for crude oil may be the development of electric cars, however, Novak (2016b) tempers the threat by saying that electric cars only represent 1% of all cars and will rise to 8 – 10% by 2035.

Thus, although statements range from direct challenges to coal and gas exports to downplaying short term impacts, there seems to be agreement that Russia has to develop its own RE industry in the medium term. If it wishes to remain an energy power, Russia has to embrace the green menace and play along with technological development.

5.3 Institutional factors

The institutional dimension, dealing with domestic and international RE regulation, comes in third in terms of discursive attention (Figure 1.). The main actors emphasizing institutional factors are located within the Ministry of Energy and the Government (Table 1.). Except for international cooperation, institutional factors are predominantly domestically oriented (Table 2.).

Most attention within this body of statements is attributed to support schemes that attempt to raise the share of renewables in the energy mix. Apart from the premium scheme (*nadbavka*), which has never been implemented (Boute, 2012), the two key policy instruments discussed are the CRESS at Russia's wholesale market (Russian Government, 2013a) and the retail market support scheme (Russian Government, 2015b). Whereas the CRESS is limited to

installations larger than 5 MW and only applies to solar, wind and small hydro investments connected to the Unified Power System (UPS), the retail scheme also encompasses micro and small renewable installations (below 5 MW), including biomass and biogas sources, and may apply to Russia's tariff zones and isolated areas.

In terms of both planned capacity expansion (5.871 GW) and policy implementation, the CRESS is the most encompassing institutional enabling factor (Smeets, 2017). This priority of stimulating large power plants on the oversupplied wholesale market, however, seems to partially contradict the financial discourse that arguments in favour of renewable energy exploitation in isolated areas on the basis of cost avoidance.

One of the guiding principles of both support schemes is the localization requirement. This institutional rule provides that renewable energy components should be, to a certain extent (Russian Government, 2013b, 2015b),[25] produced and/or assembled within the Russian Federation if they seek to ensure a guaranteed return on investment (Russian Government, 2013a).[26] This institutional condition further reinforces the resource-geographic factor to establish a Russian RE industry. It ensures that production facilities arise within its borders, along with hi-tech jobs and demand for technologic research. As Energy Minister Novak (2015a) explains: "*It is very important that Russian technologies are used, and that the production of necessary components and equipment for the construction of solar and wind power stations is created.*"

[25] For solar energy, from 2016 onwards, 70% of the components should be produced in Russia to comply with the CRESS' local content requirement. In the case of wind, this should amount to 65% by the same year. Small hydro should only reach 45% of localization, yet starting from 2018, 65% of small hydro should also be localized.

[26] The CRESS in particular foresees in the guarantee to sell the tendered renewable capacity over the course of 15 years at preferential prices that ensure a 12%-14% return on investment. The contributions come from electricity consumers, not from the state.

In parallel to these domestic enabling regulations, the database also contains joint statements of international cooperation in the field of RE. Having set the first quantitative renewable energy target at 4.5%, Russia's energy elite started looking for expertise and foreign direct investments in order to enable Russia's RE sector. Cooperation modalities differ from bilateral contacts to multilateral settings. Within the first category of bilateral cooperation mechanisms, EU member states are overrepresented, while the most frequently mentioned Asian partner is China (Table 3.). Most bilateral agreements seek institutional cooperation to attract RE investments within the Russian Federation and to gain access to know-how in advanced renewable energy technologies of mainly EU partners as Germany, France, UK, the Netherlands, Italy and Spain.[27] In these documents, Russia's elite mainly refers to mainstream explanations of improving energy efficiency and reducing GHG emissions. In its relations with China, Russia developed a strategic cooperation on an equal footing in the field of energy, amongst others to increase investments in renewables and facilitate knowledge sharing (Putin, 2012c).

An institutionalization of bilateral relationships between Russia on the one hand, and EU member states and China on the other, is subject to a time effect. Out of 16 references to Chinese cooperation, 13 have been made after February 2014; while 11 out of the 54 references to relations with EU member states date after this critical juncture (Table 3.).

[27] This overrepresentation of large Western European partners does not seem to rest on coincidence, as these are Russia's main energy partners, and renewable energy cooperation is often mentioned as one of the domains within Russian-European energy cooperation.

