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Russian Renewable Energy: The Potential for International Cooperation

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Objective
The aim of this project and this book is to provide an overview of the Russian renewable energy landscape aimed at helping Nordic Energy Research and other Nordic actors formulate policies to promote Nordic–Russian cooperation on renewable energy. The book sheds light on both the strengths that Russia has in renewable energy, and the obstacles to renewable energy research and investment in the country. The project also surveyed which specific Russian research institutions, sectors and locations might be worth targeting for collaborative ventures.

Data
The book is based on a broad range of data, including seven fieldwork trips: five to Russia, one to Copenhagen and one to Stockholm. Extensive written Russian materials have been gathered. Over 100 interviews have been carried out. From the five fieldwork trips to Russia we gathered a large collection of written Russian materials on renewable energy. Three specialised, international and highly competent peer reviewers were involved to review this specific project (see list above).

Recommendations
The book includes 16 policy recommendations, aimed at Nordic Energy Research, other Nordic funding bodies involved in science and innovation, Nordic researchers, research institutions and companies interested in cooperation with Russia, as well as other Western actors interested in cooperation with Russia and Russian research and innovation actors. The policy recommendations fall into four main categories: 1) Recommendations regarding funding and coordination of international efforts to develop renewable energy research and innovation in Russia, 2) recommendations on how to benefit from the existing Russian strengths in research and science, 3) recommendations on how to influence Russian energy policy to the benefit of renewable energy development, and 4), recommendations on geographic considerations that actors seeking cooperation with Russian partners should make.

Content, results and conclusions
Russia has several competitive advantages linked to its natural resource base and its strong tradition of research in the natural and technological sciences. It also has the advantage of its geographic size and the variation in its climate and terrain, giving it the potential to develop virtually any kind of renewable energy. There are nevertheless difficulties in ascertaining the exact potential of the various resources, and estimates diverge. Contrasting Russia’s potential for renewable energy with installed capacity, one can see that there is considerable scope for expansion. A brief analysis of the ongoing reform of Russia's electricity sector is provided, and concludes that the reform might create conditions that can seriously hamper the development of renewable energy, since difficulties are created for the entry of newcomers to the market. This calls for establishing truly independent regulatory mechanisms, and highlights the necessity of creating incentives and effective institutions that will enable Russia to realise its potential in renewable energy and energy efficiency. The major impediment to the development of renewable energy in Russia is, however, the continued existence of subsidies for domestic gas consumption. These subsidies continue to be a major issue in the negotiations for Russian WTO membership, as the prices will not reach the European market level before 2014/15, given current trends. This market distortion is an impediment to the profitability of other energy sources, justifying the claim that there is no real competition between non-renewable and renewable energy sources in Russia today. The book features a study of the markets for renewable energy in Russia. Weighing both Russia’s strengths and weaknesses, it concludes that Russia has the potential to become a strong market for renewable energy. It points to one niche where renewable energy might be able to gain considerable ground without competing with subsidised natural gas and nuclear power: the remote settlements in the northern parts of the country without access to central electricity and gas grids. These settlements could emerge as one of the first realistic market niches for the profitable implementation of renewable energy in Russia, while waiting for better framework conditions in the rest of the country. As such, they could function as a testing ground for renewable energy, preparing the country and local as well as foreign actors for any future expansion in this

sector. Joint Nordic–Russian projects in this niche market could be counted as joint implementation (JI) projects under the Kyoto Protocol and thus benefit Nordic climate accounts.

Due to its position as one of the most energy-intensive economies in the world, and one of the most inefficient and wasteful, Russia offers a prime opportunity for Joint Implementation (JI) projects under the Kyoto Protocol. This can enable EU countries to fulfil their commitments to reducing emissions under the Kyoto Protocol, while at the same time establishing a presence in the Russian energy sector. The book contains an introduction to the Russian scientific-educational system in order to help actors interested in scientific and education cooperation with Russia to understand the country's long history of research and vast landscape of scientific and education institutions. There is also an overview of organisations that fund research in Russia, which may be of use to Western research funding organisations wishing to make joint calls. The economic growth recently experienced by Russia has been largely dependent on high commodity prices. Focusing on research and innovation would help to foster new industries, increase productivity and diversify the Russian economy. Innovation has remained rather low in the private sector, which has focused on imitation rather than research-based innovation. Nordic actors aiming to carry out commercialisation in cooperation with Russian partners must therefore explicitly bring out both the benefits to be achieved from commercialisation and the opportunities available. The book maps some of the areas within renewable energy in which Russia has particular strengths or weaknesses, and analyses how these match the foci of the Nordic countries. In Russia, commercial, sociological and political approaches to renewable energy have had very low priority. This bears an important implication for Russian–Nordic cooperation. The complementarities become obvious: strong Russian basic research in the natural sciences, strong Nordic skills in social science, commercialisation and marketing. In the mapping of Nordic–Russian complementarities, hydrogen and solar power, both high-tech, basic-science fields, emerge as the best match of Russian and Nordic strengths in renewable energy. In practice each of the Nordic countries is mainly interested in cooperating within its own areas of specialisation. The many potential linkages between Russia and the Nordic countries' different specialisations within renewable energy therefore also pose a challenge to a coordinated Nordic approach to cooperation with Russia.