

# Irish Energy Policy and Regulation: Issues and Challenges

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## **Abstract**

Consideration of energy policy and regulation tends to focus primarily on electricity and gas. It is not that policy and regulatory issues do not arise in the markets for crude oil, petroleum products, coal and other fuels; they do. But markets have emerged in these fuels without the type of policy intervention and regulation that many governing politicians, policy-makers and regulators appear to have convinced themselves is necessary for electricity and gas.

This paper focuses on Irish energy (i.e., electricity and gas) policy and regulation. But, prior to applying this focus, it is worth while to examine the development of EU energy policy and regulation during the last 20 years and the extent to which much of this development has been influenced by the pioneering work in this area conducted in Britain<sup>2</sup> during the 1980s and 1990s. In addition to the inevitable demonstration effects in Ireland of developments in Britain, this provides the context in which Irish energy policy and regulation has been pursued since the entry in to law of the Energy (Miscellaneous Provisions) Act of 1995 and the Electricity Regulation Act of 1999.

The paper begins by considering the politically asserted good intentions (broadly supported by the economics profession at the time) and the, possibly, unintended consequences of the process of privatisation, market development and 'independent' regulation initiated in Great Britain in 1982 with the Oil and Gas Enterprise Act and of the EU process of electricity and, then, gas market liberalisation initiated, respectively, by Directives 96/92/EC and 98/30/EC. In Britain, the primary intent was guided by the premise that "the proper business of government is not the government of business". It was on this basis that the publicly owned British Gas Corporation and previously integrated units of the electricity supply industry were privatised, re-regulated and restructured to participate, with new market participants, in newly designed markets where none previously existed.

In the EU the primary intent was to reduce, or eliminate, the economic rent being captured by the vertically integrated electricity and gas businesses enjoying various exclusive rights to secure, produce or generate, to deliver and to supply energy. The capture of this rent was perceived by policy-makers to be damaging the internal and international competitiveness of EU industry. Over time the policy and regulatory agenda has expanded with EU institutions increasingly adapting and applying the institutions and procedures developed in Britain – culminating in the on-going efforts to reconcile this agenda with the EU's climate change

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A graduate of UCC he began his energy industry career as Corporate Economist for Bord Gáis before moving to the UK. Based on significant involvement in Britain's gas market liberalisation from the late 1980s through the 1990s the geographical scope of his work has expanded and he has considerable international experience throughout Europe, Africa, the Middle East, Russia and Central and East Asia.

<sup>2</sup> Britain is the geographical entity comprising England, Scotland and Wales and is used to differentiate this entity from the United Kingdom which includes Northern Ireland.

agenda. Not surprisingly the unintended consequences – and some deliberately engineered by market participants – have multiplied.

The implications of this continuous adaption and application, subject to the EU's external market constraints and the constraints imposed by the EU's decision-making process, on the successive waves of EU primary legislation (in 6 year cycles) have been reflected in the transposition of this primary EU legislation into all national, including Irish, legislation. The main focus of the paper is on how this primary legislation was transposed in Ireland – and on the functioning of the institutions, procedures and arrangements established and employed on foot of this legislation. The implications for market participants and for final consumers are considered and, where there is strong evidence for their necessity, remedies are advanced.

### Abbreviations and Acronyms

Bord Gáis	Bord Gáis Éireann
CER	Commission for Electricity (from 2002, Energy) Regulation
CSO	Central Statistics Office, Ireland
CSS	Commercial Semi-State
DG COMP	Directorate-General for Competition
DG ENER	Directorate-General for Energy
EMR	Electricity Market Reform
ESB	Electricity Supply Board
ESOT	Employee Share Ownership Trust
EU	European Union
EU ETS	EU Emission Trading System
HC	Historic Cost
IC1	First Gas Interconnector between Scotland and Ireland
IC2	Second Gas Interconnector between Scotland and Ireland
IHC	Indexed Historic Cost
JV	Joint Venture
LMP	Locational Marginal Pricing
LNG	Liquefied Natural Gas
NEW	North West Europe
NewERA	New Economy and Recovery Authority
NRA	National Regulatory Authority
NTMA	National Treasury Management Agency
OPEC	Organisation of Petroleum Exporting Countries
PAYG	Pay As You Go
PSO	Public Supply Obligation
RAB	Regulatory Asset Base
SEAI	Sustainable Energy Authority of Ireland
SEM	Single Electricity Market
T&D	Transmission and Distribution
TPA	Third Party Access
TSO	Transmission System Operator
UK	United Kingdom of Great Britain and Northern Ireland
UK NBP	UK National Balancing Point - a virtual hub where gas is traded
UK ONS	UK Office of National Statistics
US	United States of America
VAT	Value Added Tax
WACC	Weighted Average Cost of Capital

## ***The endemic and pervasive nature of rent seeking***

The international energy industry is driven fundamentally by the pursuit and capture of rents. Rents may be defined, in the long accepted manner, as rewards and prizes not earned in, or not consistent with, competitive market returns. Congleton, Hillman & Konrad (2008), in their magisterial, two-volume review and assessment of 40 years of research on rent seeking, plausibly assert, on the basis of reams of evidence, that rent seeking is almost as old as mankind itself, that, in most instances, it is perfectly rational behaviour for those who pursue it and that it is pervasive over time and across all polities, societies and economies.

Rent seeking has first order and second order impacts. First, there are the deadweight costs resulting from the expropriation of consumer surplus and public funds. These have long been recognised in the economics literature; Harberger's triangles are probably the most frequently cited demonstration. The second order impacts are the resources that are deployed in rent seeking and that are diverted from genuinely productive activities that would enhance economic prosperity and public welfare. This imposes significant additional economic and social costs. Quite a lot of the research reviewed by Congleton et al – and, indeed, much more of the research referenced, but not reviewed – focuses on these second-order detrimental impacts of rent seeking. One example is the seminal and influential paper by Murphy, Shliefer and Vishny (1993) which seeks to answer the question: "Why is rent seeking so costly to growth?"

And let's be clear. This is rent seeking that is legally authorised and, indeed, officially encouraged; these are not rents secured by the use of 'sharp practice' or as a result of corruption. Firms and individuals will always seek to capture rents, or to protect the capture of existing rents. And they will continue to do this while market circumstances or the institutional and procedural arrangements allow them. Indeed, given the uncertainty to which they are exposed, they will capture rents while they can to offset possible shortfalls when competitive market returns fall below the levels they require to continue operation. This 'smoothing' of returns may allow firms to continue operations; without this they might be compelled to cease operating and exit the industry. But the capture of rents should not be allowed to prevent the exit of inefficient firms; nor should the protection of this rent capture be allowed to act as a barrier to the entry of more efficient firms.

However, much of the existing research – and relatively little deals with the energy industry - is focused on why and on how individuals and firms pursue rent-seeking, on how much resource they devote to this and on the social and economic costs of this behaviour. There is considerably less research on the behavioural and structural remedies that could usefully be applied.

It probably isn't difficult to figure out why this is the case. Those who might commission and pay for such research have no interest – and most likely would not welcome it – because many are probably actively engaged in rent seeking themselves. Public funding of such research is also unlikely. Most governments are hostages to pressing demands to maximise public revenues or to some form of resource nationalism or to influential sectional economic interests (or, indeed, some combination of all three). Their desire to capture rents, or to permit the capture of rents by favoured or influential interest groups, is probably as strong, if not stronger, than that of other economic actors.

This leads to a profound political question. Indeed, it is a profound question of political philosophy and public choice because it compels consideration of the role and the boundaries of the state. Should the state seek to maximise consumer surplus and to banish opportunities for

political meddling and the exercise of market power? Or should it tolerate some degree of rent seeking by market participants (once their behaviour is broadly congruent with the achievement of various public policy objectives) and indulge in rent capture itself to secure revenue that it would be possible to generate by other means but to which voters might not give their consent?

Even those, commonly labelled right or centre-right, governments and political parties that most loudly advocate the first option – small state, low taxes, the rule of law, liberal democracy, free markets, economic freedom and individual responsibility, etc. – frequently and gleefully choose and apply the second option when it suits them. The governments and political parties, typically labelled left or centre-left, that oppose this political philosophy to varying extents – and that appear to retain a naïve belief in the omnipotence and omniscience of the state and in the enforcement of what are considered to be universal economic and social rights – have little difficulty coping with the second option. They actually appear to revel in choosing and applying it.

In this context the conflict that arises is not between the choice and application of these two options, nor is it the time-hallowed conflict between the ‘right’ and the ‘left’ - clothing their thrusts and counter-thrusts in rhetoric that resonates less and less with jaded and cynical voters: it is a conflict between different groups of rent-seekers aligned with either the right or the left. And both the right and the left advance or protect the interests of their respective rent seeking constituencies and rely on their support. It would probably be considered a cliché, but one not without a germ of truth, to say that the rent seekers aligned with the right tend to have the wealth, while those aligned with the left tend to have the numbers.

Given the extent to which rent seeking is endemic and pervasive, the toleration or application of the second option by most governing politicians and policy-makers is probably both inevitable and pragmatic. This seems to be the world in which we live. It is extremely rare to witness the application of the first option in any industry or sector. And so, in the context of the current economic crisis, this suggests that economists might usefully examine the extent to which rent seeking is retarding economic growth in Ireland and in the other advanced economies. They might be surprised at what they would find – if, first, they are able to find anyone who would commission, authorise and fund this research. When individuals and firms devote effort and resource to rent seeking – and to protecting the existing capture of rents – economic growth is retarded. And it is retarded in two respects. The first is the welfare loss that rent seeking causes directly; the second is the allocation of resources to rent seeking that could be applied productively.

For the international energy industry, the fundamental drive to pursue and capture rents, and to preserve the capture of rents, is not a guilty little secret. Energy policy and regulation has always addressed the pursuit and capture of rents. Economists have long known the answer; design and apply a fiscal regime to tax away the rent or introduce and promote competitive markets and a system of regulation to erode the rent (or a combination both). Job done; may we have the next question, please. But the reality is that it is not as easy as this. Rent seeking was, and remains, endemic and pervasive. And it is difficult to find any systematic assessment of what incentives and restraints are required to remedy the detrimental impacts of the pursuit and capture of rents.

It would, however, be unfair and inaccurate to characterise the interactions between participants in the energy supply chain, and between the participants in this chain and governing politicians, policy-makers and regulators, as being governed totally by rent seeking, but, equally, it would

constitute gross negligence and wilful blindness if an analysis of these interactions did not include some consideration of the pursuit of rent seeking.

### ***The modern transformation of energy policy and regulation***

And so, bearing all this in mind, we turn to energy policy and regulation. Consideration of energy policy and regulation tends to focus primarily on electricity and gas. It is not that policy and regulatory issues do not arise in the markets for crude oil, petroleum products, coal and other fuels; they do. But markets have emerged in these fuels without the type of policy intervention and regulation that many governing politicians, policy-makers and regulators appear to have convinced themselves is necessary for electricity and gas. For more than 30 years many governing politicians, policy-makers, academics and consultants in the advanced economies have devoted considerable effort to designing markets for, and applying regulation to, the electricity and gas sectors – and to other infrastructure and utility sectors.

There are numerous reasons for this, but, from an economic perspective, the issues that arise are the prevalence of sunk costs, the durability of assets, the existence of technical externalities, the ability of consumers to capture the benefits of economies of scale and scope, the frequency of disputes and policy concerns about the distribution of outcomes. Attempting to address these issues tends to drive governing politicians in the direction of sector-specific regulation, rather than the use of general competition law. These issues will be considered further below, but it is important to note that the primary focus is on electricity and gas and, when it comes to consideration of policy issues, the focus is on the policies governing the restructuring and regulation of the electricity and gas sectors and the introduction of competition to these markets.<sup>3</sup>

During the last quarter of a century while these issues were being addressed, energy (i.e., electricity and gas) policy and regulation in Ireland has been increasingly influenced and, to a considerable extent, determined by developments in Britain and at the EU level. Prior to this, Irish governments and the electricity and gas industries exercised considerable autonomy in terms of industry and market structure, ownership, operation and pricing.

### **For Ireland and the EU, it started in Britain...**

The policy landscape changed irrevocably in 1979 in Britain with the election of the first of four successive Conservative governments driven by a reforming zeal and the reforms pursued there had an inevitable impact on Ireland, but also throughout the EU. In terms of the various sectors that comprise modern economies, the reforms were not confined to the electricity and gas industries. All sectors where the state had a major ownership, direction or regulatory role were subject to scrutiny and reform. The oft-expressed mantra was that “the proper business of government is not the government of business”.<sup>4</sup> What followed were various combinations of

<sup>3</sup> An obvious criticism is that this focus excludes consideration of a whole host of very relevant and pressing energy policy issues. However, in response to this it is contended that policy and regulatory dysfunction in the electricity and gas sectors makes the tackling of these other policy issues far more difficult – and potentially intractable. Ensuring sensible policy and regulation for the electricity and gas sectors is a good first step.

<sup>4</sup> It appears that this mantra was first used by the then UK Secretary of State for Energy, Nigel Lawson, during the second reading of the Oil and Gas (Enterprise) Bill, HC Debate 19 January 1982. Vol. 16, cc169-247. This bill sought to legislate for the privatisation of the British National Oil Corporation and for the breaking of the monopoly enjoyed by the British Gas Corporation. The latter provisions laid the foundation for the subsequent Gas Act of 1986 which privatised the British Gas Corporation. This, in turn, and following some consideration of the structural failings of the 1986 Act, led to the legislation governing the privatisation of the electricity supply industry in 1990.

privatisation and restructuring of the major utility industries – telecommunications, natural gas, water and electricity.

There was both a political agenda and an economic policy agenda which overlapped and were pursued in tandem. The political agenda – rolling back the boundaries of the state, curtailing the power of trades unions, increasing the property and share-owning proportion of the electorate (who, in turn, would be more docile and more likely to gratefully re-elect Conservative governments) – was clear and, for the most part, was pursued effectively. But the economic policy agenda was subtly intertwined with this political agenda and cunningly propagated to endow the political agenda with considerable intellectual credibility. It was continuously advanced that the privatisation, restructuring and ‘independent’ regulation of the major utility industries would provide final users and consumers with ‘competition and choice’. Competition would ensure efficiency in investment, production and consumption and final consumers would have a choice of suppliers where previously they had none. Who could really establish a credible position in opposition to this?

### **...but the US played a major role**

Many economists – and, in particular, those with knowledge and competence in the analysis of these infrastructure and utility sectors, who, normally, would avoid like the plague any possibility of being contaminated by such a blatant political agenda, were enamoured and ensnared. The theoretical basis for the restructuring of the electricity and gas industries had been, and was being, established. Increasingly the practical basis was being developed and applied. For example, the close link between electricity costs and transmission costs was first explored by a team at the Massachusetts Institute of Technology largely under the guidance of Fred Schweppe (see Bohn, Caramanis and Schweppe, (1984)). Hunt and Shuttleworth (1996) provide a comprehensive overview of the theory and practice of promoting competition and choice in electricity. In the US the case had long been established for the ‘de-regulation’ of the natural gas industry. This process began with the enactment of well-head price de-control in 1978. Makhholm (2012) presents a compelling analysis of the political economy of the century-long development of the US gas industry that has culminated in efficient markets in both gas and pipelines. He also highlights the institutional barriers that prevent its replication in other jurisdictions.

