Workshop on the National Energy Policy - Energy Demand & Infrastructure

The demand for energy in India has grown at a rapid pace in the past decade with total energy consumption increasing at an average annual rate of about 5% during 2001–2011. As indicated in Figure 1, fossil fuels hold a dominant share in India's energy basket. There is also a heavy reliance on energy imports to fuel the growing energy need. In 2011/12, India's import dependence was nearly 76% of crude oil, while that for natural gas and coal was 21% and 23% respectively.[1] The environmental implications of such a fuel basket are also high, with carbon dioxide (CO_2) emissions from energy-consuming industries having a significant impact on total emissions.

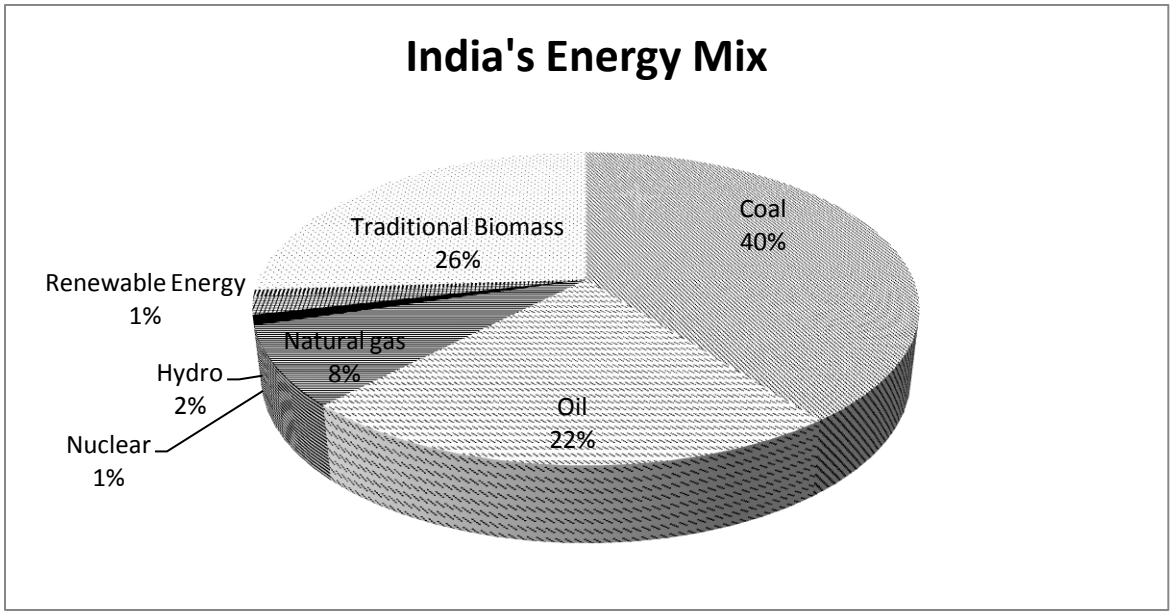

Figure 1: Primary energy supply mix in 2011/12

Domestic resources are unlikely to be unable to bridge the energy demand-supply gap even in the future. Moreover, the aspiration of providing clean & modern energy access to a large segment of the population that currently depends on polluting and inefficient traditional energy forms, would further release a significant amount of suppressed energy demand. All this puts greater pressure on the limited domestic resources – available energy deposits as well as, forests, water, land, and economic resources.

The context of energy security in India has three sets of linkages:[2]

[1] TERI. (2015). *Energy Security Outlook: Defining a Secure and Sustainable Energy Future for India.* New Delhi: TERI Press

[2] TERI. (2010). *Building an energy secure future for India: in consultation with stakeholders.* New Delhi: The Energy and Resources Institute.

Energy and growth: where energy supply needs to keep pace with the objective of high and rapid energy growth in the economy

Energy and poverty: providing access to basic services and energy needs of all sections of society in order to facilitate overall inclusive development

Energy and the environment: addressing the adverse environmental implications of energy generation and consumption

The narrative around energy security is increasingly being viewed from a multi-dimensional perspective rather than being limited to one of domestic availability of fuels. Accordingly, a comprehensive National Energy Policy needs to find cohesion between the supply and demand sectors to aid in policy planning. Containing energy demand through efficiency measures, the adoption of which is facilitated through integrated policy and technological decision making, can play a key role in transforming future energy requirements and its related implications.

