RUSSIAN FEDERATION

Climate Transparency

CLIMATE TRANSPARENCY REPORT: COMPARING G20 CLIMATE ACTION TOWARDS NET ZERO 2021

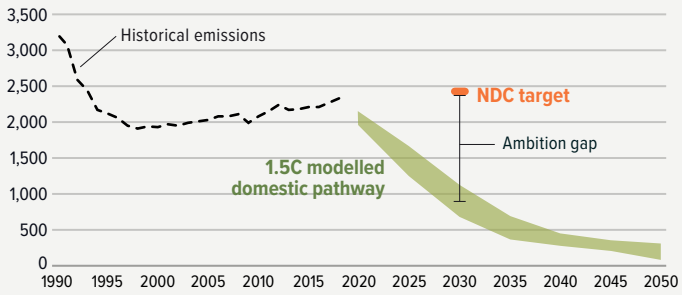
NOT ON TRACK FOR A 1.5°C WORLD

1.5°C

Russia's NDC is to reduce emissions 24% below 1990 levels, or approximately 2,423 $MtCO_2e$ by 2030. To keep below the 1.5°C temperature limit, Russia's 2030 emissions would need to be around 827 $MtCO_2e$ (or 74% below 1990 levels), leaving an ambition gap of 1,596 $MtCO_2e$. All figures exclude land use emissions.

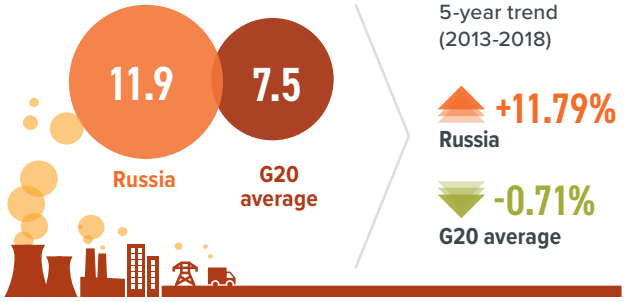
Gütschow et al., 2021; Climate Analytics, 2021

1.5°C compatible emissions pathway ($MtCO_2e$/year)[1]



PER CAPITA GREENHOUSE GAS (GHG) EMISSIONS ABOVE G20 AVERAGE

GHG emissions (incl. land use) per capita (tCO_2e/capita)[2] in 2018



Russia's per capita emissions are 1.6 times the G20 average. Total per capita emissions have increased by 12% between 2013 and 2018.

Climate Action Tracker, 2021; Gütschow et al., 2021; United Nations, 2019

KEY OPPORTUNITIES FOR ENHANCING CLIMATE AMBITION

Russia should follow the lead of its eastern region, Sakhalin, that is **implementing a carbon pricing scheme as part of its 2025 net zero emissions target.**

Recently abolished targets for increasing the energy efficiency of new buildings in Russia should be **reformulated and strengthened to target near zero energy consumption.**

Russia's renewable energy sector is lacking policy certainty, which hinders investment, with no target in place beyond its insufficient 4.5% non-hydro renewable share by 2024, and no concrete investment strategy.

Russian Federation, 2020; Tissot and Bogdanov, 2020; UNFCCC, 2021

RECENT DEVELOPMENTS

- Russia adopted its heavily watered-down climate bill in June 2021, which commits companies to begin reporting their GHG emissions from 2023 but, unlike the original version, **does not implement emissions quotas or penalties on large polluters.**
- Russia updated its 2030 emissions reduction target in late 2020, replacing the previous 25-30% target range. **This is not an increase in ambition, as 2030 emissions under current policies are projected by the Russian government to be below this level.**
- Climate scientists have expressed concern at a May 2021 recommendation by the Russian Ministry of Foreign Affairs to **fund scientific studies that would allow Russia to promote "alternative" viewpoints on climate change that "would not necessarily imply abandoning fossil fuels."**

Climate Action Tracker, 2021; Digges, 2021; Dobrovidova, 2021

CORONAVIRUS RESPONSE AND RECOVERY

Russia's USD 83bn COVID-19 recovery package announced in 2020 contains no measures explicitly targeting emissions reductions or climate change adaptation – a missed opportunity to demonstrate Russia's commitment to the global climate mitigation effort.

KPMG, 2020

CONTENTS

We unpack Russia's progress and highlight key opportunities to enhance climate action across:

LEGEND

Trends show developments over the past five years for which data are available. The colour-coded arrows indicate assessment from a climate protection perspective: Orange is bad, green is good.

Decarbonisation Ratings[3] assess a country's performance compared to other G20 countries. A high score reflects a relatively good effort from a climate protection perspective but is not necessarily 1.5°C compatible.

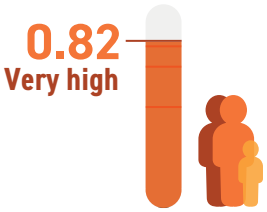
Very low | Low | Medium | High | Very high

Policy Ratings[4] evaluate a selection of policies that are essential pre-conditions for the longer-term transformation required to meet the 1.5°C limit.

Low | Medium | High | Frontrunner

SOCIO-ECONOMIC CONTEXT

Human Development Index (HDI)

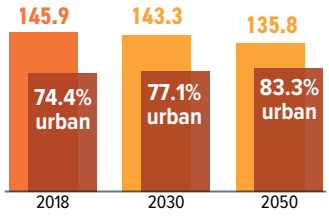


The HDI reflects life expectancy, level of education, and per capita income. Russia ranks very high.

Data for 2019. UNDP, 2020

Population and urbanisation projections

(in millions)

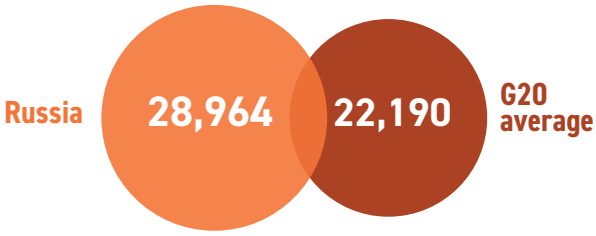


Russia's population is projected to decrease by 7% by 2050, and become more urbanised. Urban climate change-related risks are increasing with widespread negative impacts on people and their health, livelihoods, and assets. This is important in the context of an increasingly urbanised society such as Russia.

United Nations, 2019; United Nations, 2018

Gross Domestic Product (GDP) per capita

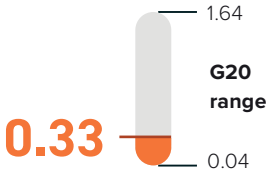
(PPP constant 2015 international $) in 2019



World Bank, 2021; United Nations, 2019

Death rate attributable to air pollution

Ambient air pollution attributable death rate per 1,000 population per year, age standardised in 2019



Over 77,500 people die in Russia every year as a result of outdoor air pollution due to stroke, heart disease, lung cancer and chronic respiratory diseases. Compared to total population, this is still one of the lower levels in the G20.

Institute for Health Metrics and Evaluation, 2020

This source differs from the source used in last year's profiles and, therefore, the data are not comparable.

A JUST TRANSITION

Russia's economy is heavily reliant on fossil fuels, with the energy sector constituting between 20-23% of GDP, 25-26% of consolidated budget revenues, and 55-60% of export revenues in recent years. Despite the rapid uptake of renewable energy sources across the globe fuelled by declining costs, Russia sees this trend not as an opportunity to decarbonise its economy, but as a threat to its plans to expand domestic fossil fuel consumption, production and exports. These plans, outlined in its Energy Strategy to 2035 adopted in 2020, put Russia at odds with the global trend away from fossil fuel consumption needed to achieve the Paris Agreement's 1.5°C long-term temperature goal. Instead of increasing Russia's dependency on jobs in the fossil fuels sector, which will be lost due to global trends, its government should initiate a process of just transition resulting in more jobs in the renewable energy, green hydrogen, and energy efficiency sectors.

ERI RAS/SKOLKOVO, 2019; Mitrova and Yermakov, 2019

ADAPTATION | ADDRESSING AND REDUCING VULNERABILITY TO CLIMATE CHANGE

PARIS AGREEMENT **Increase the ability to adapt to the adverse effects of climate change and foster climate resilience and low-GHG development.**

Russia is at risk of **extreme weather events** from climate change, such as droughts, while the **arctic permafrost is at risk of thawing** due to increasing average temperatures.

Siberian wildfires in 2019-21 were particularly severe due to record high temperatures, releasing enormous amounts of CO_2 into the atmosphere and causing health problems from smoke inhalation.

In 2018, Russia registered 18,600 heat-related deaths, one of the highest rates in the world. Global heat-related mortality in people older than 65 years increased 53.7% between 2000-2018.