Table 3. Renewable energy cooperation between Russia and its partners (Absolute number of coding references)

	Number of references to RE	Of which prior to February 2014	Of which after February 2014
EU MEMBER STATES	54	43	11
CHINA	16	3	13
JAPAN	4		
SOUTH KOREA	4		
INDIA	3		
USA	3		
SAUDI ARABIA	2		
IRENA	19		
BRICS	4		
ASEAN	4		
UN	4		
IEA	3		
APEC	2		
CIS	2		

Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®.

This seems to reflect the overall degradation of relations between the EU and Russia in the wake of the Ukraine crisis, and Russia's policy to tighten relations with China. In particular, the Roadmap for EU-Russia Energy Cooperation until 2050, which provided for the objective of '*promoting investments in clean and flexible power generation on the base of clear and stable rules*' (EU and Russia, 2013), became a dead letter after the annexation of Crimea. With China, relations expanded to the establishment of a working group on RES as part of the Russian-Chinese Intergovernmental Commission (Dvorkovich, 2014b). In its discourse with China, Russia's energy elite also mentions politically sensitive issues as Chinese interest in Crimea's renewable energy installations in the wake of the peninsula's annexation (Dvorkovich, 2014a). This politicization of renewable energy cooperation may further hamper REP development, at least with the West.

Within multilateral arrangements, the International Renewable Energy Agency (IRENA) has been mentioned most often as an enabling factor. This may not be surprising as it is one of the main international institutions in the field of RE were it not that Russia only became a member by 22 July 2015. Apart from the advantage to participate in the development of international standards, Teksler fortifies the resource-geographic factors to establish an RE sector and avoid technological backwardness:

> "For us, it is crucial to obtain the necessary data from our colleagues in modern technologies for the subsequent establishment of Russian-made equipment and components, as well as to adopt best practices of management in this area (Teksler, 2015)."

The goal setting of quantitative renewable energy targets may be considered one of the most important institutional enabling factors of increasing RE investments, yet stability of such goals is an important precondition to investor decisions (Wüstenhagen and Menichetti, 2012). A three-step discursive shift over time has been identified.

In the run-up to the Copenhagen conference, Russia for the first time decided to include a 4.5% renewable target in production and consumption of electricity generation within its energy strategy, and determined intermediate goals of 1.5% by 2010 and 2.5% by 2015 (Russian Government, 2009b).

In 2013, however, it became clear that the 2015 intermediate target of 2.5% would not have been reached, as the share of RES at that time remained below 1% of Russia's energy balance (Novak, 2013). The goal has been *de facto* reduced to 2.5% by 2020 (Russian Government, 2013c) and subsequent documents began referring to this less ambitious target (Russian Government, 2014: 16).

A second implicit shift took place by stating that 5.9 GW[28] of new renewable energy capacity represents 2.5% of installed capacity in 2020 (Novak, 2015b). *De facto*, this shift from electricity generation to installed capacity implies a reduction in the quantitative target as installed (peak) capacity of renewable energy (MWp), due to its intermittency, exceeds actual electricity generated (MWh) on the basis of these assets.[29] This is confirmed by the Ministry of Energy forecast that by 2022, a mere 0.3% of electricity generation will originate from renewables (Ministry of Energy, 2016: 73).

A third shift occurred on 28th July 2015, when the time horizon to achieve the RES target had been postponed from 2020 to 2024 for wind projects (Russian Government, 2015a). The extended time horizon for wind has direct implications for achieving the 5.871 GW goal as wind is responsible for the largest share of new planned capacity.[30] This race to the bottom may have turned the goal setting into a constraining factor, inducing investor uncertainty.

On the informal side of the institutional spectrum, Putin (2012b) and Medvedev (2011) multiple times made the argument for the state to pull out of major businesses and create a feeding ground for private companies. In particular, Dvorkovich (2013) expressed the hope that the open RE tender would instigate competition and entry of new RE companies. Although this pronounced liberalization may stimulate RE investments, *de facto*, formal and informal neopatrimonial ties (Gel'man, 2015) have been strengthened in the renewable energy business. State-owned and oligarch-led companies are the principal investors in Russia's solar (Rosnano & Renova), wind (Rosatom) and small hydro (RusHydro & NordHydro) industries (Administrator of the Trading System, 2017).

