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# **The Green Economy in the G-20, Post-Mexico: Implications for Russia**

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**South African Institute of International Affairs**

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## ABSTRACT

Over the past 20 years there has been a gradual shift in the concept of sustainable development towards an emphasis on a 'green' economy and the introduction of more environmental and social indicators in the understanding of sustainability and national well-being. While this concept has also started to gain ground in Russia (where it is historically better known as the environmentalisation of the economy), it still remains a matter more of theory than practice. The main areas on which Russia should place greater emphasis to achieve its desired results are energy savings and energy efficiency, and rebalancing the economic structure, which remains far too dependent on the export of hydrocarbons. Although this paper looks at all the aspects related to the 'greening' of the Russian economy, such as the efficient use of natural capital, fighting pollution and accumulated environmental damage, managing waste and ensuring social protection, the most emphasis is placed on the energy sector, guidelines for further actions, proposed initiatives and the results achieved.

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## ABBREVIATIONS AND ACRONYMS

BRICS	Brazil, Russia, India, China, South Africa
G-8	Group of Eight
G-20	Group of Twenty
GDP	gross domestic product
Rio+10	World Summit on Sustainable Development
Rio+20	UN Conference on Sustainable Development
UNEP	UN Environment Programme

## INTRODUCTION

At the 2002 World Summit on Sustainable Development (Rio+10), held in Johannesburg, countries agreed to develop national sustainable development strategies with implementation set for after 2005. However, since then international progress can best be described as an enormous reversal – over 300 million hectares of forests have been destroyed, global emissions have increased by 50%, and the world's population has grown by 30%, with around one-sixth of its 7 billion people being undernourished. Moreover, natural disasters are occurring ever more frequently, with estimated losses to the global economy totalling about \$2,5 trillion over the past 15 years.<sup>1</sup>

The UN Conference on Sustainable Development (Rio+20) was held in Rio de Janeiro from 20–22 June 2012, resulting in the declaration titled *The Future We Want*. Twenty years had passed since the first UN Conference on Environment and Development, also held in Rio de Janeiro and commonly known as the Rio Conference or the Earth Summit, when countries met to discuss sustainable development, the fight against poverty and the 'green' economy.

The main message emerging from Rio+20 was the acknowledgement that 'society, economy and nature are inseparable'.<sup>2</sup> All of the participating countries, Russia included, agreed to take measures to implement the Rio+20 decisions. According to the head of the Russian working group, Aleksandr Bedritskii, Rio+20 would allow Russia to develop a more comprehensive and cohesive understanding of the problem and attempt to adopt a unified strategy of sustainable development.

Although there had been universal consensus on the urgent need for the new conference to be held, its results are generally viewed as somewhere between a total failure and unsatisfactory, moderate progress. However, Rio+20 did start the process of mapping out sustainable development goals to replace the millennium development goals after 2015. A new high-level sustainable development forum was created within the framework of the UN General Assembly and a task force was created that currently consists of representatives of 30 countries. Participants also turned to the UN Statistical Agency to develop the new indicators of sustainable development to complement gross domestic product (GDP) indexes.

## SUSTAINABLE DEVELOPMENT AND THE GREEN ECONOMY: CHALLENGES AND OPPORTUNITIES

Over the past 20 years there has been a gradual shift in the understanding of the concept of sustainable development, with the emphasis moving towards the 'green economy' and introducing more environmental and social indicators in terms of sustainability and national well-being.

Although there is no generally accepted definition of the green economy (as opposed to the traditional 'brown' economy), it is viewed through the lens of creating and increasing natural capital while eliminating or decreasing environmental challenges and threats. A green economy would thus be about low-carbon, resource-efficient and socially inclusive development.<sup>3</sup> It also implies that waste should be managed and introduced back into the production cycle, thereby minimising its potentially harmful environmental impact.

Sustainable development based on the ‘green economy’ principle presents considerable opportunities for co-operation among the BRICS (Brazil, Russia, India, China, South Africa) countries, as it entails tackling the problem of human development while restating the importance of innovative, energy-efficient growth. Currently the world is still largely developing within the ‘brown economy’ model. Although this type of resource- and natural capital-intensive growth does provide a number of people with improved quality of life, it is unsustainable and leads to increased environmental degradation, resource depletion, an unbalanced biosphere, poverty and a lack of food, water and energy, as well as growing inequality among people, countries and regions. GDP per capita growth cannot simply be transformed into a higher quality of life, since the above-mentioned problems suggest a lowered quality of life, health problems and limited options for further development. Within the context of the green economy, the growing needs of the global population point to the necessity of lower levels of energy consumption and natural resource intensity, diversification and the modernisation of production. According to UN Environment Programme (UNEP) findings, the features of a green economy include

- efficient use of natural resources;
- preservation of and increase in natural capital;
- decreased pollution;
- low carbon intensity; and
- increased revenues and employment.