ADAPTATION NEEDS

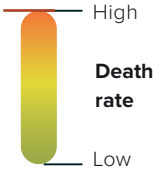
Climate Risk Index

Impacts of extreme weather events in terms of fatalities and economic losses that occurred. All numbers are averages (1999-2018) .

Annual weather-related fatalities

2,939 Deaths — **2.03 PER 100,000 INHABITANTS**

RANKING: 1st in the G20

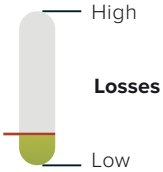


Based on Germanwatch, 2019

Annual average losses (US$ millions PPP)

1,797 $ — **0.05 PER UNIT GDP (%)**

RANKING: 17th in the G20



Based on Germanwatch, 2019

Exposure to future impacts at 1.5°C, 2°C and 3°C

Impact ranking scale: Very low | Low | Medium | High | Very high

			1.5°C	2°C	3°C
WATER		% of area with increase in water scarcity			
		% of time in drought conditions			
HEAT AND HEALTH		Heatwave frequency			
		Days above 35°C			
AGRICULTURE	Maize	Reduction in crop duration			
		Hot spell frequency			
		Reduction in rainfall			
	Wheat	Reduction in crop duration			
		Hot spell frequency			
		Reduction in rainfall			

Water, Heat and Health: own research; Agriculture: Arnell et al., 2019

Note: These indicators are national scale results, weighted by area and based on global data sets. They are designed to allow comparison between regions and countries and, therefore, entail simplifications. They do not reflect local impacts within the country. Please see technical note for further information.

CORONAVIRUS RESPONSE AND RECOVERY

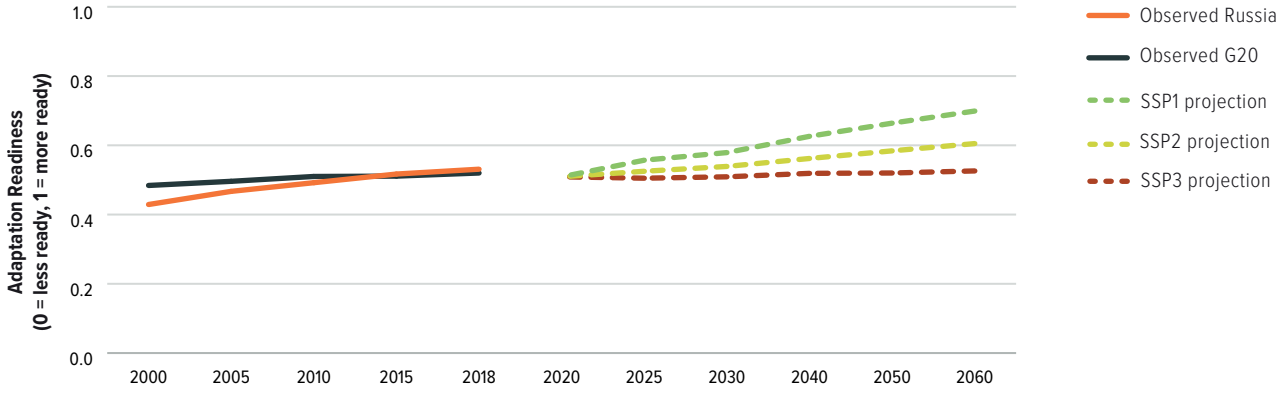
Russia's USD 83bn recovery package failed to include funding for climate adaptation measures.

KPMG, 2020

Adaptation Readiness

The figure shows 2000-2018 observed data from the Notre Dame Global Adaptation Initiative (ND-GAIN) Index overlaid with projected Shared Socioeconomic Pathways (SSPs) from 2020 to 2060.

Notre Dame Global Adaptation Initiative (ND-Gain) Readiness Index



Russia scored just above the G20 average in 2018 in terms of adaptation readiness. Adaptation challenges still exist, but the country is well positioned to adapt if it puts in place measures compatible with SSP1. Other measures, as represented by SSP2 and SSP3, undermine its readiness to adapt in the long term.

The readiness component of the Index created by the ND-GAIN encompasses social (social inequality, information and communications technology infrastructure, education and innovation), economic, and governance indicators to assess a country's readiness to deploy private and public investments in aid of adaptation. The index ranges from 0 (low readiness) to 1 (high readiness).

The overlaid SSPs are qualitative and quantitative representations of a range of projections of future governance and, therefore, of possible adaptation readiness. The three scenarios shown here in dotted lines are described as a sustainable development-compatible scenario (SSP1), a middle-of-the-road (SSP2), and a 'Regional Rivalry' (SSP3) scenario.

Based on Andrijevic et al., 2020; ND-Gain Index, 2021

ADAPTATION POLICIES

National Adaptation Strategies

Document name	Publication year	Fields of action (sectors)												Monitoring & evaluation process
		Agriculture	Biodiversity	Coastal areas and fishing	Education and research	Energy and industry	Finance and insurance	Forestry	Health	Infrastructure	Tourism	Transport	Urbanism	Water	
National Adaptation Programme and the third strategy for climate adaptation reporting	2020														n/a

Nationally Determined Contribution (NDC): Adaptation

TARGETS

None

ACTIONS

Not mentioned

MITIGATION | REDUCING EMISSIONS TO LIMIT GLOBAL TEMPERATURE INCREASE

PARIS AGREEMENT **Hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit to 1.5°C, recognising that this would significantly reduce the risks and impacts of climate change.**

EMISSIONS OVERVIEW

While Russia's GHG emissions (excluding LULUCF) fell by 28% (1990-2018), most of this was in the early 1990s after the collapse of inefficient industry. Since then, **emissions have been increasing**.

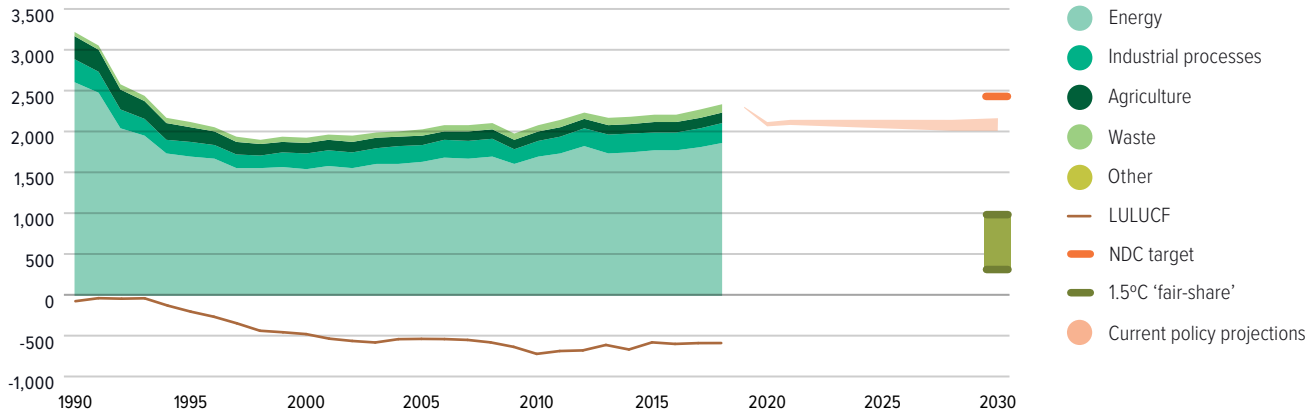
1.5°C COMPATIBILITY

In 2030, global CO_2 emissions need to be 45% below 2010 levels and reach net zero by 2050. Global energy-related CO_2 emissions must be cut by 40% below 2010 levels by 2030 and reach net zero by 2060.

