

JASPERS Assistance to phasing-out coal from district heating in Slovakia

Stanislav Voskár, City of Prievidza



Upper Nitra coal region Slovak Republic


- Population: 176 208 residents (Prievidza and Partizanske districts)
- Largest city: Prievidza (45000 residents)
- Jobs in mining: 2 000
- Coal production: 1,1 mil. tonnes/year (2020)
- Annual coal energy generation: 1 TWh electricity; 240 GWh heat (Nováky power plant)
- Coal phase out: end of 2023



An example of JASPERS assistance beneficiaries in Slovak Republic

- The initiative of the European Commission - Platform for coal regions in transition supported the Government of the Slovak Republic in **the decision to end the mandatory use of domestic brown coal until the end of 2023** latest.
- It is a major decarbonization measure at the national level.
- This decision resulted in **the shutdown of the Nováky coal-fired power plant in January 2024**, which, in addition to electricity production, also **provided heat supply for cities and companies in the surrounding area**.
- The government's decision was taken in December 2018, so there **was very little time left to choose and implement a new solution**.
- When choosing a future solution, **the region used the assistance of JASPERS, which was a significant help**.





JASPERS assignment in 2020

Assistance to phasing-out coal

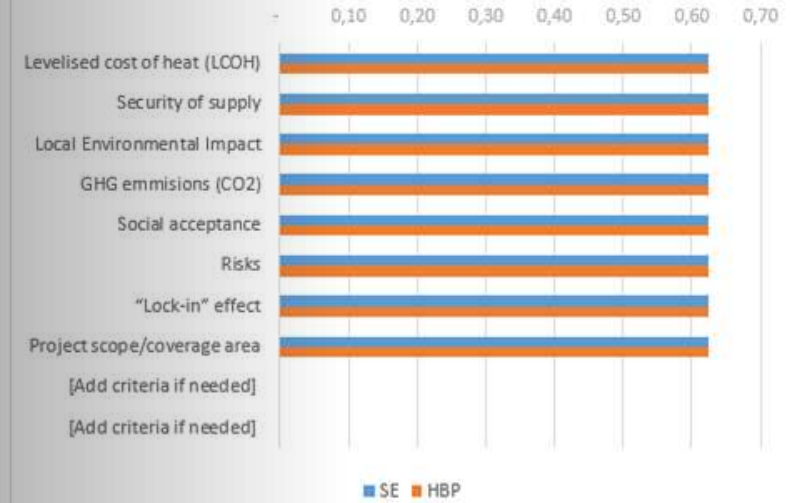
- **Need for quick decision about “fast-track” investment** project to replace the coal-fired generation source in Novaky and ensure the continuation of the district heating supply for 2023/24 and the following heating seasons
- request for a **solution without a "lock-in" effect** that could exclude other renewable energy sources with a longer development phase
- **JASPERS provided detailed opinion on two proposed projects, and finally their comparison**
- **multi-criteria analysis table**, presenting the relative strengths and potential risk / development areas of the two options
- **practical tool based on multi-criteria analysis** - the decision-makers themselves could determine how much weight they would give to the eight criteria and then rate the criteria on the specified scale

Practical tool based on multi-criteria analysis

Weighted-average total score



Criteria comparison



	SE	HBP
Total	5,00	5,00
Levelised cost of heat (LCOH)	0,63	0,63

3	Local Environmental Impact	Includes estimates of the local emission level, impact to the local air quality, location in relation to natural protected areas (Natura 2000), land use (use of agricultural land area and related visual impact), use of local resources such as fuel (fuel transportation related impact such as transportation), water etc.	5 - very low impact , 4 - low impact, 3 - average impact, 2 - high impact, 1 - very high impact	12,5%
4	GHG emissions (CO2)	Includes estimated level of CO2 emissions from the non-RES heat generation on a typical year of operation. Based on direct emissions (no induced effects)	5 - very low CO2 emission, 4- lower emissions, 3- average emissions, 2- higher emissions, 1- very high emissions	12,5%
3	Social acceptance	Assessment of the project in terms of acceptability its stakeholders. Includes aspects like its strategic fit with national and local policies, strategies and plans (e.g. NECP, Transformation Action Plan of coal region Upper Nitra, municipal heat concepts); project impact and contributions on local community development (e.g. impact on jobs, use of locally available resources incl. energy); the overall perception of the project from local community, investors and NGOs; heat customers' perception of service quality.	5 - fully acceptable , 4- more or less acceptable, 3 - indifferent , 2 - mostly not acceptable , 1 - totally unacceptable	12,5%
	Risks	Estimate of the project development risk level in terms of meeting the required time schedule (Q3/2023). Includes land acquisition risks, project financing risks, contracting risks incl. procurement risks; operational risks including technical, fuel price, demand risks	5 - very low risk, 4- lower risk, 3- average risk, 2- high risk, 1- very high risk	12,5%
		Assessment whether the proposed investment does not create		