UNEP data suggests that sustainable development based on the greening of the economy will require around 2% of world GDP for the 10 main energy-intensive sectors.<sup>4</sup>

Russia, along with the rest of the world, still faces several challenges in terms of the prevailing brown economy. When one considers the Russian approach, it is important to remember that the ‘green economy’ concept is still novel in the Russian context, and it is only recently that the term has started being used in official documents. Instead, Russia is more familiar with the concept of ‘environmentalisation’, which can be traced back to the 1960s and the Soviet scientific theories of the time.<sup>5</sup>

Experts believe that Russia, along with the other BRICS countries, could provide leadership in promoting sustainable development in line with the interests of emerging and other developing economies. When the concept was first introduced, emerging economies viewed the ‘green economy’ concept with caution, since many saw it as yet another instrument used by developed countries to rein in fast-growing developing economies. The key to the success of the ‘green economy’ concept is the possibility of its being adapted to individual countries’ needs. This in turn should lead to the development of new strategies and policies to deal with the problem. Partnerships among various countries may be key to this process.

## RUSSIA’S NATIONAL WEALTH AND CONTRIBUTION TO GLOBAL CAPACITY

Russia differs radically from many other countries in terms of structure and relative national wealth. In advanced economies, the contribution from natural capital to national

wealth usually does not exceed 10%, but in Russia this figure goes up to 83–88%.<sup>6</sup> Globally this potential cannot be overestimated. As will be argued later in this paper, Russia is the undisputed global leader in terms of cumulative energy resources: it holds up to 22% of the world reserves in all 17 rare earth metals,<sup>7</sup> and has significant potential in terms of ferrous and non-ferrous metals, non-metals, precious stones, etc.

Russia finds itself in second place with regards to fresh water reserves (coming after only Brazil with around 4,5 thousand cubic kilometres), although per capita reserves are more modest with Russia occupying 26<sup>th</sup> place with 31.8 cubic meters.<sup>8</sup> However, the country still experiences problems in terms of water usage. Only about 10% of water resources are situated in the European part of the country, which houses over 70% of the population and has the greatest industrial potential. Only 75% of the population have access to centralised water supply networks, as opposed to 90–95% or more in developed countries. The sanitary quality of only about 50% of water is considered satisfactory.

Russia also holds a vast portion of global forests (about 20%, or 1,18 billion hectares), which act as hydrocarbon sinks and cover about 47% of its national territory.<sup>9</sup>

Land resources are another of its assets, estimated to be the biggest in the world (over 1,7 billion hectares) with around 13% being arable. Moreover, around 60% to 65% of the land is undeveloped, which allows those areas to render ecosystem services globally in order to sustain the stability of the biosphere. Its considerable biodiversity also forms part of Russia's natural capital.

Even though Russia is known as the world's storehouse, the temptation to use all those resources should be resisted, since launching industrial activities in once-virgin areas could lead to an environmental imbalance on a global scale.

Although the country's level of resource availability is unique, its main problem remains the inefficient use of natural resources. This causes economic inefficiency, with an economy traditionally oriented towards these 'unlimited' national resources. Energy efficiency is very low, while investments continue to concentrate on the hydrocarbon sector and transport. Despite the fact that there is a lot of talk about the modernisation of the economy, it is clear that the country has missed opportunities for structural economic reform. This is a problem common to the BRICS. Environmental degradation occurred during times of high economic growth, while the absence of necessary reforms has caused continuing degradation along with frozen growth.

As a result of this situation, experts have identified priority measures to bring about economic change and allow environmentally friendly development:

- restructuring the economy in a balanced and environmentally friendly manner, while introducing innovative development;
- managing socio-economic tasks based on the principles of green economy;
- rethinking the system of taxes and subsidies for industries;
- reorienting investment politics towards environmentally friendly development;
- clarifying the definition of property rights for resources, privatisation mechanisms and pricing reform;
- instituting innovative forms of environmental financing – environmental banks, funds and insurance agencies; and
- changing export policies and the role of commodities.

## CONCEPTUAL FORMATION OF SUSTAINABLE DEVELOPMENT AND THE GREEN ECONOMY

On a national level a number of steps have been taken to formulate a strategy on environmentally sustainable economic growth. However, it should be noted that it took a long time for the 'green economy' concept to be introduced to Russian political documents and legislation and it only recently appeared in public debate. Instead, at the start of the 21<sup>st</sup> century the Russian leadership<sup>10</sup> concentrated exclusively on economic growth: one of the most famous slogans of the first Putin term was 'doubling GDP'.<sup>11</sup> In 2011, with another call to double GDP per capita, then Prime Minister Vladimir Putin noted that this goal could not be achieved with the traditional sources of growth and instead implied moving away from a resource economy.

Although practical achievements remain limited, the concept itself is connected to existing Russian policy documents: the Concept on Russia's Transition to Sustainable Development (signed by the President in 1996), the Russian Sustainable Development Strategy (approved by the Russian government), and the Environmental Doctrine (discussed during the Rio Conference and approved on 31 August 2002). The most recent documents were adopted in the run-up to Rio+20 and consist of the 'Fundamental Principles of State Policy in the Area of Environmental Development of the Russian Federation to 2030' (30 April 2012) and the 'Plan of Action of State Policy in the Area of the Environmental Development of the Russian Federation to 2030' (18 December 2012).