Rogelj et al., 2018

GHG emissions across sectors and CAT 1.5°C 'fair-share' range ($MtCO_2e$/year)[5]

Total GHG emissions across sectors ($MtCO_2e$/year)

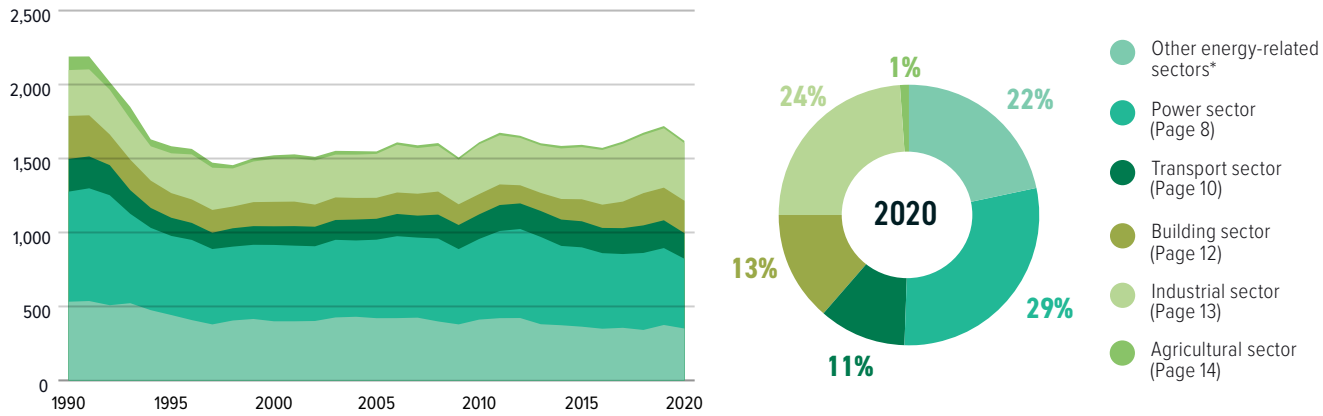


Russia's emissions (excl. land use) decreased by 28% between 1990-2018, to 2,330 $MtCO_2e$. When considered by category, reductions were registered in all sectors except for waste, which increased by 65%. Russia's 2030 emissions reduction target of a 30% reduction below 1990 levels (incl. land use) is not 1.5°C 'fair-share' compatible. A 'fair-share' contribution by Russia requires it to strengthen its domestic target and increase its international financial contributions.

Gütschow et al., 2021; Climate Action Tracker, 2020a, 2021

Energy-related CO_2 emissions by sector

Annual CO_2 emissions from fuel combustion ($MtCO_2$/year)



The largest driver of Russia's overall GHG emissions is CO_2 emissions from fuel combustion. In Russia, emissions excluding LULUCF have been increasing since bottoming out in 1998. Emissions from the power sector are the single largest contributor to overall emissions at 29%, followed by emissions from industry and other energy-related sectors with 24% and 22% respectively.

Enerdata, 2021

Due to rounding, some graphs may sum to slightly above or below 100%

**'Other energy-related sectors' covers energy-related CO_2 emissions from extracting and processing fossil fuels.*

ENERGY OVERVIEW

Russia's economy is heavily reliant on fossil fuels, particularly natural gas, which made up over half of total primary energy supply in 2019. **Renewables made up just 4%, less than half the G20 average**, with almost all of this coming from hydropower. Nuclear power generation, which has been gradually increasing over the last two decades, made up 8%.

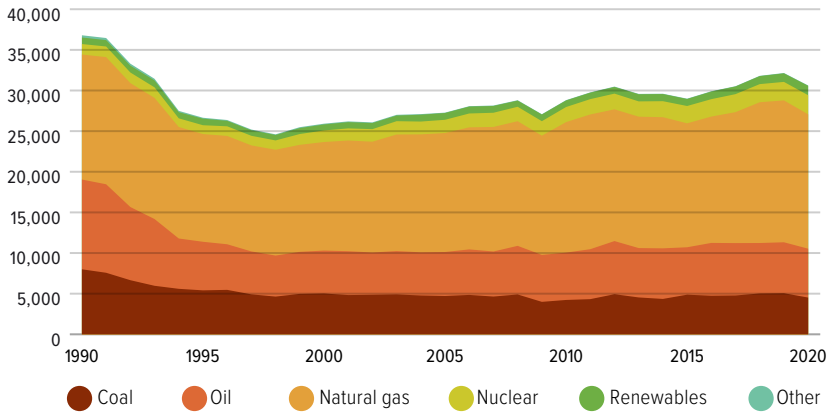
COMPATIBILITY

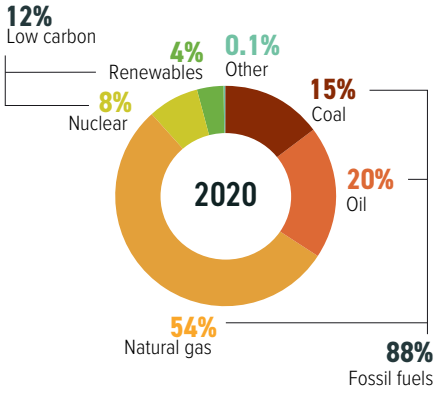
The share of fossil fuels globally needs to fall to 67% of global total primary energy by 2030 and to 33% by 2050, and to substantially lower levels without carbon capture and storage (CCS).

Rogelj et al., 2018

Energy mix

Total primary energy supply (TPES) (PJ)



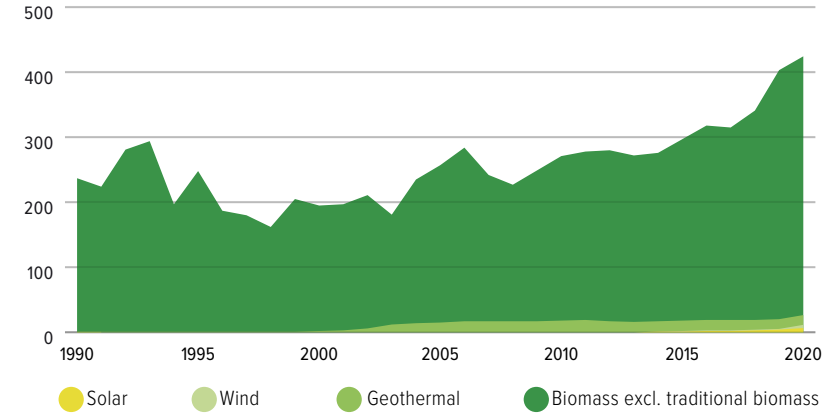


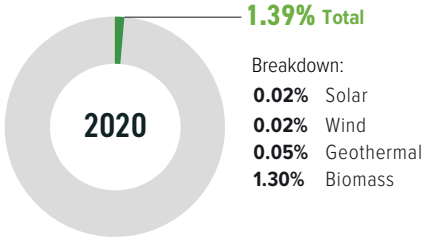
This graph shows the fuel mix for all energy supply, including energy used not only for electricity generation, heating, and cooking, but also for transport fuels. Fossil fuels (oil, coal, and gas) made up 88% of Russia's energy mix in 2019, which is higher than the G20 average of 82%. Renewable energy supply has barely increased in recent decades, as Russia has been generating large amounts of hydropower for decades, and new wind and solar installations have been very minor. Oil demand is significantly lower than in 1990 due to a steep decline in its use for power generation.

Enerdata, 2021 *Due to rounding, some graphs may sum to slightly above or below 100%*

Solar, wind, geothermal, and biomass development

TPES from solar, wind, geothermal and biomass (PJ)



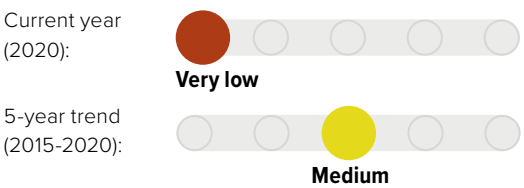


Solar, wind, geothermal and biomass account for 1.4% of Russian Federation's energy supply – the G20 average is 7.1%. Almost all of this comes from burning biomass for electricity and heat generation, with solar and wind generation close to zero. The non-hydro renewable share in total energy supply has increased by around 35% in the last five years (2015-2020), but this is from a very low base.

Enerdata, 2021 *Due to rounding, some graphs may sum to slightly above or below 100%*

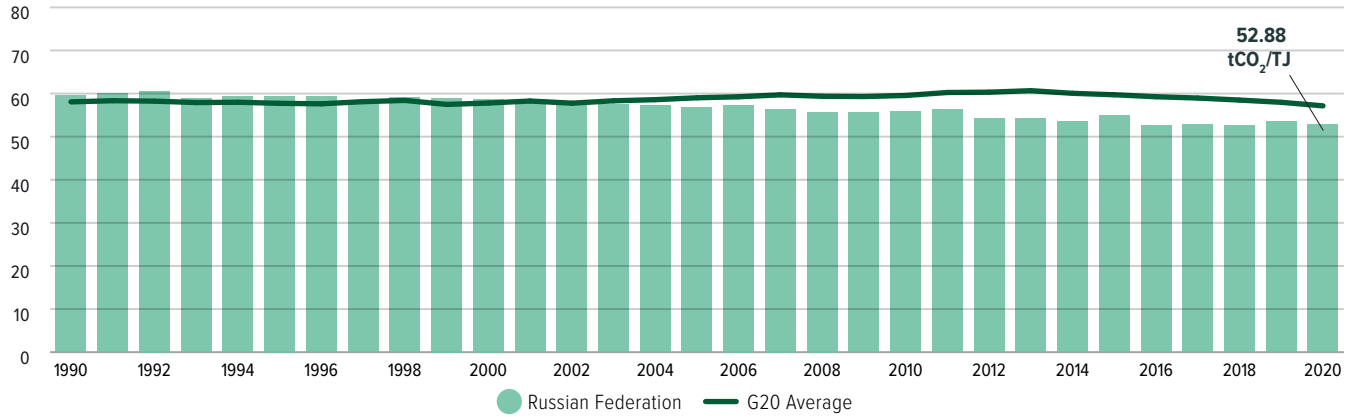
Note: Large hydropower and solid fuel biomass in residential use are not reflected due to their negative environmental and social impacts.