### **The European Commission picks up the baton**

During the decade and a half from 1978 much of the pioneering work was performed in the US (de-regulation) and in Britain (privatisation and market liberalisation). The initial impact on the EU was limited. The passage of the Single European Act in 1986 highlighted the lack of progress in completing the internal markets in electricity and gas and this initiated a legislative process, pursued by the Commission, under direction from the Council and in co-operation with the Parliament, that would lead to ‘full market opening’.

The first outputs of this effort were Directive 90/347/EEC of 29 June 1990 concerning a Community procedure to improve the transparency of gas and electricity prices charged to industrial end-user (1<sup>st</sup> Price Transparency Directive) and Directive 90/547/EEC of 29 October 1990 on the transit of electricity through transmission grids. More than five years of hard-fought negotiation ensued before the enactment of Directive 96/92/EC of 19 December 1996 concerning common rules for the internal market in electricity (the 1<sup>st</sup> Electricity Directive). Another 18 months elapsed before the enactment of Directive 98/30/EC of 22 June 1998 concerning common rules for the internal market in natural gas (the 1<sup>st</sup> Gas Directive). The Directives set minimum requirements to open national markets that would allow large volume

consumers (mainly industry and power generators) access to competing suppliers and basic requirements for negotiated or regulated access to networks. In addition to the obvious demonstration impacts of developments in the US and Britain, it appears that a key motivation, coming from the rationale for the Single European Act (and from the scope of the Directives themselves and the 1<sup>st</sup> Price Transparency Directive), was a desire to reduce the costs of electricity and gas supplies to industrial users because these costs varied considerably within the EU and were often higher than those incurred by industries operating outside of the EU. As a result these costs were deemed to be damaging the internal and external competitiveness of these businesses.

Deficiencies in their application led to the repeal of the 1<sup>st</sup> Electricity and Gas Directives and their replacement by Directives 2003/54/EC and 2003/55/EC of 26 June 2003 (the 2<sup>nd</sup> Electricity and Gas Directives, respectively) which, inter alia, reinforced the unbundling of network and supply businesses, established minimum criteria for National Regulatory Authorities (NRAs) and mandated full retail access for all non-residential consumers from 1 July 2004 and for all consumers from 1 July 2007. These directives were subsequently repealed and replaced by a more comprehensive Third Legislative Package in 2009 – the EU seems to operate on a six-year cycle in this respect – which seeks to ensure completion and full functioning of the internal markets in electricity and gas from 2014. An Electricity Target Model and a Gas Target Model are being developed.

### **Institutional Features and Economic Principles**

Though they might not, perhaps, be immediately discernible, the differences between and among the various processes – market de-regulation in the US, privatisation and liberalisation in Britain and completion of the internal market in the EU – are worthy of some consideration. To a large extent these differences spring from important differences in institutional arrangements. While occasionally noting these, it appears that economists fail to pay sufficient attention to the impact of these institutional arrangements and to the constraints they impose when governing politicians, policy-makers and regulators seek to restructure electricity and gas industries, to apply regulation and to promote competition and choice.

In all three jurisdictions considered, prior to the initiation of these processes of reform, the institutional arrangements were designed and intended to ensure well-functioning industries in terms of affordable prices and reliable, safe and secure supplies to all citizens and businesses that required them. The differences in the institutional arrangements, to varying extents, reflect variations in resource endowments, in the range of technologies available when key institutional decisions were made and in the size and scale of national markets – particularly when traditionally most electricity and gas markets were developed on a national basis. But, more often than not, they reflect how governing politicians, policy-makers and regulators addressed specific economic features of the electricity and gas industries at different points in time – often influenced by a particular set of ideological preferences.

In common with most infrastructure and utility industries the electricity and gas industries are characterised by long-lived, specific assets. This specificity has two important features. First, the assets are specific in the sense that they have value in a specific use; and they have a negligible value in any other use. Secondly, they are transaction-specific in that some form of long-term, binding set of transactions is required to ensure recovery of investment. These may take the form of vertical integration, joint ventures or long-term contracts. In effect, this specificity means that investors in these assets require a reasonably solid assurance of investment recovery at an appropriate risk-related rate of return. If such an assurance is not

forthcoming, the required investment will not be forthcoming or forthcoming only at an excessively high cost of capital that ultimately penalises final consumers.

That assurance may be provided in the production of gas and the generation of electricity – even though both activities are characterised by long-lived, specific assets – by the use of long-term contracts or liquid wholesale markets (or a combination of both). Electricity and gas distribution tend to have durable natural monopoly characteristics and the assurance of investment recovery and the simultaneous avoidance of monopoly exploitation require some form of sector-specific regulation. Electricity and gas transmission fall between the two. But, with sufficient political willingness and policy imagination, the co-ordination problems that arise may be easily resolved. A variety of economic procedures are available.

The extent to which consumer-benefitting competition will arise in any activity depends on the barriers to entry and exit that exist. And in the case of utility industries - and, in particular, the electricity and gas industries – where governing politicians have concerns about the impact of any changes on millions of final consumers or users who are also voters, any barriers to entry and exit are generally established by legislation and the body of jurisprudence – and any changes to these barriers require changes in legislation and possibly further testing in the courts. Governing politicians may also have concerns about the interests of major market participants or influential interest groups. These concerns may prevent them from initiating beneficial changes to entry and exit barriers.

When they are so minded governing politicians will erect or maintain barriers to entry or exit – or dismantle these barriers - for reasons that often have little to do with the underlying economic reality. At the risk of applying a gross simplification, it appears reasonable to assert that the process applied in the US focused on economic efficiency (with an ultimate intent to maximise consumer surplus), that Britain's combined a dominant political agenda with an enticing desire to promote competition and choice (which should have led to increased consumer-benefitting efficiency) and that the EU's focused on reducing and transferring economic rents.

In the US the existence of long-lived, specific assets has not prevented the emergence of the competitive provision of gas pipeline capacity and of a competitive market in gas. This has been facilitated by a legislative and regulatory willingness to reduce and eliminate barriers to entry and exit, a similar willingness to permit the ready application of new technology and the judicial protection of property rights. And it has been accompanied by a clear focus on consumer-benefitting competition. This is probably best exemplified by a reluctance to permit full retail access in various states until it could be demonstrated satisfactorily that it was beneficial for final consumers. And in those states where it was permitted, but has not proved beneficial, it has been rolled back. The parallel process of electricity industry de-regulation has not progressed as far or as comprehensively as that for the gas industry, but it is being progressed on a similar basis.

### **Rent seekers in the ascendant**

The contrast with Britain and the EU could not be more pronounced. The processes applied have allowed the metamorphosis of a set of existing rent seekers and the replacement of another set of existing rent seekers with a new one. In Britain, the nationalised, vertically integrated, monopoly electricity and gas industries established by the post-war Labour government inevitably mutated over time in to a paradise for certain rent seekers. It is not that final consumers were particularly ill-served or that many of those working in the industry were not imbued with a 'public service' ethos. It is that competitive market disciplines were entirely

absent. As Sir John Hicks once memorably put it “The best of all monopoly profits is a quiet life.”<sup>5</sup>

The existence of rent-seeking in the form of over-staffing, levels of pay higher and terms and conditions of employment better than those in comparable occupations, low productivity, ‘gold-plated’ investments and cosy deals with external suppliers to the industries was highlighted by the advocates of privatisation and competition and choice in supply; and this was equally vociferously rejected and denied by the opponents of privatisation. The truth, as always, probably lies somewhere between these two extremes and it is difficult now, as it was difficult then, to establish definitively the extent of rent seeking and the economic impact of this rent seeking. However, we can be sure that there was some rent seeking and that it resulted in the expropriation of consumer surplus – and in the diminution of the potential consumer surplus.

Newbury and Pollitt (1997) report on a social cost-benefit analysis of the privatisation and restructuring of Britain’s Central Electricity Generating Board which generated and transmitted all public electricity in England and Wales until 1990. The main benefits they report came from generator efficiency gains, switching from nuclear power, and lower emissions. The main costs came from higher prices for imported French electricity, the cost of restructuring and premature investment in gas-fired generating plant. Their central estimate is a permanent cost reduction of 5% per year, equivalent to an extra 40% return on assets. Consumers and government lose, and producers gain more than the cost reduction.

In a similar vein, Doumah and Pollitt (2001) report on a social cost-benefit analysis of the privatisation of the 12 regional electricity companies responsible for the distribution and supply of electricity in England by examining actual and predicted falls in costs over the period to 2005. They conclude that the privatisation did yield significant net benefits but that these were unevenly distributed across time and groups in society. In terms of their central estimate, consumers experience slightly lower prices and the government gains £5 billion in sale proceeds and net taxes. However, consumers begin to gain only from 2000.<sup>6</sup>

These social cost-benefit analyses do not, of course, address rent seeking directly or changes in the pattern of rent seeking. An assessment of UK electricity restructuring and privatisation by the Energy Information Administration of the US Department of Energy (1997) raises some issues that touch on rent seeking:

“..where issues of fairness and equity are concerned, the industry reforms have been controversial. The new system has been criticized for unfairly and disproportionately benefiting industry shareholders and corporate executives over taxpayers, rate payers [final consumers], and electricity industry employees. The auction of electricity assets to the general public was criticized for failing to obtain the full value of the assets offered for the treasury. Further, a large share of the industry’s efficiency gains was realized through massive workforce reductions. The fact that the heads of the newly-privatized companies were awarded substantial pay rises in the midst of these workforce reductions added to the controversy.” (Chap. 2, p.2)

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<sup>5</sup> Hicks, J.R., “Annual survey of economic theory: The theory of monopoly”, *Econometrica*, Vol. 3, No. 1, Jan. 1935, p.8

<sup>6</sup> It is highly likely that the application of a similar analysis to the privatised and restructured gas industry would generate broadly similar results.

A study by a research and consulting firm, ECOTEC (2001), for the European Commission on the effects electricity and gas sector liberalisation on employment confirms significant job losses, not surprisingly, in Britain's electricity and gas sectors in the post-privatisation period, but also in these sectors in many other EU member-states, including Ireland, both prior to and following the enactment of the 1<sup>st</sup> Electricity and Gas Directives. Hall (1999), coming from what might be considered a conventional left-wing position, cites Newbery and Pollitt (1997) and asserts that the net savings they identify are mainly due to reductions in labour costs in the electricity companies and in the coal industry, at a big cost in lost jobs and income.

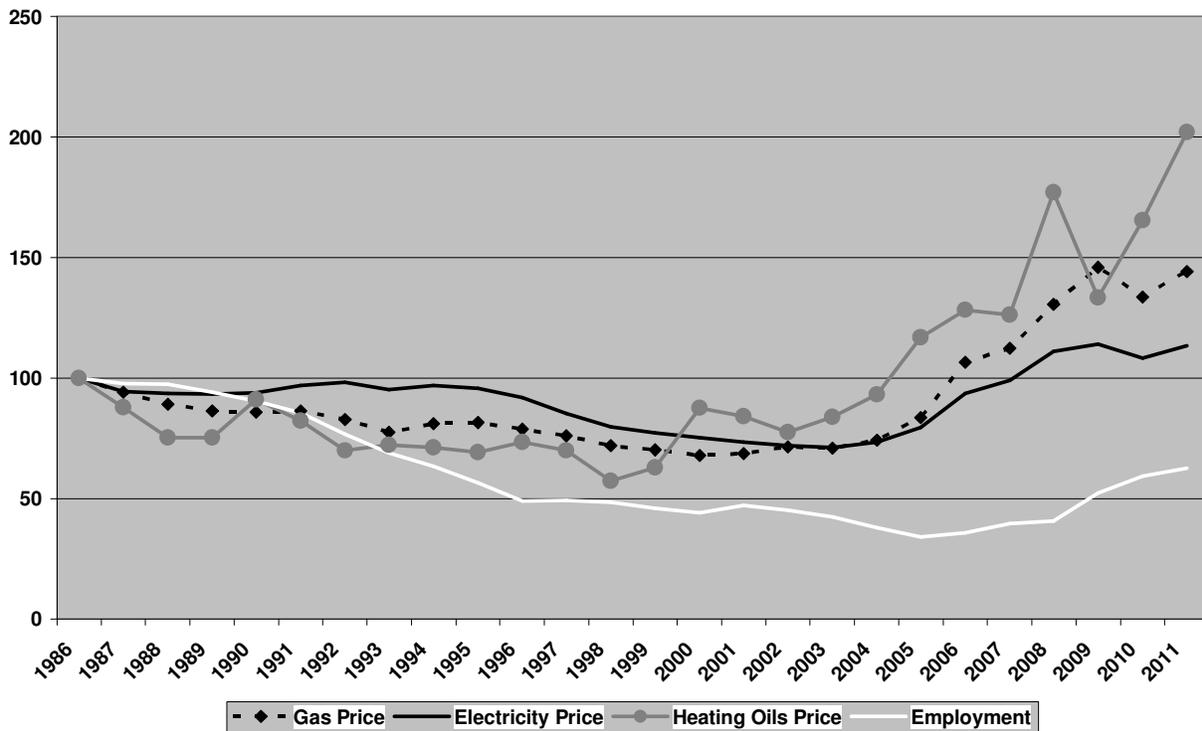
This provides a perfect example of the time-hallowed and widespread mutual incomprehension between those who practise mainstream economics and analysts who adopt a left-wing perspective. Mainstream economists are hugely confident of the enormous body of theory and practice which demonstrates that markets generate important benefits for an economy. However, neoclassical models of profit-maximisation assume static cost-minimising behaviour by all firms, regardless of market competitiveness. In the context of the issues being considered in this paper, Fabrizio, Rose and Wolfram (2007) suggest that the implications of these models for technical efficiency are less clear. But the agency models, which these authors prefer, fail to get to grips fully with the mechanics and implications of rent-seeking. Despite the existence of a significant literature on rent-seeking there seems to be an abiding unwillingness on the part of mainstream economists to apply it to the extent it could and should be applied. In contrast, analysts coming from a left-wing perspective apply a prior assumption that labour is entitled to maximise its input and rewards regardless of the impact on efficiency or consumer surplus.

And never the twain shall meet. Mainstream economists no longer deign to demolish the facile theoretical underpinnings of most left-wing analysis – mainly because they are so easy to demolish and have been demolished so often previously. They rightly deride the ideological nostrums and posturing that motivates much of this analysis; yet they fail to engage with many of the legitimate concerns raised. Left-wing analysts, on the other side, respond by labelling mainstream economics as a 'neo-liberal' project. This, for them, appears to be the most damning label they could apply.

