




## The low carbon development options for Russia

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### Abstract

Russia is one of the largest carbon emitters in the world, possessing huge resources of both fossil fuels and zero-carbon energy sources. The Paris Agreement targets require substantial efforts to limit global warming to “well below 2 °C”. Energy-economic modeling provides sound conclusions that continuation of existing energy and climate policy will lead to stabilization of energy carbon emissions in Russia at the current level in 2010–2050 (about 30% below 1990). Stronger mitigation policies could gradually reduce domestic energy CO<sub>2</sub> emissions by 61% from 2010 to 2050 (75% below 1990). Deep decarbonization policies with even more ambitious commitments could ensure an 83% reduction in energy CO<sub>2</sub> emissions from 2010 levels (88% below 1990) by 2050. All key sectors (energy, industries, transport, and buildings) can play a substantial role in decarbonizing the national economy. However Russia’s historical reliance on domestic consumption and exports of fossil fuels creates strong barriers to decarbonization. Emission reduction costs are expected to be below 29 USD/tCO<sub>2</sub> by 2030, 55 USD/tCO<sub>2</sub> by 2040, and 82 USD/tCO<sub>2</sub> by 2050 in the most ambitious decarbonization scenario. The results of this study provide insights into how Russia can enhance its ambitions to implement the Paris Agreement and contribute to global efforts toward building a climate-neutral economy by 2050.

**Keywords** Russia · Decarbonization · Climate change · Paris Agreement · Carbon emissions · Low carbon development