When one looks at one of the aims of the green economy, namely greater energy efficiency, it becomes clear that this is a real priority even for resource-rich Russia. This goal is stated in the 'Energy Strategy of Russia to 2030', the presidential order on 'Improving Energy and Environmental Efficiency' adopted in 2008, and the Energy Efficiency Law of 2009. Segments of green economic priorities can also be found in the 'Water Strategy of the Russian Federation to 2020', the 'State Programme on Agricultural Development and the Regulation of Agricultural Products, Resources and Food Markets for 2013– 2020', among others.

The most important document in this area, reflecting Russia's national development goals, remains the one adopted in 2008 – the 'Concept of the Long-Term Socio-Economic Development of the Russian Federation until 2020', which states as its primary goal the 'sustainable growth of Russian citizens' welfare, national security, dynamic economic development, [and] strengthening Russia's position in the world community'.<sup>12</sup> Its main goals correspond with those of the green economy.

Moscow is directing its national policies in several areas to ensure that it plays an integral part in sustainable development. These policies relate to environmentally friendly economic development (however, it can be argued that, notwithstanding the documented policies, not enough is being done to put environmental concerns first):

- science and education for sustainable development (with ecological education being of primary importance, not only within the framework of secondary and higher education but also for life-long learning and the whole of the society);
- health (human potential and the formation of integrated systems of health protection, technological advances, and research and development);



- new green economy<sup>13</sup> and energy efficiency;<sup>14</sup> and
- climate change and human development.<sup>15</sup>

A lot of work is being done to consolidate the international community around these new goals, but a number of questions remain. The Russian government believes that the most logical step would be to create a 'menu' of different goals adapted to the needs of the least developed countries. According to Russia, these goals should take into account regional and national conditions and peculiarities, allowing countries to develop their own sets of aims and indicators.

### 'ENVIRONMENTALISATION' OF THE ECONOMY

The authors of the report on sustainable development in Russia<sup>16</sup> highlighted the following 'unsustainable' development trends in the country, with a lot of the blame falling on the breakdown in high-tech and resource-efficient production in the 1990s and the 2000s trap formed by the 'heavier' structure of the Russian economy, caused in part by higher energy prices:<sup>17</sup>

- depletion of natural capital as an economic growth factor;
- structural changes in the economy with a greater portion of extractive and polluting sectors;
- higher threat of environmental risks due to the extreme physical degradation of facilities;
- high energy and resource intensity;
- crude exports;
- environmentally unbalanced investment policies; and
- the environmental degradation and health nexus.

In Russia, sustainable development based on 'green economy' principles is defined as the 'environmentalisation' of production and consumption.<sup>18</sup> While globally acknowledged best practices seem to be the most effective and obvious examples to follow, there are a number of limitations to that type of development, both time and structure wise (with technological, economic and even political aspects). Technological advances remain the main brick in the foundation of sustainable growth, but it is also possible to arrive at solutions by eliminating past environmental damage, monitoring and paying for negative environmental impact, abandoning the practice of granting temporary permissions for emissions, adopting laws on environmentally problematic zones, and dealing with waste.

There are signs that the situation is starting to improve. In the Federal Environmental Law of 2002 ecological disaster zones were regulated.<sup>19</sup> In compliance with the presidential order of 21 September 2012, the Ministry of Natural Resources and the Environment, along with Russian federal subjects,<sup>20</sup> did an accumulated environmental damage audit and as a result took further steps. In addition to the 2007 World Bank study on past environmental damage in Russia, in January 2013 the 'Federal Target Programme on the Elimination of Cumulative Environmental Damage, 2014–2025' was adopted, aimed at the restoration of environmentally damaged areas. Among the priorities of the programme

are waste management<sup>21</sup> and the restoration of areas damaged through hydrocarbon production, the chemical sector and other industrial development activities. Special attention is given to the Arctic region and the shelf zones of the Russian Federation, as well as to the pre-conventional elimination of chemical weapons.<sup>22</sup>

Other areas identified by the 'Report on Human Development in Russia' as being of benefit in developing a green economy are extending the system of voluntary certification and encouraging corporate social accountability.

Nevertheless, as was stated in *The Future We Want*, released after the Rio+20 meeting, each country should draw up its own national policies towards a green economy. Thus, discussions on the transformation of the Russian economy into an environmentally sustainable model primarily focus on its moving away from hydrocarbon and the general resource dependent or primary export model. Taking into account that energy is probably the most important issue in the future of green development in Russia, more attention will be paid to it later in this paper.

While it is not widely used now, the description of Russia as an 'energy superpower' was common about a decade ago. During the Russian presidency of the G-8 (Group of Eight), energy security was chosen as one of the priority areas to be discussed at the St Petersburg Summit. While Russia remains the world leader in terms of cumulative energy potential (which encompasses all energy sources, namely oil, gas, nuclear, hydro, wind, etc.), it becomes ever more vital for the country to ensure its own energy security by means of diversifying energy resources and actively introducing energy-saving and energy-efficient technologies.

