KPMG

How to ‘thrive’ in the new normal

ENRich 2017

Changing Indian energy landscape

- Adapting to a new normal and reality

November 2017

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How to thrive in the age of disruptions

A world that will never be the same

The energy industry today faces complex challenges, some of which are very far reaching. The industry is just beginning to heed the composite impact of the wave of disruptions – fragile demand supply, low commodity prices, rapid technology advances, changing consumer behaviour, increased environmental concerns and digital economy. With the rapid pace of disruptions, innovation and technology will no longer be a choice, but will be integral to succeed in the future.

Disruptions – the new normal

Several technological and macroeconomic disruptions are reshaping the energy value chain. The impact of these disruptions is evident as investments and returns in the conventional energy sector have been significantly affected in the recent past.

Figure 1: Disruptions are reshaping the energy industry

Source: KPMG in India's analysis 2017, BP energy outlook 2017, Global EV outlook 2017

Shift in energy demand patterns

- World population to increase from 7.6 billion to 8.8 billion by 2035.
- World economy doubles while energy demand grow by 30% by 2035.
- China and India to be the economic powerhouses for next two decades - will account for half of the global energy demand increase.

Transition to clean and green energies

- World would move towards clean energies led by Renewables (RE).
- RE to increase fourfold from current level and accounting for almost 30% of increase in global supply by 2035.
- Gas, hydro and nuclear to see modest growth.

Low prices

- Industry faces its strongest downturns, driven by sustained low prices.
- Average prices in FY 16 were 44% of the compared to average price in FY 14.
- Increasing oil output from US shale and other non-OPEC countries likely to limit the recovery of prices.

Mobility revolution

- Global electric car stock crossed 2 million mark in 2016.
- EV30@30 campaign – All EVI member countries aim to achieve 30% share for EVs by 2030.
- Significant production capacity scale up plans announced by many global OEMs.

Changing customer needs

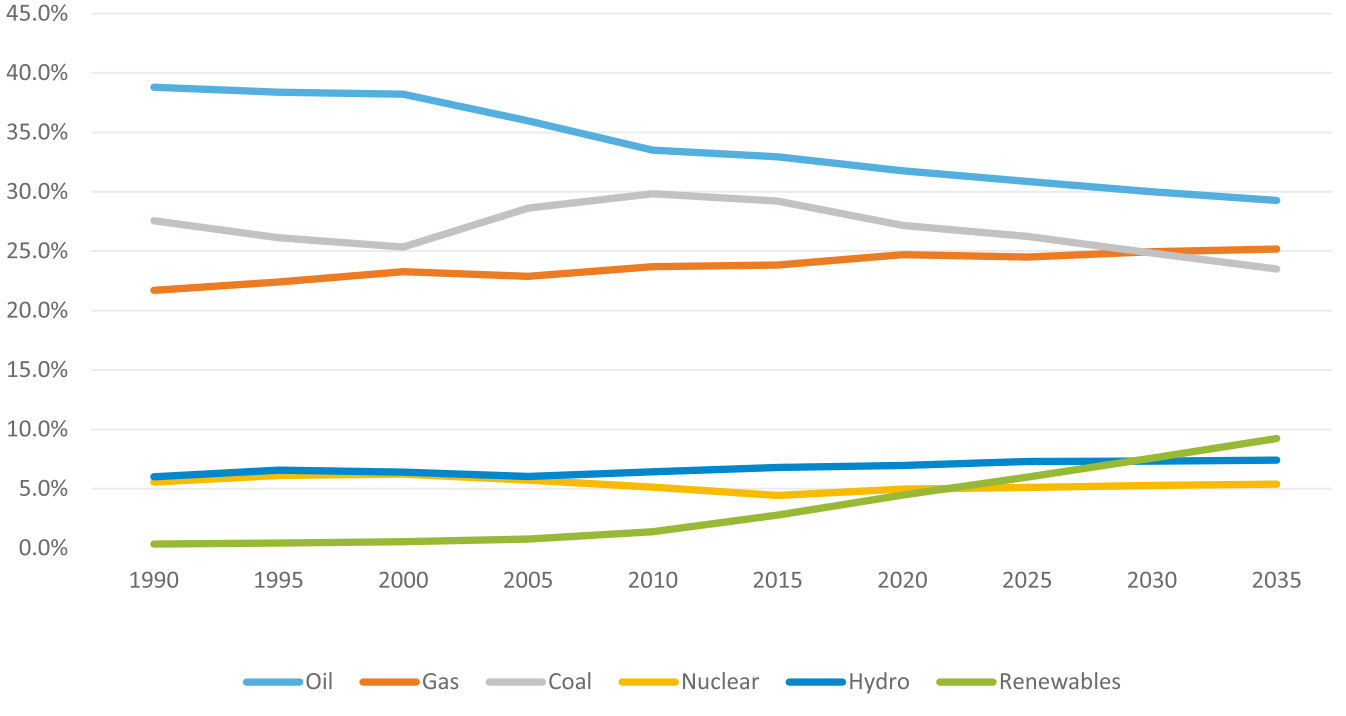
- Increasingly energy efficiency and environmental concerns are influencing energy choices.
- Changing usage patterns – smart utilities enabling effective demand side management.
- Increased customer engagement and personalisation.

