Slovnaft

CEZO

Waste-to-energy plant

- **Location:** South-eastern side of the Slovnaft compound
- **Area:** Approximately 14.8 acres
- **Chimney height:** 60 m
- **Yearly capacity:** 317,000 tonnes of waste
- **Catchment area:** Western Slovakia
- **Number of new job positions**: 40+
- **Estimated investment:** €200 million
- **EIA submission:** Autumn 2023
- **Construction period:** 2024–2029
- **Commissioning:** End of 2029

1. WHY DOES SLOVNAFT WANT TO BUILD CEZO?

Today, Slovakia is a country of landfills, which are expected to reach full capacity by 2026. More than 60% of all municipal waste ends up in landfills, totalling around 1.1 million tonnes annually. Under binding European directives, EU countries must limit landfilling to a maximum of 10% by 2035. The White Book of Waste Management, a comprehensive analysis of the state of waste management in Slovakia, warns that **by 2035, 1.25 million tonnes of non-recyclable waste will be generated in Slovakia that will not be able to be landfilled. It is estimated that by then, Slovakia will face a shortage of waste-to-energy capacity amounting to 550,000–600,000 tonnes per year.** This is why Slovnaft wants to build a new waste-to-energy plant called CEZO, which will process **more than 300,000 tonnes of municipal, industrial, and hard-to-process waste annually.** Slovnaft has the expertise, the material background, and the will to enter the waste treatment industry. Building this plant will also add to the goal of gradually reducing the processing of fossil resources. Slovnaft already operates a sludge incineration facility at its mechanical-chemical-biological water purification plant. The new centre is intended to replace this facility and, with its unique technology, expand the treatment to include other types of waste.

2. WHAT IS THE PURPOSE OF CEZO?

CEZO will generate heat and electricity for the needs of Slovnaft, but there is also the possibility of supplying heat to the city of Bratislava. This production will use not only non-recyclable municipal waste as an energy source but also industrial waste. This is what sets it apart from other projects. The unique technology can also process various sludges and other environmental burdens that are beginning to dangerously contaminate soil and groundwater. A key contribution of the centre is reducing dependence on fossil resources and lowering CO2 emissions. The reduction in CO2 emissions will be achieved by decreasing the consumption of fossil fuels for heat and electricity production in the region, while also preventing the generation of additional emissions from landfill waste. According to available data, landfills have accounted for up to 70% of waste-related emissions.

The investment is part of the new larger Shape Tomorrow 2030+ strategy in the field of the circular economy, in which we view waste as an input raw material not only for energy production but also for the production of fuels, plastics, and chemicals. We currently see waste as a suitable raw material that can replace the import and processing of fossil resources in the future, thereby reducing Slovakia's dependence on other countries. CEZO will be part of an entirely new ecosystem for waste utilisation and recovery.

3. WHERE WILL CEZO BE LOCATED?

CEZO will be situated in the south-western part of the Slovnaft refinery compound, and it will not be in contact with residential areas. It will mainly be surrounded by refinery facilities, pipelines, and roads. The nearest neighbour is OLO, a municipal waste management company, with its waste-to-energy facility. This area appears to be the most suitable due to the availability of the necessary infrastructure and utilities for its operation.

4. WHAT WASTE WILL BE PROCESSED AT CEZO?

CEZO will be capable of processing over 300,000 tonnes of waste per year. **More than two-thirds will consist of standard municipal waste, while less than one-third will be hard-to-process industrial waste.**

5. HOW WILL WASTE BE PROCESSED AT CEZO?

CEZO will consist of two main components: **a facility for sorting selected components of municipal waste and the waste-to-energy plant itself.** The facility, which will separate all reusable components from the municipal waste, will be a significant part of the operation. This is one of the aspects that sets it apart from other such facilities. Recyclable materials such as paper, plastics, glass, and metals will be sent for further recycling. Non-recyclable components and all industrial waste will be used as a source of heat. The unique fluidised bed technology differentiates CEZO from similar facilities by its ability to process even liquid waste.

6. WHAT IMPACT WILL CEZO HAVE ON THE ENVIRONMENT?

As with other investments, **Slovnaft is following the BAT (Best Available Technology) principle for CEZO**, ensuring the use of the best and cleanest technology available, similar to what is used in Austrian cities like Linz and Lenzing. The operation will be able to reduce the overall carbon footprint by eliminating old existing landfills and reducing the use of fossil resources for heat production, not only in Slovnaft but also in Bratislava.
Another significant side effect is the utilisation of raw materials available in the area. Their local availability means there is no need to import materials for refining processes and heating.
The overall air quality will not be worsened by the operation, as confirmed by the published expert study included in the project.

7. WHEN WILL CEZO BE BUILT?

The EIA submission is planned for autumn 2023. The construction should be finalised by 2029. Operations should commence by the end of this decade, that is by 2030.

8. WHAT ENVIRONMENTAL IMPACTS CAN WE EXPECT DURING THE CONSTRUCTION OF CEZO?

Construction and assembly machinery, along with related freight transport, will be sources of dust and emissions directly on the construction site and to a lesser extent on access roads. **These impacts will only be felt within the Slovnaft refinery compound and will be temporary. It is not expected to worsen air quality, as the intensity of pollution can be minimised with appropriate measures.** Mobile emission sources during the proposed activity will include vehicles transporting construction materials and technological equipment. Given the location of the construction site, there is not expected to be any impact on residential areas.

9. WHAT WILL CEZO OFFER TO THE PUBLIC?

CEZO will enable the utilisation of existing and newly generated waste, including historical burdens that cannot be removed with conventional technologies.
CEZO will be able to energetically recover otherwise hard-to-process industrial and municipal waste without further negative impacts on the environment. With the agreement of the relevant authorities, CEZO could also eliminate old environmental burdens in the form of various landfills around Bratislava and potentially other regions of Slovakia. The new waste-to-energy plant will provide a cleaner environment for people living near the refinery and throughout Slovakia **by energetically recovering several well-known old industrial landfills and processing hard-to-process waste currently being generated, such as that from car manufacturing and wastewater treatment in municipal plants.** In collaboration with the city and the existing OLO facility, the heat produced can also be used to supply Bratislava, which could have additional positive impacts by reducing the use of purchased and burned fossil resources.

10. HOW IS WASTE MANAGED ELSEWHERE IN THE WORLD?

European countries have been using waste as an energy source for years. According to the Confederation of European Waste-to-Energy Plants (cewep.eu), there are 504 facilities in Europe that together process 101 million tonnes of waste annually for energy recovery. The countries with the most facilities are France (117), Germany (100), and the United Kingdom (54). For instance, Switzerland, which is similar in size to Slovakia, operates 30 waste-to-energy plants.
Neighbouring Austria has 11 such facilities, while Slovakia only has two, and none with the currently proposed technology. In addition to the technology, a significant part is the sorting facility, which will ensure the separation of selected components of municipal waste for recycling.