Energy efficiency is not about energy savings only

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Energy efficiency is one of the cornerstones to battle global climate change and attain the 1.5° C temperature goal

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Shafiqul Alam. Illustration: TBS

The rationale for pursuing energy efficiency is often framed narrowly as a mere energy saving opportunity. Energy efficiency projects, therefore, remain largely under-implemented in many countries.

In reality, energy efficiency is more than energy saving where the benefits of it span throughout the total energy system of a country and across other sectors due to strong interlinkages of the energy sector with others.

As we march towards the target of achieving the Sustainable Development Goal- 7 and the Paris Climate goal on greenhouse gas (GHG) mitigation, we need to mold the energy intensive sectors of different countries, particularly in developing and least developed countries, and enhance ambitions at policy level to ramp up implementation of energy efficiency.

In that connection, it is worthwhile to devise a well-thought-out matrix, capturing the multitude of benefits that are offered by energy efficiency. In fact, we must be cognizant about these benefits rather than being oblivious of them.

First, I would dwell upon the effects that energy efficiency has on the energy ecosystem of a country. The obvious outcome of energy efficiency is energy saving, i.e., cost saving, at the energy users' end, where energy efficiency measures are applied.

However, this energy saving at the users' end, say, in industries or buildings, means the primary energy/fuel required at the power generation site to produce that "saved energy" is no longer required. What implications do we have from such primary energy/fuel saving? While the simple and straightforward thing that comes to mind is the cost saving against the reduced use of primary energy/fuel, what else is there?

The result would be less demand for power, attributable to the combined effects of energy efficiency improvements in many industries and buildings, and hence, it would be possible to delay, lessen or eliminate the need for capital investments for new power plants, which otherwise would have been inevitable.

In a properly managed and coordinated system, this surplus fund is the unique opportunity for a developing country, reeling with pressure on dealing with different development programmes, to utilise in other sectors. And by delaying or abandoning new power plants, a country may save both maintenance and operational costs.

This may, of course, trigger the apparent concern over reduced job opportunities in the power sector but energy efficiency can generate numerous jobs, as mentioned in the later part of this analysis. Additionally, the land resource not required for a new power plant would be possible to be allocated to other productive use. Reduced peak load, as a result of energy efficiency, also benefits the power system of a country.

The benefits of energy efficiency span throughout the total energy system of a country. Photo: Salahuddin Ahmed/TBS

Another important endeavor of energy efficiency, as it seems from the perspective of net energy importing countries, is to ride out, at least partially, the pressure on foreign currency, imputed to less fuel imports. This would be a leeway for some countries to expedite efforts to explore more renewable energies and indigenous resources to increase energy security.

It would, further, subside the growing exposure to price fluctuations of fuels in the international market.

Usually, governments in the developing and least developed countries feel the burgeoning pressure to increase power generation capacity and keep an eye on the transmission and distribution side simultaneously. As energy efficiency may provide certain relief to the governments from spending on new power plants, they may increase focus on the transmission and distribution side.

Now, we have the (negative) externalities, both of short-term local and long-term global natures, generated by combustion of different fossil fuels. The impacts of short-term (negative) local externalities on the citizens of a country under business-as-usual scenario are quite noticeable.

For instance, the brick manufacturing in some of the South Asian countries is still coal dependent and is highly energy intensive, causing significant health problems with resulting premature deaths and affecting disposable income of people.

While the energy efficient technologies have been under serious contemplation of these countries for more than a decade and they have drawn notable lessons from different programmes on energy efficient brick kilns, there are still rooms for further policy push and private sector sensitisation for the transformation of the brick kiln sector in the region.

Different studies conducted on the social cost-benefit assessment of different brick kiln technologies, for example by the World Bank, Copenhagen Consensus Center and others, validate that traditional brick kilns, despite being fairly cheaper to install compared to the efficient ones, are socially undesirable.

On the other hand, human induced global climate change is the long-term negative externality, which, if we really want to address, we shall drastically minimise GHG emissions in order to be closer to the 1.5° C temperature goal by 2100. And hardly anyone would dispute that energy efficiency is one of the cornerstones to battle global climate change and attain the 1.5° C temperature goal.

Energy efficiency stimulates net employment gain. According to some ballpark estimates, energy efficiency can generate three times more jobs in comparison to fossil fuel sectors, when similar investment (e.g. $1 million) is made in both energy efficiency and fossil fuel sectors. With growing demand for energy efficiency, there are successful examples of energy service companies (ESCOs) in the world.

The professional services of ESCOs encompass energy auditing to identify energy efficiency scopes at industries, conducting financial viability of the said scopes, supplying required equipment/machinery and installation of the same. ESCOs have gained both political and market acceptance in a good number of countries.

Consequently, new job opportunities for energy auditors, energy analysts, energy managers, financial analysts and technicians solely for energy efficiency are generated. However, appropriate training programmes are necessary to develop suitable professionals to meet the demand of energy efficiency sectors as these are specialised jobs.

This opinion piece sheds light on the benefits of energy efficiency, going beyond a simple energy saving perspective and manifests the reasons as to why energy efficiency shall be assessed in more details. And given all the positives of energy efficiency and faced with the urgency to reach 1.5° C temperature goal, investment in energy efficiency is something that should be geared up conscientiously.

Finally, all the positive aspects of energy efficiency should be highlighted to substantiate the rationality and obtain societal acceptability of embarking on more ambitious energy efficiency policy at country levels.

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