## CONCEPTUAL DEVELOPMENT OF RUSSIAN ENERGY POLICY TRENDS AND ITS ENERGY STRATEGY TO 2030

Since energy plays a significant role in Russia's move towards sustainable development based on the green economy, it is instructive to look at the conceptual formatting of the Russian energy policy, which started right after the break-up of the former Soviet Union in 1992. Those documents (for example, 'Main Provisions of the Energy Policy Concept of Russia in the New Economic Conditions' of September 1992, 'Main Guidelines of the Energy Policy of Russia for the Period to 2010' of May 1995, and 'Main Provisions of the Energy Strategy of the Russian Federation' of October 1995) combined the old goals relevant to the Soviet Union – sustaining the economic development and export potential of the country – with the new geopolitical and geo-economic realities in which the centrally planned economy had disappeared and the country had to adapt to the new market conditions and integrate into the world economy.

Nevertheless, by the end of the 1990s many of the policy documents' stated goals had not been fulfilled. This led to the need to review and modernise the country's energy strategy, which resulted in the 'Russian Energy Strategy until 2020' in 2000, which was adopted after final revisions in 2003. Importantly, according to the strategy, market conditions would define the country's energy sector with the aim of lowering state involvement. In November 2009, the 'Energy Strategy until 2030' was adopted, according to directive # 1715-p, which, among others, claimed that the liberalisation of internal markets had been finalised.

The 2008 economic crisis has brought to the forefront issues that Russia should urgently address, including moving away from its extreme dependence on hydrocarbon resources – and its resultant vulnerability due to the volatility of economic development – to a high-tech innovative economy. To achieve this, it was decided that there would gradually be less direct state participation in energy sector management and development, which would instead be transformed into various public–private partnerships, especially in the area of energy infrastructure construction and modernisation. At the same time, the state would have a stronger regulatory influence on the Russian energy sector.

The current Russian Energy Strategy<sup>23</sup> is not a simple continuation of the previous document. It formulates new tasks for the sector with regard to the innovative development of the Russian economy, as was formulated in the ‘Concept of the Long-Term Social and Economic Development of the Russian Federation until 2020’, adopted by the Russian Federation on 17 November 2008 according to directive # 1662-p.

According to this strategy, the main aspects of energy complex development are:

- the energy efficiency of the Russian economy and its transition to innovative and energy-efficient development;
- environmental security and changes to the structure and scale of energy resources production;
- the economic efficiency of the sector and creation of a competitive market environment; and
- energy security and integration into the world energy system.

All of these aspects demonstrate the country’s intentions to join the rest of the world on the path of sustainable development, while still benefitting from the natural advantages brought by its natural capital. Although the recent political crisis in Ukraine is likely to prevent Russia from benefitting from full international co-operation to achieve its stated goals, the physical survival of the country in the long term requires taking action on the following:

- increasing the country’s strategic presence in markets for high-tech energy products and intellectual services;
- diversifying exports in geographical and sectoral terms, which is not an unfriendly political act but rather a rational and economically justified approach;
- lowering the energy intensity of Russian industry, introducing and using comprehensive energy-efficient and energy-saving technologies;
- lowering the amount of hydrocarbon exports, and transitioning to the sale of more refined products, with Russian companies participating as shareholders in foreign refineries; and
- further developing energy infrastructure and hubs in the Russian Federation (as it is both a large-scale producer and a transit country for energy resources).

## ENERGY AND RUSSIA: THE INTERNAL ASPECT

The concept documents and other official documents of any country usually reflect the desired state of affairs in a specific area, strategic planning in order to achieve the best

possible outcome, and an evaluation of external conditions for the country to achieve its stated goals. For this reason a big part of the concept document is an analysis of the internal state of affairs in the Russian energy sector. It is becoming increasingly evident, especially in the wake of the 2008 economic crisis, that Russia's resource-exporting model is unsustainable, as the country simply cannot continue to develop this way. According to the Gaidar Institute, of all the G-20 (Group of 20) countries Russia spent the most money on anti-crisis policy measures (over 11% of GDP, as opposed to Brazil, China and India with an average of 4.2%), while its economic downturn was still the most drastic in the group.<sup>24</sup>

A human security approach, among other things, champions individual well-being as opposed to focusing solely on the state and other big actors. Ensuring the human security of the 143,6 million Russian citizens thus certainly forms part of the overall task.<sup>25</sup> For this reason, in tracking Russia's conceptual approach to energy security it is important to look at the state and impact of the energy sector, as well as the possibilities for the sustainable economic and social development of the Russian people.

