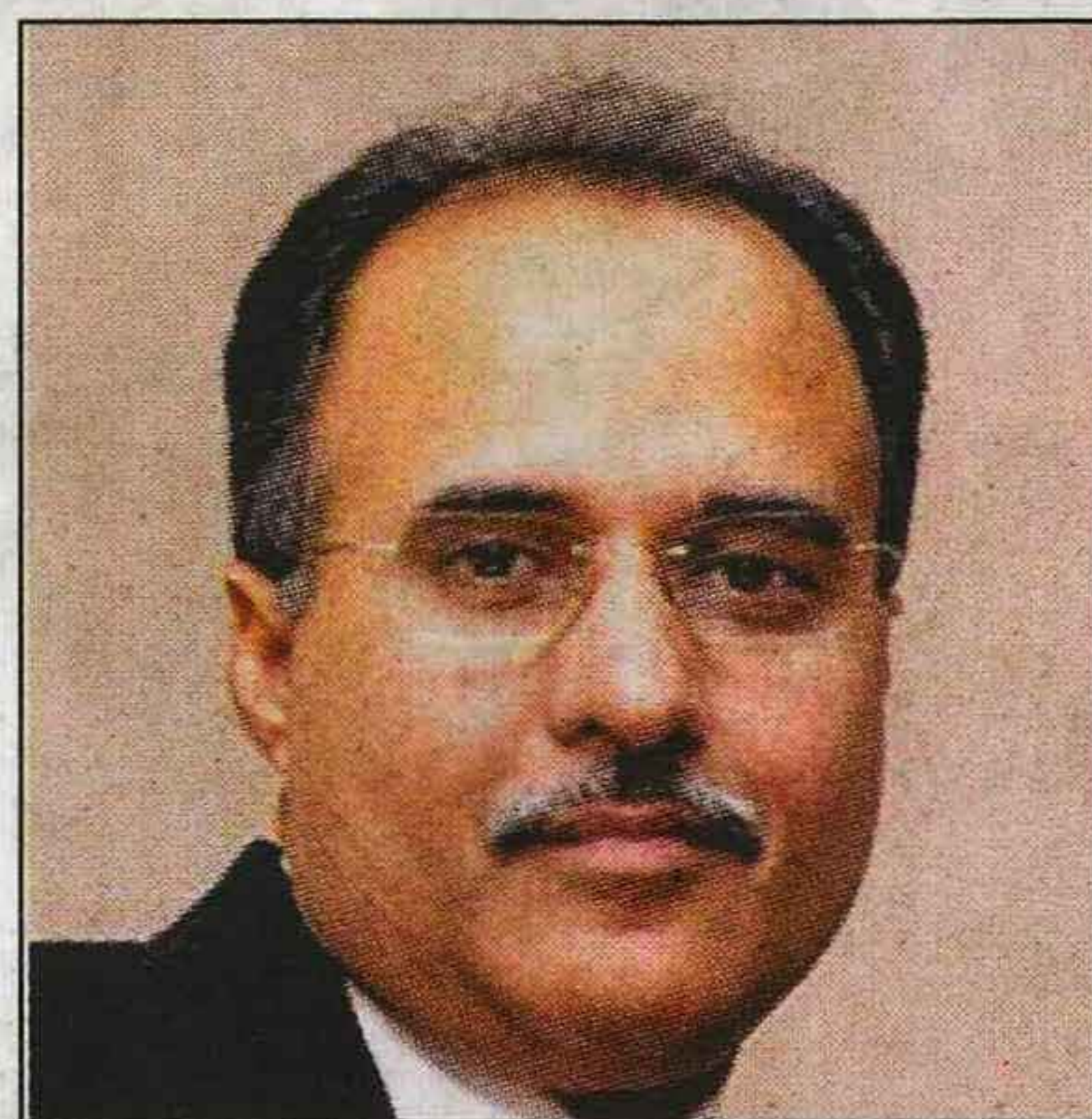




# World Environment Day

## Energy conservation through energy efficiency

Nearly 25,000 MW can be saved by adopting end-use energy efficiency and demand side management measures



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INDIA ranks sixth in energy consumption in the world. But the country's generation capacity is far below than required for sustaining its energy demand. Under this scenario, of mismatch between demand and supply, energy conservation and energy efficiency can play a significant role in optimising availability. Energy efficiency results in direct energy savings, which in return help conserve fuel resources. Efficient usage of fuel brings down emissions, thereby protecting the environment.

