

Energy Regulation Insights

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From the Editor

The German system of regulating energy networks has been a special case in Europe since the first EU Directive on the internal electricity market in 1996. The German reliance on competition law to regulate monopolies is unusual. However, Germany is now about to adopt a specialised system of network regulation described as "incentive regulation". In this ERI, Dr Michael Kraus of NERA Germany explains what these important changes mean for the German energy sectors.

Dr Kraus begins by setting out the topics that are still being debated in the German parliament, before considering the experience of network regulation in the neighbouring country of Austria. Drawing lessons from that experience, he then sets down the economic principles that will—eventually—dictate how network regulation works in Germany, and elsewhere.

The German experience will hold valuable lessons for other energy sectors that are in the process of defining or refining their regulatory regime for networks

—Graham Shuttleworth, Editor

Germany's Push for an Incentive Regulation in the Energy Market

By Dr Michael Kraus

In October 2004, Germany's Federal Government introduced its new Energy Bill to the Bundestag, or lower chamber. The previous draft of the law had been strongly criticized by the Bundesrat—the higher chamber through which the German Länder participate in the federal legislature. The Government's amendments to the draft law had been long awaited.

In its first draft the Federal Government had aimed at a lean form of regulation. The new set of rules was intended to contain all relevant provisions for regulating energy suppliers, i.e. the regulatory rules were set "ex ante." The new regulatory Authority should merely supervise compliance with these rules, i.e. the regulator would exercise "ex post" control. There was no intention to approve network tariffs on an individual basis for all 1400 or so German electricity and gas utilities; instead, a Federal Regulatory Authority would have the power to review them.

The Bundesrat demanded instead that all tariffs should be approved individually and that several tasks should be assigned to the Länder. Furthermore, the Bundesrat demanded that the method of setting tariffs should provide incentives for efficiency (incentive regulation).

The Federal Government now recognises these concerns to a large extent: The new Federal Regulatory Authority will work out over the next two years a system of incentive regulation. Before then, any increase in network charges will be subject to approval by the Authority on an individual basis. However, that Federal Regulatory Authority will remain the sole regulatory body with this power.



During the reading of the amendments to the Energy Law there was wide consensus over central issues. The requirement for approval of individual tariffs was generally welcomed. Some deputies pointed out the increased number of staff necessary for the Regulatory Authority. It was felt the fact that the Regulatory Authority for Electricity and Gas is charged with developing a regime of incentive regulation will give the Authority considerable freedom of action.

The decrees on network access and network charges

The draft decree on electricity network charges lays down the method for setting network charges and the process of control by the Regulatory Authority. Some aspects of the draft decree counter-act the Energy Bill's adoption of "net value maintenance" ("Netto-Substanzerhaltung"). This principle requires the values of "assets funded by equity" to be indexed to inflation to preserve their real value to shareholders, but the effect is undermined somewhat by the fact that corporate

tax, for instance, is not (yet) recognised as a cost item.

The draft decree on electricity network access lays down the system of network access, the rules for network access and the detailed system for buying "regulating power" (last-minute balancing). It imposes extensive information and publication requirements whose cost may be out of proportion to their benefit, and it gives the Regulatory Authority extensive powers of regulation without setting down the respective administrative criteria that its decisions must meet. Unless the Bill is amended again, it will create high expectations that may not be fulfilled.

In November 2004, some 20 energy experts, both industry associations as well as individuals, appeared at a hearing in the Bundestag. The electricity industry associations pointed out the long lead time required by a regulation model that ultimately needs to integrate price regulation, benchmarking, and quality regulation. They underlined that there is no foreign system of regulation that

could be implemented immediately in Germany. The associations stressed the necessity of addressing security and quality of supply under incentive regulation¹ and pointed out the potentially enormous financial repercussions for the utilities.

