ENERGY EFFICIENCY SERVICES LIMITED
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"Charting a roadmap for the reformation of India's power sector - post lockdown"

Inside Stories

Venkatesh Dwivedi
Director (Projects & BD)
Energy Efficiency Services Limited (EESL)

Editor's Note

Dear Reader,

The world is still in the grips of the turmoil brought about by the COVID-19 pandemic. India too has been impacted, although we have begun witnessing the "green shoots" of recovery, as mentioned by our Honourable Prime Minister. The effect of COVID-19 has been severe on the lives and livelihoods of millions, with multiple sectors staring at an increasingly uncertain future, especially in the short term. India's energy sector too hasn't remained untouched from this upheaval. The recovery process though, has begun now. It is now imperative that we formulate a comprehensive roadmap that can spur the recovery of the energy sector. This would require a reimagining of earlier interventions, targets, and timelines. This revival though, cannot happen in isolation and would require efforts from stakeholders from across the energy value chain.

This newsletter seeks to present a cross-sectoral point of view of the imminent revival of the sector. The article "COVID pandemic and the ensuring lockdown" takes a deep dive into the impact of the pandemic and builds the case for increased resource efficiency to expediate the recovery of energy sector. In "Reforming the Indian Electricity markets post "COVID-19: Why this may just be the right time" we explore the correlation between the current scenario and RE integration. The article showcases the positive manifestations of the pandemic, as we witnessed remarkable grid flexibility during the lockdown. "COVID – 19: Path to recovery for energy sector" meanwhile, traces the linkage between the recovery in energy sector and revival of the economy as a whole. "A roadmap for the recovery of the energy sector" present a global outlook for stimulating the energy sector and advocates an integrated, cross-sectoral approach for the same. "Forging strategic partnerships to catalyse energy transition" takes us through the various partnerships that EESL has formed and its potential impact on India's energy ecosystem. We also take a look at some innovative interventions by EESL such as 'RAISE', which is aimed at improving the air quality in workspaces.

This is a truly significant moment in time, with various sectors looking to move into the fast lane of growth. The pandemic, as we all know was unprecedented, its impact even more so. However, it has presented us with opportunity to re-build and re-imagine, to create a more resilient and robust energy sector. Collaboration across stakeholders and geographies, along with innovative policy and economic interventions will enable a swift recovery of our energy sector.

Upendra Tripathy
Director General
International Solar Alliance

A roadmap for the recovery of the energy sector

The world is currently scrimmaging everyday with the COVID-19 pandemic, with efforts underway to revive economies and break the chain in transmission of the virus. While we cannot discount the vast toll that this disease has exacted from the society, the time is opportune for the governments and other stakeholders across the world to rebuild sustainably.

The pandemic has caused economies and sectors across the globe to contract for the first time in decades. Industries that were on an upward trajectory suddenly found themselves in a battle for survival. The energy sector too has suffered. According to a report by IEA, electricity demand is set to decline by 5% in 2020. To put things in perspective, this is the single largest drop since the Great Depression in the 1930s. This, just like the very nature of the pandemic is unprecedented.

We have observed a plummeting demand for conventional fuel sources such as oil, fuel, coal, and gas which has further affected the energy sector. A silver lining has been the relatively stable outlook for renewable sources. In fact, electricity generation from wind and solar PV continues to increase in 2020, lifted by new projects that were completed in 2019 and early 2020. Despite supply chain disruptions that have paused or delayed deployment in several key regions this year, solar PV and wind are on track to help lift renewable electricity generation by 5% in 2020. What needs to be noted though is that despite the positive outlook of renewables, their growth is set to be lower than in previous years.

Thus, renewable power will be critical in bringing the energy sector out of the current predicament. It is now essential to make clean energy a key part of stimulus packages, globally. Stimulus goals synergise perfectly with the larger clean energy goals, and investment in all fields of clean energy can increase employment and economic activity. This in turn, can be a boon for the energy sector. Increased incentivization of clean energy projects such as solar PV, e-mobility and energy efficiency can lift the sector out of turmoil. Adoption and exploration of innovative business models, which eliminate upfront payments can potentially be gamechangers .