[28] This coincides with, and refers to the initial goal of the CRESS to implement 5.871GW of new solar, wind and small hydro capacity by 2020.
[29] In contrast to non-intermittent fossil fuels, by which the installed capacity approximates generation.
[30] 3.6GW of the planned 5.871GW should come from wind capacity by 2020; versus 1.52GW of solar and 0.751GW of small hydro capacity.

5.4 Ecological factors

Figure 1. demonstrated that policy actors in general pay the least attention to ecological factors as combating climate change and reducing pollution in explaining Russia's REP. Relatively, most attention comes from the president and the profile ministry for ecology (MNRE) (Table 1.). A discrepancy between audiences exists : whereas general assessments of reducing the ecological footprint through RES is mostly discussed in front of domestic audiences, REP in light of combating climate change is predominantly externally oriented (Table 2.).

At first sight, ecological factors seem to be similar to internationally accepted drivers, addressing air, soil and water pollution, climate change and other ecological considerations such as biodiversity. However, rearranging the statements towards ecological enabling and constraining factors of REP unveils a polarized discussion with regard to their ecological added value. Table 4. suggest that although most references consider RES as part of the solution to ecological problems almost a quarter of expressions explicitly questions their ecological advantages.[31] These statements range from promoting natural gas and nuclear technologies to improve environmental threats to outright criticism of renewables as environment-friendly resources.

Table 4. Ecological characteristics of renewables as enabling or constraining REP (Absolute number of coding references and column percentages)

ECOLOGICAL DIMENSION	SOURCES	CODING REFERENCES	PERCENTAGE OF REFERENCES
ENABLING FACTOR	102	118	76.6%
CONSTRAINING FACTOR	29	36	23.4%

Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®'s Matrix Coding Query : Nodes of dummy variable consisting of enabling and constraining arguments within the ecological dimension by ecological Dimension.

[31] These expressions are only the tip of the iceberg, as the database only deals with texts that explicitly refer to renewable energy. One might expect that critical assessments of RES are much more widespread when taking into account texts exclusively dealing with nuclear energy, natural gas, oil, and coal resources.

Apart from the absolute counts, the authority of the actor may also influence the weight a statement receives (Henry and Sundstrom, 2007: 52). To better incorporate the political clout of an actor, the enabling and constraining assessments within the ecological dimension have been plotted by policy actor (Table 5.). The three hierarchal levels are clearly reflected in the overall difference score. The deeper down the executive's hierarchy, the less often ecological factors are framed as constraining REP, with the Ministry of Energy being the least negative. Putin expressed more than double the negative assessments than Medvedev. For instance, Putin (2010) openly criticized the ecological characteristics of wind energy since windmills kill millions of birds every year and that "*Vibration there is such that worms come out of the ground, not to mention moles. This is a real environmental problem.*" Because of this finding that more important politicians voice critical assessments, we must be careful in interpreting the quantitative result that positive assessments outrank the negative ones.

Table 5. Assessments of ecological characteristics of renewable energy by actor (Absolute number of coding references)

	CONSTRAINING FACTORS	ENABLING FACTORS	DIFFERENCE SCORE (E-C)
PUTIN	15	10	-5
MEDVEDEV	7	15	+8
NOVAK & SHMATKO & TEKSLER (MINENERGY)	7	19	+12
DONSKOY & TRUTNEV (MNRE)	4	12	+8

Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®'s Matrix Coding Query : Nodes of dummy variable consisting of enabling and constraining arguments within the ecological dimension by actor Case.

In order to critically assess the credibility of ecological factors in driving REP, these statements have been distributed over audience addressed. Table 2. revealed that combating climate change through REP is mostly used abroad, and in particular to Western audiences (47 out of 52 references), whereas at home, more general environmental advantages (reducing the

ecological footprint) are articulated. This finding that climate change discourse seems to be tailored to Western audiences might further question whether Russia's elite genuinly seek to combat climate change (Henry and Sundstrom, 2007) by raising the share of RES. An alternative explanation would be that it is rather a discursive strategy to convince the international community of Russia's green intentions.