To make India globally competitive, a paradigm shift in the country's approach to energy policy issues is required. It has been estimated that nearly 25,000 MW of electricity can be saved by implementing end-use energy efficiency and demand side management measures throughout India. One unit of energy saved at the consumption level reduces the need for fresh capacity creation by 2 to 2.5 times. Moreover, the creation of new power generation capacity is a costly proposition and necessitates long gestation period. Energy efficiency activities, on the other hand, can make available additional power at comparatively low investments within a short period of time. Thus, for an energy secure



future, India needs to adopt a judicious mix of investment in supply side capacity, operational efficiency improvements of existing power generating stations, and reduction of losses in transmission & distribution.

### Policy initiatives

The government has made some noteworthy strides in the field of electricity efficiency and conservation under the aegis of the Bureau of Energy Efficiency (BEE). BEE was set-up under the provisions of the Energy Conservation Act in 2001 (EC, 2001), which deals with promotional measures to reduce energy consumption.

### ONE UNIT OF ENERGY SAVED AT THE CONSUMPTION LEVEL REDUCES THE NEED FOR FRESH CAPACITY CREATION BY 2 TO 2.5 TIMES

Some of the mandatory measures under this Act includes reduction of energy consumption in the domestic sector and transformation of the market with energy efficient appliances, conservation of energy in the building sector, appointment

of trained professionals to conduct energy audits, creation of best practices manuals, definition of guidelines for different industries, and conducting awareness campaigns in schools and universities about energy efficiency.

Projected electrical energy saving potential at the end of the 12th Five Year Plan is 44.85BU on the demand side and an additional energy saving equivalent of 21.3 million tonnes of oil equivalent (mtoe) in the industrial sector. Activities planned in the 12th Plan for achieving energy efficiency include sector-specific interventions in areas like municipality, agriculture sector, street lighting, commercial buildings and waste heat recovery in small and medium enterprises (SMEs).

The SMEs sector is an important constituent of the Indian economy and plays a significant role in energy consumption, which is about 25% of the total industrial sector. The 12th Plan targets reduction of energy consumption by 5.75% in energy-intensive manufacturing operations. In addition, other energy-intensive sectors have been identified for conservation efforts amongst the large industries. Existing initiatives towards efficiency in the industrial sectors include provision of energy consumption norms for the various sectors, introduction of techno-economic viable recommendations and establishment of energy management systems, conducting energy audits by accredited agencies, certification of energy managers and auditors and empowerment of manufacturers to affix energy labels, amongst others. The 12th Plan is aimed at strengthening the existing initiatives and introducing new opportunities.

### Participation of utilities

Demand-Side Management (DSM) is the selection, planning, and implementation of measures intended to have an influence on the demand or the customer-side of the electric meter. A DSM programme can reduce energy costs for utilities, and in the long term, it can limit the requirement for further generation capacity augmentation and strengthening of transmission and distribution system.

Tata Power is the first utility in the country to carry out a demand response programme which is practiced widely in developed countries. The benefit of these programmes goes beyond the utility and provides the consumers with a higher advantage.

There are various benefits that a utility can accrue by undertaking DSM, including helping meet (peak) demand, improve cash flow, improve reliability and customer connect while also mitigating the impact of rising tariffs for consumers.

To drive DSM there is need for incentives for utilities to promote DSM by the regulator. In addition, there is a special need for increased focus on DSM in power supplies to the agricultural sector. This is typically power being subsidised by the tariffs of residential and industrial consumers. Availability of efficient electrical motor pump-set system with proper installation, operation and maintenance can significantly lower the electricity losses.

### In a nutshell

The country needs to embark upon a path of strategic energy planning in its economic and security interests that would lay a foundation for fuel usage in an economically efficient and environmentally sustainable manner. In addition, DSM initiatives can significantly reduce losses and thus the financial burden of utilities.

When energy resources are conserved, the country can enjoy cleaner air and a healthier environment, and help protect the climate by reducing greenhouse gases. Saving energy helps the environment in many ways, from slowing down the exploration for future energy supplies to reducing emissions that come from power plants. On this World Environment Day we hope for incessant efforts from all stakeholders towards practices that can enhance energy efficiency in the nation.