One of Russia's biggest problems is its hydrocarbon-oriented economy, even though it has recently had moderate success in dealing with this problem. According to statistical data, the share of crude oil exports in the overall supply of fuel resources in 2013 dropped by 2.4% when compared to 2012 and reached 46.7%, while the relative percentage of oil in total exports for the same period also went down by 1.5%, and accounted for 33%.<sup>26</sup> Unfortunately this trend cannot be described as either stable or heading in the desired direction. Despite recent discussions on the privatisation of major state-owned companies, this process was once again postponed with the government relying mostly on hydrocarbon export revenues to meet its budget target. According to Deputy Finance Minister Tatyana Nesterenko, the percentage of hydrocarbon revenues in the 2014 budget resumed its upward trend and was likely to reach 52.5%, growing by 4.4%.<sup>27</sup> This was mainly to compensate for the downturn in the economy.

Although these developments may seem positive, it is important to remember the lessons learnt and realise that the faster the country overcomes its dependence on hydrocarbons, the sooner it can ensure sustainable development.<sup>28</sup>

Despite the apparent profitability of the sector, this could change drastically: over the past several years production costs have risen four- to fivefold. In the near future this could lead to oil production and exports verging on non-profitability, and without huge investments in its resource base, infrastructure and modernisation, the sector would cease being an engine for economic development.

Even now the Russian energy complex is not able to supply sustainable energy for the national economy (and the situation looks even more dire when judging by competitive energy prices). As a result, all its energy-intensive industries, with the exception of aluminium ore, have somewhat mediocre international rankings.

The other disadvantage is the persistent high energy intensity of the Russian economy. Its energy efficiency potential is evaluated at around 40–45%, with 18–19% in the residential sector; 15–30% in electricity generation; up to 40% in industrial production and transport; 9–10% in heating, services and construction; 5–6% in fuel production, gas flaring and energy provision in public offices; and 3–4% in agriculture.<sup>29</sup>

At governmental level it seems the problem only started to receive official attention towards the end of 2009, when the previously mentioned federal law on energy savings and energy efficiency was adopted. In accordance with this law, the Ministry of Energy,

along with other agents (such as the Agency on Forecasting Balances in Electric Power Industry,<sup>30</sup> the Centre for Energy Efficiency and the Russian Energy Agency), developed and, in 2010, adopted the state programme on 'Energy Saving and Improving Energy Efficiency until 2020'. This programme is meant to be an instrument to lower GDP energy intensity by 40%. The Russian Energy Agency is tasked with the programme's operative implementation.

An updated version of this programme that projected increased financing by RUB<sup>31</sup> 6,84 billion (approximately \$200 million) for the period 2014–2016, with lower figures for the next period until 2020, was adopted in April 2014. It is expected that GDP energy intensity will drop by 12.7% because of this programme.<sup>32</sup>

While it has been suggested that the revenue potential from Russian energy efficiency could reach around \$300 billion, thus far few investors are found in this area, mainly due to weak legislation and the absence of examples of practical energy-efficient technologies.

In order to address these problems, the Ministry of Energy plans on creating a federal energy service company that, being 100% state owned, will initiate new projects and carry all the accompanying risk. This company is also set to acquire shares and participate in the activities of the regional energy service companies tasked with the modernisation of the energy-related aspects of Russian enterprises. The fuel and energy complex has huge potential for energy efficiency. One measure that comes to mind is the overall modernisation of the electricity generation complex, with a possible twofold reduction in losses.<sup>33</sup>

However, all of these goals remain little more than wishful thinking, and practice lags behind theory. There is still not enough attention being paid to the problem at governmental level, at least in terms of practical implementation. Another major problem is the absence of a systemic approach when taking decisions.

Nevertheless, contrary to the general perception of energy intensity having remained constant, a number of experts, including those at the Centre for Energy Efficiency, believe that Russia can and does contribute positively to lower emissions and practical decoupling outside a negative scenario of de-industrialisation, such as the one the country experienced after the break-up of the Soviet Union. They argue that, if this had not been the case, emissions would have surpassed the 1990 level in 2011. They see results from the structural reform of the Russian economy (accounting for up to 84.1% of the neutralisation effect), higher use of gas (4.2%), the use of energy-efficient technologies (8.8%), a higher capacity load (2.3%) and pricing (0.5%). They also claim that each per cent of GDP growth has been accompanied by a mere 0.35% of energy-related CO<sub>2</sub> emission growth.<sup>34</sup>

It should also be noted that while Russia, during its G-20 presidency in 2013, talked of the lack of long-term financing for the sustainable recovery of the global economy, in a similar manner Russia's failure to improve energy efficiency could also be attributed to the lack of long-term financing.

The main reason why theory has thus far not necessarily worked in practice is that conditions need to be developed to ensure that green technologies hold economic benefits for businesses. An energy-efficient economy also implies the urgent introduction of energy-saving measures at all levels – from households to transport to industry. In terms of households, government policies advise the general installation of water and electricity (two- and three-phase) meters that offer benefits for lower usage, and there is also an incentive system for energy-efficient industries.

At the same time Russia needs a wide resource base of alternative and renewable energy. It has enormous potential in the wind energy sector. One Russian invention is the wind-diesel hybrid power system, which is mostly appropriate for internal use, especially in the sparsely populated areas that account for up to 70% of its territory.