The credibility of climate change arguments in explaining Russia's REP may be further analysed by dividing climate change statements into positive and negative assessments of RES (Table 6.). Positive and negative assessments have a similar proportion within domestic and Western-oriented debates. However, a qualitative analysis may shed light on the differing reasons why RES may (not) contribute to combating climate change. Within domestic debates, positive assessments of RES in combating climate change are often linked to meeting international obligations (5 out of 17 statements), creating the impression that the climate issue is exogenously driven. The negative assessments reflect Russia's economic interests in exporting traditional energy sources. Russia's coal resources are praised for their low sulfur concentrations so that it would have an ecological advantage over other coal exporting countries (Novak, 2016a). Moreover, natural gas as the cleanest fossil fuel (5 statements), nuclear energy (3) without direct carbon emissions, and Russia's vast forests (3) as global carbon sinks are most often named as alternatives to RES in combating climate change. Unsurprisingly, messages downplaying renewables and greenwashing fossil fuels are in line with statements of major oligarchs such as Sechin (Rosneft) and Miller (Gazprom).

Table 6. Combat climate change by assessment over audience addressed (Absolute number of coding references and column percentages)

Audience	*Domestic*	*Western*	*non-Western*
RES may combat CC	17 (68%)	30 (64%)	3 (60%)
RES may not combat CC	8 (32%)	17 (36%)	2 (40%)
Total	25	47	5

Source : Author's own computations on the basis of a self-compiled database of 396 Russian language texts with the help of Nvivo®'s Matrix Coding Query : Nodes of dummy variable consisting of enabling and constraining arguments within the combat climate change factor by audience addressed Case.

6. Conclusion and Policy Implications

Mapping the four dimensions by actor, audience and over time provided an insight in how Russia's energy elite frame enabling and constraining factors of REPs. Russia's most often mentioned and widely shared enabling factors revolve within the resource-geographic dimension. Within a resource-endowed country, the first priority has been judged to be the establishment of a renewable energy industry in order to catch up with global technological development and avoid technological import dependence in the future. These arguments range from promoting Russian R&D over industrializing this knowledge into RE component factories that in their turn deliver materials to project developers of domestic renewable energy power plants. The main discursive constraints remain the unclear definition of renewables and an underestimation of Russia's geographic renewable energy potential.

Financial factors have received the second most discursive attention, especially from the Ministry of Energy and the Government. The rollout of a renewable energy industry should be facilitated by attracting foreign investments and allowing Russia to export RE products and technologies in order to remain an important energy power in the future. However, fierce debate remains on the magnitude of the green menace that may threaten Russia's traditional

fuel exports, along with the timing which is often claimed to only have consequences within the medium term. The cost of renewable energy promotion in the context of relatively low Russian electricity prices, and the scarecrow discourse that REPs might result in electricity price hikes as has been the case in Germany may further constrain policy development.

Institutionally, the argumentation of support schemes requiring a localization of production and the development of a network of international cooperation in the field of RE reinforced the credibility of the resource-geographic factors that incentivize the development of a Russian renewable energy sector. Major institutional constraining factors are, however, the practice to keep firm state control over this emerging renewable energy sector and declining renewable energy targets.

Ecological factors are not only mentioned least by Russia's elite, influential actors such as the president tend to negatively assess renewable energy technologies in solving ecological issues. It became a practice to frame the ecological advantages of Russia's traditional energy exports : natural gas, nuclear energy and even coal resources which constrains renewable development. Discourse on combating climate change utilizing RES is mostly confined to foreign audiences, whereas general contributions of RES in reducing the ecological footprint are oriented at a domestic audience. This informs policy makers not to be guided by internationally oriented discourse alone, but to triangulate with domestic messages and actual policy implementation.

In conclusion, rather than mediating ecological challenges and giving room to bottom-up green energy companies, Russia's elite emphasize the establishment of a state-controlled renewable energy industry in order to hedge against the green menace that may challenge Russia's traditional energy exports in the medium term. Russia's elite hope that REPs allow Russia to

catch up with the renewable technological revolution, compete globally with RE businesses, and remain a global energy power in the long run.

Acknowledgements : The author is greatly indebted to the participants of the LINES session, in particular Dr. Johan Adriaensen, Dr. Yf Reykers, Sarah Van den Eynde, Daan Fonck and Hai Yang, who provided constructive feedback on an earlier draft of this article.

