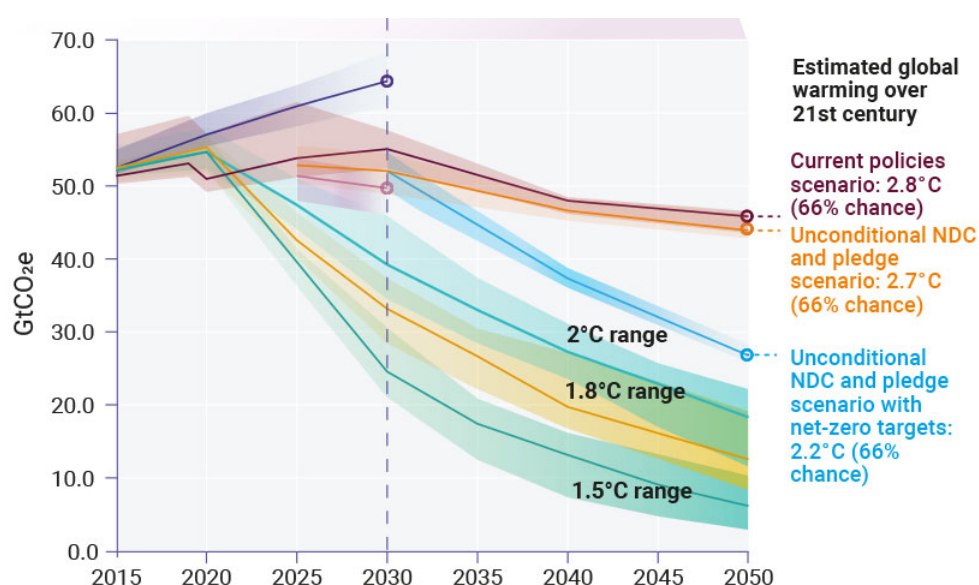


# Decarbonization pathways in Russia in the new geopolitical circumstances

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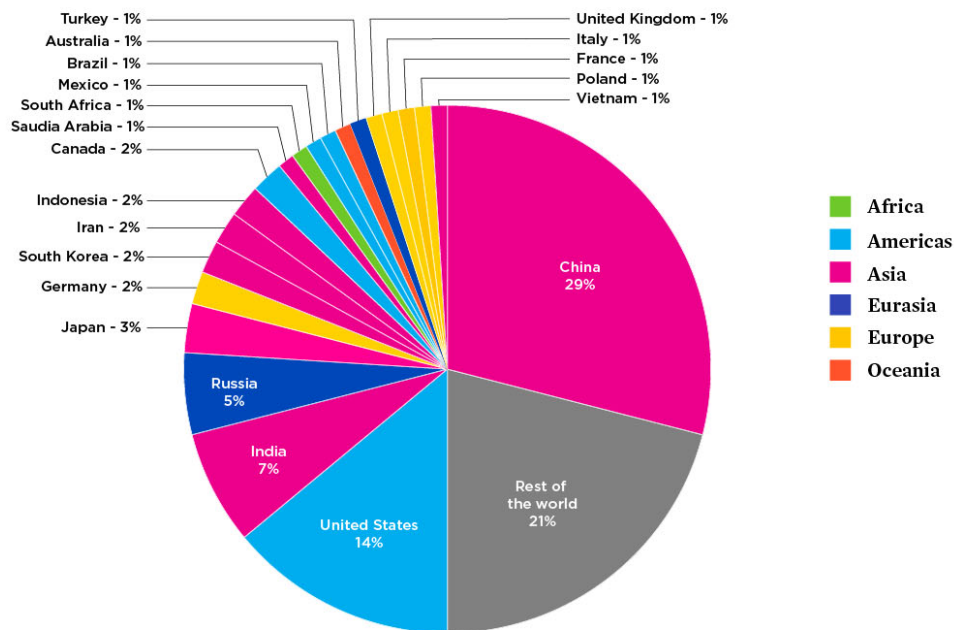
## Emission gaps to reach Paris targets

- The current commitments are not sufficient to prevent from 1.5-2°C warming
- Much more efforts are needed from ALL major countries