## 'HOW TO' POLICIES

Earlier in this paper, the state of affairs in Russia and its achievements or failures on its way towards a sustainable economy were considered. This section will focus on the other measures that can be taken. It is past time that the government and business recognise that the country will only keep its competitive edge through the green economy. In ignoring the green economy and clean technologies Russia is bound to see a growing gap between itself and advanced economies. At the same time, the new green economy presents a viable incentive for further modernisation and technological renewal in Russian industry.

Since it has been demonstrated that the main obstacle to establishing a green economy in Russia is its heavy reliance on mineral resources (fuel and metals), it is only logical to see how it can diversify its economy to support greener and less environmentally damaging sectors. One of the most obvious imbalances is taxation. While the main tax burden is currently being carried by the labour and capital sectors (ie, the less energy-intensive sectors), it would make more sense to shift this burden to natural resources (as shown above, about half of the state budget comes from taxes to the oil and gas sectors). For example, the tax rate for manufacturing machinery and equipment is 11.1%, construction 11.3%, metallurgy 3.3% and oil refinery 5%.<sup>35</sup>

Fuel subsidies are another *bête noire* for sustainable development. Although Russia did come up with some initiatives in this area, including at the G-20, the state continues to subsidise mineral resource industries. According to World Wildlife Fund estimates, oil and gas sector subsidies in 2010 came to \$14.4 billion, or the equivalent of 14% of all federal income derived from taxes on and other payments by this industry.<sup>36</sup>

Instead the government should support the wider implementation of green technologies through 'green' public contracts. Such policies could establish a long-term and sustainable demand for 'green' goods and services and create incentives for private companies to invest in that area. While this will require national political will and consistency, other measures, such as forming international partnerships and promoting best practices, can be achieved only together with the world's leading economies – the champions of green technology. One of the most recent examples is the use of the Cleantech Open, the world's largest clean technology accelerator. The Cleantech Open has signed a Memorandum of Understanding with the Skolkovo Foundation, the Moscow Innovation Development Centre and the VEB Innovations Fund and is expected to cost \$2 million over three years. According to a statement, the accelerator's aim is to support start-ups working on technologies to increase environmentally friendly production and consumption, as well as conditions conducive to the efficient use of resources and waste management, and it will eventually embrace all the regions of Russia.<sup>37</sup>

However, for as long as the provision of advanced technologies, including energy-efficient and green technologies, falls victim to political expediency, this task will be daunting.<sup>38</sup> This proves once again that the impartiality and 'political correctness' of the

BRICS countries makes this grouping ever more important as a foundation for partnership among those countries, and between the BRICS and other developing countries, in order to share and promote best practices and encourage unhampered development.

Another important aspect in the formation of a green economy is the widespread use of alternative and renewable energy. Looking at the global picture, it is clear that even the recent economic crisis did not halt funding for research on and development of renewable energy sources. This can be attributed to the fact that, according to some estimates, every dollar invested in renewable energy will bring a tenfold profit<sup>39</sup>, with the European Union and China being the biggest players in this area.<sup>40</sup>

Russia lags far behind global trends. When it was regarded as an energy superpower in 2006, this was due not only to its hydrocarbon resources but also to its cumulative potential in terms of alternative and renewable energy, since those sectors have not been developed to the full. Although Russia could have a competitive advantage in geothermal energy, it does not widely use or share tidal energy technologies. When one considers that Russia is rich in water resources, another prospective development could be the use of small hydroelectric stations. This makes it even more unsettling when one sees about one-third of these facilities abandoned and not used for their intended purposes.

Regarding wind energy, while Russia has been the source of several innovations in this area, most importantly wind-diesel (which could allow energy savings in small towns with irregular access to fuel), not only is this not widely known in the international arena but it is hardly used in those Russian regions that could greatly benefit from it.

All of the above is of great importance in a country that has such a wide range of climatic belts and that experiences such a variety of weather anomalies. Alternative energy sources could also be of great use in distant regions with a low population density and problematic access to well-developed infrastructure.

## CONCLUSION

In conclusion it should be stated that while there is a growing realisation in Russia's governmental, academic and business circles of the importance of the development of a green economy, practice lags behind theory. As this paper has illustrated, the 'green economy' concept is more familiar to Russians as the environmentalisation of the economy and the environmentally friendly use of nature and its resources for economic and social purposes. Today there are a number of federal and regional programmes in this area, but tangible results are yet to be seen. The biggest problem the Russian economy faces – a disproportionate reliance on hydrocarbon exports – remains as acute as it was a decade ago or earlier. Energy intensity, despite some optimistic research findings, is seemingly still the same as 10 years ago – two to four times higher than in advanced economies. A lot needs to be done to introduce transparent and comprehensive legislation and reform tax policies in order to encourage green development and make it attractive and competitive to business. While Russia is facing the right direction, it still has a long way to go and not much time to get there.