7. References

Aalto, P., Dusseault, D., Kennedy, M., Kivinen, M., 2014. Russia's energy relations in Europe and the Far East: towards a social structurationist approach to energy policy formation. Journal of International Relations and Development 17, 1-29.

Aalto, P., Dusseault, David, Kivinen Markku, Kennedy, Michael D., 2012. How are Russian Energy Policies Formulated? Linking Actors and Structures of Energy Policy, in: Aalto, P. (Ed.), Russia's Energy Policies: National, Interregional and Global Dimensions. Edward Elgar, Cheltenham.

Administrator of the Trading System, 2017. Tender results. ATS, Moscow.

Atalay, Y., Biermann, F., Kalfagianni, A., 2016. Adoption of renewable energy technologies in oil-rich countries: Explaining policy variation in the Gulf Cooperation Council states. Renewable Energy 85, 206-214.

Bedritsky, A., 2015. Speech at the 21st session of the COP. Climate Advisor to the President of Russia, 27.11.2015, Paris, http://kremlin.ru/events/administration/50794 [Last accessed 27.06.2017].

Belyi, A.V., Overland, I., 2010. New narratives on russian renewable energy policy. Revue de l'Energie, 99-105.

Boute, A., 2011. A comparative analysis of the European and Russian support schemes for renewable energy: return on European experience for Russia. Journal of World Energy Law and Business 4, 157-180.

Boute, A., 2012. Promoting renewable energy through capacity markets: An analysis of the Russian support scheme. Energy Policy 46, 68-77.

Boute, A., 2013a. Renewable Energy Federalism in Russia: Regions as New Actors for the Promotion of Clean Energy. Journal of Environmental Law 25, 261-291.

Boute, A., 2013b. Russia's New Capacity-based Renewable Energy Support Scheme. IFC, Washington.

Boute, A., 2016. Off-grid renewable energy in remote Arctic areas: An analysis of the Russian Far East. Renewable and Sustainable Energy Reviews 59, 1029-1037.

Capros, P., Mantzos, L., Parousos, L., Tasios, N., Klaassen, G., Van Ierland, T., 2011. Analysis of the EU policy package on climate change and renewables. Energy Policy 39, 1476.

Chang, P.-F., Bruyninckx, H., 2011. Wind Energy in China: From Ad hoc Projects to Strategic Policy, Renewable Energy Law and Policy (RELP), Berlin.

Chuprov, V., 2014. Interview with Vladimir Chuprov. Greenpeace Russia, 04.08.2014, Moscow.