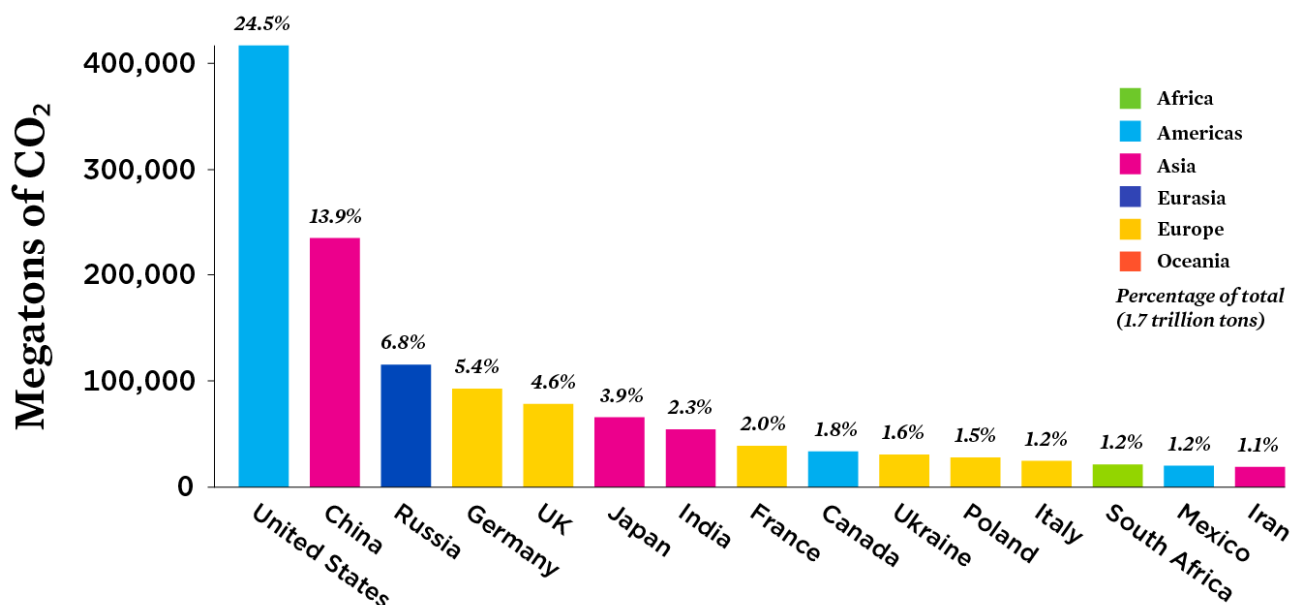
Source: UNEP (2021) The Emissions Gap Report 2021.

## Top Annual CO<sub>2</sub> Emitting countries, 2019 (from fossil fuels)



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Data: IEA Atlas of Energy

## Top CO<sub>2</sub> Emitting Countries, 1750-2020 (from fossil fuels and cement)



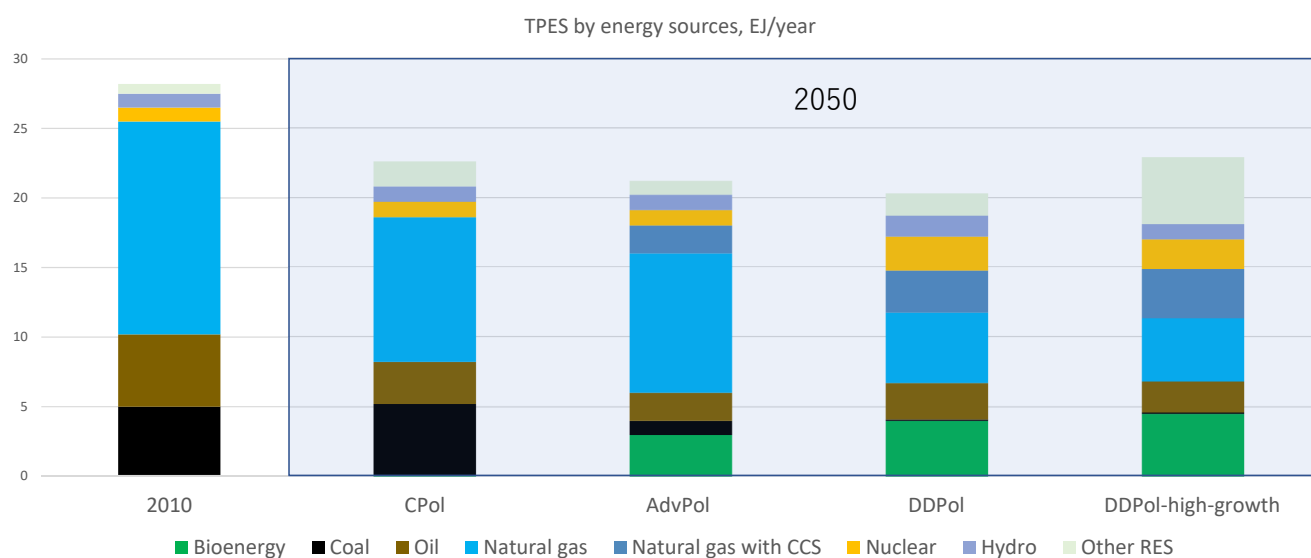
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Data: Global Carbon Project via Our World in Data