However, despite all this, rent seeking in the electricity and gas industries remains endemic and largely unexplored. In the context of Britain's privatised utility firms, Helm and Tindall (2009) document the significant changes of ownership that shifted from the initial focus on dispersed retail share ownership through takeover and mergers to more concentrated ownership and the more recent emergence of private equity and infrastructure funds. The authors show how regulation has determined the allocation of risk and has facilitated the observed changes in ownership and financial structures. A very significant finding is that these changes in ownership structure have been both accompanied and effected by substantial financial engineering – generally incentivised by arbitrage between the marginal cost of debt and the regulated Weighted Average Costs of Capital (WACC) - and balance sheets have been geared up towards exhaustion – with major implications for financing future investment.

These shifts in ownership and financial structure were motivated by and helped to generate increases in the returns to the owners and managers of these firms. And this increase in returns was mirrored by a decline in returns to labour. The following figure helps to illustrate the story of the British electricity and gas industries over the last quarter of a century.

**Figure 1 Britain: Selected Real (GDP Deflator) Residential Fuel Price Indices and Index of Total Employment in the Electricity and Gas Industries (1986=100)**



Source: UK ONS, Quarterly Energy Prices and Workforce Jobs by Industry (both June 2012)

The figure illustrates movements in the indices relative to the starting point in 1986. The Heating Oils Price index is included because this fuel is the principal competitor to natural gas in the residential heating market and because the index acts as a proxy for movements in the price of crude oil – which impacts on the wholesale price of natural gas and on the prices of other electricity generation fuel inputs. Residential gas prices fell in real terms following the privatisation of British Gas in 1986, but primarily because the price of crude oil fell<sup>7</sup> and this, via oil price linked supply contracts, reduced the bulk price of gas. Increased competition in supply, combined with softer and falling crude prices and more effective regulation of the costs of gas transmission and distribution, maintained a downward pressure on real residential gas prices until the early 2000s.

The Saudi Arabia ‘oil price effect’ helped to reduce real residential electricity prices a little in the run-up to privatisation of the electricity supply industry in 1990, but they crept up during the half decade following privatisation. Factors similar to those which impacted on residential gas prices pushed residential electricity prices down in real terms over most of the next decade. By the early to mid 2000s both electricity and gas prices for residential consumers were approximately 25% below their 1986 levels in real terms. This coincides with the period of ‘asset-sweating’ and financial engineering described by Helm and Tindall (2009). It could be argued that prices were lower than was in the longer-term interests of final consumers. Investments that should

<sup>7</sup> In 1985, Saudi Arabia decided to cease acting as OPEC’s ‘swing producer’ – reducing its production to support OPEC prices – and rapidly increased its production volumes. This drove the price of crude oil down until the next spike at the time of the First Gulf War.

have taken place were postponed and this is creating a considerable back-log in the current decade.

From this low point, the continuous, but volatile, increase in the price of crude oil from its trough in 1998 contributed to push residential electricity and gas prices upwards so that, since the early 2000s for gas and the mid 2000s for electricity, they have increased well above their 1986 levels in real terms.<sup>8</sup>

Since British Gas was privatised as a vertically integrated monopoly in 1986 and the restructuring of the industry began slowly, employment fell slowly. However, once the electricity industry was privatised and the competitive, regulatory and external market factors (described above) began to push prices down, employment in both industries was halved by the mid to late 1990s. It remained broadly at this level, with a limited and temporary increase following the roll-out of retail competition after 1998, until the early 2000s. Following a further decline to a trough in the mid 2000s, employment has shown a steady increase since then. This is due, to a considerable extent, to increased activity in the renewable energy sector and to the development of electricity system capacity to replace generating plants facing closure over the next decade and of gas system capacity in response to changing patterns of supply.

The figure does not present an index of the real returns to investors and senior management over this period, but, given the pattern of real price movements and the significant reduction in employment (until very recently) – combined with the evidence discussed above, it is probably reasonable to deduce that these returns increased considerably and remain at relatively high levels. Quite clearly, the privatisation and subsequent liberalisation of Britain's gas and electricity industries provided opportunities for private sector investors and firms to make profits by pursuing economic efficiencies that would also benefit final consumers. But it also provided a once-in-a-lifetime opportunity for new entrants to capture rents and, for some of the incumbents, to protect the capture of rents. With a wholesale electricity market dominated by the 'Big 6' firms, vertically integrated along the gas and electricity supply chains, and a wholesale gas market providing prices for each commodity and with transmission and distribution regulated as monopoly activities, the potential for retail competition to generate consumer-benefitting efficiencies is extremely limited. Indeed, the incentive for these dominant market players to collude informally to extract consumer surplus - and to extract rent-generating concessions from government - is enormous.

It would require a major research effort to demonstrate definitively that the returns secured by capital were in excess of competitive market returns, that the returns to labour have been pushed below the corresponding competitive market returns<sup>9</sup>, that considerable resources have been devoted to rent-seeking and that the consumer surplus is considerably less than it would have been with genuinely competitive outcomes. But the effort would repay itself over and over again in terms of informing policy and regulation.

### **The legacies of rent seeking in Britain**

Britain's governing politicians, policy-makers and regulators are now struggling to adapt this under-examined legacy of rent-seeking in the last quarter of a century as they grapple with the implications of implementing the climate change agenda which, though legally binding in the

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<sup>8</sup> Contractual arrangements as well as a larger share of fixed costs in final electricity and gas prices mean that movements in these prices generally lag movements in the price of crude oil.

<sup>9</sup> It should be noted that the reduction in labour, with a highly unionised workforce, was accomplished without noteworthy industrial action.

context of EU primary legislation, includes more onerous, self-imposed targets and objectives. There are numerous examples of chickens coming home to roost.

For example, the desire in Britain, initially, to avoid the perceived burden of ‘heavy-handed’, time and resource-consuming – and litigation-prone – US regulation, led to the establishment of ‘light-handed’, price cap, incentive regulation for transmission and distribution – and for retail supply. In reality, regulators were entering in to short – typically 4 to 5 year – incomplete contracts with investors in, and providers of, capacity and delivery services. These ‘contracts’ were short relative to the long lives – often 30 to 50 years – of these specific assets. Investors and operators had every incentive to ‘game’ this form of regulation so that regulators have been forced to apply increasingly complex regulation and, in effect, to ‘micromanage’ the regulated businesses. In addition, there has been a failure to develop an appropriate pricing mechanism for electricity transmission and an Entry-Exit transmission pricing mechanism, developed around a virtual trading hub – the UK NBP, that abstracts from the physical configuration and operation of transmission pipelines. The, not surprising, result is that investment has been neither sufficient nor timely and, when provided, is generally at a high cost of capital – or requires direct public support or guarantees.

In the electricity wholesale market the decision to develop this market without a payment mechanism for capacity availability has had unintended, but not unforeseeable, consequences. Newbury (2012) notes that the wholesale price in the electricity is set primarily by the variable costs of fossil fuels (including the relatively low EU Emission Trading System (ETS) price) and that this generates considerable price volatility. He also notes that the system design includes what he describes as “a somewhat perversely designed” two-price Balancing Mechanism and an illiquid prompt market that trades only a few percent of wholesale volume, both of which favour incumbent portfolio generators – in other words, the ‘Big 6’.<sup>10</sup>

The requirement to progress its climate change agenda has compelled the UK Government to pursue a long drawn-out process of policy-design, consultation and legal drafting under the misleading and inappropriate heading of Electricity Market Reform (EMR). It really has very little to do with reform of the electricity system; it may be more accurately described as an attempt to overcome deficiencies in the existing market design to allow a massive increase in the penetration of renewable energy supplies. Since this will involve a huge increase in wind power generation – probably the most technologically retarded and expensive means of reducing carbon emissions – it is creating a happy hunting ground for rent seekers and subsidy hunters of all types.

### **The European Commission learns little..and forgets even less**

Given the pioneering role that Britain played in electricity and gas market liberalisation it is not surprising that some, but not all, of the inept and ineffective legacies of Britain’s efforts have been adopted and adapted by the European Commission and applied to all EU other member-states. Most member-states seem to have avoided adopting the design flaws in Britain’s wholesale electricity market, but variations of Britain’s regulatory regime, in particular for electricity and gas transmission and distribution, have been applied almost universally. Following Britain’s roll-out of full retail competition in both electricity and gas from 1998, universal retail access was mandated by the 2<sup>nd</sup> Electricity and Gas Directives of 2003 from 1 July 2007. In the absence of established, stand-alone local distribution companies that could act as a counter-weight on behalf of final consumers to the market strength of gas producers,

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<sup>10</sup> The ‘Big 6’ are Électricité de France (EdF Energy), Scottish and Southern Energy (SSE), RWE (RWE npower), E.ON (E.ON UK), Centrica (British Gas) and Iberdrola (Scottish Power).

generators and bulk suppliers, Britain opted for full unbundling of electricity and gas distribution activities. Despite the existence of numerous local distribution companies in many member-states, the European Commission mandated the de-integration and the effective disempowerment of these regional and local distribution businesses. This, perhaps, was the most grievous policy error. And Britain's method of Entry-Exit gas transmission pricing has been mandated – with a corresponding proscription of the definition or use of 'point-to-point' (P2P) capacity – by Regulation 715/2009/EC.

Applying these to jurisdictions where rent-seeking was endemic and pervasive – indeed the European gas industry was developed explicitly on the basis of rent capture – was unlikely to lead to outcomes that were in the interests of consumers or in the public interest. And so it has proved. Prior to gas market liberalisation, integrated gas transmission and supply businesses enjoying a dominant (often monopoly) position in national markets were able to price discriminate among categories of consumers to maximise the extraction of consumer surplus. In turn they were able to enter in to long-term contracts with indigenous, other European and, increasingly, external gas producers. The basic structure of these contracts was established in the early 1960s in the Netherlands and it has since been adapted and applied to contracts between European buyers and the Norwegian supply consortium, GFU (subsequently broken up), the monopoly Russian supplier, Gazprom, and the dominant, effectively monopoly, Algerian supplier, SONATRACH, as the EU's reliance on external gas supplies increased over time. All of these contracts had considerable political support and, in many cases, were underpinned by government-to-government agreements. And this, of course, allowed the dominant integrated national utilities, as the European buyers, to establish themselves, in the eyes of their governments, as 'national champions'.

The contracts with external suppliers included a take-or-pay clause guaranteeing a minimum cash-flow to the supplier irrespective of demand conditions (see Noël (2009)). Prices were set against alternative, substitutable fuels in each specific market through an indexation formula – this created an oil price link; and the price clause was backed by a 'destination clause' that prevented importers from re-selling the gas purchased under these contracts in other markets. This rigid contractual structure was intended to support large-scale investment in transaction-specific infrastructure; it imposed most of the volume risk on the buyers and a considerable amount of the price risk on the sellers.

But it also allowed the buyers and sellers to extract the maximum rent available on their particular path along the gas supply chain and to share it between them. In most instances supply contract negotiations focused on the estimation and allocation of this rent, since there would be no basis for negotiation if there was not a reasonable expectation by both parties that rent would be available for capture for the duration of the contract. In the negotiation buyers would seek to under-estimate the total revenue captured at the consumers' points of consumption and maximise the costs of delivery and supply from the point of title transfer to consumers. Producers, on their side, would seek to over-state their costs of production, the costs of delivering gas to the point of title transfer and the revenue the buyer expected to secure – as well as under-estimating the costs of delivery and supply in the buyer's market. Eventually, agreement would be reached on the terms of the contract and the expected rent would be split. This pricing mechanism provided ample opportunity for various interest groups in the supply chain, on both sides of the point of title transfer, to seek to capture a share of the rent available. The desire to capture rent was only marginally less explicit in the European national electricity markets prior to liberalisation.

At the early stages of the liberalisation process (from the late 1980s through to the 1<sup>st</sup> Electricity Directive in 1996) the primary objective of the relevant officials in the European Commission, seeking to convince doubtful national governing politicians and extremely suspicious incumbent supply businesses, was to introduce access to networks by 'third parties' (TPA) and to promote competition and choice that would erode these rents, drive efficiencies and increase consumer surplus.

The dominant (often monopoly) incumbent, integrated supply businesses faced major challenges. The rents they (and their staff and other service providers) were accustomed to capture were under serious threat of being eroded. Having been long accustomed to conducting business in a way that allowed them to capture rents, they may not have had a clear understanding of the precise extent of their rent capture, but they knew they were capturing rents and had some legitimate concerns about how these rents would be eroded. Policy-makers and regulators, initially, in Britain, but, later, at the EU level and, more generally, throughout other member-states, espoused some naïve and impractical views about the role of competition where previously there had been policy direction and regulation with no competition.

### **Naïve and enfeebled Eurocrats..**

Shuttleworth (2000) highlights some aspects of this naivety and impracticality: for example, that more competitors in a market means more competition; or that all new entry is beneficial; or that the introduction of competition is the primary means of eroding and eliminating economic rents. He goes on to emphasise something of which policy makers and regulators should be well aware, but many apparently are not. And this is that the purpose of introducing competition is to achieve the real reductions in cost (or improvements in service quality) that count as improvements in economic efficiency. Competition should not be introduced solely for the purpose of eliminating monopoly profits, or of preventing the recovery of certain costs incurred under the previous dispensation and which market forces have now revealed to be sub-optimal. These are matters for sector-specific regulation since they involve transfers from producers and investors, on one side, to consumers, on the other. Only in those cases where producers or suppliers capture rents by foreclosing markets or abusing market power does competition have a role to play in eroding and eliminating these rents. And, even here, it is the primary duty of policy-makers, and regulators where appropriate, to ensure the enforcement of competition rules.

And those advocating the introduction of competition must satisfy further criteria. Electricity and distribution networks and gas transmission pipelines and distribution networks are the property of the owners who invested in their construction and managed their operation for their (the owners') own use. When they decide that the efficiency gains generated by competition among market participants having access to these networks and pipelines outweigh losses of efficiency due to any reductions in economies of scale or scope, or any disincentives to the network owners to invest, governing politicians and policy makers are entitled to require owners/operators of these networks to provide non-discriminatory access to these market participants. But they need to have solid empirical grounds for imposing this requirement and they also need to ensure that the regulatory arrangements do not prevent efficient investment, but, instead, provide the necessary incentives. These are challenges that remain to be addressed effectively.