The experience with incentive regulation of Germany's neighbour Austria

The German energy industry is a keen observer of regulation as practiced in neighbouring Austria over the last four years. The Austrian approach, laid down in the country's Energy Law of 2001, of averaging all costs and establishing the benchmark of a comparable and rationally managed company is viewed with particular concern. The Austrians tried to apply a regulatory method based on benchmarking in 2002, when the regulator set about constructing a virtual standard network using statistical data. Industry outrage over the demand to reduce costs by thirty per cent over four years led to legal challenges of the method, ending in the suspension of virtual benchmarking, and the adoption of network tariffs based on

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the country's previous system.² Nevertheless, German market players fear that the new German Regulatory Authority, which will become a member of the Council of European Energy Regulators (CEER) where regulators harmonise their approaches, could introduce elements of the Austrian model in Germany.

The scope for the optimum incentive regulation for Germany

The failed attempts at benchmarking might give the impression that incentive regulation is a totally different and unpredictable system, but in practice it is not so different from other, conventional forms of regulation. Any intellectually coherent incentive regulation must comply with a limited number of economic principles.

For instance, any system must define which costs belong to the network business and offer investors a reasonable prospect that they can recover all these costs, including operating costs

and capital costs (depreciation and return). Otherwise, the system will offer no incentive for companies to invest in maintaining or expanding the network.

To provide a reasonable prospect of cost recovery, regulatory methods must be objective, robust and stable over time, so that the returns to investment are predictable (although not guaranteed). Only then will investors be willing to commit funds to the long-term irreversible investments that are necessary for efficient development of a network. In some countries, the need to avoid regulatory risk is taken for granted, but in some new regulatory regimes there is an incomplete understanding of the way in which regulatory methods not only can create regulatory risk, but also discourage investment. Germany will have to find ways to avoid these problems.

Benchmarking and its techniques have been widely used, not only in

Germany, but also—with varying degrees of success—by regulatory authorities in Britain, the Netherlands, Portugal and Austria. It will be essential to review the experience of other countries, identifying the problems that arose with different methods and the solutions that each regulator adopted in the end. The German actors will need to address specific aspects of benchmarking, notably the role of pre-selecting a sub-group of comparators. They will discover—and this is already confirmed by the Austrian experience—that the specification of benchmarking models has remained more of an art than a science and the associated judgements have a large impact on the results for individual companies. Controversial issues arising from an ill-designed incentive regulation eventually could only be solved before the courts.

It is almost predictable that any specific incentive regulation will require amendments to the cost

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around the world. The coverage includes network regulation, industry restructuring, and the organisation of electricity and gas markets. The "GERN" allows energy sector professionals to keep in touch easily with looming problems, the latest developments in regulatory methods, and innovative solutions. To view the latest editions or to receive our newsletters each time they are published, click here: www.nera.com/newsletters.asp.



calculation described in current draft of the German decree on electricity network charges (“Netzentgelt-Verordnung”).

Price caps, “RPI-X” and all that

Some descriptions of incentive regulation give the impression that it consists entirely of a price cap formula, set without any need to consider a company’s actual costs. In practice, it is only possible to define a successful price cap formula once the regulated companies’ costs are well defined. A successful price cap formula is one that tracks expected costs in a way that maintains the incentive to spend money efficiently on operating, maintaining and expanding the network. For instance, price formulae must

provide at least a short-term incentive for the German companies to increase supply when demand increases, by offering additional revenue sufficient to cover the additional cost. Also, the formulae must allow the German companies that beat efficiency targets to earn additional profits comparable with those earned by efficient companies in other industries.

The academic literature on price cap regulation envisages a formula containing exogenous factors (such as inflation, expected efficiency growth, demand and other indices) so that the allowed revenue closely follows the expected level of costs, based on expected, average or reasonable levels of efficiency. The German regulated companies, accordingly, would have

opportunities to increase their profits by becoming more efficient and reducing their actual costs. However, a successful formula will limit the extent to which profits vary, in order to avoid creating pressure to revise the price cap. A price cap only provides strong incentives to reduce costs if there is no uncertainty over the regulated company’s ability to keep the increased profits. Revising price caps before the end of the regulatory period—or even after the regulatory period has finished—to take away unexpected profits undermines these incentives and may even offer worse incentives for efficiency than a traditional regime of cost pass-through.