Decarbonisation rating: renewable energy share of TPES compared to other G20 countries



Carbon intensity of the energy sector

Tonnes of CO_2 per unit of TPES (tCO_2/TJ)



Carbon intensity is a measure of how much CO_2 is emitted per unit of energy supply.

While Russia's emissions intensity of energy is slightly lower than the G20 average, it has also been falling at a slower pace than the G20 average over the last five years. This recent slight decline in emissions intensity is primarily due to an increasing share of natural gas relative to the more polluting fossil fuels, coal and oil, and a higher share of zero carbon nuclear power generation.

Enerdata, 2021

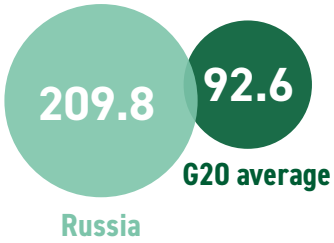
Decarbonisation rating: carbon intensity of the energy sector compared to other G20 countries

Current year (2020): **Medium**

5-year trend (2015-2020): **Medium**

Energy supply per capita

TPES per capita (GJ/capita) in 2020



TPES per capita (GJ/capita): 5-year trend (2015-2020)

+7.24%
Russia

-0.12%
G20 average

Decarbonisation rating: energy supply per capita compared to other G20 countries

Current year (2020): **Low**

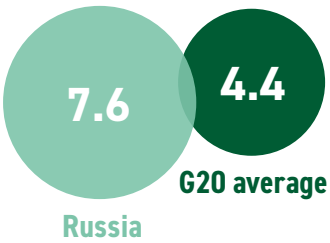
5-year trend (2015-2020): **Very low**

The level of energy use per capita is closely related to economic development, climatic conditions and the price of energy. Energy use per capita in Russia is, at 210 GJ/capita in 2020, well above the G20 average, and has increased 7% over the period 2015-2020 in contrast to the decreasing G20 average of 0.12% over the same period.

Enerdata, 2021; United Nations, 2019

Energy intensity of the economy

(TJ/million US$2015 GDP) in 2019



Energy intensity of the economy: 5-year trend (2014-2019)

+5.35
Russia

-10.56%
G20 average

Decarbonisation rating: energy intensity compared to other G20 countries

Current year (2019): **Very low**

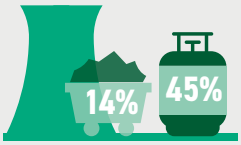
5-year trend (2014-2019): **Very low**

This indicator quantifies how much energy is used for each unit of GDP. This is closely related to the level of industrialisation, efficiency achievements, climatic conditions or geography. Russia's energy intensity of GDP is almost double the G20 average and has increased by 5% between 2014 and 2019, compared to a decline of 11% over the same period for the G20.

Enerdata, 2021; World Bank, 2021

POWER SECTOR

Emissions from energy used to make electricity and heat



Russia produced 14% of its electricity from coal in 2020, but **almost half of its power generation was from natural gas (45%).** Nuclear generation hit an all-time high of 20%, while generation from hydropower, which remained reasonably stable between 1990 and 2015, has hit record highs in recent years, also reaching 20% in 2020.

29%

Share of energy-related CO_2 emissions from electricity and heat production in 2020.

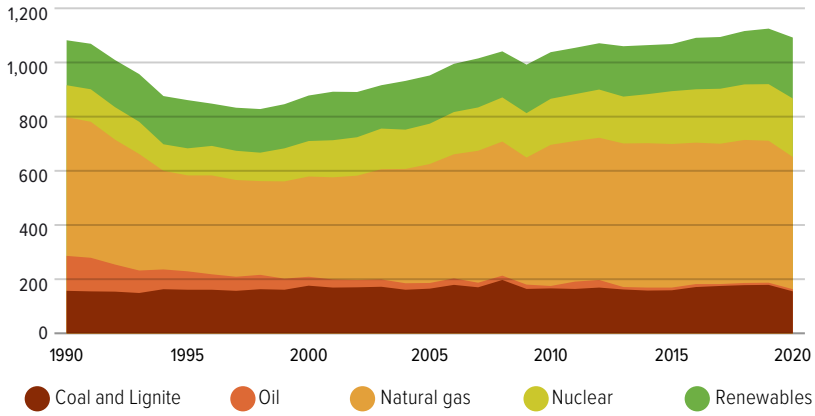
COMPATIBILITY

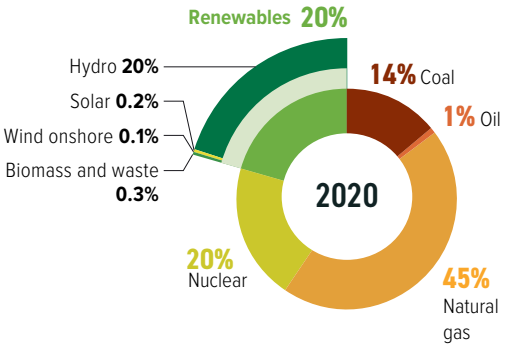
Worldwide, coal use for power generation needs to peak by 2020, and between 2030 and 2040, all the regions of the world need to phase out coal-fired power generation. By 2040, the share of renewable energy in electricity generation has to be increased to at least 75%, and the share of unabated coal reduced to zero.

Rogelj et al., 2018; Climate Action Tracker, 2020b

Electricity generation mix

Gross power generation (TWh)



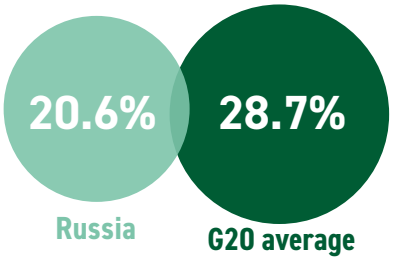


Russia generated **60% of its electricity from fossil fuels in 2020.** The amount of renewable energy generation in Russia's power sector has barely risen since 1990, accounting for approximately 21% of the power mix in 2020. Almost all of this is generation from hydropower. Oil, which made up a notable share of power generation in the early 1990s, has been almost entirely phased out of the power system.

Enerdata, 2021 *Due to rounding, some graphs may sum to slightly above or below 100%*

Share of renewables in power generation

(incl. large hydro) in 2020

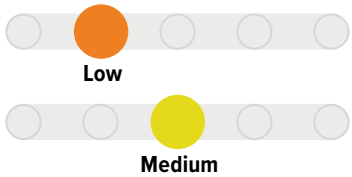


Share of renewables in power generation: 5-year trend (2015-2020)

+21.21%
Russia

+24.49%
G20 average

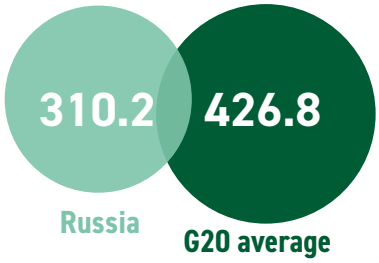
Decarbonisation rating: share of renewables compared to other G20 countries



Enerdata, 2021

Emissions intensity of the power sector

(gCO_2/kWh) in 2020

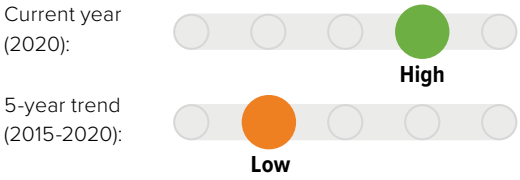


Emissions intensity of the power sector:
5-year trend (2015-2020)

-6.01
Russia

-11.18%
G20 average

Decarbonisation rating: emissions intensity compared to other G20 countries



For each kilowatt hour of electricity generated in Russia in 2020, an average of 310 g of CO_2 was emitted. This is significantly lower than the G20 average of 427 g of CO_2/kWh due to the **high share of natural gas generation in Russia's power sector as well as its considerable nuclear and hydropower generation**. A lack of investment in new renewable energy projects is behind the slow downward trend in recent years.