The energy demand sectors include the Industry, Residential & Commercial, Agriculture and Transport sectors. Of these, Industry accounts for the highest share in demand, followed by residential, and transport (Figure 2).

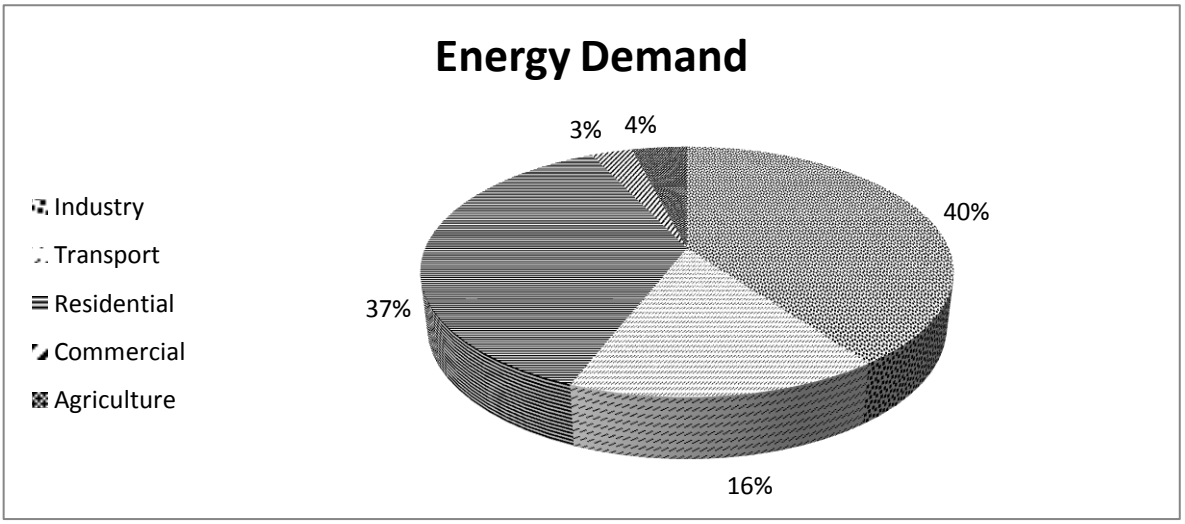

Figure 2: Primary energy demand mix in 2011/12

In laying out India's INDC, the GoI expects energy demand to rise to around 2499 TWh by 2030[3]. At the same time, India's commitment to reduce its emission intensity by 33-35% by 2030 implies that the government must examine all possible measures to attain this goal. While different estimates for energy efficiency improvements and options exist, appropriate policy, regulation and institutions are required to effectualise the adoption of the efficient alternatives at the requisite pace and scale.

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[3] *India's Intended Nationally Determined Contribution – Working towards Climate Justice.* (2015). Government of India. New Delhi.

Policies and measures that guide energy choices towards efficient options at each stage of the energy chain, targeted subsidies where appropriate and necessary, long term and integrated decision making for adoption of alternative fuels and technologies in the future via appropriate investments in R&D etc., are some elements that could aid this goal on the demand side. Moreover, long term integrated policy making should focus on energy infrastructure that facilitates these energy transitions and avoid lock-ins into infructuous fuel supply and technology investments.

This workshop seeks to highlight various issues and challenges associated with demand-side efficiency and management across the energy consuming sectors. Individual sessions seek to highlight the challenges plaguing the sectors and the opportunities therein to resolve these challenges. Key sectors such as transport and industry are large sources of CO_2 emissions. The sessions will therefore explore the possibilities of introducing more efficient measures, and fuel-switches (where possible) in these two important large energy consuming sectors – industry and transport. Considering India's aim of providing energy access, it becomes imperative to discuss methods and possibilities to provide sustainable habitat for a large section of the population. The concluding session seeks to highlight infrastructure constraints that hamper growth for the consumption sectors and seeks to discuss options that will provide for a long-term integrated infrastructure planning.