

Namely, the [production of electricity](#) in the world is still mostly based on the use of **fossil fuels**, among which [coal](#) is the most common. Thus, in 2021, 36% of the total electricity at the world level was produced using this **energy source**. When fossil fuels are burned, thermal power plants emit dusty particles into the atmosphere, as well as sulfur, nitrogen and carbon oxides. **Sulfur dioxide (SO₂)** is the most important among sulfur oxides, whose high concentrations threaten the flora and fauna by causing acid rain, while in humans they increase the risk of cancer and respiratory and cardiovascular diseases. Also, sulfur oxides contribute to the creation of particle pollution – secondary **PM particles**, which are recognized by automatic measuring stations as particulate particles, and not as the gases from which they were created. Also, secondary PM particles are often not detected by measuring stations because they are particles of extremely small diameter – reminds RERI in the blog.

He adds that in Serbia, the permitted level of sulfur dioxide emissions from [thermal power plants](#) has been exceeded many times over for years.

– Only in 2020, emissions from thermal power plants in Serbia were higher than sulfur dioxide emissions from as many as 221 thermal power plants in the [European Union](#). One of the ways to reduce these emissions is the construction of desulphurization plants, in which the technological process of SO₂ removal from flue gases is carried out. In the 1990s, the construction of these facilities began in thermal power plants in Europe, while newer thermal power plants were equipped with desulphurization plants from the beginning. In Serbia, however, the first operating permit for a **desulfurization plant** was issued only at the beginning of 2023, although the average age of thermal power plants in Serbia is over 45 years. The construction of these facilities is a long-term and complex process that requires a lot of resources, both human and financial. It is estimated that the construction of a 200MW block costs between 70 and 90 million EUR, while it should be taken into account that the operation of these facilities additionally increases the operating costs of the thermal power plant.

For example, according to **RERI**, the desulphurization plant of the 300MW block increases the [energy consumption](#) within the thermal power plant by about 11MW, by which amount less energy will be delivered to the system. According to today's prices of around €350/MWh, it is estimated that the operation of these thermal power plants would cost over EUR 30 million per year.

– At the same time, it should be born in mind that these plants “**do not go by themselves**”, but are accompanied by large amounts of waste and wastewater, which must be treated in

an adequate manner in order to prevent negative impacts on the environment. In addition, there are increased emissions of **carbon dioxide (CO₂)**, both from the lime used in this process, and due to reduced energy production per ton of coal. Therefore, with the operation of these plants, less electricity is obtained by burning the same amount of coal. Higher energy consumption in the power plant itself leads to a drop in its energy efficiency below 30%, as a result of which the question arises whether any thermal power plant in the **Western Balkans** could harmonize its operation with the requirements of the **EU Directive** on industrial emissions, which will apply to old large combustion plants apply from 2028. While investments in desulfurization plants contribute to the reduction of sulfur dioxide in the air, it is necessary to keep in mind the broader picture - that these are still investments in the production of energy from coal, the text notes.

RERI points out that the decision to build desulphurization plants in **EPS** thermal power plants in Obrenovac and Kostolac was made without prior analysis of the available options and the economic and environmental consequences of the chosen solutions. That is why the question inevitably arises, whether it is still more expedient to invest funds and efforts in the diversification of energy sources, energy efficiency and energy production from renewable sources and thus essentially contribute to the protection of the **environment and human health**.