

How coal plants in the Western Balkans violate air pollution laws and cause deaths and what governments must do about it.

Summary

In the last three years, new air pollution standards have been supposed to bring about reductions in harmful emissions from coal-fired plants across the Western Balkans. But in 2020, emissions of sulfur dioxide from coal-fired power plants across the region continued to flagrantly violate these legal restrictions.

A drop in emissions could be expected in 2020 due to a decline in economic activity, as a result of the Covid-19 pandemic. But it was not so. For plants included in the National Emission Reduction Plans (NERPs) of Bosnia and Herzegovina, Kosovo, Northern Macedonia and Serbia, emissions have increased rather than decreased.

In 2018 and 2019, the coal-fired plants that were included in the NERP emitted about six times more sulfur dioxide (SO₂) than allowed, while in 2020 they emitted 6.4 times more. The plants emitted about 1.6 times more dust than the allowed limit in the period between 2018 and 2020, and the absolute emissions even increased slightly.

Moreover, in 2020, total CO₂ emissions from coal-fired power plants in the Western Balkans were 2.5 times higher than emissions from all coal-fired power plants in the EU.

Only emissions of nitrogen oxides (NO_x) remained below the sum of the upper limits of countries for 2020 - 0.9 times higher than allowed. However, Bosnia and Herzegovina and Kosovo have broken their national ceilings, and nitrogen oxide emissions have increased slightly at the regional level. NO_x pollution limits continue to decrease every year, so there will be major violations in the coming years unless urgent action is taken.

Moreover, health modeling shows that from 2018 to 2020, almost 19,000 deaths occurred due to the total emission of coal-fired power plants in the Western Balkans.

Of that, more than 50 percent (10,800) were in EU countries, almost 30 percent (6,500) in the Western Balkans, and the rest in distant countries. Total emissions from coal-fired power plants have resulted in costs ranging between 25.3 billion and 51.8 billion euros.

The total number of deaths from 2018 to 2020 caused only by exceeding the NERP ceiling in the Western Balkans is 11,660. More than half of these cases occurred in EU countries - 7,000 deaths, 3,700 deaths in the Western Balkans and 960 in remote regions. Total health costs are estimated at 6 to 12.1 billion euros in 2020, only due to the excess of coal emissions in the Western Balkans.

Almost three quarters of these costs (73 percent) relate to residents and EU countries (4.4 to 8.9 billion euros), 21 percent (1.3 to 2.6 billion euros) to the Western Balkans, and the remaining 6 percent to other countries (0.3 to 0.7 billion euros). Costs are borne at both the

individual and national levels; through personal treatment costs, increased national health care budgets, and reduced productivity (which worsens the economic impact).

Due to the violation of the limits of NERP pollution in 2018 and 2019, in March 2021, the Secretariat of the Energy Community opened cases for resolving disputes against Bosnia and Herzegovina, Kosovo, Northern Macedonia and Serbia.

Montenegro, although it does not have a NERP, as it has only one coal-fired plant, was also not in line with the 2020 Large Combustion Plant Directive. The coal-fired power plant in Pljevlja spent 20,000 hours as long as the opt-out regime allowed it after January 1, 2018, and continued to operate. The Energy Community Secretariat therefore opened a settlement of the dispute against Montenegro in April 2021.

In 2020, Serbian NERP power plants were the largest emitters of SO₂, with 333,602 tons, followed by Bosnia and Herzegovina with 220,411 tons. SO₂ emissions from Serbian coal-fired power plants exceeded emissions from all 221 plants in the entire European Union. In absolute terms, Ugljevik in Bosnia and Herzegovina was again the largest emitter of SO₂ in the region in 2020, with 107,402 tons. However, the sum of the SO₂ limit for all four countries was 103,682 tons, which means that only this one power plant broke through the overall ceilings.

Kakanj 7 in Bosnia and Herzegovina was the biggest violator, exceeding the individual upper limit for SO₂ in 2020, emitting almost 15 times more than the allowed limit. Ugljevik and Serbian Kostolac B1 and B2 emitted almost 12 times more than the allowed ceiling, despite the fact that desulphurization equipment was installed.