## GHG emissions in Russia, 1990-2020 (MtCO<sub>2</sub>e)

Emissions/sinks	1990	2000	2010	2020	% change, 2020/1990
Fossil fuel combustion	2291,6	1308,0	1414,2	1380,9	-40%
Fugitive methane emissions	285,5	213,6	225,1	216,8	-24%
Industries	285,1	197,7	197,8	241,7	-15%
Agriculture	247,5	118,9	103,5	116,6	-53%
Forestry	-226,1	-594,6	-749,8	-622,3	+175%
Other sources	205,5	183,7	100,7	148,5	-28%
<b>Total net-emissions</b>	<b>3089,1</b>	<b>1427,3</b>	<b>1291,5</b>	<b>1482,2</b>	<b>-52%</b>

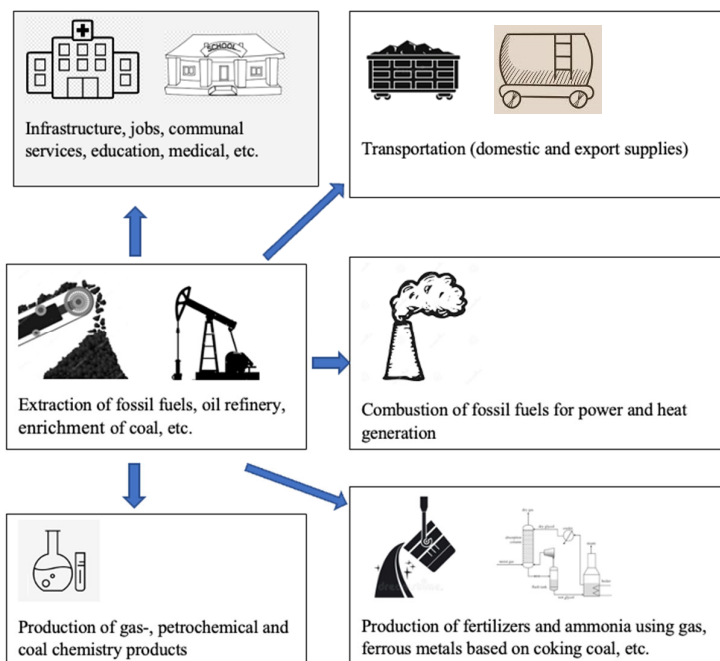
Source: National GHG emission and absorption inventory of the Russian Federation, 2022.

## Decarbonization pathways for Russia, scenarios by 2050



Source: Safonov et al. (2022) Potential Role of Bioenergy in Decarbonizing Russia's Economy. Ekonomicheskaya Politika Journal, 2022, v. 4.

## Impacts of sanctions and related factors on Russian economy



- Embargo on oil and oil refinery products: over **50%** decline of production
- Embargo on coal exports: up to **47%** decline in coal production
- Natural gas exports: drop by **40%**
- Expectation: reduction of related GHG emissions at least by **20-30%** in near term, likely continuation of the same level by 2030

Thank you  
for attention!

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