Digital transformation

- Rapid infusion of digital technologies viz. big data & analytics, IIoT, Cloud, Robotics and AI are enabling efficient, reliable and safe operations.
- Key to maximising the value in oil and gas.

In a short span of time, the unconventional resources and new suppliers have gained prominence, with over 65 per cent[1] of total global oil supply being met by non-OPEC countries. The emergence of non-OPEC supplies (U.S. shale, in particular) are largely held responsible for the collapse of prices from average level of around USD100 per barrel in 2014 to average prices of USD44 per barrel in 2016[2]. While there were serious doubts on the sustainability of the cheap shale producers, technology advancements, process and cost improvements in fracking industry resulted in progressively lowering the break-even prices (BEP) by 55-60 per cent during 2013-2016. The most visible implication of these developments is the reduced influence of OPEC countries on oil prices and their limited ability to regulate the global demand-supply balance.

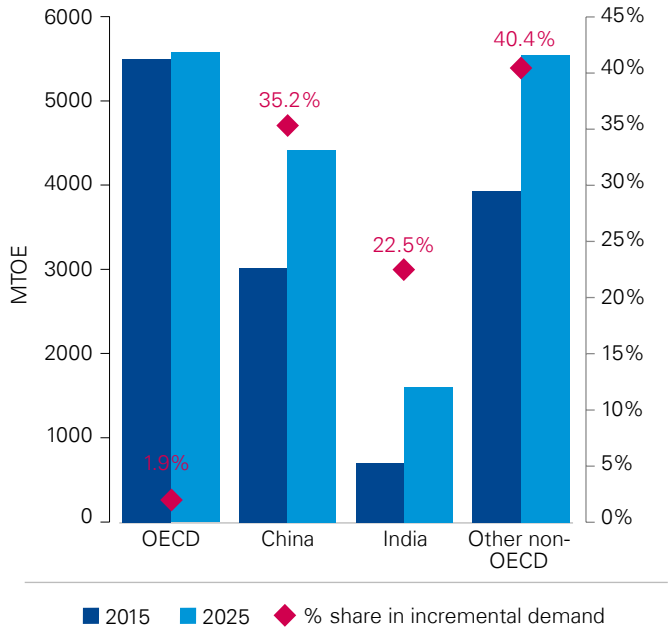
Figure 2. Gradual transition in the energy mix



Source: KPMG in India's analysis 2017, BP energy outlook 2017

1. OPEC monthly oil market report – October 2017
2. KPMG in India's analysis, US Energy Information Administration (EIA)

Figure 3. Emerging economies to drive incremental demand



The energy mix is the next evident disruption, with renewables likely to grow fourfold in the next two decades and constitute around 10 per cent of the total energy supply by 2035.[3] While oil may witness diminishing growth at the global level, some of the fast emerging economies could still see growth in oil and gas demand. China and India together for instance, are expected to account for over 85 per cent of the incremental oil demand by 2035. Similarly natural gas is likely to witness stark growth in these countries, to almost three times their current level.

Recent developments in the renewable energy technology and its ever increasing affordability has led to a paradigm shift in the overall energy sector. According to estimates, in FY 2022, 160 GW of coal-based capacity in India will have a variable cost of power generation more than the cost of solar power generation (considering the latest solar tariff bid of INR 2.44 per kWh discovered in May 2017)[4].