The EU is a net importer of electricity, including imports from the Western Balkans. So, it bears not only a large part of the health costs of coal electricity production in this region, but also a part of the responsibility. From 2018 to 2020, the Western Balkans exported 25 TWh of electricity to the EU, accounting for 8 percent of total coal production in the Western Balkans. Thus, the EU plays a significant role in the sustainability of coal-based electricity in the region.

EU electricity imports from the Western Balkans account for only 0.3 percent of total EU electricity consumption, but the CO₂ emissions associated with these imports are equal to 50 percent of total CO₂ emissions from all power plants in the EU in 2020.

This is because production in the Western Balkans is about 300 times more CO₂-intensive than in the EU. As the countries of the Western Balkans aspire to EU membership, EU activities in the fight against air pollution must inevitably include this region.

The needs of governments and companies to reduce pollution are now greater than ever. Due to the lack of timely measures, the measures that need to be taken now must be drastic.

Opt-out plants must limit their operation to 20,000 hours in the period from 2018 to 2023, after which they must be closed. Also, the closure of plants included in the NERP earlier than planned should be considered, as well as the reduction in the number of operating hours, especially of the oldest plants and those that require large investments to comply with the LCPD.

At the same time, investments in solar energy and wind and reduction of network losses must be increased, and the use of efficient heat pumps for households should be increased. The development of national energy and climate plans provides an opportunity to strengthen ambitions in this area, by setting a date for the phasing out of fossil fuels and updating current, unrealistic national plans. It also means that plans for a fair transition of the region for coal exploitation need to be accelerated.

For those plants that cannot be closed in the next few years, it is most urgent to ensure that the desulphurisation units of TPP Ugljevik and Kostolac B function properly. Investments in pollution control equipment in a limited number of other facilities, such as Kakanj 7, Tuzla 6 and Kosovo B, also need to be accelerated, and in the meantime service life should be shortened to reduce pollution from these plants.

Publishing real-time emissions data through continuous monitoring would help build public confidence.

The Energy Community must have stronger tools at its disposal to implement legislation in accordance with the Treaty. The European Commission must strengthen its dispute settlement mechanism to include dissuasive penalties for violations. It must also include electricity imports in its future carbon border adjustment mechanism (CBAM). Mechanisms for determining the prices of carbon dioxide (CO₂) need to be introduced in the countries of the Energy Community as soon as possible in order to equalize the conditions on the European electricity market.

To ensure a faster transition from coal, the EU and other international donors must help countries save energy and sustainable forms of renewable energy. However, in order to ensure that the polluter pays principle is applied, public funds may no longer be used for pollution control investments in coal-fired plants or for any other investment in fossil fuels. All investments must be made at the operator's own expense.

Introduction

Since the Large Combustion Plants Directive (LCPD) entered into force in the Energy Community in 2018, Benchwatch has analyzed countries' compliance with their NERPs in two editions of the "Compliance or Closure" report. In 2020, a cumulative three-year non-compliance scale was considered.

The LCPD was included in the Energy Community Treaty when it was signed in 2005. For a treaty aimed at aligning the EU's energy market with that of its immediate neighbors in Southeast and Eastern Europe, the inclusion of environmental legislation in the Treaty is crucial to leveling the playing field and preventing emissions leaks.

National Emission Reduction Plans (NERPs) allow countries to summarize emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x) and dust from some or all of their power plants and align with the overall emission ceiling, instead of each plant complying with emission limits provided for in the annexes to the Directive. The development of the NERP is only one of the options for compliance with the Directive; countries have decided whether to develop it or not. The NERP allows combustion plants to deviate from individual compliance with emission limit values (ELVs) for existing plants. The NERP sets periodic annual ceilings (2018, 2023, 2026 and 2027) beyond which the emissions of all plants together must not exceed, regardless of their individual emissions.

Plants with better performance can compensate for those with poorer performance, if the overall limit is met. Therefore, the NERP already represents a compromise compared to the full compliance of each unit: the failure to comply with the NERP ceilings is therefore extremely problematic.

Existing combustion plants may be exempted from the LVE specified in the LCPD or from inclusion in the NERP if the operator opts for a limited derogation. This allows the power plant to operate for a maximum of 20,000 hours starting from 1 January 2018, no later than 31 December 2023, without the need to adhere to certain emission limit values or upper limits. This derogation applies to units that are foreseen to be closed or completely renovated in order to comply with the newer and stricter limit values under the Industrial Emissions Directive at the end of the derogation period.

