Introduction

The energy sector is undergoing transformational change across the globe, driven by technological, political and socio-economic factors, which vary by geography and market. Based on our discussions with many of the world’s largest utility companies, we’re seeing a number of reoccurring themes emerging which are having tangible impact on the sector such as; regulatory frameworks, the changing energy mix and distributed generation. Other fundamental items such as digital, infrastructure investment, market and policy reforms, empowered customers, new competitors and talent are also high on the agenda for leading executives.

Some of the trends that EY is seeing globally are:

- World energy sector investment is predicted to total $68 trillion from 2015 to 2040, of which 37% is in oil and gas supply, 29% in power supply and 32% in end-use efficiency.¹
- Renewables overtake coal as the largest source of electricity by the early 2030’s and account for more than half of all growth over the period to 2040.
- Distributed generation will disrupt the traditional utility business model, with continued global growth expected in distributed solar PV and improving economics for energy storage.
- The number of smart meters installed globally is expected to reach 1.1 billion by 2020², with the Asia Pacific region expected to remain the largest market by volume, based on recent trends.

¹ IEA World Energy Outlook, 2015
² Navigant Research, Smart Electric Meters, Advanced Metering Infrastructure, and Meter Communications: Global Market Analysis and Forecasts, 2013
Regulation

Regulatory change is one of the biggest drivers of transformation within the sector, representing both a major challenge and an opportunity for companies to gain a competitive advantage by managing change more efficiently. Furthermore, market reforms and policy changes are creating a significant platform for change and innovation.

One of the key initiatives currently driving the change agenda in Ireland and Northern Ireland is the proposed smart meter roll-out for gas and electricity in Ireland and the I-SEM programme in support of the implementation of an EU-wide wholesale electricity market. These major transformation programmes affect organisations across the entire industry, impacting on people, processes and systems.

The requirements for businesses to plan for, actively engage with, and respond to the demands of external regulator-driven programmes such as I-SEM present significant resource constraints. Organisations must ensure that their interactions and activities are consistent and in line with their fundamental strategic objectives in order to derive value from the transformation process, rather than passively complying with the minimum imposed conditions required to be considered compliant.

Smart will bring considerable change to utility companies, their customers and the broader industry, that fundamentally re-defines the sector - and in turn, individual strategy and positioning. The changes to the operating landscape mean that the status quo will not suffice. There are three broad dimensions which organisations may opt to position themselves in a smart world - service innovation, operational excellence and customer experience. The degree to which they choose to orientate themselves will dictate both the type of transformation to be undertaken as well as the level of impact on their people, processes and systems.

Infrastructure investment is central to this transition in order to adhere to regulatory changes and also to operate in a smarter way.

Infrastructure

Ireland is experiencing a major expansion of existing infrastructure in both traditional and renewable energy sources, across power, gas and water assets on the island - triggered by increasing public and private investment. Another key driver of this prioritised investment is ageing assets that have resulted from sustained under-investment over decades.

In 2016 however, Ireland is no longer playing catch up with its European counterparts in terms of utilities infrastructure to the extent that we were five years ago. During the Irish government’s Capital Plan\(^3\) implementation period up to 2021, there will be around €5.75 billion invested in energy transmission and distribution networks, renewable and conventional power generation and smart metering by the industry.

Planned investment in water infrastructure will be more than €5.5 billion over the period up to 2021.\(^4\) This is targeted at addressing the major deficits in drinking water quality and capacity, wastewater quality and capacity, and new infrastructure.

Not only has investment in infrastructure stimulated economic activity and job creation across the island, it has led to an overall improvement in Ireland’s competitiveness. It has also stimulated innovation and the need to create operational efficiencies, which is driving large transformational programmes to make fundamental changes to the way that they operate.

The roll-out of smart meters across Europe is a prime example. By 2020, close to 200 million smart meters for electricity and 45 million for gas will be rolled out across the EU, representing a potential investment of €45 billion.\(^5\) In Ireland the National Smart Metering Programme is underway which will deploy electricity and gas smart meters to the majority of homes by 2020. This will transform the retail energy market in Ireland providing customers with energy usage information and promoting the development of new products and services.

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\(^3\) Building on Recovery: Infrastructure and Capital Investment 2016-2021

\(^4\) Irish Water Business Plan

\(^5\) European Commission, Report From The Commission Benchmarking smart metering deployment in the EU-27 with a focus on electricity, 2014
Digital transformation

Although government mandates and improving operational efficiency are driving smart meter roll outs in Ireland, the exponential growth of data, analytics and empowered customers are playing key roles in the digital transformation of the sector. Utilities must manage customer demands through an approach to serve that is shifting from addressing simple behavioural preferences to managing increasingly sophisticated day-to-day interactions.

The relationship between the energy sector suppliers and their customers is fundamentally changing, placing the customer at the heart of the transformational process. Irish utilities now must recognise the need to interact with their customers in more sophisticated ways, and adapt their processes accordingly if they are to compete and indeed survive in the market.

As the customer and billing processes evolve and transform, EY is helping several retail utility companies re-design and deliver their response in a new way, adapting to the continuously evolving customer landscape. Utility suppliers now need to develop a better understanding of their customers, improve their customer experience and develop their digital strategies to drive increasing revenue from digital channels and reduce costs.

Organisation transformation

All of these significant transformational changes taking place in the sector bring about the challenge of implementing changes at the core operational levels within utility companies. Core business functions need to be fundamentally transformed to deal with these shifting external factors, in order to improve and sustain performance.

Operating models in these organisations can suffer from barriers to economies of scale, and the challenge of standardising processes and technology, or driving for greater efficiencies. This is further complicated by the ongoing pressure to deliver ambitious business plan targets for stakeholders. As a direct result, the concept of performance improvement is moving higher up the list of priorities within organisations.

With the energy sector evolving at this rapid pace globally, EY is working with clients world-wide to develop the solutions needed to address these new and complex challenges.

At a national level, the energy sector is pledged to work constructively with all policy makers across the island of Ireland but there are no simple solutions. EY are working with many organisations, helping them to achieve operational excellence. However, to implement real change, organisations need take a holistic view in terms of people, IT infrastructure, supply chain, operations, finance and marketing to improve overall efficiencies and improve their performance.

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