

Innovation is the new imperative in energy

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The energy industry globally and in India, which is witnessing a wave of disruptions today, faces numerous complex challenges. Some of these challenges include fragile demand and supply, low commodity prices, technological advancements, evolving customer demands, environmental concerns and the rise of the digital economy. All of this presents us with the reality that innovation and technology will not be a choice, but an imperative for future success.

The global energy value chain is being remodelled on the basis of several technological and macroeconomic disruptions. This has had a significant impact on investments and returns in the conventional energy sector. According to KPMG India's analysis, the world's population is slated to increase from 7.6 billion to 8.8 billion in 2035, and China and India will come to account for nearly half of the increase in global demand for energy. This indicates a clear shift in energy demand patterns.

Also, with the world gradually moving towards clean energy led by renewables, our analysis saw a four-fold increase in the use of renewable energy, which will account for nearly 30 per cent of global supplies by 2035, with coal, gas, hydro power and nuclear energy seeing modest growth. This is paving the way for a disruption in the global energy mix. Recent developments in renewable energy technology and its affordability have now led to a paradigm shift in the overall energy sector.

Driven by technology, disruptions are spreading to the traditional energy industry with increasing oil output from the United States and other non-OPEC countries, causing an abrupt drop in prices. Unconventional resources and suppliers are gaining importance, with over 65 per cent of the total global oil supply being met by non-OPEC countries, according to the OPEC Monthly Market Report October 2017.

The rise of non-OPEC supplies — in particular US shale — has been responsible for the collapse of prices from an average of around \$100 a barrel to \$44 a barrel in 2016, according to a KPMG India analysis and the US Energy Information Administration. The direct impact of this has been a decline in the influence of the OPEC countries on oil prices, which has led to their inability to regulate the global demand-supply balance.

Smart storage technologies bringing in the new wave of transformation on the demand side are now allowing customers much-needed flexibility on how to use, manage and store, and even give

back to the grid. Also, advancements in battery technology have made large-scale penetration of electronic vehicles in mobility affordable.

Moving on, rapid infusion of digital technologies such as big data and analytics, Internet of Things (or IOT), the cloud and artificial intelligence are other disruptions which are slowly and surely making their way into the industry. We must learn to embrace these, as they will be critical elements that will enable the growth of the energy sector.

What we are increasingly seeing is that despite a realisation at the highest levels, the sector has lagged in embracing digital technologies, with the adoption so far being selective and inconsistent across the energy value chain.

So, how can energy players thrive in this age of disruptions and still be relevant?

As production, distribution, new technologies and disruptions all create opportunities, numerous uncertainties exist in the market. Hence energy players must focus on a few key areas if they are to thrive in this age of disruption. First, cost and efficacy improvements must be a key imperative. Cost reduction led by technological advancement is what is helping the oil industry sustain business profitability and the current market scenario.

Second, digitisation and convergence of information technology and operational technology is important, as access to high data connectivity and faster computers means that a large quantum of data can be analysed and used for decision-making.

Additionally, the use of analytics, energy utilities and IOT will help in providing better prices and services and understand customer needs. Similarly, innovative business models, value added services and customer-centricity are other attributes that energy players must develop, if they are to survive and stay relevant in the market.

To sum up, there is a strong convergence theme emerging within the energy value chain and this is why enterprises in the energy sector are diversifying into previously unexplored or under-exploited energy sources (solar, wind and a range of other new and unconventional resources) and technologies (fuel cells and EV infrastructure). We believe energy will be recognised more by the applications it is used for in the future, rather than the source, and this convergence will be the new cornerstone for survival of energy companies in a rapidly changing world.

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