

Energy industry induced urbanization: A study of energy industry in India with energy-urbanization-population nexus

(エネルギー産業による都市化 エネルギー - 都市化 - 人口関係をもつインドのエネルギー産業の研究)

Hokkaido University, Graduate School of Environment Science,
Division of Environmental Science Development, Course in Global Environment
Management
Saurabh Tripathi

ABSTRACT

This study is aimed to model potential change brought upon by implementation of energy projects in developing countries & in this case, India. Currently project sites include Dadri CCPP 2600MW in Uttar Pradesh state, Vindhyanal TPP 4760 MW in Madhya Pradesh state & Kamuthi Urta Mega solar plant (648MW) in Tamil Nadu state of India. These sites have been chosen as they have further expansion plans & are above the 500MW threshold capacity of power plant generation capacity. The aim of the proposed research work is to address the trio of population, urbanization and energy challenges induced due to energy industry in India in a region(s) & it's socio-economic development. The challenges for Nexus approach are-

The on-going research is focused on energy industry induced urbanization to better understand true impact of ever expanding energy market in India & also develop carbon & urban footprint of energy industry (specially solar) , all these factors are either never considered or often ignored. The research will also be aimed at calculating rate & listing of driving factors of higher rate of urbanization due to energy industry which will further Provide data that may help planning & development of future projects & policies. The integrated methodology involves use of multi temporal Landsat data to see the urbanization pattern in the study area & use of multi variable assessment for establishing & calculating Nexus index. GIS techniques are proving useful in analyzing potential change of the landscape & urbanization. Thus the methodology adopted in this study can be utilized not only for realization of carbon foot print, develop energy policies , but also on previously overlooked factors for planning & managing energy production & policies for a sustainable future development.

Specific objectives of the research are:

- Understanding the population, urbanization and energy nexus in relation to human dependency, location and capacity of the ecosystem to provide goods and services
- To measure the impact of setting up of power plants in a given area & List the driving factors of rate of urbanization due to energy industry
- Provide guidelines for green energy development projects & predict the possible future impact & changes

Keywords : Energy population urbanization nexus, India, energy industry, GIS,