

Analysis of Geothermal Manifestation Distribution at Blawan-Ijen Geopark, East Java, Indonesia based on Magnetotelluric and Gravity Data for Determining the Recommendation of PLTP Location

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SUMMARY

Magnetotelluric (MT) and gravity investigations have been carried out at the Blawan-Ijen Geopark. Blawan-Ijen Geopark is located in Bondowoso-Banyuwangi, East Java, Indonesia. This investigation aims to find the subsurface resistivity structure of the area that may be correlated with geothermal in the area of unknown geothermal potential. MT surveys have been carried out in the area using a magnetometer located 3-5 km from the survey area. On the other hand, a gravity survey has been carried out at the same location as the MT survey site. The results of gravity data interpretation are used to support or check the results of MT data interpretation. The result of interpretation of MT and gravity data shows that the subsurface structure of the area correlates with the structure of the geothermal reservoir. The emergence of the Blawan fault is a way for geothermal fluid to flow to the earth's surface in the form of gas or steam. The distribution flow of Blawan's geothermal manifestations originates from the caldera of the older Ijen Mountains which spreads towards the Kendeng Mountains. It is also known that the geothermal manifestations of Blawan follow the flow of the Banyu Pahit river as evidenced by several hot springs along the river.

Keywords: Magnetotelluric, Gravity, Blawan-Ijen Geopark, Geothermal