In hindsight, it is, perhaps, far too easy to criticise the governing politicians and policy-makers for espousing these naïve and impractical views when they were trying to restructure industries whose organisation and mode of operation had been long established. The legal 'architecture'

of the EU permitted only incremental changes, required considerable recognition of the principle of subsidiarity, of existing security of supply and public service obligations and of the variety of institutional arrangements in the member-states. These resulted in setting the achievement of some minimum common standards as the most feasible and achievable policy objective. But, unfortunately, even as the competences of the EU have increased via the amendment and consolidation of the various treaties underpinning the EU, there has been little evidence of learning or of translating universal economic principles in to practical and beneficial public policy.<sup>11</sup>

### **..and highly skilled rent seekers**

Given the naïve and impractical views espoused by the policy-makers, it is little wonder that the incumbent national businesses had genuine and legitimate concerns. As a result, a variety of strategies and tactics were employed. Initially, at an official and public level, these incumbent businesses expressed their opposition to the (quite limited) legislative proposals to open electricity and gas markets, to unbundle, i.e., to formally separate, potentially competitive supply activities from those which were considered to have natural monopoly characteristics and to provide for the option of sector-specific regulation. But they recognised the ‘writing on the wall’ – in terms of an apparently unflinching commitment by EU policy-makers to this process of market liberalisation - and most initiated processes of both internal and strategic restructuring – as well as strengthening their negotiating positions with policy-makers and regulators.

As the process of liberalisation was developed, applied and extended, the principal impact, in a similar manner to Britain, was on the returns to labour – as documented in ECOTEC (2001). But more profound changes were being advanced. Schülke (2010) presents a comprehensive review of the evolution of major European energy utilities since the 1990s. He uses case studies to analyse how the largest companies adapted their strategies to respond to, manage and profit from the process of market liberalisation. He shows how all entered the markets of other EU member-states and how all diversified their business activities in the energy sector – primarily by developing their activities in electricity and gas. Via an expansive process of mergers and acquisitions a limited number of big companies - the ‘Big 7’<sup>12</sup> – have an increasing share of the EU electricity and gas markets. He follows this with an assessment of the situation in some of the major national (and regional) markets within the EU which examines the impact of this increasing trend towards oligopoly.

From an economic perspective these developments are perfectly understandable – and, indeed, were perfectly predictable. In the absence of effective, continent-wide, wholesale markets, the prevalence of long-lived, specific assets (in production, generation, transmission and distribution) encouraged increasing vertical integration along both the electricity and gas supply chains to manage risk internally and to provide some assurance of investment recovery.<sup>13</sup> Of

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<sup>11</sup> This process has striking similarities with the process that established European Monetary Union (EMU) and the Euro. The institutional and procedural arrangements underpinning EMU were based on the maximum that could be agreed by governing politicians and policy-makers. The deficiencies in these arrangements should be clear to all by now. But it took an external shock to reveal them. For the process to complete the internal market in electricity and gas a number of developments, both internal and external, are taking place in the background. Individually or collectively, these have the potential to generate a moderate shock to the process.

<sup>12</sup> The ‘Big 7’ in the EU are E.ON, GdF Suez, EdF, Enel, RWE, Iberdrola and Vattenfall. Not surprisingly there is a considerable overlap between these and the ‘Big 6’ in Britain.

<sup>13</sup> There is evidence of a ‘Catch 22’ here. The failure of liquid wholesale markets to emerge encourages increased vertical integration; but increased vertical integration, in turn, reduces market liquidity.

course, the ability to exercise market power to capture rents, and to protect the capture of rents, was also a contributing factor. Despite conducting numerous investigations and performing a major inquiry of the electricity and gas industries in 2007, the Competition Directorate-General of the European Commission, DG COMP, has been remarkably relaxed about the extent of cross-border merger and acquisition activity that has copper-fastened this movement towards oligopoly.

The only area where the Energy Directorate-General (DGXVII, later DG TREN and now DG ENER) may claim some success in enforcing competition-promoting de-integration is in the unbundling of network activities. The major integrated businesses mounted forceful opposition to any legal requirement to compel divestment of their network activities and, for a long time, succeeded in watering down sustained efforts by the policy-makers to enforce full ownership unbundling. They were loath to relinquish the balance sheet heft these network assets provided. But circumstances have changed in various ways and many of the major businesses have come to realise that it is in their strategic interests to divest these activities.

From a geo-political perspective, this trend towards oligopoly is also understandable – and is largely determined by the organisation of external gas industries and markets. In continental western Europe the integrated gas businesses, in their previous manifestation, had been ‘national champions’ going toe-to-toe with the major external gas suppliers. Expanding in to other national markets and increasing integration along the gas and electricity supply chains built up these ‘national champions’ in a manner that more than compensated for any reduction of their dominance in national markets enforced by market liberalisation. In addition, over time strategic partnerships have emerged between the European majors and the external suppliers. According to Noël (2009), Gazprom earns 80% of its profits from gas exports to the EU and approximately half of this from sales to Germany and Italy alone.<sup>14</sup> Russia has long promoted the development of downstream joint ventures with major players in the EU in exchange for joint ventures and investment opportunities in upstream gas and oil in Russia and in its electricity sector. Gazprom has a considerable presence, either on its own or via joint ventures, in most EU national markets. And Gazprom is strongly opposed to further liberalisation of the EU energy markets – in particular to the attempt, authorised by the Third Legislative Package, flawed as it is, both to develop and integrate regional traded markets in natural gas.

This is where a major conflict has been brewing for some time. If the participants in the EU’s electricity and gas markets have well developed rent seeking capabilities, the big, mostly

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<sup>14</sup> This may go some way to explain the joint Russian-German development of Nord Stream pipeline delivering Russian gas to Germany along a route that bypasses Belarus and Eastern Europe, or the proposed South Stream pipeline across the Black Sea, initially a 50:50 joint venture between ENI of Italy and Gazprom, to deliver gas to Italy and to central Europe. As the likelihood of Azeri gas supplying Italy has increased, ENI has relinquished 30% of this venture; but this has been taken up by EdF and Wingas – a BASF-Gazprom JV. The South Stream Pipeline across the Black Sea, in addition, and, perhaps, more importantly, was advanced by Gazprom as a ‘spoiler’ to prevent the development of the EU-backed Nabucco pipeline delivering Caspian gas via Turkey. This effort has been successful, but mainly as a result of the efforts of Azerbaijan and its international production partner companies to get their gas to the market. The Nabucco project, in its original grand concept, is now dead; all that is required is the EU-signed death certificate. The development of Nord Stream and the proposed development of South Stream are also intended by Russia/Gazprom to exert further pressure on Ukraine to secure ownership and control of Ukraine’s gas transit system. Such are the geo-politics to the east of the EU and even this brief consideration should highlight the extent to which Russia has been able to employ a successful ‘divide and conquer’ policy in response to the EU’s efforts at electricity and gas market liberalisation.

national, energy companies in the nations supplying the EU are rent seekers *par excellence*. With the exception of Norway, corporate and fiscal accounting is often opaque in these supplier countries, but, for example, there can be no doubt that the Russian federal budget relies to a considerable extent on fiscal revenues extracted from oil and gas supplies to Europe. The situation is similar for Algeria. The political longevity of the ruling elites depends crucially on this ability to extract rent from energy supplies to the EU.<sup>15</sup>

Given Russia's share of EU gas imports – more than 25% - it is not surprising that Gazprom (and Russia) is determined to preserve the oil-linked pricing that generates this economic rent. And the threat to this link is coming from the emergence of traded gas markets in North West Europe. Heather (2012) describes the development of the various interconnected physical and virtual trading hubs that have emerged in this region. Harmsen and Jepma (2011) show that, despite the inanities of Entry-Exit transmission pricing, prices at these hubs are increasingly co-integrated. It is not that traded market prices are always below oil-linked prices; there is considerable seasonal variation and volatility that can drive traded market prices above oil-linked prices for extended periods of time. But, when the price of crude oil looks like it will stay, and, insofar as OPEC has any influence, be kept, around or above \$100/barrel, oil-linked supplies will seek to capture a premium that is likely to prove unsustainable. Rodgers and Stern (2011) present an insightful assessment of the implications of increased gas trade at these hubs, of the formation of prices based on the interaction of supply and demand, of the strains that are emerging with this dual-pricing in the market – trade market prices v. oil-linked prices – and of the likely long drawn-out process of re-negotiation, arbitration and litigation that will ensue. However, the authors are in no doubt that traded market prices will prevail.

The economic argument is clear and irrefutable, but the extent to which rent seeking is entrenched – in particular on the supply side – may well hinder, while not preventing, the emergence of this apparent economic inevitability. Other pressures are also building up. The remarkable success of shale gas production in the US – partly supported by the existence of a competitive market in pipeline capacity which ensures rapid market penetration of these gas supplies – has driven down traded market prices. A huge gap has opened up between reference prices in the US and those in the EU and in East Asia. Where, less than five years ago, there were plans for LNG import and re-gas facilities all along the US coast, there are now plans to re-design and re-engineer some of these facilities to liquefy and export natural gas. Low prices are stretching the economic and financial viability of US gas producers and they require the export outlet to exploit this EU-US and East Asia-US price arbitrage and, thereby, to raise internal US prices. These additional lower cost supplies will further increase the strains on the current dual-pricing arrangements in the EU market.

### ***The transformation of energy policy and regulation in Ireland***

This chronicle of rent seeking, interspersed with legislative initiatives by the EU, provides the context in which policy and regulation has been developed and applied to the electricity and gas industries in Ireland. The commissioning of the first gas interconnector between Ireland and Scotland in 1994 (IC1) tangibly exposed the Irish gas (and electricity) market to the impact of the opening up of these markets in Britain for the first time. It created the basis for a single wholesale gas market on both islands. This development provoked the enactment of the Energy (Miscellaneous Provisions) Act of 1995 which placed provisions for TPA to IC1 on a

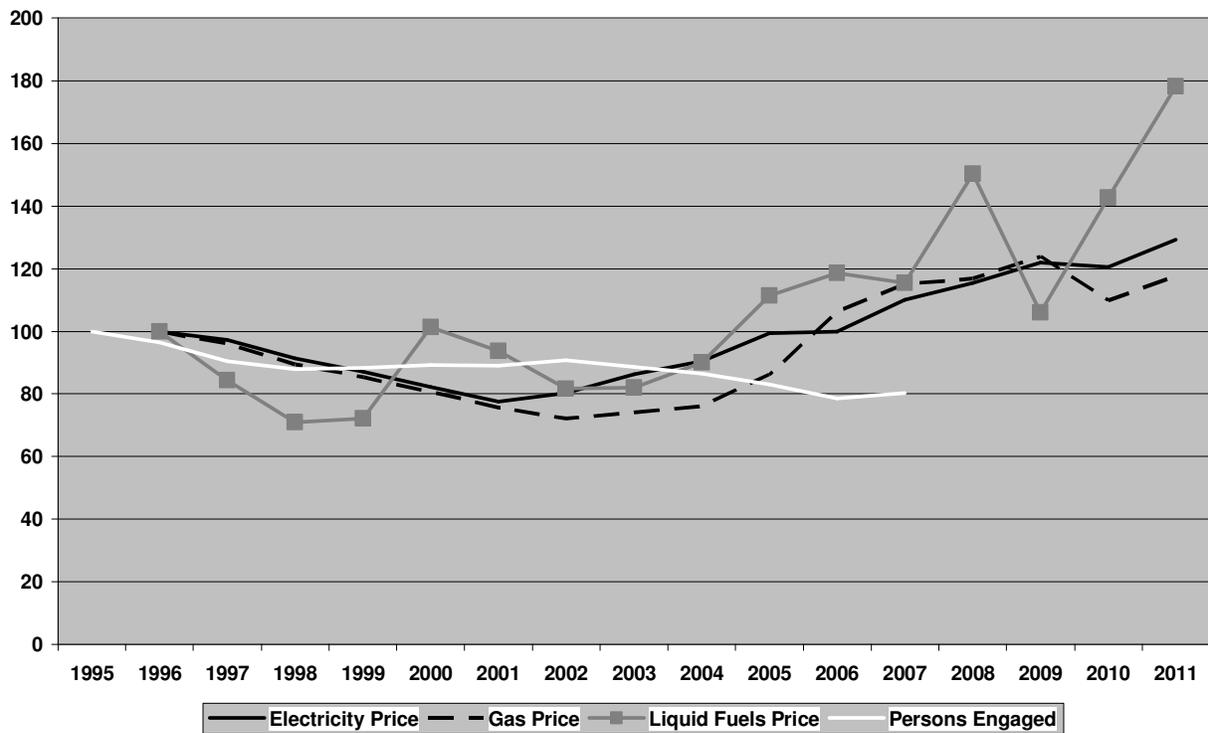
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<sup>15</sup> This is true for almost all of the authoritarian or autocratic regimes in the major oil or gas exporting countries. For example, it is reported that Saudi Arabia has targeted a crude oil price of €100/bbl. Prices below this level on a sustained basis could limit the government's ability to fund the largesse required to prevent the emergence of the Kingdom's version of an Arab Spring.

statutory footing. This legislation pre-dated the enactment of the 1<sup>st</sup> EU Gas Directive (98/30/EC) and the subsequent enactment of the legislation (Gas (Interim) (Regulation) Act of 2002) which transposed the 1<sup>st</sup> Gas Directive in to Irish law. Following a limited derogation secured by the then government, the 1<sup>st</sup> Electricity Directive (96/92/EC) was transposed in to Irish law with the enactment of the Electricity Regulation Act of 1999. This established the Commission for Electricity Regulation (CER) as the relevant National Regulatory Authority. The Gas (Interim) (Regulation) Act of 2002 extended the regulatory remit of the CER to include the gas industry and changed its name to the Commission for Energy Regulation.

The impact of these legislative and institutional developments may be assessed by replicating Figure 1 above for Ireland:

**Figure 2 Ireland: Selected Real (GDP Deflator) Residential Fuel Price Indices (1996=100) and Index of Total Persons Engaged in the Electricity and Gas Industries (1995=100)**



Source: CSO: selected data series.<sup>16</sup>

A number of interesting features (and contrasts with experience in Britain) are immediately apparent.

