To determine the suitability of a location for generating solar energy, the Indian Space Research Organization (ISRO) uses solar data derived from measurements on-board the geostationary satellite Kalpana. This is used in conjunction with global horizontal, direct normal and diffuse horizontal irradiance along with capacity utilization factors, these are available at an hourly temporal resolution. By identifying the solar resource described above and temperature of specified locations, ISRO is able to map the richness and potential of solar energy generation across India. In addition, the ISRO employs the Digital Elevation model to find suitable slope for energy extraction, which is a key parameter for installing solar power plants.

The resulting integrated information, on monthly and yearly potential solar energy, at any given location, is available through a web-based GIS interface. Users can access the data by providing a location in the form of geographical coordinates or clicking on the map. Making full use of geospatial information, the interface also provides multi-parameter criteria on factors relevant to site selection, such as slope, distance to existing power grid lines, distance to roads, and land-use (Figure 1).\(^1\)

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\(^1\) Visualisation of Earth Observation Data and Archival System, Space Applications Centre, ISRO. Available at https://vedas.sac.gov.in/vcms/en/home.html
Figure 1. The Solar Site Selection Tool Portal based on multi-parameter criteria

Source: Vedas Solar Site Selection Tool. Available at https://vedas.sac.gov.in/s3t/

Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Additional details and more practices like this can be found in Geospatial Practices for Sustainable Development in Asia and the Pacific 2020: A Compendium