## ENDNOTES

- 1 UN, *Global Assessment Report on Disaster Risk Reduction*. Paris: UN, 2013, p. 246c.
- 2 Statement by Dmitry Medvedev, Prime Minister of the Russian Federation, at the UN Conference on Sustainable Development (Rio+20), Rio de Janeiro, 21 June 2012, <http://sustainabledevelopment.un.org/content/documents/3136Statement%20by%20H.E.%20Prime%20Minister%20Medvedev%20at%20Rio20%20-%20ENG.pdf>.
- 3 See UNEP (UN Environment Programme), *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. UNEP, 2011, [http://www.unep.org/greeneconomy/Portals/88/documents/ger/ger\\_final\\_dec\\_2011/Green%20EconomyReport\\_Final\\_Dec2011.pdf](http://www.unep.org/greeneconomy/Portals/88/documents/ger/ger_final_dec_2011/Green%20EconomyReport_Final_Dec2011.pdf).
- 4 *Ibid.*
- 5 At the end of the 1950s the Soviet Union saw a worsening in environmental conditions, which led to a new round of scientific research and legislation. In 1960 the government adopted the Law on Environmental Protection, which was aimed at resource use regulation rather than protection. In 1968 it introduced a legal framework for rational agricultural production, in 1969 health policies in terms of the prevention of pollution were formulated, the following year a suggesting framework for water management was developed, and legislation on subsoil and forests was introduced in 1975 and 1977 respectively.
- 6 World Bank figures put this at about 70%, which still exceeds the global average by far, allowing for 20% to human capital and 10% to manufactured capital. All data (Russian and from the World Bank) on natural capital etc. was taken from *Navstrechu 'zelenoi' ekonomike Rossii* [Towards a green economy in Russia]. Institute of Sustainable Development of the Civic Chamber of Russian Federation, Center for Environmental Policies of Russia, 2012, p. 14.
- 7 Russian statistical data in this regard differs from American geological surveys, which give different estimates. The problem with rare earth metals (REM) is that China has the monopoly on production and exports (at around 97%) and Russian REM production degraded after the collapse of the Soviet Union.
- 8 For more information see Torkunov AV (ed), *Problema presnoi vody: globalny kontekst politiki Rossii. Ekspertno-analiticheski doklad* [Problems with sweet water: The global context of Russian policies. Expert analytical report]. MGIMO-University, 2011.
- 9 In total, Russia has 20.1% of the world's forests, 70% of the world's boreal forests and 25% of its primeval forests. See Russian Federation, Ministry of Natural Resources and the Environment, *Annual Report on Conditions and Use of Forests of the Russian Federation for 2012*. 28 October 2013, <http://www.mnr.gov.ru/regulatory/detail.php?ID=131589&print=Y>
- 10 Specifically, the period that encompasses the advent of President Vladimir Putin, starting in 1999 (first as acting and then as elected president).
- 11 In 2003 Putin called on the government to double Russian GDP within the next 10 years, while the next year an even more ambitious goal was set, with achieving the target by 2010. However, this target was not achieved, primarily due to the economic crisis of 2008–2009 when Russian GDP fell by 7.9%. Almost a decade later, in 2011, this time as Prime Minister, Putin set yet another goal of doubling GDP per capita (from around \$19,000 to over \$35,000 per capita) in the following 10 years.
- 12 Russian Federation, 'Concept of the Long-Term Socio-Economic Development of the Russian Federation until 2020' [Concept 2020], Government order of 17 November 2008, # 1662-r.
- 13 According to Concept 2020, the current production structure should be modernised, making innovations 'the leading factor of economic growth in all sectors of the economy', *ibid.* It states