Depledge, J., 2008. Striving for No: Saudi Arabia in the Climate Change Regime. Global Environmental Politics 8, 9-35.
Dvorkovich, A., 2013. Meeting with vice-prime ministers. Russian government, 15.04.2013, Moscow, http://government.ru/news/1358/ [Last accessed 27.06.2017].
Dvorkovich, A., 2014a. Meeting with vice-prime ministers. Russian government, 14.04.2014, Gorki, http://government.ru/news/11688/ [Last accessed 27.06.2017].
Dvorkovich, A., 2014b. Working visit to China. Russian Government, 09.04.2014, Beijing, http://government.ru/news/11643/ [Last accessed 27.06.2017].
Dvorkovich, A., 2016. Renewable energy sources will lead to tariff increases, Ria Novosti. Russian Government, 17.06.2016, Saint-Petersburg, http://ria.ru/economy/20160617/1448891227.html [Last accessed 27.06.2017].
EU, 2009. DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, in: European Parliament, C.o.t.E.U. (Ed.), Brussels.
EU and Russia, 2013. EU-Russia Energy Cooperation unitl 2050 Roadmap, Brussels.
Fairclough, N., 2006. Analysing discourse : textual analysis for social research, Reprint ed. Routledge, London.
Gel'man, V., 2015. The vicious circle of post-Soviet neopatrimonialism in Russia. Post-Soviet Affairs, 1-19.
Henry, L.A., Sundstrom, L.M., 2007. Russia and the Kyoto Protocol: Seeking an alignment of interests and image. Global Environmental Politics 7, 47-69.
Henry, L.A., Sundstrom, L.M., 2012. Russia's Climate Policy: International Bargaining and Domestic Modernisation. Europe-Asia Studies 64, 1297-1322.
IEA, 2016. World Energy Outlook. International Energy Agency, Paris.
Khafizov, A.D., 2016. Opyt realizatsii proyektov solnechnoy generatsii [Experience in project development of solar generation]. Hevel Solar, 09.06.2016, Yakutsk, http://www.eastrenewable.ru/upload/iblock/0af/2.%20Айдар%20Хафизов.pdf [Last accessed 28.06.2017].
Kotzian, P., 2007. Arguing and bargaining in international negotiations: On the application of the frame-selection model and its implications. International Political Science Review 28, 79.
Kozlova, M., Collan, M., 2016. Modeling the effects of the new Russian capacity mechanism on renewable energy investments. Energy Policy 95, 350-360.
Lombardi, P.S., T. ; Suslov, K. ; Voropai, N. ; Styczynski, Z.A., 2016. Isolated power system in Russia: A chance for renewable energies? . Renewable Energy 90, 532-541.
Medvedev, D.A., 2010. Congratulations to the employees and veterans of the nuclear industry. Kremlin.ru, 22.09.2010, Moscow, http://kremlin.ru/events/president/news/8987 [Last accessed 27.06.2017].
Medvedev, D.A., 2011. Meeting of the commission on modernization and technological development of Russia's economy. Kremlin.ru, 30.03.2011, Moscow, http://news.kremlin.ru/transcripts/10777 [Last accessed 27.06.2017].
Medvedev, D.A., 2014. Zasedaniye prezidiuma Soveta po modernizatii ekonomiki i innovatsionnomu razvitiyu Rossii o razvitii innovatsionnykh tekhnologiy s ispol'zovaniyem vozobnovlyayemykh istochnikov energii i syr'ya [Meeting of the Presidium of the Council for economic modernization and innovative development of Russia on the development of innovative technologies with the use of renewable energy and fuel sources]. Government of the Russian Federation, 04.02.2014, Belgorod, http://government.ru/news/10228/ [Last accessed 07.07.2017].
Medvedev, D.A., 2016. Roadmap to the national technology initiative 'EnergyNet'. Government of Russia, 17.06.2016, Gorki, http://government.ru/news/24688/#doc961 [Last accessed 27.06.2017].
Miller, A., 2016. Press-konferentsiya PAO Gazprom po itogam sobranii aktsionerov [Gazprom press conference on the results of the shareholders' meeting]. Gazprom, 30.06.2016, Moscow, https://www.youtube.com/watch?v=3wYQ3P3sVmw [Last accessed 07.07.2017].