India in particular has been moving swiftly towards achieving its clean energy ambitions. In this scenario, especially with the stable outlook for renewable power, a policy push might keep the energy sector in good shape for the foreseeable future. Forging conducive policies that can incentivise private players and the public sector to work in synergy can provide a fillip to the sector.

The COVID-19 pandemic has compelled a comprehensive reconsideration of our current efforts, targets, and priorities. Financial impetus is being given to avenues of immediate relief. However, energy sector has to remain a key focus area. Ample energy access and security is the pre-requisite of a healthy society and recovery cannot happen without reviving the energy sector. An integrated, cross-sectoral approach is imperative and governments, think-tanks, financial institutions, and industry need to work in tandem to stem the tide of a faltering energy sector.

India is on the right path in her policy stimulus, which encompasses not only factors of production - land, labour, capital and technology- but also includes actors, institutions and ideas, with a vision to upscale and upgrade their fundamental themes of skill, scale and speed.

Dr. Ajay Mathur
Director General
The Energy & Resources Institute (TERI)

COVID pandemic and the ensuring lockdown

The economic slowdown during 2019-20, followed by the COVID-19 pandemic and lockdown in 2020 have resulted in a decrease in energy demand in general, and in electricity demand in particular. The current demand, in June 2020, when air conditioning is at full blast both in homes and offices is not 5% more than it was in June 2019, but 10% less. TERI's estimates suggest that the electricity demand would rise slowly, with the 2019 demand being exceeded only in 2022, and the annual demand in 2025-26 growing to about 1.3 million GWh, compared to the pre-COVID estimation of 1.6 million GWh in that year, and about 1.17 million Gwh in 2019-20.

We are also noticing an increased uptake of both electricity from renewables and of energy efficiency. Anecdotal evidence suggests that lower operating costs are now pulling business decisions towards resource efficiency, primarily because of the necessity to reduce and limit budget expenditures, and the extremely competitive enviornment for business and consumer goods and services. We also note that in the two most recent SECI tenders, which sought to procure electricity beyond the sunshine hours, we have seen price bids for round-the-clock renewable electricity (from solar plus storage) at prices that are less than those of coal electricity (discovered in the recent tender to procure electricity from stressed coal power generating assets).

Resource efficiency – whether through energy efficient technologies and services, or through renewable electricity – has, therefore, emerged as a means to enable competitiveness in the marketplace, while ensuring job creation, sustainable livelihoods, as well as medium term economic growth. Large and medium scale enterprises, as well as electricity distribution companies, are seeking to minimize their costs, and have already started veering towards resource efficient options. The economic recovery packages provides us a great opportunity to procure credit for resource efficient options (LED bulbs, solar pumps, energy-efficient motors, etc.) in the MSME, agriculture and power sectors; this has a double advantage since the financial institutions too prefer financing of resource efficient options since no resource efficient technology investment has yet become a non performing asset because of technological reasons.

The immediate challenge for all of us is to gather and aggregate equity based financing for these resource-efficient options and then blend them with the available credit into business models that are attractive to users. It will not only provide a fillip to the economy, but also ensure its long term sustainable growth.

Gurpreet Chugh
Managing Director
ICF (India)

Reforming the Indian Electricity markets post COVID-19: Why this may just be the right time

Electricity consumption has fallen drastically during the COVID-19 times. Industries, commercial establishments, malls, hotels, and all other public places downed shutters on March 22nd leading to a sharp decline in electricity consumption during the lockdown. For DISCOMs, this meant a drastic reduction in their revenues as their high-paying consumers were forced to shut shop overnight. For developers, it meant an even greater struggle in receiving payments from DISCOMs. While these are the visible impacts of COVID-19 on the electricity sector, lockdown has also led to some other unanticipated positive side-effects. The direct impact of lockdown on the Air Quality and carbon emissions for instance has been unprecedented - something that might not have been achieved under normal circumstances.