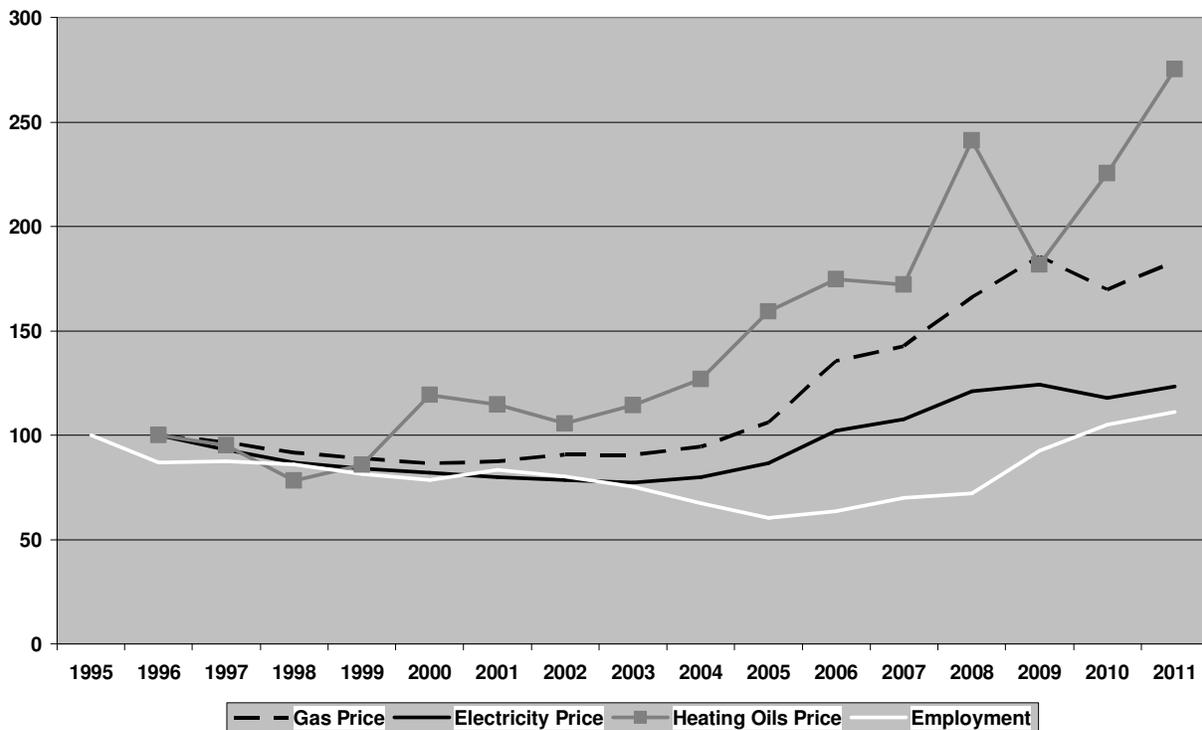
<sup>16</sup> The Index of Total Persons Engaged in the Electricity and Gas Sectors terminates in 2007. Since then surveys have been used and data are estimated in aggregate for the electricity, gas, water and waste management sectors. The CSO is legally prevented from publishing or making available any disaggregation of these data by sector (or any re-combination of data for two sectors, for example, the electricity and gas sectors) lest it reveal information for any individual firm.

**Ireland does it its way...**

At the beginning of the period the ESB was the dominant, vertically integrated firm in the Irish electricity industry; Bord Gáis was the dominant, vertically integrated firm in the natural industry. In effect, they, respectively, were the electricity industry and the gas industry in Ireland. Both appear to have recognised the ‘writing on the wall’ in terms of an understanding of the European Commission’s determination to enact directives to initiate an effective completion of the internal market in electricity and gas. The total number of persons engaged in both industries began to be reduced gradually in advance of the expected EU Directives and their transposition in to Irish law. To an extent, this process was continued, but in no sense as enthusiastically as it appears to have been pursued in Britain. Either the Irish firms prior to the enactment of the relevant legislation exhibited much higher labour productivity than their counterparts in Britain at the same stage of the market liberalisation process or resistance to reductions in the numbers of persons engaged was, and remains, much more effective in Ireland. Any evidence available is inconclusive and, not surprisingly, highly contested.

In terms of price impacts, the contrasts with Britain are more apparent when the data in Figure 1 are re-based to the same years:

**Figure 3 Britain: Selected Real (GDP Deflator) Residential Fuel Price Indices (1996=100) and Index of Total Employment in the Electricity and Gas Industries (1995=100)**



Source: As for Figure 1.

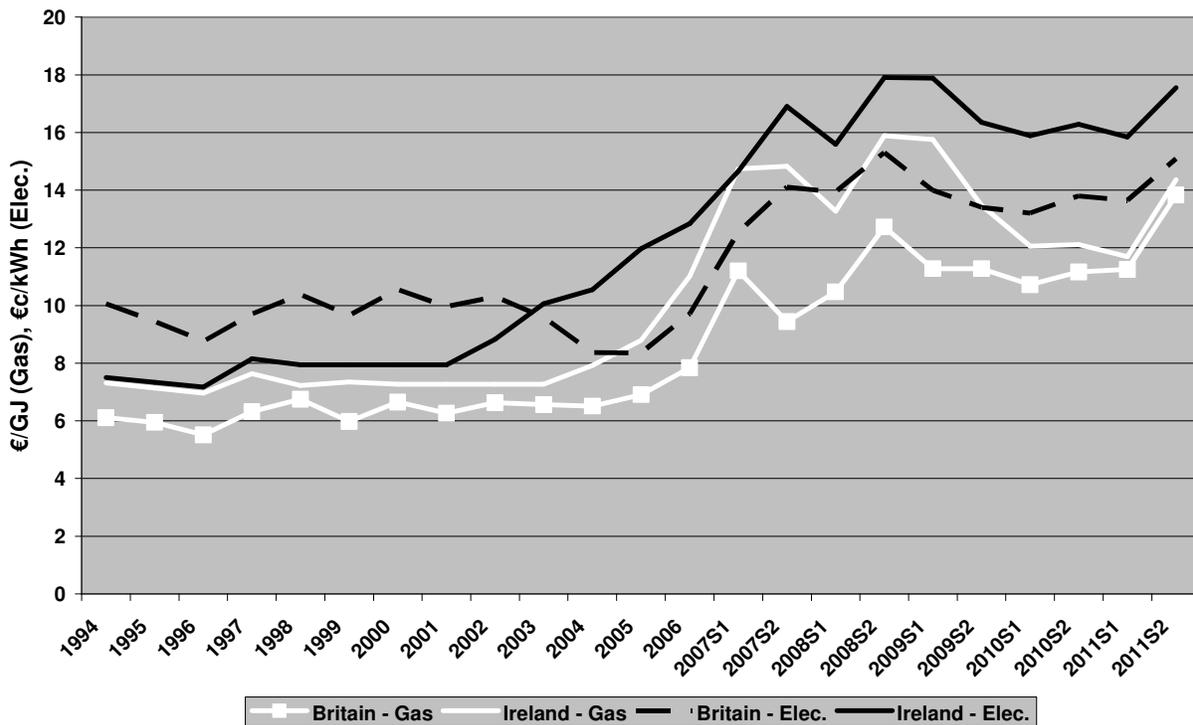
From the mid-1990s through to the early 2000s the real residential prices of electricity and gas fell more sharply in Ireland than in Britain. During this period both the ESB and Bord Gáis maintained a ‘price freeze’ and this goes a long way to explain the relatively sharper fall in the indices in Ireland. Once the CER applied its regulatory powers to the electricity industry, in particular, to the electricity networks, from 2001 the real residential price of electricity started on an upward trajectory. The CER did not apply its full regulatory powers to the gas industry until

2003 and from then the real residential price of gas started on an upward trajectory. Significant real increases in residential prices of electricity and gas in Britain did not kick in until the following year. These were driven to a considerable extent by increases in the price of crude oil feeding in to the prices of other fossil fuels, delays in the construction of gas supply infrastructure that was required to offset the decline in North Sea gas supplies and the rent seeking behaviour of many of the major continental suppliers.

Another interesting feature is the extent to which movements in the electricity and gas price indices in Ireland from the early 2000s broadly match those in the price index for liquid fuels. In Britain a gap opens up between the heating oils and the gas price indices and, in turn, between the gas and electricity price indices. The emergence of these gaps is perfectly understandable given the share of fossil fuel costs in each of the three energy supply processes. The share of fossil fuel costs in final prices is greatest for the supply of heating oils; it is considerably less than this for the supply of gas; and is lower again for the supply of electricity. It is an interesting question why these gaps did not emerge in Ireland.

The significant depreciation of Sterling against the Euro and the US Dollar after 2007 pushed British residential energy prices considerably higher. In order to abstract some what, but not entirely, from this it is necessary to focus on a comparison of Irish and British electricity and gas prices to households in nominal terms:

**Figure 4 Ireland and Britain: Electricity and Gas Prices to Households (Euro Cent/kWh and Euro/GJ, resp,)**



Source: Eurostat<sup>17</sup>

<sup>17</sup> For gas, this is the average national price in Euro per GJ without taxes applicable for the first semester of each year for medium size household consumers (Consumption Band D2 with annual consumption between 20 and 200 GJ). Until 2007 the prices are referring to the status on 1st January of each year for medium size consumers (Standard Consumer D3 with annual consumption

Figure 4 confirms some of the observations made above, but it also highlights other features. Until the early 2000s, British residential electricity prices were above those in Ireland. During the same period, Irish residential gas prices were above British prices by a relatively stable margin. This may be attributed to the unit cost of IC1 and relative differences in internal gas transmission, distribution and supply costs. However, once the CER applied its regulatory powers, Irish residential electricity prices accelerated beyond British residential electricity prices and opened a sustained gap. Similarly, the relatively stable gap between Irish and British residential gas prices widened considerably following the CER's involvement.<sup>18</sup> The commissioning of IC2 presumably also had an impact.

### **The official line: don't mind the gaps...**

The widening of these gaps between residential electricity and gas prices in Ireland and Britain since the application of regulation demands some explanation. A key criterion of the effectiveness of the whole process of completing the EU's internal markets in electricity is the extent to which there is price convergence. Applying key elements of this process and finding that prices are diverging should be a cause of public concern. There is, of course, the possibility that prices in Britain are, and have been, too low. That may, indeed, have been the case up to the early to mid 2000s. But, since then, it would be very difficult to sustain this argument. Yet this sustained gap opened up following the application of regulation in Ireland.

The Sustainable Energy Authority of Ireland (SEAI) is the primary official body that seeks to rationalise the existence of these gaps and to deflect and minimise any public concern that might arise. Its latest publication on electricity and gas prices in Ireland, SEAI (2012), which analyses the most recent electricity and gas price data collected and published by Eurostat, seeks to rationalise any price divergences in the following manner:

“There are a number of factors that influence energy prices in Ireland and how prices here compare with prices elsewhere. These factors include, but are not limited to, imported fuel prices, energy infrastructure investment costs, Ireland's electricity generating fuel mix and non-energy costs that affect energy prices (for example taxes levied, employment costs, raw material and shipping costs).” (p. 8)

The price gaps being considered in this paper do not include VAT or other taxes and levies.<sup>19</sup> This leads to consideration of the other factors mentioned by the SEAI. With regard to imported fuel prices there is a global market in crude oil, petroleum products and coal; all electricity generators throughout the EU may be viewed, individually, as price takers in these markets – even if their behaviour, in aggregate, will impact on pricing. As noted above, there is now a single wholesale gas market on these islands based on pricing at the UK's virtual hub, the National Balancing Point (NBP). Indeed, there is little point comparing gas prices in Ireland with prices in national markets in the EU beyond the increasingly integrated national markets in North West Europe (NWE) until gas prices have been decoupled more effectively from the price

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of 83.70 GJ). For electricity, this is the average national price in Euro cent per kWh without taxes applicable for the first semester of each year for medium size household consumers (Consumption Band Dc with annual consumption between 2500 and 5000 kWh). Until 2007 the prices refer to the status on 1st January of each year for medium size consumers (Standard Consumer Dc with annual consumption of 3500 kWh). From 2007, prices are presented for each semester.

<sup>18</sup> For the last four semesters in 2010 and 2011, the gap between the gas prices has narrowed. It is not clear to what extent this is as a result of excessive profit-taking by the 'Big 6' which is causing concern to the British energy regulator, Ofgem.

<sup>19</sup> Including the Peat PSO Levy and VAT (13.5% in Ireland and 5% in Britain) would widen the gaps even further.

of oil. It is difficult to see how the variations and volatility in the prices of fossil fuels identified by the SEAI help to explain why the gap between Irish and British electricity and gas prices widened so much following the application of regulation in Ireland.

A factor particularly favoured by the SEAI to explain away Ireland's relatively poor performance in Eurostat's 'league tables' of electricity prices is the share of electricity generated from fossil fuels. It is contended that there is a causative relationship between high dependence on fossil fuels and high prices. Using Eurostat data from 2010 the SEAI asserts that Ireland has close to the highest overall dependency of electricity generation on fossil fuels (coal, oil and gas) at 78% behind the Netherlands at 83%, Cyprus at 98% and Malta at 100%. It fails to note that the UK is at 75%, not very much behind Ireland. Once again, it appears that an ostensibly plausible explanatory factor fails to pass muster. For both of these factors, high dependency on imported fossil fuels and a large share of fossil fuel generated electricity, it appears that the SEAI is confusing price volatility with the formation of prices.

There is no doubt that some economies of scale and scope may help to explain at least part of these gaps, but the SEAI seems reluctant to explore this avenue. However, both the ESB and Bord Gáis have not been reluctant to deploy some related factors. A low population density and the spatial dispersion of consumers have sometimes been used to justify these gaps. But these contentions tend to crumble when exposed to some scrutiny. In many instances consumers make capital contributions to defray part of the cost of connection and supply. Other factors such as high labour costs and additional 'isolated island' costs are advanced, but even significant reductions in these costs would be unlikely to have more than a negligible impact on final prices.

This leaves the SEAI's 'trump card' – the requirement for a high level of investment in electricity and gas infrastructure and the extent to which the costs of this investment are passed through to final consumers. The SEAI notes that rapid growth in electricity demand (averaging 4.6% a year between 1990 and 2008) was coupled with a long period of significant under-investment and that this required the implementation of a major investment programme for the electricity networks from 2000. There can be no doubt that the 'price freeze' implemented by the ESB from the mid-1990s (with final prices falling in real terms) accompanied by sustained economic growth increased the demand for electricity – and, as a result, the demand for investment in generation and networks. The 'price freeze' coincided with the period when the ESB was seeking to reduce staff numbers. It is possible to contend that prices were frozen to reduce profitability temporarily and that this reduction in profitability was used to exercise downward pressure on employment costs. This, of course, also reduced the cash flow available to finance investment which partly explains the under-investment that occurred.<sup>20</sup>

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<sup>20</sup> During the period following the enactment of the 1<sup>st</sup> Electricity Directive in 1996 when governing politicians and policy-makers were seeking to develop the relevant arrangements and to draft the legislation to transpose this Directive in to Irish law, and subsequently, it was recognised that provisions would have to be introduced, in either primary or secondary regulation, to limit and to reduce the ESB's share of electricity generation capacity so as to foster competition in generation. As a result, for most of the decade from the mid 1990s – when the demand for electricity generation capacity was growing most rapidly – the ESB was prevented from investing directly in the provision of electricity generation capacity – even though it was the firm best-skilled and resourced to do so. Prospective new entrant generators had to be attracted and incentivised. The CER has never revealed the details of the contractual arrangements required to secure this new entrant investment, which it oversaw and effectively guaranteed, but it is more than likely that these new entrants secured high prices and juicy returns. This, of course, increased the bulk price of electricity.

When the CER was established in 1999 it spent much of its first full year of operation in 2000 devising a means to secure the finance to remove the huge back-log of electricity network under-investment. That task continued to be performed through the subsequent decade to secure finance for the expansive programme of network investment that continues and is projected to continue – with much being driven by the excessively subservient and unquestioning compliance by successive governments with the EU's climate change policies. The CER was also concerned with securing investment – and the financing of investment – in generation capacity and, later in the decade, in the expansion of retail access and the development of the Single Electricity Market (SEM) on the island of Ireland. And, when the remit of the CER was extended to the gas sector in 2003, Bord Gáis was dealing with the financing of its second gas interconnector (IC2), while seeking to expand its business in other areas.

