## Deriving the most from every unit of energy

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Energy efficiency deserves as much policy emphasis and funds as the push for renewables

More than 2.5 crore LED bulbs have been distributed under the government's massive Domestic Efficient Lighting Programme (DELP).

The price of LED bulbs under the DELP is one-third of the current market price. This has resulted in wide-scale adoption of LED bulbs which can significantly reduce our electricity consumption.

Many similar energy efficient technologies can reduce our total energy consumption by 15-20 per cent.

They can play a crucial role in meeting India's commitment under the Intended Nationally Determined Contributions to reduce our carbon emission intensity in 2030 by about 33-35 per cent of the 2005 level. India enacted the Energy Conservation Act in 2001 and established the Bureau of Energy Efficiency (BEE) as a nodal agency responsible for energy efficiency and energy conservation policies in India. BEE has been conducting several programmes like the flagship standards and the labelling programme with some success.

## Four-pronged approach

However, India needs a broad strategy to realise the full potential of energy efficiency. Four key points can shape this strategy.

First, the government needs to allocate more resources to energy efficiency.

The budget outlay for the BEE for the year 2014-15 was about Rs. 140 crore. Comparatively, the budgetary support for the Ministry of New and Renewable Energy (MNRE) for the same year was about Rs. 2,500 crore. Energy efficiency technologies, similar to renewable energy technologies, require policy and financial support for their development and adoption. NITI Aayog estimates annual investments of a few thousand crores for moderate efficiency measures.

Although this investment will come from private sector, adequate budgetary support is crucial to build the enabling framework.

Second, energy efficiency needs sector-specific targets. Renewable energy has specific targets like installing 100 GW of solar and 60 GW of wind capacity by 2020. There are broad targets in the 12th Five Year Plan in form of energy saved and capacity avoided.

However, this should be complemented with specific actionable targets, for example, achieving a 70 per cent market share of 5 star rated air-conditioners by 2020. They result in timely and innovative policies, and a keen response from the private sector.

However, highly ambitious targets can lead to hasty decisions without careful planning which can lead to undesired results and consequent loss of credibility. On the other hand, low targets can mean business as usual leaving the energy efficiency potential unrealised.

Third, we need more research on India specific energy efficiency technologies and policies. There are national institutes to facilitate research and development for solar and wind energy. The government can set up research centres focused on specific sectors such as lighting, space heating and cooling, as well as different industries. These centres can be established in collaboration with academic institutes, manufacturing associations as well as the energy service companies.

Along with technology, research should also focus on the emerging field of behavioural economics. For example, people generally like to conform to social norms, and telling them that their neighbours are consuming less electricity through their electricity bills can encourage them to adopt more conservation efforts.

## **Transparent information**

The fourth and the most important point is to adopt an evidence-based and transparent approach. Energy efficiency is often called "the invisible energy" since we cannot see the actual energy saved, hence the importance of proper measurement. Information related to load research, technical analysis, bidding, monitoring, and compliance should be available in the public domain.

A few months back BEE published a list of star-rated AC models which did not comply with the ratings. Making data public and other such measures can significantly help in building trust with the consumers. A broad over-arching strategy that allocates adequate resources, sets specific targets, facilitates research, and adopts a transparent, evidence based approach will go a long way in realising the full potential of energy efficiency.

Aditya Chunekar and Shantanu Dixit

Aditya Chunekar and Shantanu Dixit are with Prayas (Energy Group), Pune. Email: aditya@prayaspune.org