Figure 4. Lowest solar tariff bid discovered across the globe in the past one year

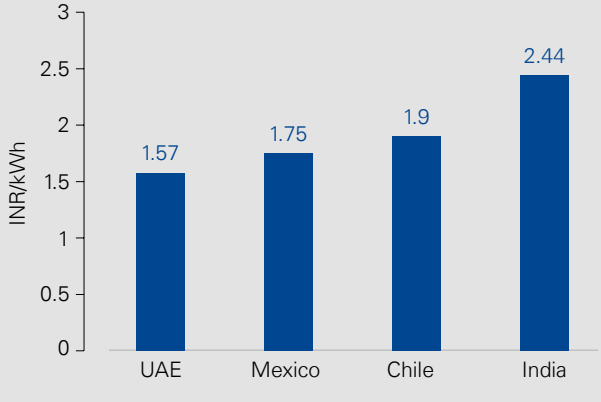
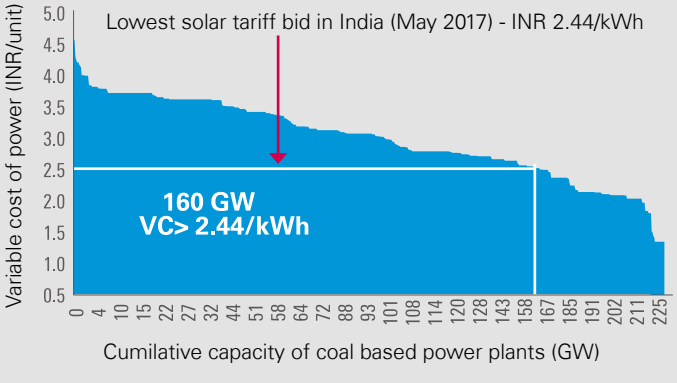


Figure 5. Coal vs solar cost of generation – India case (2022)



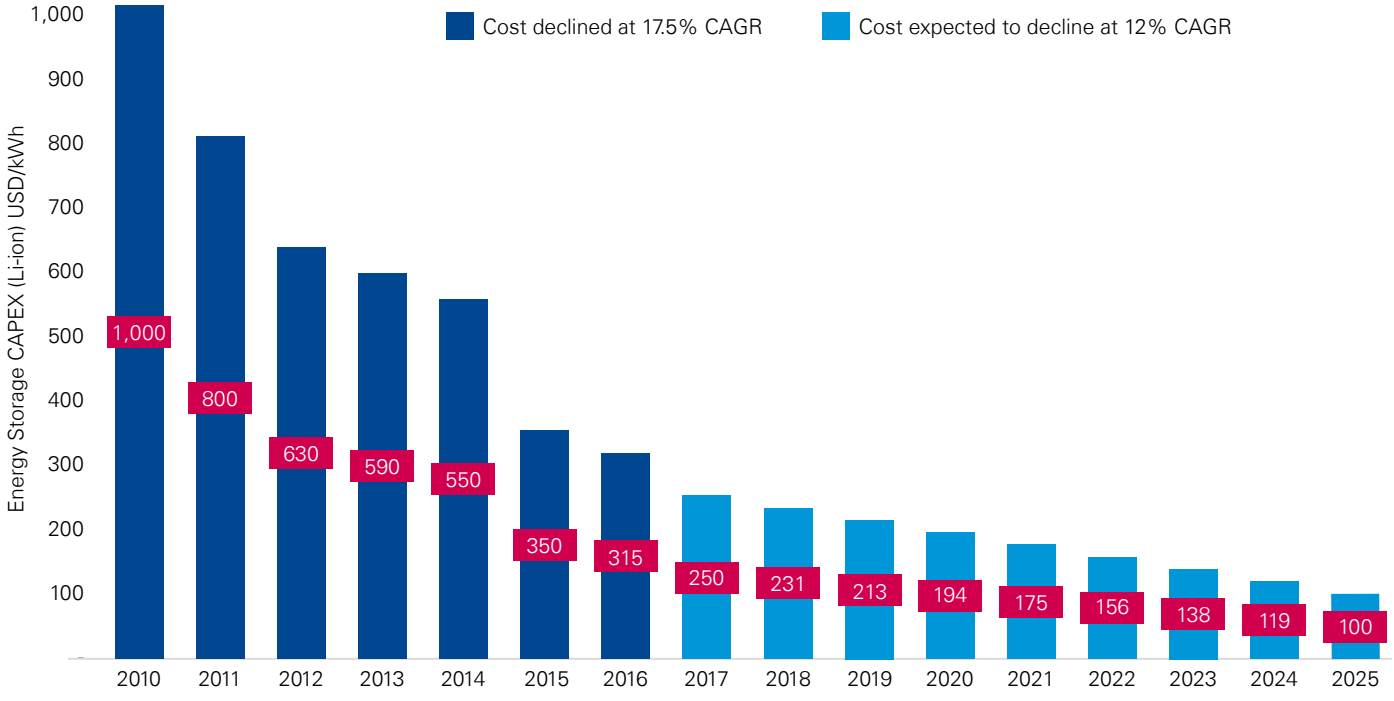
Source: Solar beats coal cost: Implications, KPMG in India, July 2017