### **Papering over the cracks...**

There may be some grounds to contest the level and extent of the pass-through of the non-network related costs to final consumers, but, in general, it is possible to suggest that the CER made the best of the bad hands of cards it was being dealt by successive governments. However, when it comes to the pass-through of the costs of network investment, the CER has totally failed to protect the interests of final consumers and this failure is reflected in the gaps between final Irish and British electricity and gas prices. Most final consumers, with the exception of some selected, favoured large volume consumers, are paying prices well in excess of what they should be paying. This is damaging the prospect of economic recovery because these excessive costs impact on all areas of economic activity and it is damaging Ireland's international competitiveness.

Again, it is, perhaps, unfair to be too hard on the CER. The fault lies initially with the policy-makers who drafted the empowering legislation and imposed these onerous duties on the CER and with the governing politicians who authorised the imposition of these onerous duties on the CER and ensured the enactment of the empowering legislation. Their sins of omission and commission are legion, but, to avoid being accused of condemning them too hastily, it is necessary to consider the constraints – or the constraints they perceived - that compelled them to choose these policy and regulatory options which clearly damage the interests of most final consumers and are not in the public interest.

The ESB, more an institution than just a commercial semi-state (CSS) organisation, was established in 1927 and is only five years younger than the Irish state. Through its activities since then it has secured a place in the affections of generations of Irish citizens and has a geographical reach into every parish. Although a newcomer relative to the ESB – established by the Gas Act of 1976 – Bord Gáis has emerged in the slipstream of the ESB and both are formidable institutions in political, economic, social and cultural terms. In addition, the unions representing their staff, in particular, the ESB Group of Unions, are formidable players on the political, economic and social stages. There can be no doubt that, in general, both firms deserve the public affection and respect they have secured. But there are worrying signs that, over the last 20 years, both firms have exploited this public affection and respect to pursue some egregious rent seeking.

Once the general thrust of the European Commission's intentions with regard to the electricity and gas markets became clear in the early 1990s, successive governments have committed themselves to maintaining the ESB and Bord Gáis as well-resourced, integrated CSS businesses. Even in the face of concerted efforts by the European Commission to secure the

full separation (or unbundling) of supply and network activities for both electricity and gas, Irish governments have held firm to this commitment. It was formally confirmed most recently in the Energy White Paper of 2007. This has led to long-drawn out efforts to secure the functional, operational and accounting unbundling of network activities, in compliance with the successive packages of EU legislation in 2003 and 2009, while maintaining the financial integration of each of the companies. This financial integration is reflected in the centralised corporate direction of each company with a single corporate treasury in each.

A separate CSS, Eirgrid, was established to act as the electricity Transmission System Operator (TSO), but the network business unit within the ESB, ESB Networks, retains ownership of the transmission network. It also operates as owner and operator of the electricity distribution network. A separate business unit within Bord Gáis, Gaslink, acts as the gas TSO, but the ownership of the gas transmission and distribution networks is held by Bord Gáis Networks (BGN), a major business unit within Bord Gáis.

The state is the majority owner of both financially integrated companies. Employee Share Ownership Trusts (ESOTs) own 5% and 3.27% of the ESB and Bord Gáis, respectively. The state holds the remaining shares. The shares awarded under the ESOTs were ostensibly offered as rewards to the staff for complying with efficiency enhancing activities pursued by the firms. But they might be more accurately viewed as a very limited allocation of economic rent and as a sop to secure staff consent to possible future changes in the terms and conditions of employment. And the ESOTs play an equally limited role in the control and direction of the firms.

In the context of a huge, and growing, demand for network investment from the late 1990s, it would be reasonable to expect that the state, as the dominant, majority owner, would play a major role in securing the finance for this investment. But that, unfortunately, was not the case. The then government was entirely unwilling to contemplate the direct part-financing of investment. Nor was it willing to consider full ownership unbundling of the networks and their sale to private sector investors who could be incentivised or obliged (or both) to contribute investment financing. Its unwillingness on both counts is, perhaps, entirely understandable.

For most of the years since its establishment, the ESB had operated on a 'break-even' basis and was able to finance its operations and investment via a mix of external borrowing and retained earnings without recourse to central government funds. It achieved this by applying a 'double depreciation' policy. It applied a conventional annual depreciation charge and an amortisation charge which contributed to a 'sinking fund'. Changes in accounting policies and in the nature of governance during the 1980s and 1990s resulted in the emergence of a more conventional financial structure which required the ESB to generate a return on investment. It is, perhaps, not surprising that governing politicians, well aware of the ESB's long history of 'self-financing', were not convinced that circumstances had changed to the extent that direct part-financing of investment by the state might be required.

And, even if there was some limited recognition of the huge increase in investment that required financing, there appears to have been a judgement that staff and popular resistance to privatisation would be sufficient to render that option unviable. It is unlikely that the governing politicians were unaware that financing this investment would require increases in final prices, but it appears they were unwilling to continue to discharge their traditional price direction responsibility.

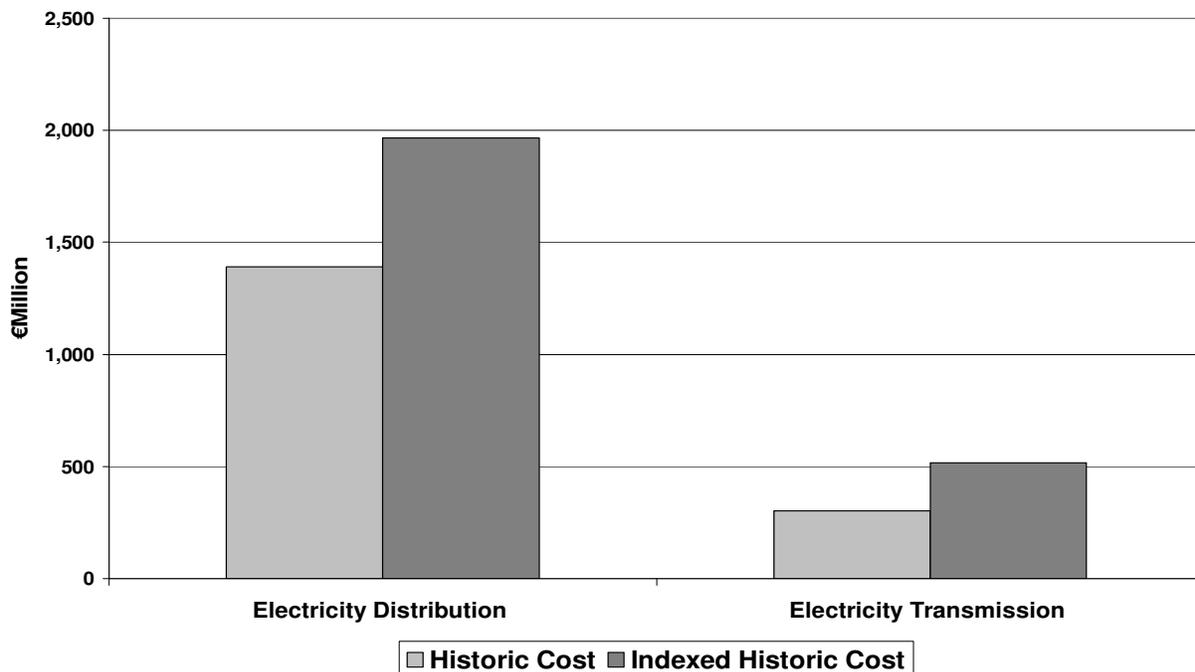
**... with very expensive wallpaper**

So, having closed off, or feeling obliged to close off, all these policy and regulatory options, they used the Electricity Regulation Act of 1999, which, ostensibly, was intended to transpose Directive 96/92/EC in to Irish law, to place the obligation to secure the financing of this investment on the CER. In contrast to the regulatory arrangements in other jurisdictions and, in particular, in Britain (which pioneered the development of this form of regulation), the CER was empowered to set the tariffs for the use of the networks, rather than setting a maximum tariff.

On its own this subtle difference in the powers exercised by the CER might not have made much difference to final prices, but the manner in which the CER exercised, and continues to exercise, this power most certainly did. In the face of government determination not to discharge its shareholder responsibility, the CER had little option but to secure part-financing of investment from network users and, ultimately, final consumers in addition to the normal contribution generated by the allowed annual depreciation charge and return on the Regulatory Asset Base (RAB). To achieve this the CER applied an Indexed Historic Cost (IHC) approach to the assets already written down under the Historic Cost (HC) accounting convention (employed by the ESB in line with appropriate international accounting standards in its financial and statutory reporting) to, almost magically, generate a new, much higher, IHC written-down value for the opening transmission and distribution (RABs).

This increased the opening RAB of the electricity transmission network in 2001 by 71% and that of the electricity distribution network by 41%.

**Figure 5 ESB: Opening Distribution and Transmission RABs for 2001**

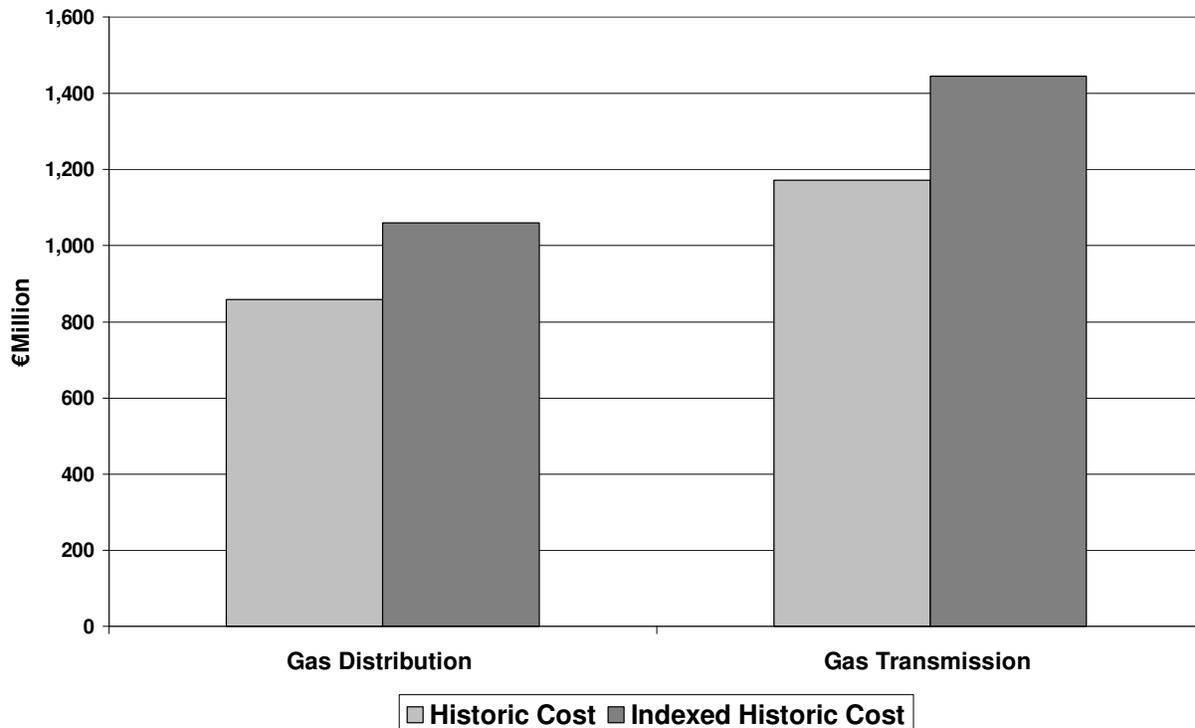


Source: CER/09/094

This increase in value generated an additional stream of annual depreciation charges and returns that was employed to part-finance the investment which should have been part-financed by the majority shareholder. The CER applied precisely the same approach to the gas transmission and distribution networks when it assumed regulatory responsibility in 2003.

increasing the RABs by 23 and 24 per cent when the increase in valuations is assessed for 2006.

**Figure 6 Bord Gáis: Opening Distribution and Transmission RABs for 2006**



Source: CER/10/079a and CER/10/079b

This has been, and continues to be, a major contributor to the dramatic increase in final electricity and gas prices highlighted in Figure 4 above.

The CER, of course, has consistently denied that it has valued the networks to generate any specific stream of revenue or to achieve any specific level of network tariffs, but it probably proved impossible to continue denying indefinitely what is blatantly obvious. In its “Information Paper on scope of Natural Gas Network Transmission & Distribution Price Control 3 (2012/13-2016/17)” (CER/11/070) of 21 April 2011, the CER finally conceded that “[t]he RAB should..be such that it is capable of providing sufficient revenue when applying the cost of capital to it to ensure that the business is able to fund appropriate new investments” (p15).

McCarthy (2011) succinctly highlights the problem with this approach in a report which contains the following:

“Incentive regulation as commonly understood ... [and which the CER asserts it employs] permits to operators of natural monopoly assets recovery of costs arising from the existing capital stock only, including an adequate rate of return on capital above the risk-free rate. This latter is intended to provide the incentive to raise additional capital but not to provide the capital itself, upfront and in advance of the commissioning of new assets. No business operating in a market environment can recover future capital expenditures from current customers, and any regulatory regime which facilitates such recovery does not replicate market disciplines” (p16).