Enerdata, 2021

POLICY ASSESSMENT

Renewable energy in the power sector

Low

Russia failed to meet its very low 2020 target of a 2.5% share of non-hydro renewables and, based on its current trajectory, is unlikely to meet its modest 2024 target of a 4.5% share. There are regional incentive schemes that encourage renewable energy projects by offering capacity supply agreements with favourable pricing. However, not all regions are covered by such schemes, and those that are, have prohibitively high 'local content requirements' that restrict supply. The level and form of state support for renewables beyond 2024 remains uncertain, though preliminary estimates show USD 5.4bn could be made available to achieve 10 GW in total non-hydro renewables capacity by 2035. Strictly applied, the rating criteria would have led to a 'Medium' rating, but due to Russia's very low targets, the fact that it missed the 2020 target, and that no progress has been made in the last 12 months, a rating of 'Low' has been given.

Tissot and Bogdanov, 2020

Coal phase-out in the power sector

Low

Russia has no strategy for phasing out coal in the power sector: on the contrary, it is targeting an increased role for coal by 2035. The Energy Strategy 2035, adopted in June 2020, targets an increase in annual domestic coal consumption to 196 million tonnes by 2035, a 12% increase on current levels. Total domestic production is targeted to double between now until 2035, while the forecast share of global coal exports is 25%, more than double the current 11%.

Russian Federation, 2020b

CORONAVIRUS RESPONSE AND RECOVERY

Russia has not outlined any climate specific policies as part of its USD 83bn recovery package announced in 2020. This remains the case, despite the importance of the upcoming COP26 for ensuring global efforts are in line with limiting warming to 1.5°C.

KPMG, 2020

TRANSPORT SECTOR

Emissions from energy used to transport goods and people

Emissions from transport are still on the rise in Russia. Only 9% of freight transport travelled by road in 2018, however, which is a much lower share than that of most G20 countries. **The passenger and freight sectors are both still dominated by fossil fuels, and electric vehicles (EV) make up only a tiny fraction of car sales**, with just 687 EV passenger cars sold in 2020. In order to stay within a 1.5°C limit, both sectors need to be decarbonised.

1.82% Indirect emissions

10.7% Direct emissions

Share of transport in energy-related CO_2 emissions

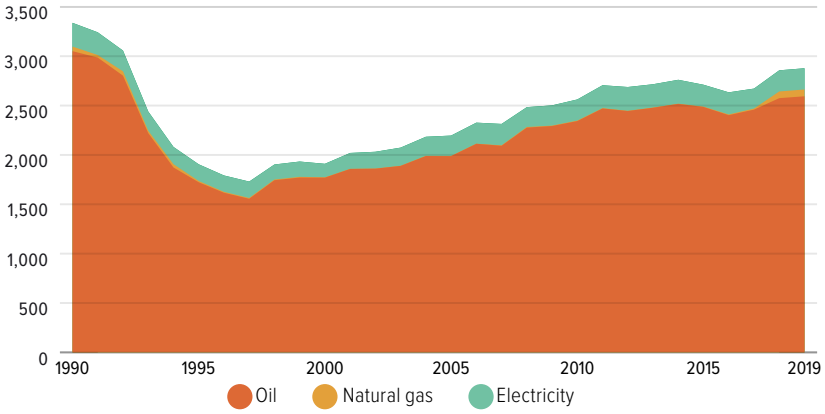
1.5°C COMPATIBILITY

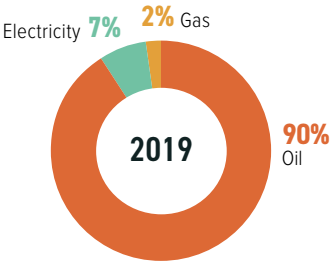
The share of low-carbon fuels in the transport fuel mix globally must increase to between 40% and 60% by 2040 and 70% to 95% by 2050.

Rogelj et al., 2018; Climate Action Tracker, 2020b

Transport energy mix

Final energy consumption of transport by source (PJ/year)



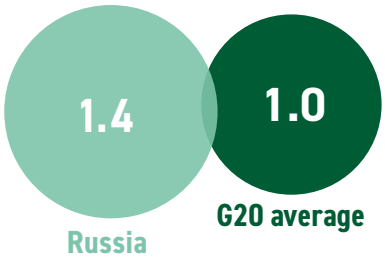


Electricity and biofuels make up only 7.47% of the energy mix in transport.

Enerdata, 2021 *Due to rounding, some graphs may sum to slightly above or below 100%*

Transport emissions per capita

excl. aviation (tCO_2/capita) in 2020



Transport emissions: 5-year trend (2015-2020)

-0.4% Russia

-4.3% G20 average

Decarbonisation rating: transport emissions compared to other G20 countries

Current year (2020): **Medium**

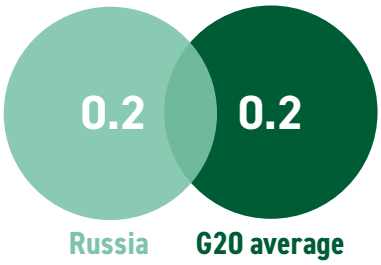
5-year trend (2015-2020): **Medium**

Reductions in transport emissions per capita in 2020, and concomitant changes in the 5-year trends and decarbonisation ratings, reflect widespread economic slowdowns and transport restrictions imposed in response to the COVID-19 pandemic. For a discussion of broader trends in the G20 and the rebound of transport emissions in 2021, please see the Highlights Report at www.climate-transparency.org

Enerdata, 2021; United Nations, 2019

Aviation emissions per capita[6]

(tCO_2/capita) in 2018



Aviation emissions: 5-year trend (2013-2018)

-7.72
Russia

+21.25%
G20 average

Decarbonisation rating: aviation emissions compared to other G20 countries

Current year (2018):

5-year trend (2013-2018):

Enerdata, 2021; International Energy Agency, 2020; United Nations, 2019

Motorisation rate

257 VEHICLES
per 1,000 inhabitants in 2019 in Russia*

Enerdata, 2021

Market share of electric vehicles in new car sales (%)

In Russia, just 687 electric passenger vehicles were sold in 2020, corresponding to a near zero percent share of new sales. This is a 95% increase, however, on 2019 sales of 353 units.

Autostat, 2021

Passenger transport

(modal split in % of passenger-km) in 2018*

No data available for Russia

Freight transport

(modal split in % of tonne-km) in 2018*

Freight transport by air, pipelines and waterways are excluded due to lack of data.

Enerdata, 2021

**Owing to the variety of sources and data years available, these data are not comparable across G20 countries.*

POLICY ASSESSMENT

Phase out fossil fuel cars

Low

There is currently no plan to phase out fossil fuel cars in Russia, and sales of EVs remain vanishingly small, registering just 687 units in 2020. A government strategy adopted in 2018 targeted a 1% electric vehicle share of total sales by 2020, reaching 5% by 2025. Achieving even this unambitious trajectory appears to be unlikely.

Russian Federation, 2018

Phase out fossil fuel heavy-duty vehicles

Low

There are currently no plans in Russia to phase out fossil fuel heavy-duty vehicles. A national regulation requiring the use of cleaner gasoline and diesel fuels has been adopted, and a low emissions zone is in place around Moscow, restricting entry to more polluting heavy-duty vehicles. These rules target toxic non-CO_2 emissions, like NOx gases and particulate matter, however, and do not reduce overall CO_2 emissions.

City of Moscow, 2021

Modal shift in (ground) transport

Medium

A number of Russian strategic documents target improvements in public transport and the rail network, including the 2030 Transport Strategy, the Russian Railway's long-term investment programme to 2025, and the Strategy for Development of Rail Transport 2030. Some of the targeted measures include investments in high-speed rail, improving the capacity of the rail freight network, 16,000km of new rail routes, and a 33% increase in passenger numbers between 2008 and 2030. In 2020, Russia released its draft long-term climate strategy, which includes a "large-scale change in the structure of cargo and passenger turnover in favour of less carbon-intensive modes of transport" under its more ambitious "intensive" scenario.

Russian Federation, 2014, 2020a; Russian Railways, 2008

BUILDING SECTOR

Emissions from energy used to build, heat and cool buildings

Direct and indirect emissions from Russia's buildings account for 12% and 9% of total energy-related CO_2 emissions, respectively. Per capita emissions from the building sector are roughly twice the G20 average. Russia's building sector policies are unlikely to result in significant emission reductions and are **not sufficient for a 1.5°C pathway.**

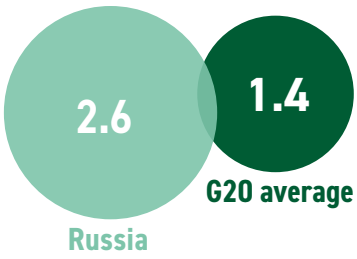
Share of buildings in energy-related CO_2 emissions. Building emissions occur directly (burning fuels for heating, cooking, etc) and indirectly (grid-electricity for air conditioning, appliances, etc.)

By 2040, global emissions from buildings need to be reduced by 90% from 2015 levels, and be 95-100% below 2015 levels by 2050, mostly through increased efficiency, reduced energy demand, and electrification in conjunction with complete decarbonisation of the power sector.