There is wide expectation that these benefits seen during COVID-19 times will provide further impetus to the growth of RE in the country. The earlier apprehensions about the Indian Grid's ability to absorb large amounts of RE have also perhaps been allayed during the lockdown. With demand down by 25% and RE generation at its normal levels, the effective share of RE in the generation mix has increased during lockdown and is being successfully integrated in the grid without much curtailment. The ramping and balancing capability of the Indian Grid was also tested during the 9 PM 9-minute lights-off event on 5th April 2020. The Indian grid operators successfully managed this significant load variation without any discernible impact on grid frequency – a big achievement.

With the grid being tested to technical extremes which may not have been possible under normal circumstances, there is now a sense of comfort that Indian grid can absorb an increasing volume of RE technically. Alongside this, the rapidly falling costs of RE provide even more reason to focus on bringing more and more RE in the mix. However, to enable RE to be smoothly integrated in thriving and competitive power markets, some key changes and reforms are needed in the wholesale market design. Some of these changes have already happened (like introduction of Real Time Market) and others have been set in motion (like Market Based Economic Despatch). However, more work is needed on:

(a) Development of robust framework for market linked ancillary services to support increasing RE in the generation mix

(b) Establishing a robust framework for resource adequacy and capacity markets that will enable grid resilience over long-term time horizons

(c) Allowing financial trading of electricity so that buyers and sellers can hedge their risks (this is still sub-judice). This will allow advanced products like Contracts for Differences to be brought to the Indian power market, which is the primary way RE is contracted in all developed markets.

(d) A thorough review of the REC and RPO mechanism and its need in the longer term

(e) A review and restructure of the transmission pricing mechanism to make it easier for more power to be sold in the spot markets.

While the above issues are important, there is no doubt that reforming the power markets will take time. The good news is that the ball has been set in motion and there is strong will to make the required changes. The hope is that the lessons learnt during the lockdown and the experience of clearer skies and cleaner air will remain with us and propel us forward instead of making us return to pre-COVID-19 times.

Anish De
Partner | National Head
Energy Natural Resources & Chemicals, KPMG India

COVID – 19: Path to recovery for energy sector

Energy supplies have held up admirably through the disruptions - COVID related disruption. This has, however, come at a cost. The electricity sector, while largely insulated from the commodity price swings, is contending with rapid dip in revenues and cash collections. Finances of most companies are significantly imperiled.

Recovery in the energy sector is largely linked to the recovery of the economy as a whole. At a broader level, the sector will have to deal with three principal challenges on (a) mitigating the effects of demand compression (b) transitioning to a clean and efficient energy supply portfolio and (c) modernizing sector operations and reducing the excessive dependence on human interventions.

As end use industries start producing again this situation will ease up, even if demand is not fully restored to pre-lockdown levels. With summer consumption of electricity peaking in the coming few months, the effects will partly abate, but costs will need very close watch. A key response strategy of DISCOMS has been to cut back on high marginal cost generators leading to very substantial cost saving for the utilities. Several utilities have become more active in the day ahead market (DAM) and Real Time Markets (RTM) to optimize costs and have gained substantially in the process. These gains need to be maintained.

The Indian economy is also in a massive build phase with Rs. 24 trillion committed to the energy in the National Energy Pipeline . The biggest share of this is of renewable energy investments, as India seeks to chart out its own energy transition trajectory. Through the lockdown the performance of renewable energy projects has been admirable. The country should do all that is necessary to keep the momentum.

Pandemics can no longer be considered as black swan events. Our capabilities must reflect the ability of organized response to such incidences as they emerge. This ability stems from financial strength and institutional readiness. Financial strength comes from strong balance sheets. Unfortunately, most public owned enterprises suffer from weak balance sheets as compared to the scale of their assets and operations. The situation is particularly severe in the state-owned electricity distribution companies which for all practical purposes are bankrupt and heavily dependent on explicit and implicit governmental support. They need to be weaned of, which may point to change of ownership structures.