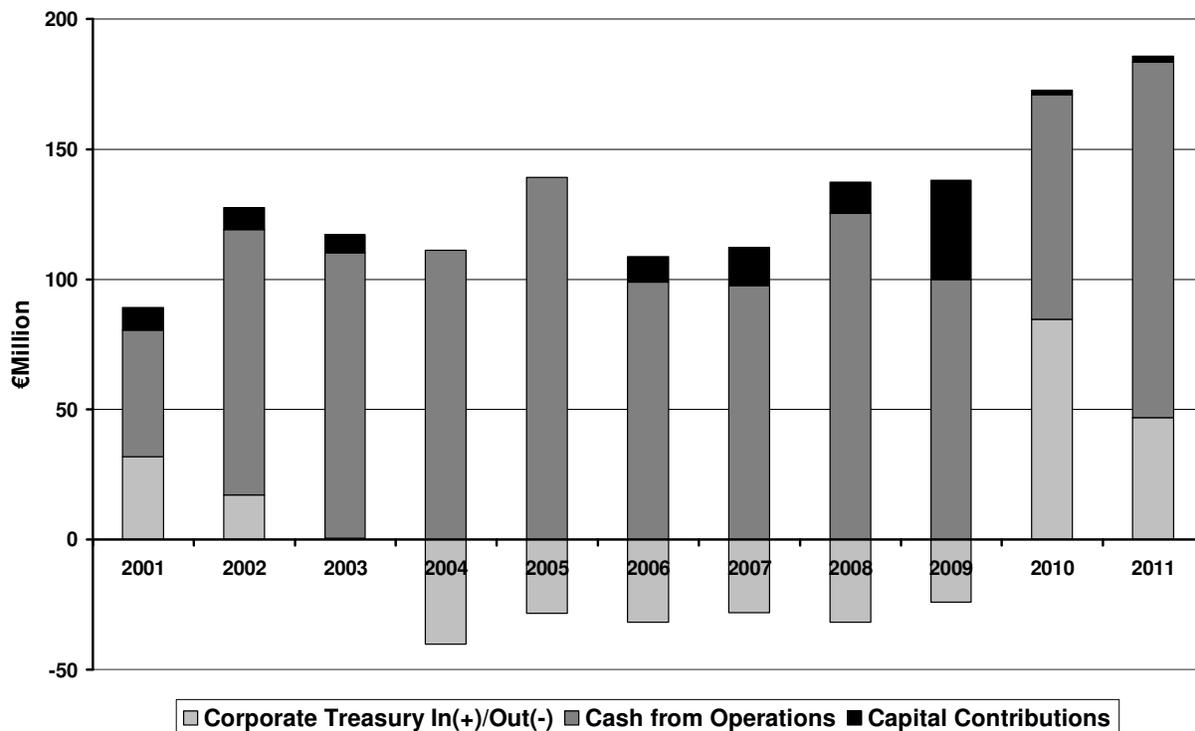
The CER’s approach has forced network users and, ultimately, final consumers to provide a share of the “capital itself, upfront and in advance of the commissioning of new assets”. In effect, the CER has been compelled to impose an excessive and unjustifiable cost burden on final consumers. This may be viewed as an implicit ‘financing tax’ and it is a regressive tax, because those on low or fixed incomes expend proportionately more of their disposable income on fuel than those on higher incomes. And there are further deadweight costs because governments have been compelled to increase welfare payments to ameliorate the impact of these excessively high prices on welfare recipients.

**No recognition of the damage being done means no remedy or repair**

It would be bad enough if this ‘financing tax’ was applied solely to part-finance network investment, but that is not the case. Despite the effort expended (and noted above) to present a degree of technical, operational and accounting unbundling of the network and energy supply activities (in compliance with the EU’s Second and Third Legislative Packages in 2003 and 2009), both the ESB and Bord Gáis remain financially integrated. Each has a single corporate ‘treasury pot’ into which and which funds flow from and to the various business arms as their ability to generate cash or require cash varies. The ESB is required to prepare and publish summary regulatory accounts, so it is possible to gain some understanding of the cross-subsidisation that goes on.

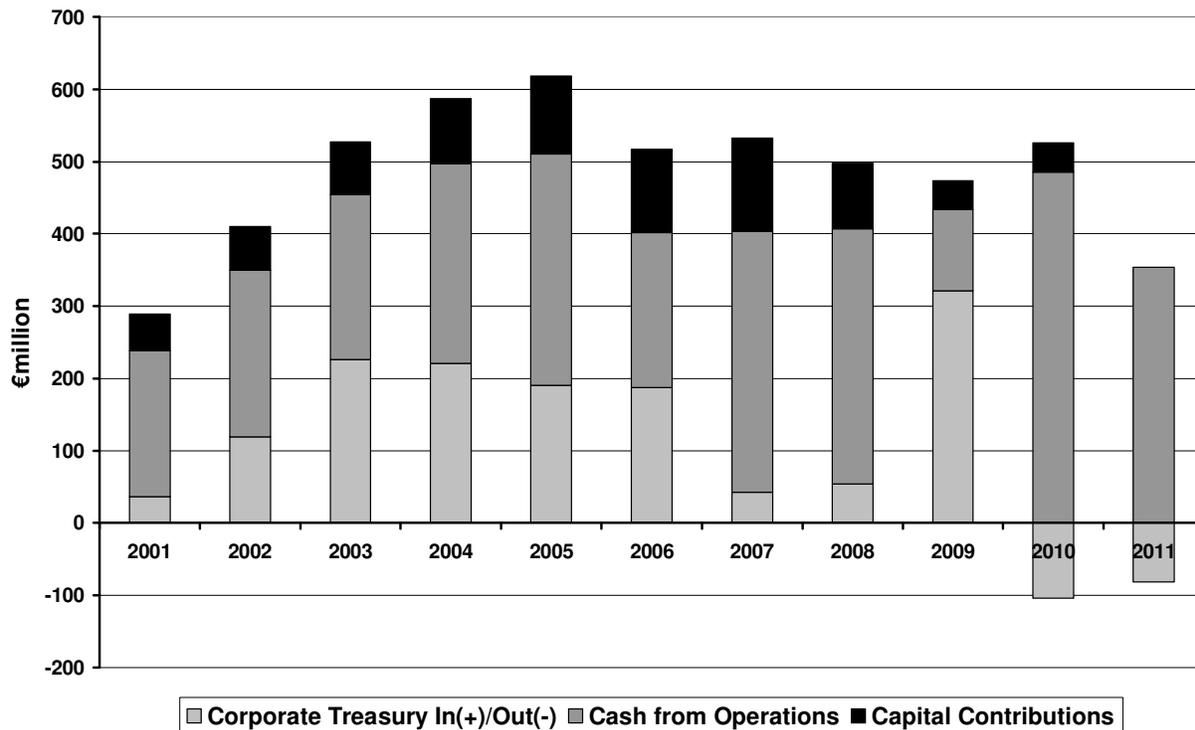
Figures 7 and 8 present the sources of financing capital expenditure on the ESB’s transmission and distribution networks since regulation was applied.

**Figure 7 ESB Transmission Network: Financing of Capital Expenditure**



Source: ESB Summary Regulatory Accounts 2001 – 2011.

Figure ESB Distribution Network: Financing of Capital Expenditure



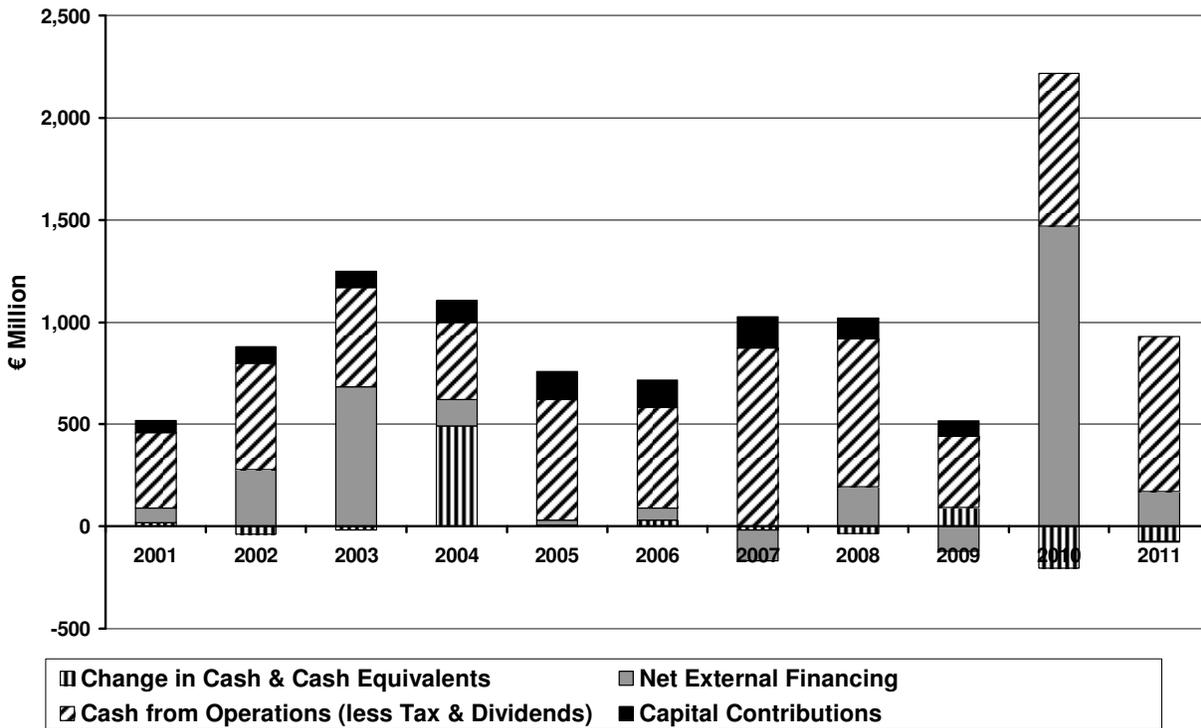
Source: ESB Summary Regulatory Accounts 2001 – 2011.

For a total transmission capital expenditure of € 1,255 million over these 11 years, in aggregate, cash generated internally, primarily determined by the network revenues determined by the CER, contributed 92% of the financing of this investment. Capital contributions, mainly by consumers, contributed 8%, while the net aggregate flow from the central treasury in percentage terms was close to zero. For a total distribution capital expenditure of € 5,150 million over these 11 years, in aggregate, cash generated internally contributed 61% of the financing of this investment. Capital contributions contributed 15.5%, while the net aggregate flow from the central treasury amounted to 23.5%. For transmission and distribution taken together, cash generated internally contributed 67%,<sup>21</sup> capital contributions contributed 14% and net flows from the central treasury contributed 19%. In one way or another, final consumers directly financed 81% of capital expenditure.

This needs to be placed in the context of how the ESB, as a group, financed its net acquisitions and capital expenditure during this period.

<sup>21</sup> The reduction in the contribution from cash generated by operations to investment financing in 2009 reflects the temporary application of windfall gains secured by the ESB via its allocation of CO<sub>2</sub> emission allowances under the EU Emission Trading System. The effect was to reduce network tariffs in 2009, but the cost of applying this subsidy was clawed back in subsequent years.

Figure 8 ESB Group: Financing of Net Acquisitions and Capital Expenditure

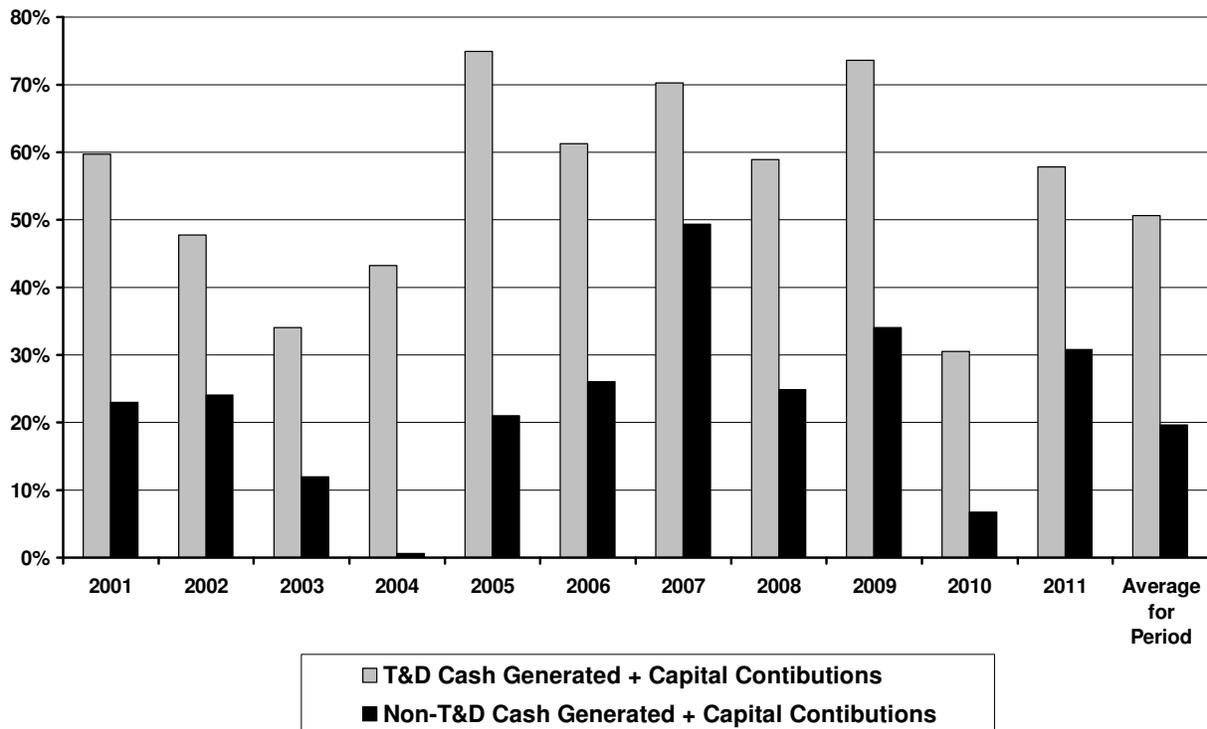


Source: ESB Annual Accounts 2011 – 2011.

For a total expenditure on net acquisitions and capital investment of € 10,267 million over these 11 years, in aggregate, cash generated internally contributed 61.3% of the financing of this investment. Capital contributions (both from consumers and capital grants) contributed 9%, net financing from external and internal sources contributed 27.3%, while the net aggregate flow from cash and cash equivalents amounted to 2.4%.

Figure 9 highlights the contribution of transmission and distribution (T&D) and non-T&D activities to the financing of the ESB’s total capital spend.

**Figure 9 T&D and Non-T&D Financing Shares of ESB Net Acquisitions and Capital Expenditure from Cash Generated and Capital Contributions**



Source: ESB Summary Regulatory and Annual Accounts 2011 – 2011.

Over this 11 year period, T&D contributed on average, via cash generated from operations and customer capital contributions, over 50% of the financing of the ESB's net acquisitions and capital expenditure. Non-T&D activities contributed less than 20%. And this has allowed the ESB to rely on net external financing to finance less than 30% of its total spend during this period on net acquisitions and capital expenditure.<sup>22</sup> This 'Pay-as-you-go' (PAYG) financing of network investment is gloriously inefficient, with financial integration, it constitutes cross-subsidisation on a massive scale and presents an egregious example of rent seeking. T&D activities, with regulated revenue streams, are inherently less risky than non-T&D activities and are capable of attracting considerable external financing at a low cost of capital.

In addition it should be noted that the ESB during this period contributed €256 million in taxation and €892 million in dividends to government central funds. It is quite remarkable that, during a period when the ESB had a total investment spend of more than €10.25 billion, the state, as the dominant, majority owner, refused to make any direct or indirect contribution to financing this investment.

