

EVENT & EXPO INVESTMENT PROJECT PROFILE



Stupska bb, 71000 Sarajevo / Tel. +387 61 162 592 +387 62 324 495/ www.e

-

ventexpo.com /



|  |  |  |  |
| --- | --- | --- | --- |
|  | | | |
| Project title | Geotermal Energy for Buldings Heating and Cooling in Visegrad municipality | | |
| Sector | Energy sector and ecology | | |
| Location | Municipality of Visegrad, eastern part of Republic of Srpska and BiH, 112 km away from Sarajevo on the main road M5 Sarajevo-Uzice. | | |
| Location description | Visegrad is a town and municipality in eastern Bosnia and Herzegovina, positioned on the Drina River, in the Republic of Srpska Entity. | | |
| Company description | According to Census from 2013, Municipality of Visegrad has population of 10.118 inhabitants.  The area of ​​buildings in the urban area (public, commercial and residential ones), which are connected to the central heating system is about 35,000 m2. This system consists of three coal-fired boilers.  Currently, there are 3,966 households in individual houses in the municipality. Around 50% or about 2,000 households are in the suburbs and use individual boilers and stoves for heating.  Assuming that the average household area is about 100 m2, and the average heating area is 60 m2, then the total heating area of ​​individual houses in the suburban area (which could be connected to the central heating system) is about 120,000 m2. | | |
| Project status | Analysis of the geothermal potential of the Municipality of Visegrad was done by an expert who, based on previous research and experience, clearly confirms the possibility of using thermal waters and groundwater for heating and cooling facilities in the area of ​​Visegrad. | | |
| Project description | Potential of geothermal energy in the Municipality of Visegrad  The geothermal potential of Visegrad can be divided into two sources:  1. Groundwater  The city center of the Municipality of Visegrad is located at the confluence of the two rivers Drina and Rzav. This results in alluvium containing a large amount of groundwater at shallow depths (10-15 m) and relatively easy exploitation of that groundwater.  Recently, at the confluence of the rivers Rzav and Drina, tourist complex "Andricgrad" was built with an area of ​​about 30,000 m. The geothermal potential of groundwater is being used for heating and cooling of "Andricgrad" with water-water heat pumps. Water pumps were installed in 2013 and since then the geothermal energy of groundwater has been used successfully. Seven wells for heating and cooling of "Andricgrad" were drilled at this location with an average flow of 8 l/s and an average inlet water temperature of 12˚C. These capacities are sufficient for heating and cooling of the facilities within the complex.  Based on the above experience and research, it can be assumed that there is very large untapped potential of geothermal groundwater at this location and locations next to these rivers with the flow of at least 200 l/s groundwater, which is enough for about 4 MW for heating and cooling of facilities.  2. Thermal water  In the immediate proximity of Visegrad there is a spa center "Vilina vlas" with four sources of thermal water. The total capacity of all four springs is 120 l/s in "C" exploitation model. There is a huge surplus of geothermal potential, because all the water from the source, even after use of the spa can be used as a source of geothermal energy. All waters from sources that are currently under exploitation of about 30 l/s are discharged into a brook that after 2,000 m flows into the river Drina. The temperature of thermal water ranges from 31 to 34˚C. The establishment of a heating system (pipeline), which would bring water to the city, would allow the use of this potential for heating of the residential buildings, for domestic hot water and for cooling.  The spa is 6 km away from the city, so there would be a drop in temperature in the heating system from 1 to 2˚C, depending on the quality of insulation of the heating system. It should also be noted that due to the difference in height between the position of the spring and the city of Visegrad, no special power would be needed to supply thermal water.  Given the above, it can be calculated that the thermal potential of water from thermal baths and groundwater below the urban area of ​​the municipality, with the use of water/water type pumps, has the following heating capacities:  - Spa "Vilina vlas" 12.6 MW  - Groundwater 5.9 MW.  The sum of these capacities is sufficient for heating and cooling of about 154,000 m2 of buildings.  The heating system using heat pumps in the municipality of Visegrad should be gradually established, in several phases. Priority should be given to public facilities with high heating costs, in order to achieve maximum performance in the beginning. | | |
| Estimated total investment cost | Estimated area for heating and cooling: 155,000 m2.  Estimated annual income: 1,444,732 Eur  Total project costs: 8,840,237 Eur  Expected return on investment: 8 years.  The municipal administration would provide all necessary support to the investor to obtain the concession. | | |
| Inputs provided by local partner | Value | | Description |
| EUR | | The municipal administration would provide all the necessary support to the investor to obtain the concession. The decision for registration of a business entity issues the District Court in East Sarajevo. The urban consent for works and building permits issues the Municipality of Visegrad. |
| Inputs required from foreign partner |  | Value | Description |
| Estimated investment of investor: 8,840,237 Euro  - costs of digging wells 46,016 Eur (30 wells with an average price of 1,533.87 Euro)  - Pipeline Visegrad spa -city center, 613,550 Euro (6,000 m pipes Ø 150mm or 6 ”)  - heat pumps 3,067,751 Euro (5-6 heat pump stations with a total capacity of 18.50 MW)  - replacement of heating installations, production of secondary pipelines and installation of fan convectors 5,112,919 Euro | | The heating system of the Municipality of Visegrad should be done in a way that thermal water from the Visegrad spa is introduced into urban and suburban areas via pipelines. Depending on the location and needs of the settlement for heating, it is necessary to combine the use of thermal water and underground springs.  The project involves investing in infrastructure and machinery. The expected time limit for the realization of the project is 2 years. |
| Form of cooperation with foreign partner |  | Financial | Technical |
|  | | Concession / Public Private Partnership |
|  |



|  |  |  |
| --- | --- | --- |
|  |  |  |
| Supporting information available | For additional information about this project, please contact either by e-mail:  info@e-ventexpo.com or phone number: +387 61 162 591 | |