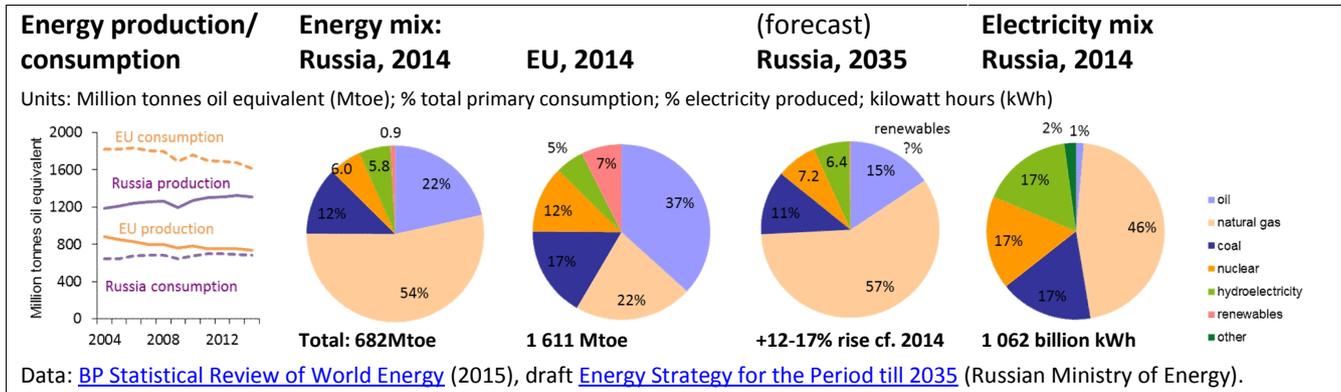


Russia's domestic energy policy

Russia's domestic energy mix is essentially fossil fuels with some nuclear power, a situation which is unlikely to change in the foreseeable future. Except for large-scale hydroelectricity, renewable energies are still in their infancy. Energy efficiency is very poor and only slowly improving.



Fossil fuels

Russia's ample fossil fuel supplies, including the world's largest proven gas reserves, cover nearly 90% of its domestic energy needs. While Russia earns only [one quarter](#) as much from its gas exports as from oil, gas is by far its largest domestic energy source (54% of consumption), followed by oil (22%) and coal (12%).

Sector ownership and markets. Most large energy companies are state-controlled, including Gazprom ([73%](#) of gas production) and Rosneft (40% of oil production). However, there are also some private players, such as Lukoil and Novatek, the second largest producers of oil and gas respectively. Gazprom has a monopoly on gas exports and a near-monopoly on the domestic gas market. Other producers expanded their share of the domestic gas market [from 10% to 17%](#) between 2009 and 2013, but despite Gazprom's [legal obligation](#) to let them use its pipelines on a non-discriminatory basis, third-party access is a frequent [bone of contention](#).

Domestic gas prices are regulated at [unsustainably low](#) levels (as little as [a quarter](#) of the price of exported gas), a practice [criticised](#) outside Russia for giving the energy-intensive Russian metals sector an unfair advantage over foreign competitors, and potentially in violation of World Trade Organization (WTO) commitments. The Russian government had [planned](#) to bring domestic gas prices up to market levels by 2014, but in fact has not done so, and charging more for gas would be unpopular in the current economic climate. In contrast, oil and coal prices are not regulated.

Prospects. According to Russia's draft [Energy Strategy for the Period until 2035](#) (Energy Strategy 2035), the share of fossil fuels in the domestic energy mix will remain close to 90%, though with a shift from coal and oil to gas. In terms of reforming domestic gas markets, the strategy sees deregulating gas prices and ensuring a level playing field between Gazprom and its domestic competitors as long-term goals, but does not envisage any changes to the current structure of the Russian gas market before 2020.

The strategy envisages maintaining oil production at its current [record high levels](#) while increasing gas volumes by 29-39%. This may be difficult: output from the current main fields in western Siberia is declining, while Western sanctions over Ukraine are [hampering](#) Russia from accessing the finance and technology it needs to develop its remaining deposits, many of which are in remote Arctic areas or under deep water. In any case, [stagnant demand](#) for gas may make it difficult for Russia to find buyers for its additional output; in 2014 it signed a major supply deal with China, but implementation is in [doubt](#), due to lower-than-expected Chinese energy demand, a lack of Russian finance and disagreement over the pipeline route.



