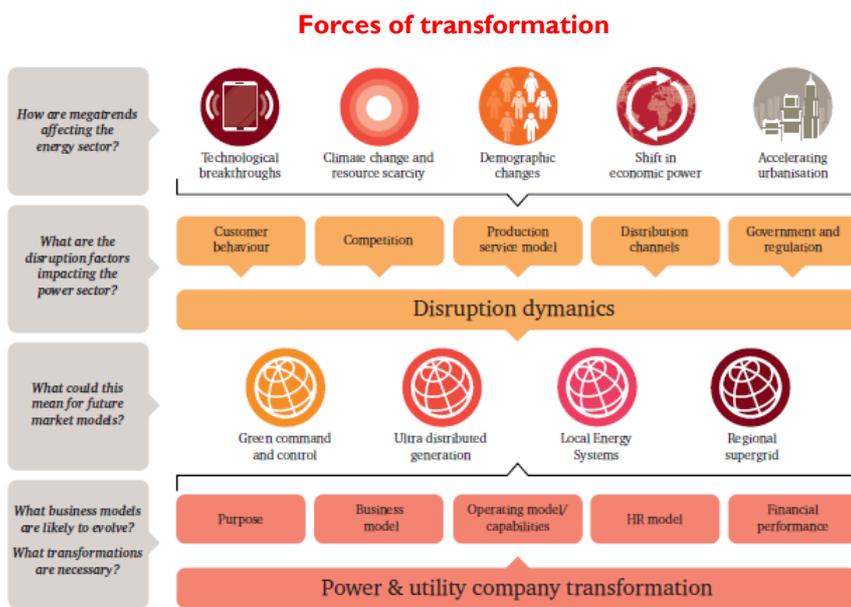


What utility future, which business model?—Perry Sioshansi’s Letter from America

The questions everyone wants to know the answers to.

Demand for oil may not grow as fast as it used to, if at all, as is already evident in the US and much of Europe. As counter-intuitive as this may appear, it gets even worse for future electricity demand growth. Not only do many of the same fundamental drivers—such as more efficient appliances, lighting, motors, etc.—erode industry sales, but a sub-class of consumers can in fact generate some or all of their electricity needs through distributed self-generation, say from rooftop PVs.



Source: PwC

Many within and outside the industry, of course, are sympathetic to the plight of the incumbents—generators as well as those in transmission and distribution—who, by and large, historically recovered their costs through volumetric tariffs. Fewer kilowatt-hours means lower sales and falling profits.

The parallels to the oil industry, of course, break down quickly since certain segments of power sector are considered natural monopolies and are universally regulated even in so-called de-regulated or competitive markets. In the oil business, on the other hand, companies like Exxon, Chevron or BP do not charge monthly service fees to recover the substantial costs associated with their extensive distribution and retailing networks. Nor can United Airlines or Lufthansa charge a fixed fee for maintaining their extensive global network.

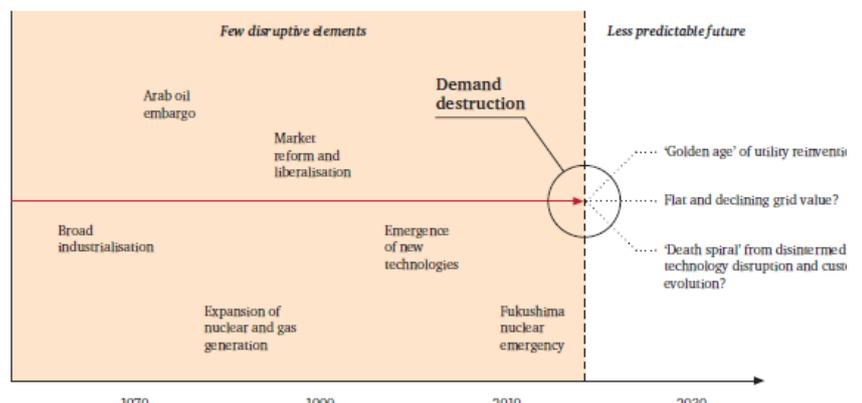
Naturally, a great deal of effort is going into predicting how these developments may define the future of the power sector, impact incumbent players while creating opportunities for new entrants.

Among these is a recently released report by PwC global power & utilities titled *The Road Ahead: Gaining Momentum From Energy Transformation*, which describes the main drivers of industry transformation and how they may interact with one another over time.

And as the cost of distributed generation falls over time, more or less a given, and as storage technologies become affordable, more consumers may be enticed to become prosumers. Since regulation in many parts of the world currently provides generous subsidies such as net energy metering (NEM) schemes, distributed self-generation is not only cost-effective; it is a bargain few consumers can resist.

The combination of consuming less while producing more is likely to result in lower sales volume and falling revenues for the incumbent utilities. There is no parallel in case of oil, natural gas or coal since virtually no customer can self-generate.

Future less predictable



According to the PwC: "Global megatrends—such as technological breakthroughs, rapid urbanization and resource shifts—are creating new opportunities and challenges in customer behaviour, new forms of competition, different generation models, and regulatory changes that could quickly eclipse current company and country strategies."

Clearly, the power sector is entering uncharted territory where the outcome is not entirely predictable. In fact PwC claims that the future is virtually *unpredictable* depending on what assumptions are made and which country or part of the world one is dealing with. What applies in Germany or Denmark may not be the same as in Texas, California or New York, for example.

Since the important variables are likely to play differently in different regimes and be influenced differently by the prevailing regulatory and policy framework, the outcome is likely to differ widely. Moreover, depending on how incumbents and new entrants play their cards and position themselves the winners and losers will differ.

The PwC report observes:

- existing generation assets could be left stranded as local energy systems and self-generation by customers "eat away at" the traditional centralised grid and large-scale generation model;
- the expected transformation could shrink the role of some utility companies to providers of back-up power;
- developing countries may "leapfrog" conventional centralised system models in favour of local energy systems; and
- existing grid and network systems may be unable to rapidly evolve to meet the needs of decentralised assets—delaying the adoption of advanced technologies.

According to PwC: "It's not a question of whether new market models will take shape, as this is already happening, but which new business models will be pursued in the sector and what countries and regulators will do to increase access to reliable electricity supply and what existing power utilities will do to keep up with the change and alter their course."

Any number of market models could emerge including:

- markets in which governments own and operate certain aspects of the business while mandating the adoption of renewable generation;
- ultra-distributed generation markets where generators invest in distributed generation;
- localised energy markets where local communities demand greater control over their energy supply; or
- regional super grids with large-scale renewable generation, storage and transmission capacity.

As PwC sees it, one of these models will not necessarily win out over the others or different models may emerge in different countries depending on the circumstances. It speculates that incumbent players may not be as nimble or focused as some new entrants—a polite way to say they may be disadvantaged relative to the new players. On the other hand, the incumbents currently enjoy a number of advantages—e.g., existing assets, customer relationships—which may prove valuable in fostering new partnerships.

Perry Sioshansi is a specialist in electricity sector restructuring. He is founder and president of Menlo Energy Economics and is the editor and publisher of EEnergy Informer, from which we have sourced this article, and which we commend.

We will be holding a half day workshop with Perry on 6 October to explore these issues and potential GB impacts. Please let Bethany.Blake@cornwallenergy.com know if you would like to receive an invitation.

Nutwood contains occasional pieces from Cornwall Energy team members and guest contributors on key industry and policy issues.

If you have a point of view that you would like to see featured, please contact our editor Andy Mower. His contact details are 01603 604403 or andy.mower@cornwallenergy.com.