From shortage to surplus to shortage?

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For the oil industry, the past 24 months have been remarkable. In 2015, the industry entered an age of surplus, after years of apprehension about peak supply, and the energy transition accelerated, casting a shadow on future oil demand. The World Energy Scenarios 2016 report published by the WEC in collaboration with Accenture Strategy focused on five key themes: growing energy demand at lower intensity, golden age for power, emerging competitive advantage for renewables, transportation transition, and peak demand for oil. The last one stole the headlines.

In the past two years, the industry paradoxically faced one of the largest demand accelerations in history. Lower oil prices and better-than-forecasted macroeconomic conditions stimulated demand. These factors added 1.5+ mbp/d growth each year, versus a past decade average of ~1 mbpd, putting demand on track to hit 100 mbp/d in the coming months. The record growth in EVs and renewables minimally offset the growth in hydrocarbon demand, which is driven by more passenger cars, more commercial and non-road miles, and more petrochemicals.

In this environment, it is worthwhile to revisit the drivers of energy demand and explore what today's oil and gas leaders and tomorrow's "energy leaders," must do to prepare for the new paradigm.

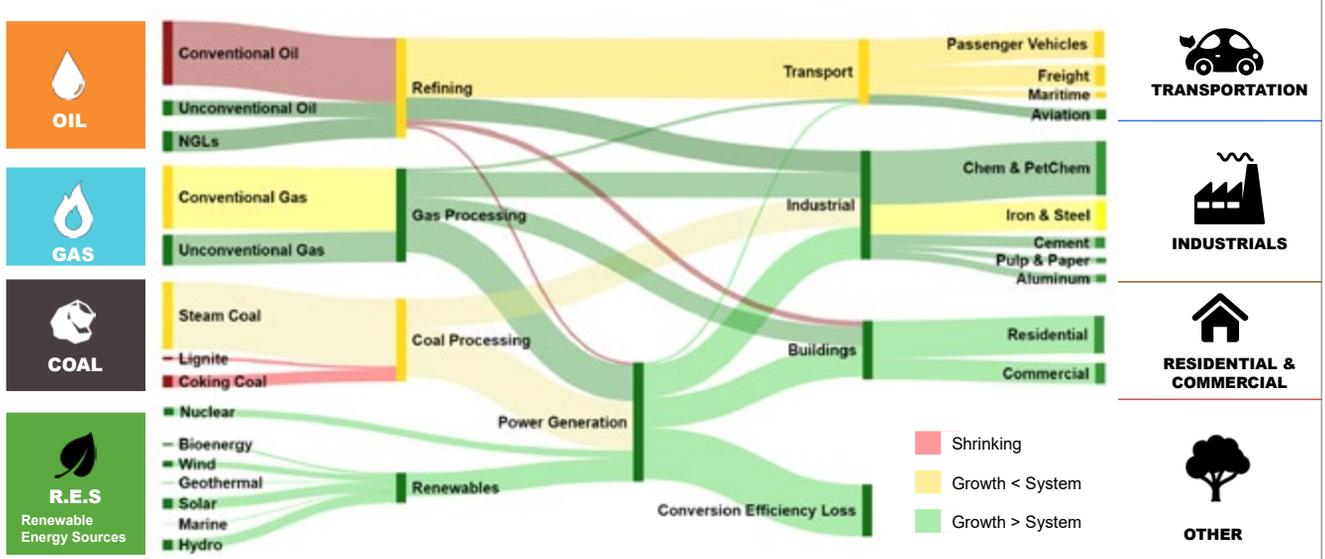
Changes in future energy demand (see figure 1)

1. Chemicals/petrochemicals as fastest growing demand segment, offering high value "path" for energy molecules. Rapid growth in indigenous demand for products and materials, such as plastics, in emerging economies pull more oil into the petrochemicals value chain, doubling its demand over two decades.

2. Continued global growth in transportation alongside a transition to higher efficiency modes. Passenger vehicle fleets will double in two decades (and triple by 2060), with EVs grabbing nearly a 10 per cent share by 2030 and more than a third by 2060. Growth in commercial and non-road (marine, air, rail) traffic will contribute to the doubling of total transportation miles. Therefore, a more meaningful impact in oil demand will come from fuel efficiency gains. In the most optimistic scenarios – in which autonomous vehicles and ride sharing become ubiquitous and fuel efficiency standards fall – the reduction in oil demand for passenger vehicles will not exceed 5 mbp/d by 2030. Of that reduction, approximately 80 per cent will be due to fuel efficiency. Within OECD nations, oil demand for passenger transportation has already peaked. For others, the peak remains decades away.

