

Does Electricity (and Heat) Network Regulation have anything to learn from Fixed Line Telecoms Regulation?

EPRG Working Paper 0914

Cambridge Working Paper in Economics 0925

Michael G.Pollitt

The purpose of this paper is to examine the lessons from the recent history of telecoms deregulation for the electricity (and by implication heat) network regulation. We do this in the context of Ofgem's RPI-X@20 review of energy regulation in the UK, which considers whether RPI-X based price regulation is fit for purpose after over 20 years of operation in energy networks. We examine the deregulation of fixed line telecoms in the UK and the lessons which it seems to suggest. We then apply the lessons to electricity networks in the context of a possible increase in distributed generation directly connected to local distribution networks. We conclude that there is the possibility of more parallels over time and suggest several implications of this for the regulation of electricity and heat networks.

The major lesson for energy networks from telecoms is that competition and innovation should go hand in hand in network industries. Where major innovation is possible and desirable, price regulation of incumbent monopolies is likely to be a barrier to new entry. If we are to take some of the more radical scenarios for the future of the electricity (and heat) sectors seriously, there is no doubt that major innovation both in terms of the application of technology and in terms of the organisation of the energy sector is essential. It is here above all that the lessons from telecoms are salient.

If a world of micro-grids and energy service companies (and actively managed distribution network operators (DNOs)) is to emerge it will have to do so in a way which challenges the current business model of distribution network operators. No doubt innovative DNOs will be able to adapt to such a world, but all will have to face the threat of intensifying competition for

the provision of network services and / or further unbundling and erosion of their natural monopoly.

Telecoms provides two clear models of how this might proceed: via facilities based competition (based on actual or potential bypass of incumbent networks) or unbundled local access (via local loop unbundling). Telecoms experience also strongly suggests the link between effective competition and the improvement in performance of the incumbent, who may retain a significant market share but only at the cost of substantial innovation, implying that there are substantial net benefits from apparently inefficient network asset duplication.

There would appear to be no obvious technical barriers to this happening over time in electricity: only economic and regulatory barriers (which may be quite rational). What society should strive for is a situation where fundamental economics determines whether or not these radical electricity futures emerge and not the inertia of incumbents or the existing regulatory system. Telecoms in the UK provides a case history of the resistance of the incumbent to change in face of what would seem to be greater technological barriers than in electricity and heat. There would also seem to be lessons about the role of the regulator in deciding what form deregulation should take and the speed at which it should proceed.

The lessons from telecoms remain tempered by the fact that electricity and heat networks develop more slowly than those in telecoms and the assets are longer lived. The role of climate change targets and incentives are also crucial in underpinning any future evolution of the energy sector. Information about how localised energy network competition based on new entrants might work has a high value in the near term. What would be sensible are some major experiments in promoting energy service companies and micro-grids to assess their ability to deliver climate change targets and their cost effectiveness. This might involve experimentation with fuller network charge deregulation/reregulation along the lines suggested in the paper in particular localities. It also remains important to ensure that regulation does not close off more radical future network scenarios too early before they have the chance to be examined.

Contact m.pollitt@jbs.cam.ac.uk
Publication June 2009
Financial Support Ofgem, TSEC1