

## Obverse

The obverse depicts the wheel of the hoist that services the shaft above the underground hydroelectric plant in Kremnica. To the upper right of this image is the Slovak coat-of-arms, splitting the year of issuance '2021'. The name of the issuing country 'SLOVENSKO' is inscribed along the upper-left edge. At the bottom of the design are a stylised letter 'N', referring to the coin's designer Štefan Novotný, and the mint mark of the Kremnica Mint (Mincovňa Kremnica), consisting of the letters 'MK' placed between two dies.



The Main Hereditary Adit below the power plant

## Reverse

The reverse image depicts, in the lower right quadrant, the Kremnica underground hydroelectric power plant and, on the left side, the mine's surface buildings connected with the Turčekovský water pipeline and with subterranean mine workings. The lower left quadrant includes an upper aperture on to a rail switch inside the mine and a lower aperture showing water flowing out of the adit. The words 'PODZEMNÁ VODNÁ ELEKTRÁREŇ KREM-NICA' (Kremnica underground hydroelectric plant) are inscribed along the edge of the design. The coin's denomination and currency '10 EURO' appears in the space above the image. In the top part of the image are the years '1921' and '2021', separated by the mining symbol of a hammer and pick.

## Coin details

Denomination:	€10
Composition:	.900 silver, .100 copper
Weight:	18 g
Diameter:	34 mm
Edge lettering:	• ELEKTRINA - NOVÉ ZLATO PRE KREMICKÝCH BANÍKOV (Electricity - The new gold for Kremnica miners)
Issuing volume:	limited to a maximum of 11,000 coins in either brilliant uncirculated or proof quality
Designer:	Štefan Novotný
Engraver:	Dalibor Schmidt
Producer:	Kremnica Mint (Slovakia)



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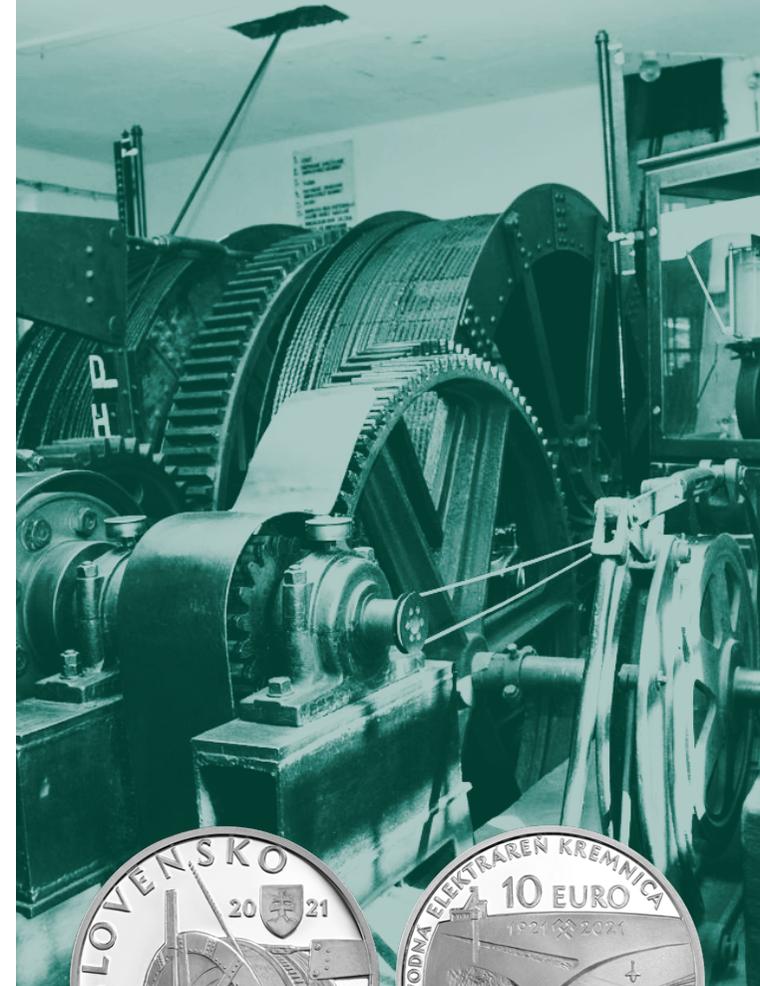
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Photographs by Ivan Čillík

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# 100th anniversary of the underground hydroelectric power plant in Kremnica

SILVER COLLECTOR EURO COIN



One of the Pelton turbines (TG1)

Miners have for centuries toiled to extract the natural treasures deposited in the earth around Kremnica, a town in central Slovakia. To this task they have also applied their intellect and ingenuity, with their most notable technical accomplishment being the construction of an underground hydroelectric power plant which, a hundred years on, continues to transform flowing water into electrical energy. Such a construction is rare in Europe, and the Kremnica plant has been included in the Register of National Cultural Heritage Sites in Slovakia.

Since time immemorial, water has been used in mining as a technological medium. Until the 19th century it was the only source of energy, apart from the muscles of animals and miners. Its shortage in the Kremnica ore field was remedied in the 15th century, when water captured from springs in the Turiec basin was channelled to Kremnica via the Turčekovský pipeline, a novel technology of its day. When it became necessary to mine for gold at greater

depths, water became, paradoxically, the miners' enemy. Water blocked their route to the gold, and in order to drain it, the miners had to make what is now known as the Main Hereditary Adit. The adit's length between shaft IV at Kremnica and its outlet at the Hron River is 11 km, and its elevation over that distance is only 5.5 metres. Its overall length, going back to the Anna shaft, is 15.5 km.

Hydroelectric power started to be used in mining in the late 19th century. Kremnica's underground hydroelectric plant was built in 1921 at the level of the Main Hereditary Adit, 245 metres below ground, and has been in continuous operation ever since. It houses three Pelton turbines with flow rates of 225, 225 and 750 litres per second, along with three corresponding generators that can produce up to 400, 400 and 1,360 kW of power. The water is conveyed by two pressure pipes, each 0.5 m in diameter. The plant staff are wound up and down the



The head of shaft IV



The distribution control panel for the generators

shaft by a cage and hoist that were installed in the late 19th century and remain in their original condition.

The potential use of cascading water also provided the impetus for the construction of two surface power plants with accumulation reservoirs. Electricity generation at the Kremnica power plants can be imagined in simple terms: water runs along various paths and is captured by the accumulation reservoir in Kremnické Bane. Here the water's strength of movement undergoes a first stage of transformation into electricity. The water continues to the Revolta reservoir, to be channelled to another power plant for a second stage of transformation. From there, it flows to the reservoir at Kremnica, and then, via shaft IV, to the underground hydroelectric power plant, before flowing away through the Main Hereditary Adit to the Hron River. The mining company Kremnická banská spoločnosť, s.r.o. is proud to operate these power plants and the Turčekovský pipeline.