Nuclear

Nuclear energy is Russia's largest non-fossil source of energy. Here too Russia is largely self-sufficient, with its own substantial uranium deposits ([third largest](#) in the world) and highly developed technology. However, [21 of the country's 34 nuclear reactors](#) are over 30 years old, and 11 are of the same [type](#) as Ukraine's Chernobyl plant, though since retrofitted with safety features to prevent a similar incident recurring.

Prospects. One of the advantages of nuclear energy for Russia is that it [frees up gas](#) (currently the main fuel used in electricity generation) for sale to lucrative export markets. Russia is therefore increasing its nuclear capacity by upgrading existing nuclear plants and building new ones – nine are currently under construction, including the [world's first floating nuclear power station](#) to provide electricity in the Arctic. A further [25 reactors](#) at 14 sites are planned for the next 15 years, while 24 older ones are to be decommissioned at the same time. The long-term aim is to increase the share of electricity generated from nuclear power from 17% at present to [19-21%](#) by 2035, [45-50%](#) by 2050, and 70-80% by the end of the century. Total electricity production is also set to rise substantially ([+24-36%](#)) over the next 20 years; in order to raise their share in 2035 of this increased total by 2-4%, nuclear power stations will need to generate 40-70% more electricity.

Hydroelectricity

Hydropower provides a similar share of Russia's electricity to nuclear power. The [2009 Sayano-Shushenskaya](#) disaster at Russia's largest hydroplant, in which 75 people died, highlighted the need for investment in ageing Soviet-era infrastructure; since then, existing facilities have been upgraded and [several new dams](#) constructed, resulting in a [5% increase](#) in hydroelectricity production between 2008 and 2014.

Prospects. With Russia using a mere [20%](#) of its hydroelectric potential, it has enormous scope for expansion. The Energy Strategy 2035 envisages a 20-30% increase in hydroelectricity production by 2035, meaning that the share of hydropower in the energy mix will stay roughly constant. With limited interest from investors, raising the capital needed for this target ([up to US\\$125 billion](#) over the next 15 years) will be difficult.

Renewable energy sources (not including large-scale hydroelectricity)

Russia has massive potential for renewable energy production, [estimated](#) at five times current total annual energy consumption, as well as a strong [technological legacy](#) from the Soviet Union, which in the 1930s already had the world's largest [wind power plant](#). Wind and solar plants can especially benefit [remote communities](#) isolated from national electricity and gas networks. However, renewable energy now only accounts for a very small share of the energy mix – less than [1%](#) even by the most optimistic estimates. Reasons for slow development include an abundance of cheap fossil fuels, [widespread climate scepticism](#) and a lack of international pressure, given that Russia's very loose commitments at the COP 21 conference allow it to increase emissions [by up to 50%](#) while still meeting its climate target.

Prospects. To encourage renewables, the government launched an [auction scheme](#) in 2013 offering a guaranteed return on investments. To date, 96 projects (mostly solar) have committed themselves to providing [1 071 MW](#) of generating capacity, around 0.5% of total capacity in Russia. Just one tenth of this is for wind and small hydro projects, with bidders in these sectors apparently discouraged by [local content rules](#) requiring generating equipment to be 50% or more Russian-made – less of a problem for solar as Russia has already started developing a [photovoltaic sector](#). Even if all these projects get off the ground, the share of renewable energy will remain very small; Energy Strategy 2035 does not set a quantitative target (an earlier [target](#) of generating 4.5% of electricity from renewables by 2020 has been dropped).

Energy efficiency

The Russian economy is five times more energy-intensive than that of the EU, meaning that it uses a far higher amount of energy for a given amount of economic activity. This has partly to do with geography, as a cold climate and widely dispersed population require more energy for heating and transport (Canada also has higher energy intensity), but also with poor energy efficiency, due not least to [antiquated heating systems](#), a creaking electricity grid, and as in the case of renewable energies, limited environmental awareness.

Energy Strategy 2035 envisages a further 37% reduction over the next 20 years; however, progress may be slow given that many current energy efficiency measures are [poorly designed](#) and patchily implemented.

