

# GeoAmpere : Geomatics-based Application Model for Planning Distribution of Electricity to Rural Entity

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## Abstract

Electronic governance includes all aspects of physical planning, management of social and physical infrastructure, and enhancement/restructuring of existing facilities, facility management and land use planning. In all these areas, there is a special emphasis on spatial dimensions. In the present age of emerging technologies, Geomatics which is the synergy of multiple disciplines has evolved as a separate discipline dealing with spatial and non-spatial information, its method of acquisition, organization, classification, analysis, management, display and dissemination. It provides not only the answers for macro-level planning but also state-of-the-art models to the government in the context of decentralized planning for sustainable development in rural areas.

At a time when the country is aiming at a double-digit growth rate, the acute shortage of power is a serious impediment. About 44 % of households in the country have no access to electricity. The per capita consumption of electricity is 580 units as compared to 10,000 units consumed in the developed country. To improve the lives of all citizens, the economy has to grow at a fast pace. The growth depends on making available adequate energy at reasonable cost. In order to improve access to electricity, GoI has launched the Rajeev Gandhi Gramin Vidyutikaran Yojna (RGGVY) to provide electricity to all villages by 2009 and "power for All" by 2012. Under RGGVY, electricity distribution infrastructure is envisaged to establish Rural Electricity Distribution Backbone (REDB) with at least a 33/11KV sub-station, Village Electrification Infrastructure (VEI) with at least a Distribution Transformer in a village or hamlet, and standalone grids with generation where grid supply is not feasible. The objective of every distribution utility is summed in the words, "**Deliver electricity to customers with minimal interruptions and maximum profit**". But in reality, it is always difficult, particularly while keeping the government regulators satisfied. In this connection, application of modern ICT tools is being increasingly recognized to provide efficient and effective means towards the planning, preparation & implementation of appropriate development plans.

This paper describes the development of GeoAmpere - *Geomatics-based Application Model for Planning Distribution of Electricity to Rural Entity* based on the requirement studies undertaken for M.P. *Paschim Kshetra Vidyut Vitran* Company Limited, Indore in the Western part of Madhya Pradesh, India. Development of GeoAmpere involved conversion of Single Line Diagram (SLD) into scalable maps, digitization of distribution network (Sub-Stations, Feeders), creation of spatial data and its integration with attributes and development of suitable Geomatics-based planning model. GeoAmpere could help achieve not only the desired transparency and easiness in planning process but also facilitates efficient & effective tool for planning rural electric distribution network. It enables a faster response to the changing ground realities in the development planning, owing to its in-built scientific approach and open-ended design.

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