- that 'the [percentage] of industrial enterprises introducing technological innovations should grow to 40–50% (from 8.5% in 2007), and the [percentage] of production of innovations in the total volume should reach 25–35% (from 5.5% in 2007)'.
- 14 In accordance with Concept 2020, energy intensity should go down by 1.6–1.8 times. However, Russia continues to experience problems with its energy intensity being two–four times higher than in advanced economies.
  - 15 Among the major challenges are extreme temperatures and their influence on population health and the spread of infectious diseases due to climate change. While there are federal programmes on carbon emissions and the increased use of alternative energy, this remains more theory than practice. Sochi 2014 and carbon neutrality is presented as one of the country's successes in this area, and can be seen as a sign that Russia's efforts are being directed at taking its place as a responsible member of the international community.
  - 16 Bobylev SN (ed), *Human Development Report in Russia for 2013. Sustainable Development: Rio Challenges*. UNEP, 2013.
  - 17 To be fair, it has to be mentioned that global speculation allowed for its 'surviving' 2003, when the over-burdened country after the default of 1998 was expected to repay debts with no clear understanding on how to raise the necessary funds.
  - 18 Bobylev, *op. cit.*, p. 7.
  - 19 Starting in 2003 one can find annual reports on environmental conditions in Russia with the characteristics of the country's regions, prepared by the Russian Ministry of Natural Resources and the Environment. A full list of the annual reports can be found at: Ministry of Natural Resources and the Environment of the Russian Federation, <http://www.mnr.gov.ru/regulatory/list.php?part=1101>.
  - 20 The term used for the regions forming part of the Russian Federation – autonomous republics, autonomous regions, cities of federal significance etc.
  - 21 In accordance with the findings of the Ministry of Natural Resources and the Environment, Russia has accumulated 31,6 billion tonnes of waste, with around 2–2,3 billion tonnes being toxic. This leads to soil, water and atmospheric pollution and geochemical imbalance in the affected areas. For more details see: Russian Federation, Ministry of Natural Resources and the Environment, *Federal Target Programme for 2014–2025: Elimination of Accumulated Environmental Damage*. 2013.
  - 22 For example, the authors of the programme state that about 200 abandoned ships in Kola Bay have dumped barrels in the Arctic. According to estimates the accumulated environmental damage has had a negative impact on the quality of life of about 17 million Russians.
  - 23 The draft of the new 'Energy Strategy until 2035' will be released on 1 October 2014. See <http://www.fes-com.ru/newsensrv/485-k-1-oktyabrya-minenergo-dodelaet-proekt-energostrategii-rf-na-period-do-2035-goda>.
  - 24 Bobylev AN & VM Zakharov, *Green Economy Bulletin – On the Path to Sustainable Development in Russia*. 60, 2012, p. 21.
  - 25 The data used is that of 1 January 2014 and does not take into account the latest political and demographic developments. See [http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/population/demography/#](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/#).
  - 26 *Itar-Tass news agency*, Rosstat: doliya eksporta nefi iz RF v obschih postavkah produktov TEK sokratilas' do 46.7% [Share of Russian Federation oil exports in the general supply of fuel and energy complex products drops to 46.7%], 21 February 2014, <http://itar-tass.com/ekonomika/991399>.

- 27 Netreba P *et al.*, *Doprivatizatsiya otkladyvayetsia* [Finalisation of privatisation postponed], *Kommersant* 99, 5372, 10 June 2014, p. 1.
- 28 At the end of the 1970s and during the 1980s, the Soviet Union, which had enjoyed high revenues as an energy exporter following the energy crises of 1973 and 1979, could not ensure sustainable development and the competitiveness of its economy. Its economy finally collapsed in no small part due to the low oil prices of the 1980s and the government's failure to introduce 'safety nets' and modernisation at the time of the windfall in revenues.
- 29 Russian Federation, *Energy Strategy of the Russian Federation until 2030*, order of 13 November, 2009, # 1715.
- 30 The agency was created in 2005 with the main aim of offering the government and energy enterprises (ЗАО «АПБЭ») analysis on the state of the electricity-generating sector and its influence on the country's economy and environment, as well as forecasts for short- and long-term decision-making.
- 31 Three-letter currency code for the Russian rouble.
- 32 FESCO (Federal Energy Service Company), <http://www.fes-com.ru/newsensrv/490-pravitelstvo-rf-uvlichit-finansirovanie-programmy-energoeffektivnost-i-razvitie-energetiki>.
- 33 More information on what the federal energy service company offers to clients (mainly government and municipal departments and agencies) in terms of energy savings and energy efficiency can be found at <http://www.fes-com.ru/>.
- 34 See Bashmakov I (ed), *Costs and Benefits of Low-Carbon Economy and Society Transformation in Russia: 2050 Perspective*. Centre for Energy Efficiency, Moscow, 2014, p. 11, <http://www.cenef.ru/file/CB-LCE-2014-eng.pdf>.
- 35 *Sustainable development in Russia*.
- 36 Gerasimchuk IV, *Gosudarstvennaya Podderzhka Dobychi Nefti I Gaza V Rossii: Kakoi Cenoi?* [State Support of Oil and Gas Production in Russia: At What Price?]. Moscow, Geneva: WWF Russia and IISD (International Institute for Sustainable Development), 2012.
- 37 'Tendencii: Nauchat chistote' (Tendencies: teaching to be clean), *Vedomosti*, 21 March 2014, p. 20.
- 38 During the recent Ukrainian crisis, White House officials pressured the leadership of several big transnationals not to attend the St Petersburg Economic Forum (thus far only Alcoa has acknowledged that this was the reason for its non-attendance), while Microsoft joined in sanctions against a number of Russian enterprises.
- 39 Estimates can be found in Energy Vision 2013. *Energy Transitions: Past and Future*. World Economic Forum and Cambridge Energy Research Associates (IHS CERA), January 2013, [http://www3.weforum.org/docs/WEF\\_EN\\_EnergyVision\\_Report\\_2013.pdf](http://www3.weforum.org/docs/WEF_EN_EnergyVision_Report_2013.pdf).
- 40 The EU and China are also the biggest competitors. In 2013 the two entities signed a deal on the minimum pricing formula for European and Chinese solar panels, while 2014 saw another conflict with the Union of European Enterprises filing a complaint against its Chinese counterparts. The Chinese government denied all allegations and said it welcomed an investigation into the matter.

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