Organizations also need to rapidly upgrade competencies. Response to the pandemic in every sphere involves digitalization and rapid induction of technology in every part of operations. Be it in forecasting of demand, managing supply chains, reaching consumers, collecting dues efficiently, managing and maintaining critical assets, responding to rapidly evolving ground situations, all require technology for the much needed efficiency and resilience. Technology in such circumstances does not replace human judgement, but instead enhances the capabilities to react and respond. The gains that have been made on this front in the COVID period need to be built on further.

EESL: Setting benchmarks in employee engagement & maintaining business continuity

The COVID-19 pandemic has altered the functioning of companies, across sectors. With social distancing norms in place, trends such as work from home and use of technology have gathered steam. However, in such a scenario, it becomes critical for an organisation to forge new touchpoints to stay connected to its employees. The situation becomes especially pivotal in absence of a physical workplace.

EESL has undertaken significant measures to help their employees manage their work efficiently from home, stay abreast of the company updates and help them manage their workload. The key parameters of seamless working are connectedness, lack of disruption and collaboration. In that context,one of the key initiatives from EESLhas been the townhalls with the leadership, which are organised at regular intervals. These townhalls provide the employees with pertinent update on business verticals, opportunities and helps the organisation identify issues faced by employees, whilst working from home. During the COVID-19 pandemic, EESL has proficiently utilised technological tools to enable a smooth transition to remote working, by leveraging its IT infrastructure, bringing the entire organisation together, virtually. This has enabled EESL's employees in working efficiently and has rooted out any impediments, which might affect business continuity. Throughout this period and before, EESL has continued to form partnerships across the nation and abroad.

One key partnership that has been formulated recently is with GAIL, for increasing the proliferation of Trigeneration in the country. Under this, EESL will conduct a Techno-Commercial feasibility analysis of identified sites and the outcome of the study shall lay foundation for the creation of a 50:50 JV Company between EESL and GAIL. Moving onto international forays, EESL recently struck a partnership with GORD (Gulf Organisation for Research and Development) in Qatar. With the use of EESL's ESCO model, it will carry out interventions such as large-scale streetlight retrofit projects, smart metering, deployment of electric vehicles and other energy efficiency projects in the region. Furthermore, with the aim to increase the visibility and adoption of energy efficient technology in the North-Eastern parts of India, EESL signed an MoU with Assam Hydrocarbon and Energy Company Limited (AHECL). EESL and AHECL will work collaboratively towards exploring various kinds of energy efficiency projects in Assam, such as SLNP, Solar, Smart Meter and EVs among others.

EESL has also identified e-mobility as a major component of India's energy transition and firmly believes that the future of mobility is electric. In that context, it has signed an MoU with ANERT (Agency for New & Renewable Energy Research & Technology) in Kerala Through this partnership, it seeks to explore the scope for deployment of EVs and EV charging infrastructure(EVCI) ecosystem in the state of Kerala. With this MoU, EESL envisages ANERT being nominated as the nodal agency for leasing EVs in various depts. under Govt. of Kerala and seeks to develop EVCI network across the state to promote electric mobility. EESL has also forged a partnership with EDF on a multitude of EE interventions, including Trigeneration, Smart Meters, RE projects and EVCI. This partnership will open pathways for EESL to explore business opportunities in Middle East, South East Asia and the European Market, helping it expand its already impressive international portfolio. In line with its razor-sharp focus on innovation and cutting-edge technology, EESL has partnered with TATA communications to augment its programmes such as SLNP, Smart Metering and others with the usage of IOT technology. Through this collaboration, EESL seeks to scale from "Group Level Control" system to "Individual Lamp Level Control" in SLNP and enhance the control and monitoring of other projects.