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Evaluation of Shale Gas Resource Potential of Cambay Basin, Gujarat, India

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Abstract : Energy is one of the most eminent and fundamental strategic commodity, scarcity of which may poses great impact on the functioning of the entire commodity. According to the present study, the estimated reserves of gas in India as on 31.03.2015 stood at 1427.15 BCM. It is expected that the gas demand is set to grow significantly at a CAGR of 7% from 226.7 MMSCMD in 2012-13 to 713.5 MMSCMD in 2009-30. To bridge the gap between the demand and supply of energy, the interest towards the exploration and exploitation of unconventional resources like – Shale gas, Coal bed methane, Gas hydrates, tight gas etc has immensed. Nowadays, Shale gas prospects are emerging rapidly as a promising energy source globally. The United States of America (USA) has 240 TCF of proved reserves of shale gas and presently contributed more than 17% of total gas production. As compared to USA, shale gas production in India is at nascent stage. A resource potential of around 2000 TCF is estimated and according to preliminary data analysis, basins like Gondwana, Cambay, Krishna – Godavari, Cauvery, Assam-Arakan, Rajasthan, Vindhyan, and Bengal are the most promising shale gas basins. In the present study, the careful evaluation of Cambay Shale (Indian Shale) properties like geological age, lithology, depth, organically rich thickness, TOC, thermal maturity, porosity, permeability, clay content, quartz content, Kerogen type, Hydrocarbon window etc. has been done. And then the detailed comparison of Indian shale with USA shale will be discussed. This study investigates qualitative and quantitative nature of potential shale basins which will be helpful from exploration and exploitation point of view.

Keywords : shale, shale gas, energy source, lithology
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