3. Electricity set to dominate consumption. "Electric everything" is changing the way people live. The rise of smart homes,

Figure 1: Changes in energy flows 2016-2040



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increased efficiency, and adoption of next-gen storage will check demand growth in advanced markets. But the global picture is clear: as demand accelerates, electricity will become the dominant form of consumption. While that consumption is set to double, the impact on oil demand will be minimal given its small, and shrinking, share in the power sector.

Combined, these factors may bring the peak point for oil demand closer to 110 mbp/d. The specific peak point matters less than how the industry will profitably fulfill the supply requirement. Sustainable returns, which were receding even before the current downturn, must be attractive enough to justify the investment required to bring on the 3-5 mbp/d of new yearly production needed to offset natural decline and demand growth. This is akin to bringing a Permian basin online every year.

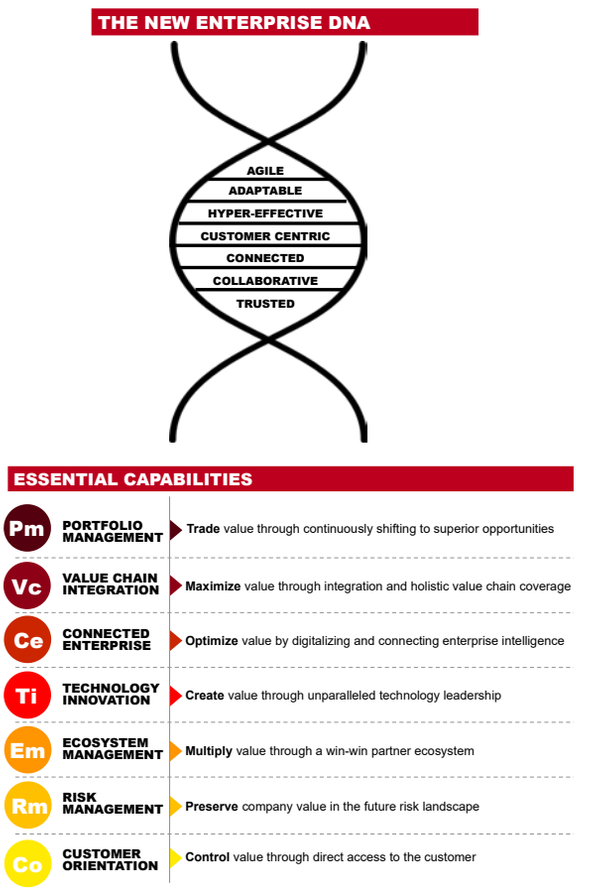
Imperatives for tomorrow's energy leaders

Competitive advantage will not come through size, scale or asset recovery capacity as it has in the past. A new enterprise "DNA" containing the code for the set of essential capabilities of speed, performance and innovation will be required (see figure 2). Our research identified five fundamental building blocks of this future DNA:

1. The agile portfolio. Today's monolithic, multi-year portfolios are replaced with dynamic portfolios designed for flexibility and continuously refreshed to align to the highest value. Portfolios will increasingly comprise shorter-cycle assets and achieve quicker time to return.
2. The hyper-effective operating model. Being the second-best means being the first loser. O&G companies will insource only those activities they can dominate and partner on all other aspects of delivery. Digital connectivity resets how organisations need to be structured.
3. The ecosystems of partners. Competition between companies is being replaced by competition between dynamic ecosystems. Adversarial relationships between operators and suppliers will give way to partnership-based models with aligned incentives. Ecosystems, not individual companies, win.
4. The innovative and productive workforce. Oil and gas companies will be seen as employers of choice for future workforces looking for leading-edge work and serious about societal responsibility. Agile teaming will enhance productivity and create a fluid workforce willing to accept careers that include multiple experiences within and beyond the energy industry.
5. The digitally connected enterprise. Leaders that have digitally transformed (versus those that have just digitally optimised the current business), can unlock scale without assets, operate without people, optimise at scale through analytics, and allocate capital with precision.

In today's dynamic energy environment, there is no finish line, certainly not at the peak demand point for oil in the future. Companies have to think about supply continuity while delivering acceptable returns and capturing new opportunities, which come with growth in energy demand, by successfully transitioning to become energy companies enabled by a new enterprise DNA.

Figure 2: New enterprise "DNA" and enabling capabilities



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