



## The EU and RES: From Fighting Climate Change to Fighting Russia

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Renewable energy sources (RES) are a key tool in EU climate policy. They can also be an important remedy to the problems of the shortage of energy resources and political abuses of control over them by producers and suppliers. However, at the current level of development of RES technologies, their use is associated with risks for energy security. For the EU, which wants to accelerate the development of its renewable energy potential in the wake of Russia's full-scale invasion of Ukraine, a simultaneous goal should be to reduce the vulnerability of the European energy market to renewable energy challenges, such as cyberattacks or lack of access to critical raw materials.

According to the assumptions of the [European Green Deal](#) (EGD), the development of RES is one of the priorities of the EU's energy transition and a way to fight climate change. Energy obtained from, for example, the sun or wind can largely replace fossil fuels, contributing to the reduction of the carbon footprint of the European economy and the achievement of climate neutrality by 2050. The EU beat its target of 20% renewable sources of final energy consumption in 2020 included in the first RES Directive (RED I) by 2 percentage points. The next target (from the RED II Directive) bumps that to 32% of RES in the European mix by 2030. RES is responsible for nearly 40% of electricity production in the EU, with the largest share in the forms of hydro, wind and the rapidly expanding solar power sector.

**Political Tool.** Russia's invasion of Ukraine shed new light on the use of renewable energy. It exacerbated the energy crisis induced by the COVID-19 pandemic and its other effects, such as supply chain disruptions and volatility in energy commodity prices, which began to threaten the stability of the European economy. The EU's energy dependence is a big problem: according to data from 2020, 57.5% of the energy available in the EU came from imported resources, and Russia was the main supplier of oil, gas, and coal. In response to the Russians' manipulative use of their exports (e.g., suspending supplies and changing contract terms to put

pressure on Member States' support for Ukraine), the European Commission (EC) on 18 May presented details of its REPowerEU plan. It assumes that the EU will become independent of Russian raw materials as soon as possible in order to increase energy security and cut Russia off from revenues from trade in hydrocarbons. The use of the ubiquitous and inexhaustible resources of solar and wind energy comprise one of the pillars of REPowerEU. The Union seeks the rapid installation of new photovoltaic panels and the acceleration of the development of wind farms (especially at sea). Even partial replacement of fossil fuels with distributed electricity generation will, on the one hand, hit Russia, limiting its possibilities of influence and manipulation, and on the other hand, keep the EU on track for its "Fit for 55" package implementing the EGD. According to the International Energy Agency, an additional 35 TWh of electricity from new renewable energy projects (beyond that planned for the next year) may reduce gas consumption in the EU by 6 bcm.

The EC initiative of May this year to increase the use of RES during the next revision of the RED enjoys quite a lot of support from the Member States. In June, the Council agreed to establish a new, 40%, target for RES in the European energy mix by 2030 (although less than the 45% proposed by the EC). Many countries, especially those

dependent on gas from Russia, which is difficult to replace, have taken measures on a larger scale—for example, Germany has announced a target of 80% of RES by 2030, and Austria has decided to provide a €300 million subsidy for their accelerated deployment. According to the Eurobarometer from May, as many as 84% of Europeans believe that investments in renewable energy have become more urgent due to the war in Ukraine. This is also evident in the prosumer sector, where small home photovoltaic installations are gaining popularity as a way to reduce energy expenditures and ensure security of electricity supplies.

**Limits to Security.** In the energy scenarios to 2050 published in 2018, the EC did not assume 100% use of RES in electricity generation, despite the calls of several countries (including Lithuania, Denmark, and Spain). Ultimately, the EU decided to choose a net-zero CO<sub>2</sub> emission path, taking into account the possibility of using, besides renewable energy, fuels emitting greenhouse gases if they are balanced by so-called carbon sinks (e.g., forests). This approach was cautious based on the state of knowledge and technology, which suggested that in future it will be possible to replace fossil fuels with RES, but there is still a number of barriers to overcome.

The mere construction of wind or solar installations is not enough, as they are not able to ensure a continuous supply of electricity and periodically generate oversupply, which may also destabilise the electricity grid. The issue of stability is key to energy security, as demonstrated by the example of Ukraine. In the first days of Russia's attack, the operator of the network, Ukrenergo, decided to disconnect many solar farms until further notice to make it easier to balance the system. Therefore, RES development must be accompanied by additional actions, also included in the EC's plans, such as investments in large-scale energy storage (recognised in REPowerEU as "being in the overriding public interest"), the development of [green hydrogen production](#), densification of the power grid in the EU (including the expansion of inter-state connections), as well as creating synergies between various RES (e.g., using sun energy during the day and wind at night).

The EU's withdrawal from the use of fossil fuels from Russia is also associated with the risk of technological dependence on the supply of components for renewable energy installations. The risk is significant as this sector is dominated by a dubious partner, [China](#), which controls over 80% of the global production of components for photovoltaic panels. It is also the fastest-growing market for wind turbines (with

50% of the global market) and also a leader in the production of lithium-ion batteries (nearly 80% of the world's supply). Critical raw materials used in the RES sector, such as nickel, palladium, lithium, cobalt, aluminium, copper, etc., so far largely imported from Russia, are also starting to be obtained from other suppliers from China, Indonesia, South Korea, the U.S., and others. Considering the planned rapid increase in power from RES, the EC aims to maintain technological independence, increase the security of energy supplies, and guarantee the competitiveness of European enterprises. It therefore intends to strengthen the supply chains of RES technologies by improving the regulatory framework and coordinating cooperation between the Member States.

Critical infrastructure can be a target of hostile actions, and modern technologies accompanying the decentralised generation of energy from RES are particularly vulnerable to cyber threats. The EU's firm stance on the side of Ukraine in the conflict with Russia increases the risk of cyberattacks on European infrastructure, especially since it is being developed to make the EU independent from Russia. On behalf of Russia's authorities, Russian cybercriminals have been attacking Ukrainian energy installations for years, and their activity has recently increased. European companies also have fallen victim to the ongoing conflict—in March and April this year, Russian hackers attacked enterprises in the German renewable energy sector.

**Conclusions.** Due to REPowerEU's plans, the growing strategic importance of RES for the EU will make this sector, in addition to the oil and gas sectors, very vulnerable to political games and manipulation. The EU should therefore proactively strive to develop protective mechanisms for RES. It is necessary to diversify the import of raw materials and components for RES installations, implement regulatory facilitations conducive to quick decision-making on the expansion of the network, coordinate work on innovation and crisis management, and increase the EU production capacity. With the planned accelerated expansion of European infrastructure, it is also important to pay special attention and simultaneously increase the security of RES networks and installations. The huge scale of these projects will be accompanied by equally significant costs, the more so that some technologies are still at an early, very capital-intensive stage of development. Therefore, from the Polish perspective, it is important to join activities coordinated at the EU level (e.g., [IPCEI](#)) and to foster the development of the political and business potential of Polish RES by creating favourable investment conditions.