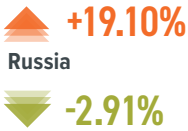
Rogelj et al., 2018; Climate Action Tracker, 2020b

Building emissions per capita

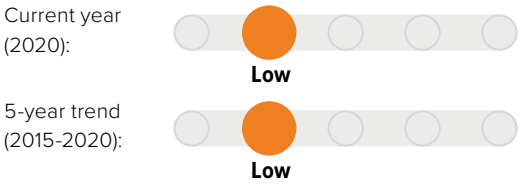
(incl. indirect emissions) (tCO_2/capita) in 2020



Building emissions: 5-year trend (2015-2020)



Decarbonisation rating: building emissions compared to other G20 countries



Building-related emissions per capita in Russia are nearly twice the G20 average as of 2020. This reflects the high fossil fuel share in the electricity mix and extensive natural gas consumption. In contrast to the G20 average, which has been declining since 2015, Russia's per capita buildings emissions have increased by 19% (2015-2020).

Enerdata, 2021; United Nations, 2019

POLICY ASSESSMENT

Near zero energy new buildings

In 2020, Russia abolished a set of mandatory energy efficiency requirements for the construction of new buildings. These requirements mandated, from 1 January 2018, that new buildings should achieve at least a 20% reduction in energy use, at least a 40% reduction from 2023, and from 2028, at least a 50% reduction below baseline. In Russia's draft Energy Efficiency Action Plan, released in 2020, there are provisions mandating automated heating controls, energy efficiency surveys for new apartment buildings, and the banning of certain heating systems. However the effect of these measures remains unclear and is unlikely to achieve the energy reductions mandated in the now-abolished legislation.

Russian Federation, 2020c, 2020d

Renovation of existing buildings

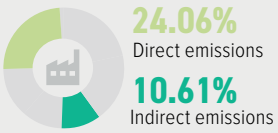
Russia's draft 2020 Energy Efficiency Action Plan includes a target for ensuring all capital upgrades to housing results in a minimum C-rating for energy efficiency from 2022, but the plan does not include a specific renovation rate, a critical shortfall. Subsidies for carrying out works on existing apartments to achieve the minimum C-rating will also be available from the 3rd quarter of 2022, while funds will be made available for energy audits to determine the energy rating before and after renovations are completed, from the 3rd quarter of 2021.

Russian Federation, 2020c

INDUSTRY SECTOR

Emissions from energy use in industry

Direct and indirect emissions from industry make up 24% and 11% of energy-related CO_2 emissions in Russia, respectively. Russia has outlined its intention to **develop national policies for improving the energy efficiency of its industry sector, but these have yet to materialise**.



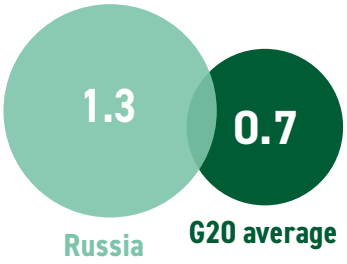
Share of industry in energy-related CO_2 emissions.

Industrial emissions need to be reduced by 65-90% from 2010 levels by 2050.

Rogelj et al., 2018

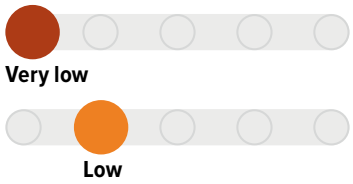
Industry emissions intensity[7]

(tCO_2e/USD2015 GVA) in 2017



Industry emissions intensity: 5-year trend (2012-2017)

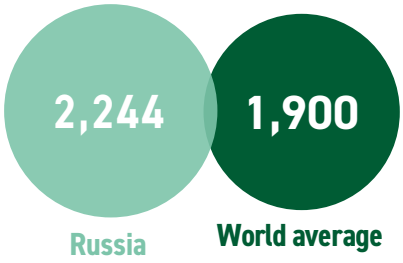
Decarbonisation rating: industry emissions intensity compared to other G20 countries



Enerdata, 2021; World Bank, 2021

Carbon intensity of steel production[8]

($kgCO_2$/tonne product) in 2016

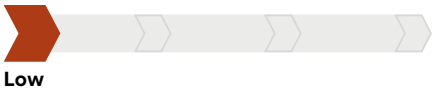


Steel production and steelmaking are significant GHG emissions sources, and challenging to decarbonise.

World Steel Association, 2018; Climate Action Tracker, 2020c

POLICY ASSESSMENT

Energy efficiency



Russia's draft 2020 Energy Efficiency Action Plan outlines timelines for the development of numerous national standards and requirements to improve the energy efficiency of the Russian industry sector. However, none of these have been released yet, with scheduled release dates ranging from Q3-Q4 2021. **The draft action plan targets a slight improvement to the energy intensity of cast iron (-0.3%) and a moderate improvement in cement and clinker production (-17%) by 2030.**

Russian Federation, 2020c

LAND USE SECTOR

Emissions from changes in the use of the land

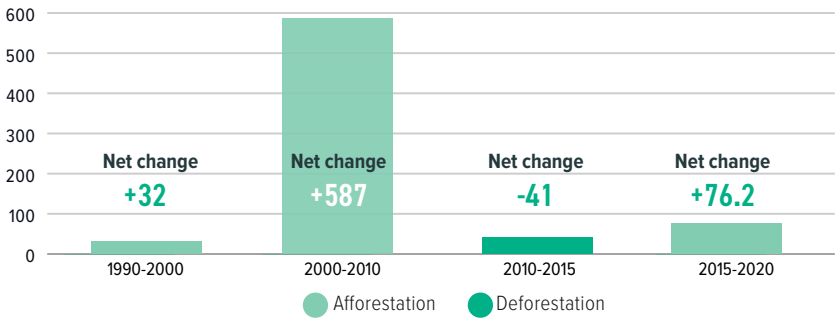
To stay within the 1.5°C limit, Russia needs to ensure the land use and forest sector continues to be a net sink of emissions, for example by discontinuing the degradation of peatlands and use of moor soils, converting cropland into wetlands, and by creating new forests. **The size of Russia's forestry sink is projected to halve between 2020 and 2030 under current policies.**

Global deforestation needs to be halted and changed to net CO_2 removals by around 2030.

Rogelj et al., 2018

Annual forest expansion, deforestation and net change

Net change in forest area (1,000 ha/yr)



Between 2015-2020, Russia gained 76.23 kha of forest area per year. This does not, however, take into consideration the large extent of unmanaged forests that are lost to wildfires and illegal logging.

Global Forest Resources Assessment, 2020

Note: There is a change of source and methodology for measuring this indicator from last year's profiles, which means the two years may not be directly comparable.

POLICY ASSESSMENT

Target for net zero deforestation

Medium

While Russia's extensive forests have acted as a significant emissions sink for many years, large-scale deforestation continues to occur, including significant illegal logging. **The size of Russia's emissions sink is expected to halve between 2020 and 2030 under current policies.** In 2021, Russia's Environment Ministry decreed that for the purposes of carbon accounting, its unmanaged "reserve" forests would be treated equally to its managed forests, potentially leading to an increase in absorption figures of up to half a billion tonnes of CO_2 annually. This violates a key element of international climate reporting set by the UNFCCC, and would further exacerbate what some scientists have claimed is an already exaggerated level of "managed" forests claimed by Russia.

Light, 2021; Russian Federation, 2019

AGRICULTURE SECTOR

Emissions from agriculture

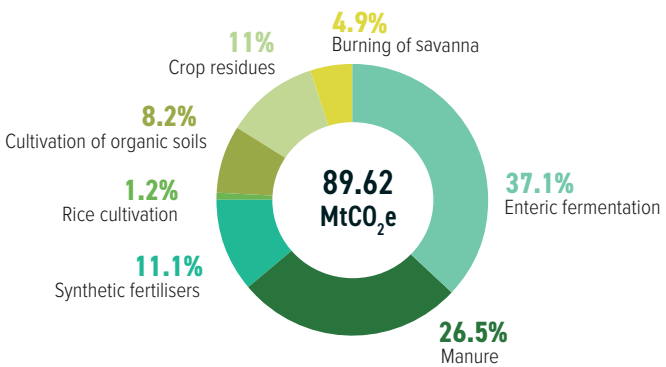
Russia's agricultural emissions are mainly from livestock digestive processes (mainly cattle) and manure. **A 1.5°C 'fair-share' compatible pathway requires behavioural and dietary shifts and less fertiliser use.**

Methane emissions (mainly enteric fermentation) need to decline by 10% by 2030 and by 35% by 2050 (from 2010 levels). Nitrous oxide emissions (mainly from fertilisers and manure) need to be reduced by 10% by 2030 and by 20% by 2050 (from 2010 levels).

