



The European Single Market in Electricity: An Economic Assessment

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The European single market in electricity has been promoted vigorously by the European Commission since 1996. We discuss how national electricity markets and cross border electricity markets have been reshaped by the process. We examine the Commission's own work on evaluating the benefits of the single market. We also look at the wider evidence of impact on prices, security of supply, the environment and on innovation.

Reflecting on the development of the EU single market in electricity, it is difficult not to be impressed with it in terms of the structural changes since 1996. National markets that were once dominated by a single incumbent generator and a single incumbent retailer have been opened-up to competition. Independent regulation has been significantly increased, both at the national and at the level of the EU itself. There has been significant enforcement action by the European Commission's competition authority (DG Competition) to promote further reform. Legislation has evolved through successor directives and a new directive is under discussion. In parallel there has been the development of power exchanges and market coupling, as well as the emergence of non-discriminatory access to the transmission system with robust legal and ownership unbundling of transmission and increased coordination between national system operators. The ownership of the industry has been reorganized, with large numbers of pan-European mergers and acquisitions and the entry of gas incumbents into electricity. Cross border trading of electricity has increased. There has been a high degree of 'regulatory convergence' in electricity between member states, at a higher level than might have been imagined in the absence of the single market. At the same time the environmental agenda has been promoted with the introduction of a carbon market in 2005 and massive financial support for renewables which is bringing about a genuine 'energy transition'. The electricity industry has been transformed, especially for countries with less favourable initial attitudes to competition in electricity.

However, while the level of structural and institutional change is impressive, the quantification of the costs and benefits of the single market is extremely hard and the evidence we do have suggests that the overall gains in terms of price, cost and quality of service impacts are modest, especially if we consider the 25-year time frame.



The difficulty of doing econometrically robust analysis of actual data on the single electricity market is high. This is not helped by the multiple reform elements (horizontal and vertical unbundling, wholesale market developments and privatization) happening at more or less the same time. Add in the cost increasing effect of renewables support and underlying fluctuations in wholesale gas, coal and carbon prices. Furthermore, the EU itself is not the same: it had 15 members in 1996, but this had expanded to 28 by 2013. Any single market study suffers from a lack of compatible data, combined with multiple confounding factors and highly partial analysis of a narrow range of impacts. Putting different econometric studies together to gain an overall picture involves comparing studies conducted over different numbers of countries and different time periods. Some of the best studies on single market-type impacts don't look at just the EU, but often the wider OECD.

What one can say, is that the 'proven' overall impacts on welfare would seem to be small. The evidence seems to be of some small productivity improvement, some wholesale price convergence and limited (if any) retail price reductions. The studies on which the European Commission relies (notably Copenhagen Economics, 2005, and Booz & Company, 2013) significantly rely on simulation of future impacts and give rather limited attention to actual data. Given that the measured overall impacts would seem to be small, this suggests the need for rather more careful attention to measuring impacts than most current studies are capable of. Indeed, in line with Pollitt (2012), it suggests little substitute for detailed cost benefit analysis of individual European country case studies of reform.

In fairness to the European Commission as architects of the single electricity market, it is important to say that the Commission does continually emphasize the fact that the single electricity market remains a work in progress. The Commission together with its sector regulatory organisations - ACER and the CEER - stress that more needs to be done. The fourth energy package is a commitment to doing more. Indeed, one of the genuinely good reasons the Commission may not have emphasized studies of past gains from the process is precisely to keep the focus on what needs to be done in the future. However, that is not to say that the documentation of single market gains (and losses) is unimportant. Simulation studies can always show *potential* gains from extending markets towards a first best world, but we all live in the here and now, in the second best.

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