Ministry of Energy, 2014. Project Russian energy strategy until 2035. Ministry of Energy, Moscow.
Ministry of Energy, 2016. Skhema i programma razvitiya Edinoy Energeticheskoy sistemy Rossii na 2016-2022 gody, in: Energy, M.o. (Ed.), Prikaz Minenergo Rossii 1 March 2016 No 147, Moscow, p. 299.
Ministry of Energy, 2017. Main characteristics of Russia's electricity market 2016. Ministry of Energy, Moscow, https://minenergo.gov.ru/node/532 [Last accessed 28.06.2017].
MNRE, 2015. State report on the status and environmental protection of the Russian Federation in 2014. Ministry of Natural Resources and Ecology, 20.07.2015, Moscow, https://www.mnr.gov.ru/news/detail.php?ID=141666&sphrase_id=1901369 [Last accessed 28.06.2017].
Novak, A., 2013. Government meeting. Russian Government, 07.03.2013, Moscow, http://government.ru/meetings/712/stenograms/ [Last accessed 28.06.2017].
Novak, A., 2014. Zasedaniye Komissii po voprosam strategii razvitiya TEK i ekologicheskoi bezopasnosti [Meeting of the Commission for Strategic Development of the Fuel and Energy Sector and Environmental Security]. Kremlin.ru, 04.06.2014, Astrakhan, http://kremlin.ru/events/councils/by-council/29/45831 [Last accessed 07.07.2017].
Novak, A., 2015a. Commissioning of the Orsk and Abakansk Solar power plants. Russian Government, 21.12.2015, Gorki, http://government.ru/news/21179/ [Last accessed 27.06.2017].
Novak, A., 2015b. Results of the Ministry of Energy in 2014. Ministry of Energy, 15.04.2015, Moscow, https://minenergo.gov.ru/node/92 [Last accessed 27.06.2017].
Novak, A., 2016a. Aleksandr Novak vystupil na XVIII Mezhdunarodnom kongresse po obogashcheniyu uglya [Aleksandr Novak presented at the XVIII International Congress on Coal Enrichment]. Ministry of Energy, 28.06.2016, Saint-Petersburg, http://minenergo.gov.ru/node/5514 [Last accessed 27.06.2017].
Novak, A., 2016b. Interview to radio station Ekho Moskvy. Ministry of Energy, 01.10.2016, Moscow, http://minenergo.gov.ru/node/6142 [Last accessed 27.06.2017].
Novak, A., 2016c. Interview to television station NTV. Ministry of Energy, 17.06.2016, Saint-Petersburg, http://minenergo.gov.ru/node/5419 [Last accessed 27.06.2017].
Novak, A., 2016d. Prognoz nauchno-tekhnologicheskogo razvitiya otrasley toplivno-energeticheskogo kompleksa Rossii na period do 2035 goda [Scientific-technologic development of Russia's fuel-energy complex forecast until 2035]. Ministry of Energy, 01.11.2016, Moscow, http://minenergo.gov.ru/node/6365 [Last accessed 27.06.2017].
Novak, A., 2017. Russian Investment Forum 2017. Ministry of Energy, 27.02.2017, Sochi, http://minenergo.gov.ru/node/7275 [Last accessed 27.06.2017].
Putin, V.V., 2006. Valdai club meeting. Kremlin.ru, 09.11.2006, Novo-ogarevo, http://kremlin.ru/events/president/transcripts/23789 [Last accessed 27.06.2017].
Putin, V.V., 2010. Interregional conference of United Russia "Socio-economic development strategy of the Far East until 2020. Russian Government, 06.12.2010, Khabarovsk, http://archive.government.ru/docs/13223/# [Last accessed 27.06.2017].
Putin, V.V., 2012a. Federal Law No. 121-FZ of July 20, 2012 "On Amending Certain Legislative Acts of the Russian Federation Regarding Regulation of Activities of Non-Profit Organizations Performing the Functions of a Foreign Agent".
Putin, V.V., 2012b. On our economic tasks, Vedemosti. Kremlin, 30.01.2012, Moscow, http://www.vedomosti.ru/politics/articles/2012/01/30/o_nashih_ekonomicheskih_zadachah [Last accessed 27.06.2017].
Putin, V.V., 2012c. Press conference on the results of Russian-Chinese negotiations Kremlin.ru, 05.06.2012, Beijing, http://kremlin.ru/events/president/transcripts/15552 [Last accessed 27.06.2017].
Putin, V.V., 2013. Direct Line with Vladimir Putin. Kremlin.ru, 25.04.2013, Moscow, http://kremlin.ru/events/president/news/17976 [Last accessed 30.06.2017].
QSR, 2016. Nvivo 11. QSR International Pty Ltd., United Kingdom, www.qsrinternational.com

