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FACT SHEET to the research project THERMOCLUSTER BBT

SHORT TITLE / ACRONYM

ThermoCluster BBT

LONG TITLE

Geothermal heat recovery from tunnels using the example
of the Brenner Base Tunnel

DESCRIPTION

The content of the FFG-funded project, conducted from March 2022 to May 2023 within the framework of the "Stadt der Zukunft" initiative, is the investigation of selected tunnel sections of the Brenner Base Tunnel (BBT) meets this requirement. Furthermore, the Brenner Base Tunnel provides a third tube which drains the entire tunnel structure and allows subsequent installations to a certain extent. Thus, the example of the BBT offers perfect conditions to find out how much natural geothermal potential, which is found above all in the drainage water, is in this tunnel structure and how this potential can be sustainably increased beyond this natural level.

The most important prerequisite for the geothermal use of underground structures is the presence of a customer in the immediate vicinity. This is not only for cost reasons, but above all to keep thermal losses low and the efficiency of the system high. The proximity of the city of Innsbruck and the surrounding municipalities to the Brenner Base Tunnel (BBT) meets this requirement. Furthermore, the Brenner Base Tunnel provides a third tube which drains the entire tunnel structure and allows subsequent installations to a certain extent. Thus, the example of the BBT offers perfect conditions to find out how much natural geothermal potential, which is found above all in the drainage water, is in this tunnel structure and how this potential can be sustainably increased beyond this natural level.

In addition, knowledge about topics such as the effects of heat generation on the technical components and on the tunnel lining in the instrumentation sector is generated. Also the question of the length of tunnel meters which must at least be instrumented in order, for example, to bring the city of Innsbruck long-term savings in supply costs. Supplementary to tunnel constructional knowledge, geological and hydrogeological parameters are determined.

PROJECT COORDINATOR

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