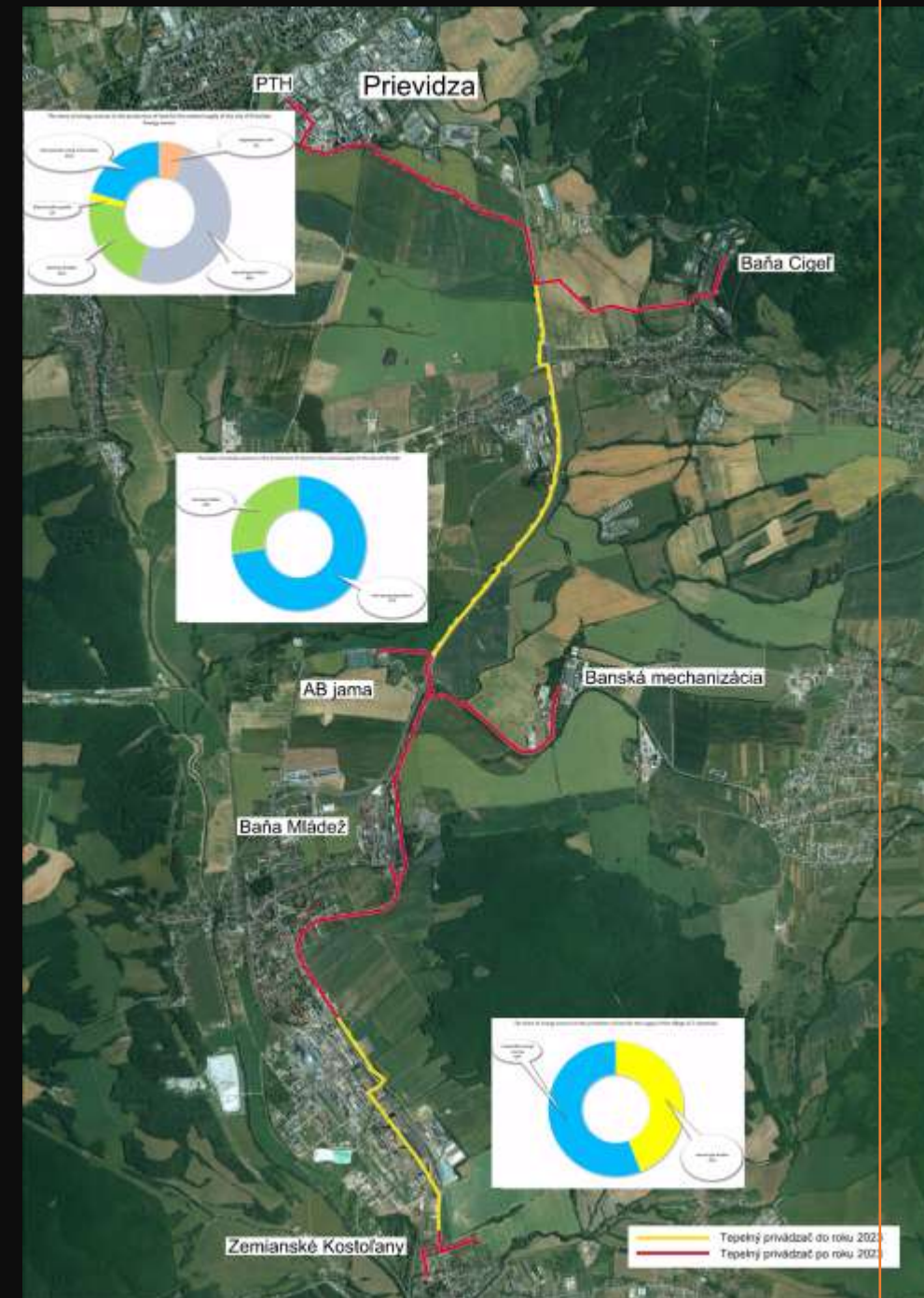
With what the assistance JASPERS helped us

- **facilitating very different opinions** in the region
- a platform to **hear the diverse views of stakeholders**
- **objective assessment** of the technical solutions offered
- **independent professional opinion** on calculations, highlighting where clarification is still needed
- **explanation of strengths and weaknesses of solutions**, and potential risks
- **specification of the potential of solutions for financing from EU sources** - what are the rules and which technologies cannot be supported
- **a practical tool for decision makers** - thanks to which they could better determine their important criteria when making a decision



Result

- the implementation of “fast-track” investment project is completed. Project has still potential for further addition of renewable resources and investment in new green technologies
- Investor is a company PTH coowned by the city Prievidza and the mining company HBP
- investment to renewable resources and new infrastructure was supported by EU resources (19 million € grant) – significant help for consumers of heat
- greener Region of Upper Nitra - new solutions are an important contribution to environmental transformation:
- new heat source for the city of Prievidza will have a majority share of renewable sources - located in the brownfield of the former Cigel' mine, technically it is a unique combination of using the potential of mine waters, heat pumps, biomass and solar panels. A gas boiler will be used only to cover the peaks
- in the town of Nováky, the heat source will be based only on renewable sources (combination of biomass, heat pumps and use of mine water)



New Instalations and future development

- The installed RES consists of new and revitalized biomass boilers, heat pumps that use mine water with a continuous flow of 100 l/s being preheated by solar collectors installed on the former landfill.
- Project has further potential to be greener such as utilization of waste heat from the wastewater treatment plant and the use of underground mine spaces as thermal energy storage.
- A significant expansion of the range of heat consumers is being prepared, such as connecting a regional hospital and a new automotive plant being built in Nováky.
- The district heating operator, in cooperation with the regional university and the city, is also launching a research and development project to implement control algorithms to maximize the use of renewable resources.

