Geothermal Energy in India: Past, Present and Future Plans

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Abstract

It is well known that among the various new and renewable energy sources, geothermal energy is known to be one of the clean energy without smoke and also without environmental hazards. Although it's importance is realized long back in other countries, it's exploitation is still far away in India, mainly due to lack of knowledge on the deep subsurface structure and lack of dedicated program on deep drilling in high pressure, high temperature conditions. Geological Survey of India (GSI) and National Geophysical Research Institute (NGRI) have made concerted efforts in identifying these resources in different parts of our country for possible exploitation. In this direction, different geothermal regions have been investigated in recent years using deep electromagnetic geophysical technique, namely the Magnetotellurics. The geothermal regions investigated include Puga in higher Himalayas of Jammu and Kashmir, Tattapani of Surguja district in Chattisgarh, Surajkund of Jharkhand, Tapovan-Vishnugad, Lohari-Nag-Pala, Badrinath regions of Uttarakhand, Kullu-Manali regions of Himachal Pradesh. These investigations have provided the quantitative dimensions of the anomalous subsurface structures related to geothermal heat source. In this talk, an overview of the details of present day knowledge of geothermal energy at different locations with estimated potential based on the geophysical studies and shallow boreholes temperature logs are discussed. Concrete plans and future directions are also provided to develop this untapped resource.