The road ahead: charting own path while learning from global experience

Vincent van Gogh famously said, "Great things are not done by impulse, but by a series of small things brought together." This wisdom has served us well in the area of energy efficiency.

The demand for energy in India is expected to increase to about 1,250 million tonnes of oil equivalent or mtoe (as estimated by the International Energy Agency) to 1,500 mtoe (as estimated in the Integrated Energy Policy Report) in 2030.

Energy efficiency would play a crucial role in not only reducing the demand for electricity but also accelerating the achievement of goals set out in the nationally determined contributions that we have pledged under the Paris climate change agreement.

India's energy efficiency efforts, a few of which have received global recognition, can be categorized into three main areas—domestic, green buildings and industrial.

When the country started its journey towards energy efficiency, it initially looked at the global experience and the first thought was to walk the proven paths.

For instance, we looked at the standards and labelling programme by European countries and the US before adopting a star labelling programme for appliances.

The experience has been very successful, with average efficiencies increasing dramatically. For example, the average air conditioner sold in 2016 was 25% more efficient than the air conditioner sold in 2008.

Meanwhile, in the industrial sector, there were not many examples of requirements, largely because of the internationally competitive nature of industrial sectors and the feeling that they would become less competitive if such requirements were mandated.

Enhanced energy efficiency in the industrial sector is a challenge as it competes for investment with new production capacity.

However, it is also an opportunity since it enables higher productivity and greater competitiveness.

Though energy efficiency is recognized by industries as an important aspect, several uncertainties surround the future alternatives.

Some of these are high upfront costs along with incorporating required safety features, additional R&D capacity and incremental costs.

When specific energy requirements were assessed, it was found that, contrary to perceptions, in each industrial sector some firms were the most energy efficient in the world.

At the same time, some other units used two-six times the energy required per product as compared to the sector's best.

The public policy problem, hence, was of a wide bandwidth. This was startling and quite contrary to received economic wisdom, which said that because of competitive reasons, all industrial units would cluster close to an average specific energy consumption.

This led to the perform, achieve and trade (PAT) programme, which incentivizes energy efficiency

in industries. PAT encourages industries to become more efficient by mandatory differentiated targets with efficient units being required to achieve a smaller reduction than the less-efficient units.

Further, plants that achieve more energy savings than their target are issued energy saving certificates, or EScerts. Industrial units can bank these certificates or trade them with those that have not achieved their targets.

In the first cycle of PAT, the overachievers saved an additional 3.6 mtoe of energy while the underachiever missed their target by 1.4 mtoe. Subsequently, the underachievers brought about 1.2 mtoe of EScerts for compliance purposes, and the trading process discovered a price of about Rs800 for each toe of EScerts. A market for energy efficiency has thus been created.

To unlock the immense potential in the market for energy efficiency, Energy Efficiency Services Ltd (EESL) was created in 2009.

EESL, through a series of demand aggregation-and-competitive procurement steps, was able to reduce the bulk price of LEDs from Rs310 to Rs38, and sell over 300 million LEDs to date.

India continues to both walk down well-established energy efficiency roads, as well as charting out new paths where required.

In all cases, we learnt from international experience, but in some cases, we had to create our own mechanisms based on specific needs and circumstances.

This ability to tailor mechanisms based on our specific needs, while learning from global best practices, is serving us well and should be leveraged further.

After all, great things are accomplished by a series of small things done right.

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