Romanova, T., 2014. Russian energy in the EU market: Bolstered institutions and their effects. Energy Policy 74, 44-53.
Russian Government, 2009a. Energy Strategy of Russia for the period up to 2030, Moscow.
Russian Government, 2009b. Government resolution No. 1-r of 8th January on the "fundamental Areas for State Policy in Raising Energy Efficiency in the Electricity Sector Through the Use of Renewable Energy Sources for the Period to 2020", Moscow.
Russian Government, 2013a. Government Decree of 28 May 2013 No. 449 'O mechanisme stimulirovaniya ispol'zovaniya vozobnovlyaemykh istochnikov energii na optovom rynke elektricheskoi energii i moshchnosti'. Russian Government.
Russian Government, 2013b. Government resolution of 28 May No. 861-r 'O vnesenii izmenenii v Osnovnye napravleniya gosudarstvennoi politiki v sfere povysheniya energeticheskoi effektivnosti elektroenergetiki na osnove ispol'zovaniya vozobnovlyaemykh istochnikov energii na period do 2020 goda, utv. rasporyazheniem Pravitelsva RF ot 8 yanvarya 2009 g. N 1-r. Russian Government.
Russian Government, 2013c. Government resolution on the approval of the state program of the Russian Federation, "Energy efficiency and energy development", No 512, Moscow.
Russian Government, 2014. Government Decree No. 321 of 15 April on "the Approval of the State Programme on Energy Efficiency and Energy Development", 15 April, Moscow.
Russian Government, 2015a. Government Resolution of 28 July No. 1472-r 'izmeneniya, kotorye vnosyatsya v akty Pravitel'stva Rossiiskoi Federatsii', Moscow.
Russian Government, 2015b. 'O vnesenii izmenenii v nekotorye akty Pravitel'stva RF po voprosam stimulirovaniia ispol'zovaniia vozobnovliaemykh istochnikov energii na roznichnykh rynkakh elektricheskoi energii', in: Gazeta, R. (Ed.), No. 47 of 23 January 2015. RG, Moscow.
Sechin, I., 2013. Zasedaniye Komissii po voprosam strategii razvitiya TEK i ekologicheskoi bezopasnosti [Meeting of the Commission for Strategic Development of the Fuel and Energy Sector and Environmental Security] Kremlin.ru, 13.02.2013, Novo-Ogarevo, http://kremlin.ru/events/president/news/17511 [Last accessed 27.06.2017].
Singh, S., Jain, S., PS, V., Tiwari, A., Nouni, M., Pandey, J., Goel, S., 2015. Hydrogen: A sustainable fuel for future of the transport sector. Renewable and Sustainable Energy Reviews 51, 623-633.
Smeets, N., 2014a. Combating or Cultivating Climate Change? Russia's Approach to Renewable Energy as an Opportunity for the EU as a Facilitating Actor UACES Annual Conference, Cork.
Smeets, N., 2014b. Opening up the black box: Russia’s energy security concept, in: Heinrich, A.P., Heiko (Ed.), Changing Europe: Export Pipelines from the CIS region. Ibidem, Germany, pp. 107-127.
Smeets, N., 2017. Similar goals, divergent motives. The enabling and constraining factors of Russia's capacity-based renewable energy support scheme. Energy Policy 101, 138-149.
Teksler, A.L., 2015. Interview to ITAR/TASS. Ministry of Energy, 22.01.2015, Moscow, https://minenergo.gov.ru/node/4434 [Last accessed 27.06.2017].
Teksler, A.L., 2016. Interview to news agency TASS. Ministry of Energy, 28.06.2016, Saint-Petersburg, http://tass.ru/pmef-2016/article/3408448 [Last accessed 27.06.2017].
Trutnev, Y., 2009. Speech at the 15th session of the COP. Ministry of Natural Resources and Ecology, 18.12.2009, Copenhagen, https://www.mnr.gov.ru/news/detail.php?ID=17280&sphrase_id=1901369 [Last accessed 27.06.2017].
Tynkkynen, N., 2014. Prospects for ecological modernization in Russia: analysis of the policy environment. Demokratizatsiya 22, 575.
UN, 2015. Paris Agreement. United Nations, Paris.
Valdés Lucas, J.N., Escribano Francés, G., San Martín González, E., 2016. Energy security and renewable energy deployment in the EU: Liaisons Dangereuses or Virtuous Circle? Renewable and Sustainable Energy Reviews 62, 1032-1046.
Vasileva, E., Viljainen, S., Sulamaa, P., Kuleshov, D., 2015. RES support in Russia: Impact on capacity and electricity market prices. Renewable Energy 76, 82.

Wang, P., 2013. The Large Dam Dilemma: An Exploration of the Impacts of Hydro Projects on People and the Environment in China. Springer, Dordrecht.
Willems, P., 2014. Green giant will be awaken in the east. Eastrenewable.ru, Yakutsk.
Wittmann, N., 2013. OPEC: How to transition from black to green gold. Energy Policy 62, 959-965.
Wüstenhagen, R., Menichetti, E., 2012. Strategic choices for renewable energy investment: Conceptual framework and opportunities for further research. Energy Policy 40.
Yanovsky, A., 2016. Konferentsiya 'Perspektivy razvitiya uglekhimii v Rossii: nauka, tekhnologii i proizvodstva [Conference 'Perspectives of developing Russia's coal chemistry : science, technologies and production]. Ministry of Energy, 26.01.2016, Kemerovo, http://minenergo.gov.ru/node/3960 [Last accessed 27.06.2017].