Rogelj et al., 2018

Emissions from agriculture (excluding energy)

Emissions from the agriculture sector in 2018



In Russia, the largest sources of GHG emissions in the agriculture sector are enteric fermentation (37%), livestock manure (27%), and synthetic fertiliser use (11%). Dietary changes and efficient use of fertilisers as well as reductions in food waste could help reduce emissions from this sector.

FAO, 2021

Due to rounding, some graphs may sum to slightly above or below 100%

MITIGATION: TARGETS AND AMBITION

WARMING OF 2.4°C

The combined mitigation effect of Nationally Determined Contributions (NDCs) assessed in April 2021 is **not sufficient and will lead to a warming of 2.4°C by the end of the century.** This highlights the urgent need for all countries to submit more ambitious targets by COP26, as they agreed to do in 2015, and to **urgently strengthen their climate action to align to the Paris Agreement's temperature goal.**

Climate Analytics, 2021a

AMBITION: 2030 TARGETS

Nationally Determined Contribution (NDC): Mitigation

TARGETS

30% reduction in GHG emissions below 1990 levels by 2030 (including LULUCF)

ACTIONS

Not mentioned

Climate Action Tracker (CAT) evaluation of targets and actions

RUSSIA'S OVERALL RATING

- 1.5°C Paris Agreement compatible
- Almost sufficient
- Insufficient
- Highly insufficient
- **CRITICALLY INSUFFICIENT**

This CAT evaluation is a **new, overall rating**, that combines the several, separately rated elements, of policies and actions, domestic and internationally supported targets, 'fair-share target' and the country's contribution to climate finance. The "Critically Insufficient" rating* indicates that Russia's climate policies and commitments reflect minimal, to no action, and are not at all consistent with the Paris Agreement.

Russia failed to increase its ambition when it submitted its NDC update in November 2020. We rate the updated NDC target as "Highly insufficient" when compared to modelled domestic pathways and "Critically insufficient" when compared with its fair share emissions allocation. It is also not providing adequate climate finance, so is rated "Critically insufficient". The weak target will be easily met under existing policies and action, which we rate as "Highly insufficient". For the full assessment of the country's target and actions, and the explication of the methodology see www.climateactiontracker.org

Climate Action Tracker, 2021

**This assessment includes CAT's policy analysis from 22 September 2020 translated into our new rating methodology. No policies since then have been analysed, but the updated NDC submitted in November 2020 was included.*

TRANSPARENCY: FACILITATING AMBITION

Countries are expected to communicate their NDCs in a clear and transparent manner in order to ensure accountability and comparability. The NDC Transparency Check has been developed in response to Paris Agreement decision 1/CP.21 and the Annex to decision 4/CMA.1, which sets out the "information to facilitate clarity, transparency and understanding" as crucial elements of NDCs.

NDC Transparency Check recommendations

Russia submitted its NDC to the UNFCCC on 25 November 2020. To ensure clarity, transparency and understanding, it is recommended that Russia provides the following additional detailed information in its next NDC or NDC update:

- Clarify whether it has met the conditions for compliance with the NDC.
- Provide information on sources of data used and methodological approaches in quantifying the reference points.
- State the time frame, period of implementation of the NDC, and how Russia will account for its target(s).
- Show progression of latest NDC compared with previous commitments, including the Convention and the Kyoto Protocol.
- Detail the process of developing its NDC, public participation, stakeholder engagement, and gender responsiveness.
- Provide grounds to substantiate how its NDC target contributes to the Paris Agreement's long-term objectives.
- Explicitly state Russia's emissions peaking year.

For more visit www.climate-transparency.org/ndc-transparency-check

AMBITION: LONG-TERM STRATEGIES

The Paris Agreement invites countries to communicate mid-century, long-term, and low-GHG emissions development strategies by 2020. Long-term strategies are an essential component of the transition toward net zero emissions and climate-resilient economies.

Status	Submitted to UNFCCC, last update in 2020
Interim steps	Yes: 30% below 1990 levels by 2030
Sectoral targets	Yes: 4.5% non-hydro renewables by 2024
Net zero target	No
Net zero year	Not announced

FINANCE

MAKING FINANCE FLOWS CONSISTENT WITH CLIMATE GOALS

PARIS AGREEMENT

Make finance flows consistent with a pathway towards low-GHG emissions and climate-resilient development.

Russian fossil fuels subsidies reached an historic high in 2018 of over USD 12bn, roughly tripling the level in just three years. The vast majority of these subsidies go to its oil industry, one of the largest in the world. **A pilot carbon trading scheme in Russia's far east region of Sakhalin was given the go-ahead by the federal government in January 2021 as part of the region's quest to achieve net zero emissions by 2025**. The development of a Green Finance System is underway, with the Russian State Development Corporation collaborating with ministries, the Bank of Russia, and the expert and business communities.

1.5°C COMPATIBILITY

Investment in green energy and infrastructure needs to outweigh fossil fuel investments by 2025.

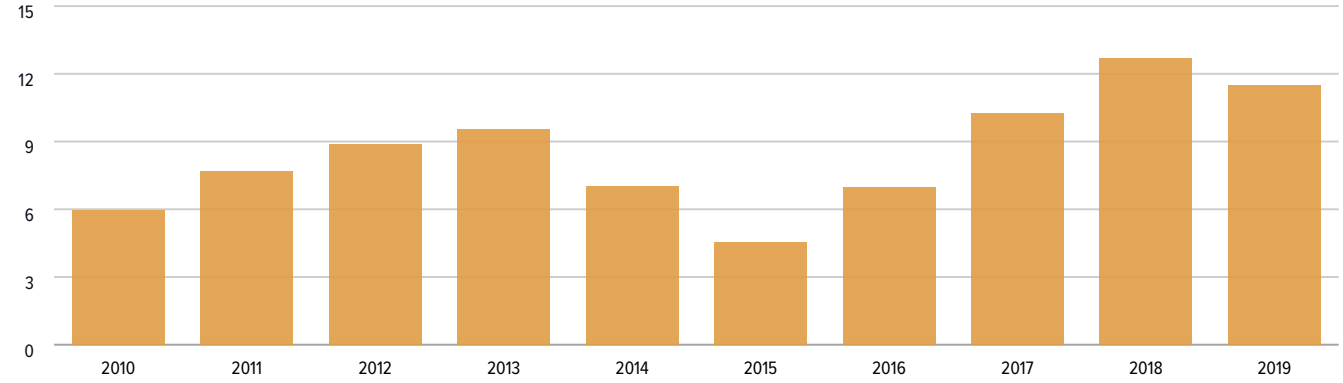
Rogelj et al., 2018

FISCAL POLICY LEVERS

Fiscal policy levers raise public revenues and direct public resources. Critically, they can shift investment decisions and consumer behaviour towards low-carbon, climate-resilient activities by reflecting externalities in the price.

Fossil fuel subsidies

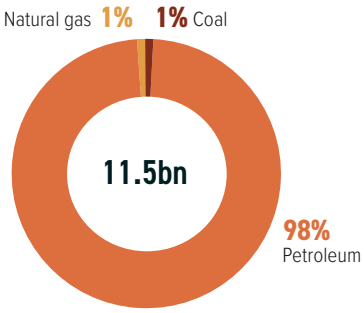
(USD billions)



OECD-IEA Fossil Fuel Support database, 2020

Fossil fuel subsidies by fuel type

USD in 2019



Over the past decade (2010-2019), Russia's fossil fuel subsidies have oscillated considerably, reaching a value of USD 11.5bn in 2019. Over this period, most of the subsidies were directed to support the production and consumption of petroleum.

Comparable data is not yet available for 2020. However, according to the Energy Policy Tracker data, during 2020 Russia pledged at least USD 5.2bn to fossil fuel energy as part of its energy-related funding commitments and COVID-19 economic response. This commitment is mainly represented by the Russian state-owned enterprise Gazprom's plan for the gasification of several Russian regions between 2021 and 2025.

Energy Policy Tracker, 2021; OECD-IEA Fossil Fuel Support database, 2020

Due to rounding, some graphs may sum to slightly above or below 100%

CORONAVIRUS RESPONSE AND RECOVERY

The Russian government did not target green measures in its USD 83bn 'nationwide economic recovery plan' approved in 2020. It, instead, focuses primarily on social measures and tax exemptions for SMEs.

EBRD, 2021

Carbon pricing and revenue

Russia does not have a national carbon tax or emissions trading scheme. In 2019, there was some talk about introducing a carbon tax. The framework drafted by the government included different regulatory mechanisms, such as a cap-and-trade system of emissions permits and tax breaks for companies reducing or capturing their emissions. However, the cap-and-trade component of the draft regulation was removed after widespread protests from industry. The regulation that was eventually adopted in 2021 obliges companies to begin accounting for their emissions from January 2023.