Coal-fired plants in line with the Large Combustion Plants Directive continue to have a health impact, but those that do not unnecessarily worsen human health and cause premature death. Compliance with NERP ceilings and opt-out conditions are, therefore, not just a matter of compliance, but of life and death.

Export of electricity to the European Union

For two decades, the European Union has been tightening its legislation on industrial emissions, climate change and state aid related to the coal sector, which has led to the shutdown of many coal-fired power plants in the EU. Many EU member states have announced ambitious plans to phase out coal this decade with the support of the European Green Agreement, which aims to make Europe the world's first climate-neutral bloc by 2050.

Using detailed hourly data on the amount of electricity transmitted between the Western Balkans and the European Union and the energy mix in each country during each hour, it is estimated how much electricity from coal produced in the region is exported to the EU.

The EU is a net importer of electricity, including from the Western Balkans. The Western Balkans exported 25 TWh of electricity to the EU from 2018 to 2020, accounting for 8 per cent of total coal energy production in the Western Balkans. Thus, the EU plays a significant role in the sustainability of coal-based electricity in the region.

Imports of electricity into the EU from the Western Balkans make up only a negligible 0.3 percent of total electricity consumption in the EU, but the consequences of emissions are extreme: **CO2 emissions associated with these imports represent 50 percent of total emissions from all power plants in the EU in 2020.**

This is because electricity production in the Western Balkans emits about 300 times more SO2 per unit of production than electricity production in the EU.

Moreover, in 2020, total CO2 emissions from coal in the Western Balkans were 2.5 times higher than SO2 emissions from all coal plants in the EU.

The largest importers of this highly polluting electricity in the EU are Croatia, Greece, Hungary and Romania. In 2018, 2019 and 2020 together, the countries of the Western Balkans exported 10.2 TWh of electricity to Croatia, 7.3 TWh to Greece, 2.4 TWh to Hungary and 1.7 TWh to Romania. At the same time, exports vary significantly by country and year. Bosnia and Herzegovina's exports to the EU decreased in 2019 and 2020, partly due to poor hydrological conditions that affect hydropower production. Total electricity production and consumption recorded a slight decline in 2020 compared to 2019, with a total of 15.4 TWh produced and 11.3 TWh of domestic consumption - the largest balance surplus in Southeast Europe.

Total electricity exports (to all countries, not only in the EU) were three times higher than imports - 5.5 TWh in 2020, with most going to Serbia and Montenegro, and slightly less than 1 TWh in the EU (Croatia). By 2020, the share of coal in exports fell to 66 percent, from 73 percent in 2018, but that still accounted for two-thirds of exports. About a third of electricity production in Bosnia and Herzegovina is hydropower, but it largely depends on weather conditions - in 2020, bad conditions led to a decrease in electricity production from hydropower plants by 24.3 percent compared to the previous year.

In 2019, 95% of Kosovo's production came from coal-fired power plants, while the rest came from hydropower, wind and small amounts of solar energy. However, electricity generation in Kosovo is inefficient; every day, Kosovo may require imports to cover domestic demand and produce surplus electricity.

In Northern Macedonia, exports have increased in the last few years, with the value of exports in 2020 increasing by 9% compared to 2019, and by 70% compared to 2018. Bulgaria and Greece are the main importers of electricity - they imported 2.8 TWh of electricity from Northern Macedonia in 2020, of which 76 per cent was coal-based. The total production of electricity from renewable sources in 2020 amounted to 1.49 TWh, which is an increase compared to 2019, but less compared to 2018, mostly due to hydrological conditions.

The Montenegrin electricity market experienced many significant changes in 2019; The main electricity company Elektroprivreda Crne Gore (EPCG) was renationalized, and the electricity network was connected to Italy in November 2019. In 2019, Italy imported only 0.012 TWh of electricity from Montenegro. This number has drastically increased to 1.6 TWh in 2020, of which just over half - 51.1 percent - are coal-based.

By the end of 2019, Serbia had only four wind farms connected to the transmission system. In 2020, Serbia exported electricity mainly to four EU countries - Bulgaria, Croatia, Hungary and Romania. The share of coal in 2018 in exports to these four countries ranged between 59 and 64 percent, but in 2020 the share of coal in exports rose to 66 to 70 percent.

Source: bankwatch.org