

The utility model - has it outlived its usefulness?

By Walt Patterson

The utilities of the future will not be 'utilities'. That much is clear. Otherwise, however, the future is still pretty much up for grabs.

Such, at least, is the overall impression you get from Perry Sioshansi's latest symposium, *Utilities of the Future - The Future of Utilities*. Sioshansi is the vastly experienced editor of the US newsletter *EEnergy Informer*, required reading for anyone trying to keep up with the hectic transition now engulfing world electricity. He has compiled and edited a series of valuable book-length commentaries on the electricity transition. His tenth and latest is perhaps the most ambitious.

The 'utilities' in the title are involved with electricity, not gas or water or any of the other activities once also called 'utilities'. But these electricity 'utilities' now rarely meet the criteria which once justified the epithet 'utility'. As Sioshansi describes in his introductory chapter, traditional electricity 'utilities' are an endangered species. Innovative technologies not only to generate electricity but also to manage, control and even store it are upending the ruling assumptions that governed the shape, organization, operation and financing of electricity systems for the past century. What will take their place, however, remains profoundly uncertain.

The book is divided into three parts, a total of 22 chapters. Unlike many US commentators, Sioshansi draws his co-authors, their material and their examples not only from the US but widely from around the world. The topics are often very specialized, but the text throughout is generally readable. Although it bristles with acronyms, the editing maintains clarity and stylistic consistency, with many cross-links between chapters and topics. Each chapter also includes detailed references.

Part I takes its lead from Sioshansi's introduction. It assumes existing physical technology and infrastructure, institutions, regulation and financial arrangements, and asks 'What Is Changing, What Are The Implications' - what is going to happen to electricity, its users and its providers. In some respects the book title could simply be 'Future Electricity'. Although it focuses on existing 'utilities' and how they face the future, it is also about newcomers moving into electricity, not 'utilities' at all. At least by implication it therefore acknowledges a deeper issue. If we were starting from scratch to electrify society, knowing what we now know, we would not start from here.

Starting from here, however, Part II discusses 'Competition, Innovation, Regulation, and Pricing', as evolutionary developments from the traditional centralized monopoly franchise model of electricity. Authors from the US, Australia, the UK and Germany offer differing - and sometimes conflicting - analyses of the headlong changes under way, with specific case studies of the upheavals and conflicts.

In Part III, entitled 'Utilities of the Future: Future of Utilities', authors once again from the US, Australia, the UK and Germany examine new business models and strategies, not only for existing 'utilities' but also for the various new participants. Such models and strategies have to cope with

decentralized generation; so-called 'prosumers' who not only use but generate electricity; microgrids and other network innovations, including technology, operation and financing; and whole-system concepts in which the traditional passive 'electricity customer' becomes instead an active player.

Needless to say no brief summary can do justice to such an encyclopaedic undertaking. But a few particular points catch the eye, such as these uncompromising comments by Ralph Cavanagh and Amanda Levin of the US Natural Resources Defense Council: 'Abundant experience shows that retail competition is not a promising route to a clean energy future.' '... the current utility business model often fails to motivate them to, or worse, discourages them from embracing clean energy. Future utility business models must correct this, and motivate utilities to be clean energy partners.' 'The best way to make utilities effective clean energy partners is by rewarding them for clean energy advancements through performance-based regulation.'

A recurring issue throughout is that of fixed costs vs variable costs, and how to recover them. This is now crucial also for the fundamental difference between traditional fire-based generation, with its variable fuel costs, compared with renewable, fire-free generation, whose costs are almost entirely fixed. Insistence on a 'market', presumably in kWh, still seems to be the default position, despite all the chapters on alternatives; and a kWh market is utterly unsuited to non-commodity fire-free electricity.

The recent enthusiasm for 'capacity remuneration mechanisms' turns out mainly to offer windfall revenue to existing conventional generation or - worse still - polluting diesel farms. As several of Sioshansi's contributors demonstrate, we are still far from a satisfactory 'electricity market' design, if such indeed is possible.

The debate will continue to rage - and Perry Sioshansi will probably be in the thick of it.

(c) Walt Patterson 2016

Walt Patterson is an associate fellow of Chatham House, London. His latest book is Electricity Vs Fire: The Fight For Our Future - <www.waltpatterson.org/evf.htm> .