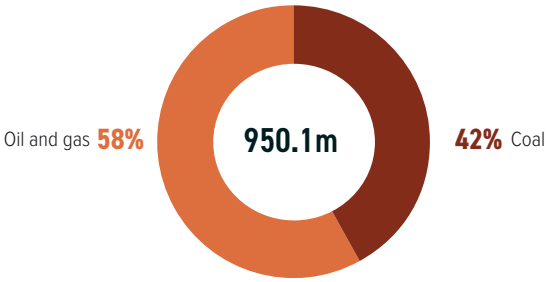
I4CE, 2021; Energy Policy Tracker, 2021

PUBLIC FINANCE

Governments steer investments through their public finance institutions, including via development banks both at home and overseas, and green investment banks. Developed G20 countries also have an obligation to provide finance to developing countries, and public sources are a key aspect of these obligations under the UNFCCC.

Public finance for fossil fuels

USD per annum (2018-19 average)



Between 2018 and 2019, Russia provided an average of USD 950m per year in public finance for the oil and gas sector. The country has no recorded public finance for coal over the same period. Russia also has three large government-owned banks that are very active in the energy sector, whose support is not captured in the data adopted for this analysis. Including majority government-owned banks would increase the finance provided significantly.

Oil Change International, 2020

Due to rounding, some graphs may sum to slightly above or below 100%

Provision of international public support

Russia is not listed in Annex II of the UNFCCC and is, therefore, not formally obliged to provide climate finance. It is an Annex I country, however, and submits biennial reporting to the UNFCCC. Despite the voluntary nature of contributions, it has provided international public finance to the Global Environment Facility (GEF) Trust Fund and the Green Climate Fund. While Russia may channel international public finance towards climate change via multilateral and other development banks, it has not been included in this report.

FINANCIAL POLICY AND REGULATION

Financial policy and regulation

Through policy and regulation, governments can overcome challenges to mobilising green finance, including real and perceived risks, insufficient returns on investment, capacity and information gaps.

Russia's efforts to green its financial system are beginning to head in the right direction, but have been relatively slow.

In April 2019, the Moscow Exchange became a Partner Exchange of the United Nations Sustainable Stock Exchanges (SSE) initiative, joining other securities exchanges in a commitment to elevating sustainability practices. The Moscow Exchange Listing Rules also created a sustainability sector for financing projects in the fields of environmental and social sustainability. This corresponds to the concept currently developed for green, social and sustainability bonds by the Russian Ministry of Economic Development, relevant government agencies, the Bank of Russia and business community.

In July 2020, the Central Bank of Russia circulated recommendations for the implementation of the Principles of Responsible Investment to help institutional investors build effective relations and improve the dialogue with their investee companies. According to the recommendations, responsible investment requires taking into account material risks related to sustainable development factors when choosing and managing securities to invest in.

In 2020 the State Corporation Bank for Development and Foreign Economic Affairs (Vnesheconombank) released the Green Finance Guidelines aimed at stimulating investments in the Russian Federation and attracting private investment to green finance projects contributing towards the national development goals of the Russian Federation, the UN Sustainable Development Goals, and the Paris Agreement. The guidelines outline the Russian National Green Projects Taxonomy and procedure for assessing compliance of financial instruments.

Bank of Russia, 2020; Russian State Development Corporation, 2020

Nationally Determined Contribution (NDC): Finance

Conditionality	Not applicable
Investment needs	Not specified
Actions	Not mentioned
International market mechanisms	No contribution from international credits for the achievement of the target

ENDNOTES

Where referenced, "Enerdata, 2021" refers to data provided in July 2021. For more detail on the sources and methodologies behind the calculation of the indicators displayed, please download the Technical Note at: www.climate-transparency.org/g20-climate-performance/g20report2021

1 The '1.5°C compatible pathway' is derived from global cost-effective pathways assessed by the IPCC's SR15, selected based on sustainability criteria, and defined by the 5th-50th percentiles of the distributions of such pathways achieving the long-term temperature goal of the Paris Agreement. Negative emissions from the land sector and novel negative emissions technologies are not included in the assessed models, which consider one primary negative emission technology (BECCS). In addition to domestic 1.5°C compatible emissions pathways, the 'fair share' emissions reduction range would almost always require a developed country to provide enough support through climate finance, or other means of implementation, to bring the total emissions reduction contribution of that country down to the required 'fair share' level.

2 'Land use' emissions is used here to refer to land use, land use change and forestry (LULUCF). The Climate Action Tracker (CAT) derives historical LULUCF emissions from the UNFCCC Common Reporting Format (CRF) reporting tables data converted to the categories from the IPCC 1996 guidelines, in particular separating Agriculture from LULUCF, which under the new IPCC 2006 Guidelines is integrated into Agriculture, Forestry, and Other Land Use (AFOLU).

3 The Decarbonisation Ratings assess the current year and average of the most recent five years (where available) to take account of the different starting points of different G20 countries.

4 The selection of policies rated and the assessment of 1.5°C compatibility are primarily informed by the Paris Agreement and the IPCC's 2018 SR15. The table below displays the criteria used to assess a country's policy performance.

5 The 1.5°C 'fair-share' ranges for 2030 are drawn from the CAT, which compiles a wide range of perspectives on what is considered fair, including considerations such as responsibility, capability, and equality. Countries with 1.5°C 'fair-share' ranges reaching below zero, are expected to achieve such strong reductions by domestic emissions reductions, supplemented by contributions to global emissions reduction efforts via, for example, international finance. On a global scale, negative emissions technologies are expected to play a role from the 2030s onwards, compensating for remaining positive emissions. In order to maintain comparability across all countries, this report harmonises all data with PRIMAP, 2021 dataset to 2018. However, note that Common Reporting Format (CRF) data is available for countries which have recently updated GHG inventories. Where countries submitted updated NDC targets before August 2021, these have been analysed and included.

6 This indicator adds up emissions from domestic aviation and international aviation bunkers in the respective country. In this Country Profile, however, only a radiative forcing factor of 1 is assumed.

7 This indicator includes only direct energy-related emissions and process emissions (Scope 1) but not indirect emissions from electricity.

8 This indicator includes emissions from electricity (Scope 2) as well as direct energy-related emissions and process emissions (Scope 1).

On endnote 4.	Low	Medium	High	Frontrunner
Renewable energy in power sector	No policies to increase the share of renewables	Some policies	Policies and longer-term strategy/ target to significantly increase the share of renewables	Short-term policies + long-term strategy for 100% renewables in the power sector by 2050 in place
Coal phase-out in power sector	No targets and policies in place for reducing coal	Some policies	Policies + coal phase-out decided	Policies + coal phase-out date before 2030 (OECD and EU28) or 2040 (rest of the world)
Phase out fossil fuel cars	No policies for reducing emissions from light-duty vehicles	Some policies (e.g. energy/emissions performance standards or bonus/ malus support)	Policies + national target to phase out fossil fuel light-duty vehicles	Policies + ban on new fossil fuel-based light-duty vehicles by 2035 worldwide
Phase out fossil fuel heavy-duty vehicles	No policies	Some policies (e.g. energy/emissions performance standards or support)	Policies + strategy to reduce absolute emissions from freight transport	Policies + innovation strategy to phase out emissions from freight transport by 2050
Modal shift in (ground) transport	No policies	Some policies (e.g. support programmes to shift to rail or non-motorised transport)	Policies + longer-term strategy	Policies + longer-term strategy consistent with 1.5°C pathway
Near zero energy new buildings	No policies	Some policies (e.g. building codes, standards or fiscal/financial incentives for low-emissions options)	Policies + national strategy for near zero energy new buildings	Policies + national strategy for all new buildings to be near zero energy by 2020 (OECD countries) or 2025 (non-OECD countries)
Energy efficiency in industry	No policies	Mandatory energy efficiency policies cover more than 26-50% of industrial energy use	Mandatory energy efficiency policies cover 51–100% of industrial energy use	Policies + strategy to reduce industrial emissions by 75-90% from 2010 levels by 2050
Retrofitting existing buildings	No policies	Some policies (e.g. building codes, standards or fiscal/financial incentives for low-emissions options)	Policies + retrofitting strategy	Policies + strategy to achieve deep renovation rates of 5% annually (OECD) or 3% (non-OECD) by 2020
Net zero deforestation	No policies or incentives to reduce deforestation in place	Some policies (e.g. incentives to reduce deforestation or support schemes for afforestation/ reforestation in place)	Policies + national target for reaching net zero deforestation	Policies + national target for reaching zero deforestation by 2020s or for increasing forest coverage

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