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The potential of geothermal district heating in the city of Banja Luka, Bosnia and Herzegovina

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The geothermal energy potential in the Balkan area includes locations in Slovenia, Hungary, Romania, Bulgaria, Serbia and Bosnia and Herzegovina. Although the potential for clean, cost-efficient, and renewable geothermal heating energy is well known, exploitation of geothermal sources is still hampering. According to the existing surveys, mappings, and calculations, Banja Luka area is built on a geothermal underground reservoir, which is currently only used for balneology purposes. Due to the specific geographic position and the emissions from the existing district heating system based on biomass and heavy petrol, the air quality in Banja Luka is severely mitigated during the winter season. In order to assess the potential and the challenges of geothermal district heating for Banja Luka numerical energy modeling, life cycle analysis of the energy systems, and stakeholder assessment are currently being performed. These activities are currently carried out in the frame of international cooperation between the University of Banja Luka, Reykjavik University in Iceland, and the Energy Institute at the Johannes Kepler University in Linz, Austria. Our preliminary results indicate that geothermal district heating in Banja Luka can provide a reliable, cost-efficient, clean, renewable, and domestic heat supply to the residents of Banja Luka. Furthermore, our initial findings indicate that the main challenges in developing geothermal district heating in Banja Luka are complex bureaucratic processes, high skepticism among the decision-makers, and a high degree of conflicting interests among relevant stakeholders. This presentation will conclude by highlighting how geothermal district heating in Banja Luka falls in line with the concepts of the new EU Green Deal and the obligations of Bosnia and Herzegovina according to Energy Community Treaty.