Our Practice

NERA is at the forefront of the continuing transformation of the energy industries worldwide. We have pioneered in developing approaches for introducing competition in segments such as power generation and gas supply where competition is workable and for improving the regulation of sectors where it is not. We work with companies and governmental bodies and regulators worldwide to design competitive gas and electricity markets and to develop tariffs and rules of access for regulated transmission and distribution systems for electricity and gas and the transport of oil and oil products.

With industry restructuring in many countries, we also help companies develop strategies for exploring new opportunities and minimizing new risks, including issues related to climate change and other environmental

initiatives. We help our clients to develop new regulatory strategies and, when needed, support our clients with analysis and testimony before regulatory commissions, antitrust and competition policy agencies, and domestic and international courts.

Our economists help clients to decide which lines of business to pursue; to divest assets no longer consistent with their strategy; to identify and evaluate opportunities for mergers, acquisitions and investment; and to develop bidding, trading, contracting, and marketing organizations and strategies. Our work also includes designing and conducting energy auctions, providing strategy and valuation, advice on mergers and acquisitions, the financing of energy companies and the financial restructuring of distressed companies.

Incentive regulation is intended to give an incentive for cost reduction but it must include an incentive to maintain the quality of supply, or else the regulated company will be able to cut its costs and increase its profits at the expense of the quality of supply. Incentive regulation must counteract this effect, in order to fulfill the general underlying principles, or consumers' interests. The quality of supply provided by electricity networks depends on their original standard of construction as determined by planning standards, the standard of maintenance and speed with which faults are repaired when they occur; and incentives for replacement of old equipment. It will be necessary for the German companies to identify the quality incentives that require special incentives. There are economic trade-offs between benefits and costs that should guide the design of incentives for quality of service that are economically efficient or in the interest of the German consumer.

The new regulatory agency will face an almost impossible task if it tries to introduce new revenue ceilings for all 1400 networks overnight. The point of incentive regulation is to provide incentives for lowering costs, not to presume that costs are lower and to reduce revenues accordingly. The Norwegian regulator faced a smaller, but equally challenging task when it transferred more than 200 networks from a cost pass-through regime to incentive regulation in 1997. The smoothness of the transition rested on the decision to link new price cap formula to the previous years' costs. That left the regulator time to consider refining the formula in the light of experience. By learning from such success stories—and from other countries' failures—Germany can also achieve a smooth transition to the new and more efficient regime.

The months ahead in Germany

Against this background, all the major players in the German electricity market are preparing for the new era of incentive regulation that will start

in two years' time. Some players have already formed their views on incentive regulation, whilst others are just beginning to appreciate what it will mean and what new risks they have to manage. Ultimately, a host of incentive regulation designs will compete with the Regulatory Authority's views on incentive regulation. In the end, only the designs that comply with fundamental economic principles, and which draw on lessons from the successes and failures of other countries, have any hope of surviving this period.

Notes

- 1 According to the latest survey of the electricity industry association VDEW, German electricity suppliers altogether invested EUR 3.8 billion, most of which for electricity network expansion and renewal (EUR 1,650 million). EUR 554 million were invested in ultra-high and high-voltage grids, EUR 517 million in medium-voltage grids and EUR 577 million in low-voltage grids. Compared on a year-on-year basis, investment in ultra-high and high-voltage grids has been stable, investment in medium-voltage grids increased by 7 per cent whereas investments in low-voltage shows a significant decrease.
- 2 Attempts to use benchmarking failed in Austria (2002-03) and the Netherlands (2000-01), and benchmarking has recently played only a subsidiary role in Portugal, Scandinavia and the UK.

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