3. BP energy outlook 2017

4. KPMG in India's analysis

The rapid progress of smart and storage technologies is bringing in the next wave of transformation on the demand side by empowering customers with flexibility to use, manage, store and even supply back the to the grid. For several decades, mobility has relied on hydrocarbon, with transport accounting for over 60 per cent share in the global oil demand[5], the advancements in battery technology of late has made large scale penetration of EVs in mobility affordable.

Figure 6. Cost of Li-ion battery storage is on rapid decline



Source: Bloomberg new energy finance; Rising Sun 2015, KPMG in India analysis. *Note - Along with simultaneous decline in solar costs as per trends

5. BP energy outlook 2017

Around ten[6] member countries of Electric Vehicles Initiative (EVI), a multi-government policy forum, have launched the EV30@30 campaign with a goal to achieve 30 per cent market share for electric vehicles in most of vehicle segments by 2030. This is likely to translate to a growth of the total EVs in vehicle stock from extant 2 million to 200 million by 2030[7]. This, in part, is also supported by huge commitments by vehicle OEMs to scale up EV capacity in the next five to 10 years and policy announcements setting timelines for restriction on petrol/ diesel cars.

Embracing digital technologies is increasingly becoming critical for the industry. In a recent KPMG International study of 51 global oil and gas CEOs, around 80 per cent of CEOs plan to invest in three key digital themes – Data and Analytics, Internet of Things and Cognitive Automation, to achieve sustained growth in the medium to long-term. Despite realisations at the highest levels, the sector has lagged in embracing digital technologies and the adoption so far has been selective and unsystematic across the value chain.

1. Canada, China, France, Germany, Japan, the Netherlands, Norway, Sweden, the United Kingdom and the United States
2. Global EV Outlook 2017

Strategies to thrive in the age of disruptions

At all points of the value chain from production to distribution, new technologies and market disruptions are creating opportunities but also uncertainty about the shape and nature of the market. Some of the key areas that energy players would need to focus on include:

Focus on cost and efficiency improvements

There are innumerable examples of how efficient operations and reduced cost of technologies are leading to lower breakeven price of oil for a lot of fields. Many U.S. shale producers today operate at below USD30 per barrel breakeven prices, as compared to their initial cost of around $80 per barrel. The focus on cost reduction led by technology advancement is what is helping the oil and gas industry sustain business profitability in the current market scenario.

Digitalisation and convergence of Information Technology (IT) and Operational Technology (OT) Low cost sensors, high data connectivity and faster computers are enabling operators to collect a big quantum of data, analyse and use them for operational decision making. Analytics has already started showing up results in reducing the well drilling, completion time and costs. The ability of energy utilities to collect more data from customers via smart meters, and Internet of Things sensors will allow utilities to provide better prices and reliable services and understand customer needs.

Innovative business models and value added services (energy efficiency, energy services and solutions) It is very likely that most energy companies will no longer remain sector or fuel specific, and will move towards transforming themselves into 'Energy Service Providers' focussing on end-to-end energy solutions to end-users. In the coming years, interoperability of various energy and sectors will be the norm and limiting oneself to just one sector will be myopic.

Consumer centricity

As more complex energy ecosystems emerge, companies will have to develop new value propositions not only to address customer energy needs but also offer them the flexibility and choice of use by integrating them digitally to the broader energy supply chain.

Convergence of energies

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 energy sources (viz. RE and wind) and technologies (viz. 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. Thus, there is a need for energy companies to invest and develop capabilities in emerging new energy technologies through organic or inorganic diversification.

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