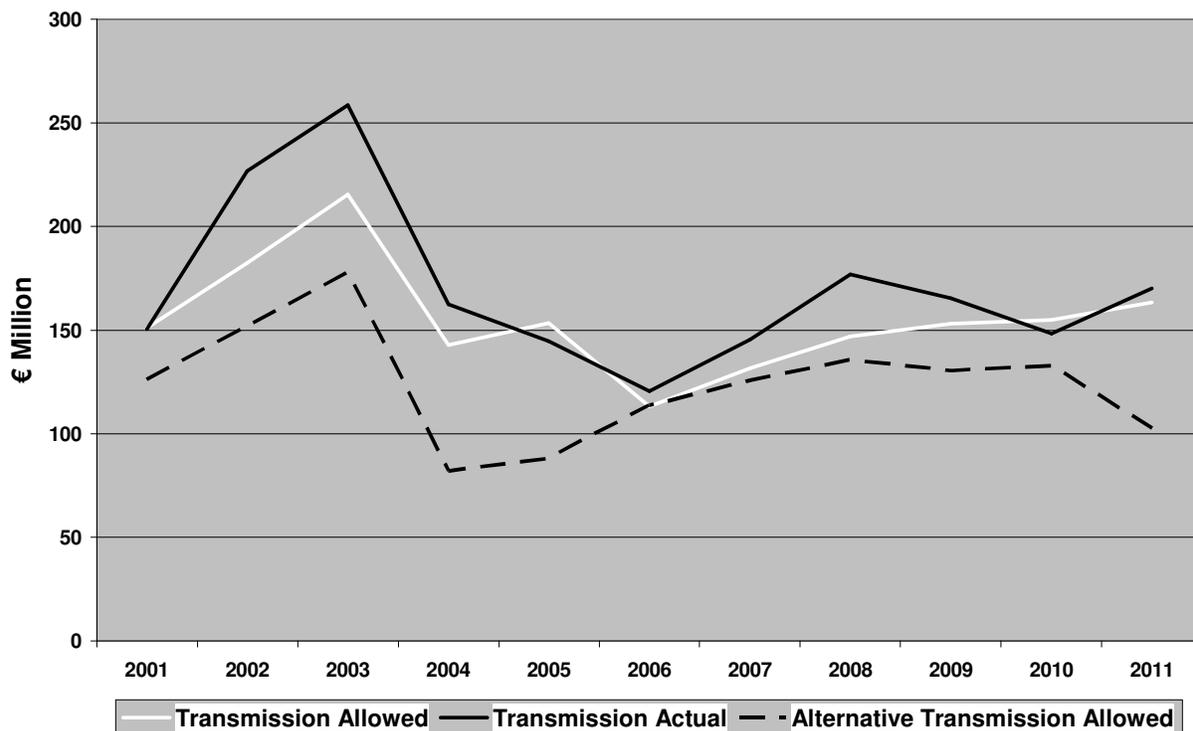
Moreover, despite this refusal, it is even more remarkable that the ESB chose not to secure efficient financing of network investment. Rather than contributing 19% from internal and external financing sources to finance T&D capital expenditure during this period, it would have been possible for the ESB to secure external financing to finance 60% or even more of the

<sup>22</sup> This percentage has been boosted by the requirement to finance the acquisition of the Northern Ireland electricity network in 2010.

capital expenditure. Securing external financing for 60% of T&D capital expenditure during this period would have saved final consumers somewhere between €2 and €2.5 billion.

But what is most remarkable of all is that the CER authorised this PAYG financing of network investment which has proved so excessively and unnecessarily costly to final consumers and to the economy. It is possible to envisage the savings that could have been secured for consumers by comparing the allowed and actual transmission and distribution revenues with an estimate of these revenues based on an appropriate valuation of the opening RABs, a financing structure consistent with the notional structure chosen by the CER when estimating the WACC and a slightly modified WACC.<sup>23</sup>

**Figure 10 Transmission Revenue: Awarded. Actual and Alternative**

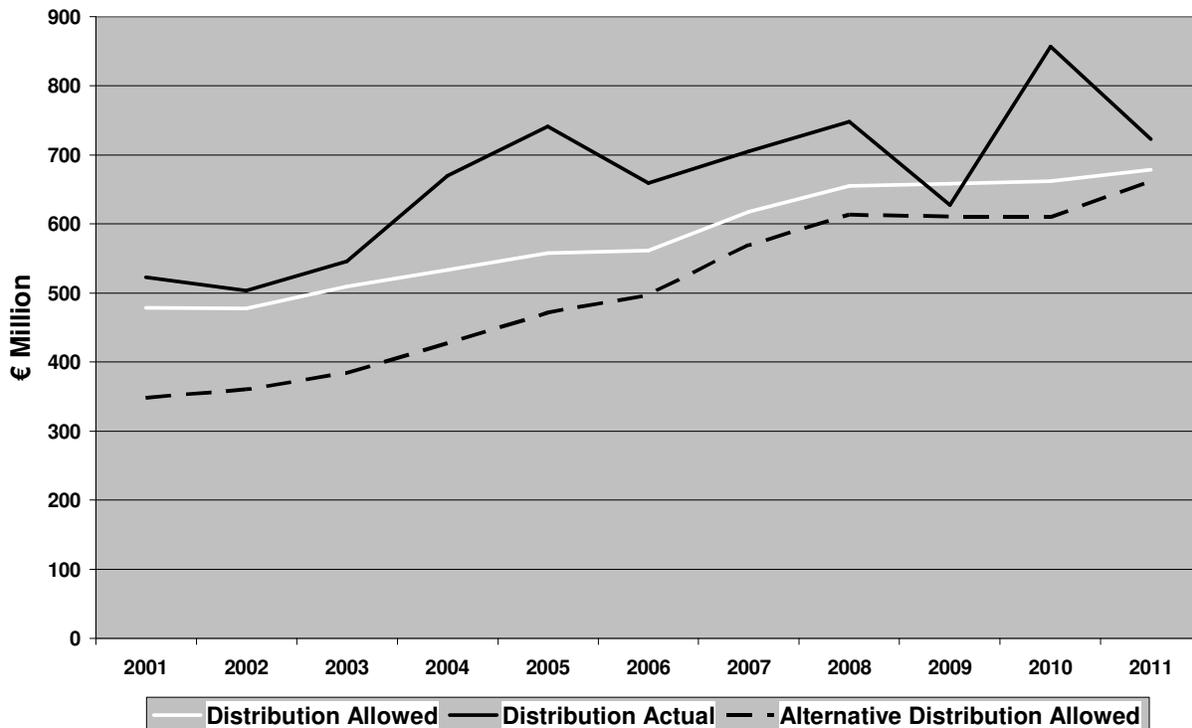


Source: CER Network Revenue Decisions, 2001, 2005 & 2010; ESB Summary Regulatory Accounts 2001 – 2011 and own calculations.

<sup>23</sup> The CER has generally used consulting firms with relevant expertise to derive the WACC estimates. These firms tend to draw on evidence employed to derive estimates of the cost of capital for regulated utilities in other jurisdictions which they and others have performed. When applying this evidence to the Irish electricity and gas networks it appears that they ignore the implications of the ownership of these networks and devote considerable effort to estimating the cost of equity. In the Irish context, this is both futile and inefficient. It is futile because no matter how high the estimate is of the cost of equity the owner will not be induced to invest. It is inefficient because they generate a cost of capital that is in excess of the actual cost that would be appropriate for these businesses – and final consumers, ultimately and entirely unnecessarily, pay the difference. The true cost of capital is probably very close to the cost of debt, because external lenders are the only providers of finance – apart the general mass of consumers who overpay for the service they receive or those consumers who provide capital contributions. The former, however, have a choice; the latter don't.

Up to 2003 the transmission unit combined the asset ownership and system operation functions. From 2004, a separate unit undertook the system operation function which was eventually established in 2006 as Eirgrid. This separation of functions is reflected in Fig. 10. The CER sets network revenues and tariffs for five-year price control periods – 2001-2005, 2006-2010 and so on. The CER revises its revenue determinations annually between reviews, but these revisions have not been taken in to account and this may explain the gaps that emerge between allowed and actual revenues.<sup>24</sup>

**Figure 11 Distribution Revenue: Awarded, Actual and Alternative**



Source: As for Fig. 10.

The impact of the break between the 2001-2005 and 2006-2010 review periods may be observed in both figures. The CER is always keen to highlight the good job it is doing on behalf of consumers at such junctures by re-setting the price control downwards for the first year of the new price review period. Inevitably, this one-off adjustment ‘for the optics’ is clawed back, and more, later. However, the impact of the break between the 2006-2010 and 2011-2015 review periods has been partly suppressed, particularly for the distribution network, by the application of the ESB’s EU ETS windfall. The gaps between the actual and alternative allowed revenue streams, when taken together and summed, confirm the estimate of above of between €2 and €2.5 billion being extracted unnecessarily from electricity consumers.

It is not, however, very difficult to grasp the reasons for CER’s apparent willingness to pursue this approach which places an unjustified and unnecessary cost burden on final consumers –

<sup>24</sup> It would require considerable effort to assess these interim revisions and to include them in the analysis because a consistent approach has not been pursued. A number have an ad hoc flavour. A strong case may be made for the performance of a comprehensive, published reconciliation each year between the actual network revenues reported by the ESB in its summary Regulatory Accounts and the network revenues awarded by the CER.

and ultimately on the economy. Governing politicians and policy-makers were more than happy to transfer regulatory responsibility – and much of the implementation of energy policy – to the CER. It was politically safe, comfortable and convenient. There was no willingness to advance public funds directly, or to forgo dividends to any meaningful extent, to finance investment. Nor was there any willingness to contemplate alternative ownership and financing arrangements. The requirement to transpose mal-formed primary EU legislation in to Irish law provided a once-in-a-generation opportunity to insulate governing politicians and policy-makers from the requirement to make, and from the political ramifications of, difficult policy and regulatory decisions. And it was gleefully grasped. The CER was given a statutory obligation ‘to make sure the lights stay on and the gas continues to flow’, so it was required to come up with a revenue generating mechanism that would generate the cash flows the ESB required. The ESB was content that the CER would be compliant and turn T&D into a ‘cash cow’ that could be used to support, finance and cross-subsidise its other activities.

The story is almost identical when it comes to the regulatory treatment of Bord Gáis. However, Bord Gáis is required only to prepare regulatory accounts, but is not required to publish them. So it is difficult to gain any precise understanding of the cross-subsidisation that goes on there. But there can be little doubt that it happens. Preliminary, and very tentative estimates, suggest that something of the order of €1 billion has been extracted unnecessarily from gas consumers since the application of regulation to the gas industry.

Electricity consumers in Ireland have helped to finance the ESB’s acquisition of the Northern Ireland electricity network and other overseas activities<sup>25</sup> and gas consumers have helped to finance the major inroads made by Bord Gáis in to the gas market in Northern Ireland and its foray into the electricity market in Ireland. Final consumers of electricity and gas (and that means all citizens) have paid, and are paying, either directly or indirectly, via the pass-through of electricity and gas prices in the goods and services they consume, to part-finance, up-front, the extra-jurisdiction empire-building of the ESB (intended to compensate for its declining market shares in generation and supply in Ireland) and the ambition of Bord Gáis to build a ‘billion Euro’ energy supply business.<sup>26</sup>

This, of course, is a story that very few people wish to hear – in particular, those who benefit, so every effort is made to prevent it being told. And, even if it is told, considerable efforts are made to dismiss, reject or ignore it – or, more usually, to traduce the integrity of the story-teller. In official circles, the telling of such a story is neither profitable nor popular. The illusion of effective regulation and efficient competition in the market must be maintained at all costs.

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<sup>25</sup> The ESB recently announced its Financial Investment Decision to construct an 880MW power station at Carrington outside of Manchester:  
<http://www.esb.ie/main/press/pressreleaseWS.jsp?id=2234>

The announcement prompted the UK Secretary of State for Energy and Climate Change to concede publicly for the first time that a new fleet of gas-fired power stations will be required to replace Britain’s ageing coal plants – many of which are due to be shut down in compliance with the EU’s Large Combustion Plant Directive:

<http://www.decc.gov.uk/en/content/cms/news/esb/esb.aspx>

<sup>26</sup> An ambition which may be close to realisation if this report is accurate:

<http://www.independent.ie/business/irish/bord-gais-energy-under-the-hammer-next-year-3235767.html>

The tradition of compensating these energy CSSs when they are deprived of a part of their existing empires appears to be continuing. Even though it will lose its energy supply business via the proposed privatisation, Bord Gáis will acquire the Irish Water utility, which the Government proposes to establish, as a subsidiary.

A recent review of Irish energy policy, FitzGerald (2011), not surprisingly studiously avoids consideration of these issues. Concerns are expressed about the impact of EU proposals for accelerating the completion of the internal market on electricity on the Irish SEM and in relation to the soon-to-be-commissioned East-West Electricity Interconnector, about the cost of compliance with the EU's climate change policies and about some aspects of security of energy supply. But, when it comes to the price of electricity, the focus is on wholesale prices. The costs of electricity supply on the consumers' side of the electricity pool seem to give no cause for concern. Natural gas barely gets a look in. The illusion is maintained intact.

But it is proving more and more difficult to continue to suspend disbelief and to sustain this optical illusion. A careful reading of the analysis of, and recommendations for, the electricity and gas CSSs in the Report by the Review Group on State Assets (2011) suggests that the Group possessed some awareness of these unusual financing arrangements, but these were not addressed specifically. To make any progress the very least that is required is the publication of the regulatory accounts prepared by Bord Gáis and the preparation and publication of a comprehensive reconciliation between the regulated revenues presented in these and the ESB's regulatory accounts, on one side, and the network revenues awarded by the CER, on the other. And this would need to be accompanied by a revaluation of the opening RABs and an assessment of ownership and financing options that would eliminate this excessive and unnecessary cost burden on final electricity and gas consumers – and ultimately on the economy.

It is not that potential solutions are not available, even if the EU's approach to completing the internal markets in electricity and gas is making it very difficult to devise and implement them. It may be that some alteration of the current course will be required at this level before sensible reforms may be implemented at the national level. For example, there is a strong case for amending Gas Regulation 715/2009/EC to modify the requirement to apply Entry-Exit transmission pricing and to remove the proscription on 'point-to-point' capacity. Makhholm (2012) demonstrates convincingly that efficient markets in the gas commodity will not emerge unless they are accompanied by competitive markets in gas pipeline capacity. These provisions in the Gas Regulation are preventing this happening. There is an equally strong case to develop and apply locational marginal pricing (LMP) on electricity transmission networks.

In addition, given the forced de-integration of local and regional electricity and gas distribution companies which would have been able to enter in to contractual arrangements that would provide an assurance of investment recovery to investors in electricity generation, gas productions and transmission, it may be necessary for national governments, individually, or collectively at the EU level, to build up investment recovery guarantee funds to provide the necessary assurance to investors. And, furthermore, there is a requirement to consider a major review of the EU's climate change policies. In Ireland, serious consideration should be given to restructuring, re-financing and privatising the electricity and gas networks.

All of this, of course, is extremely unlikely to happen and final consumers will continue to be kept in the dark about the excessive and unnecessary cost burden being imposed on them by the CER to satisfy the rent-seeking desires of the ESB and Bord Gáis – and to protect governing politicians and policy-makers from the implications of their policy failures. The current government is embroiled in arrangements to sell the energy supply business of Bord Gáis. An earlier proposal to part-privatise the ESB appears to have been shelved and has been replaced by a more modest proposal for the sale of some generation assets. To facilitate some restructuring of the CSSs, the Government established a non-statutory body, NewERA, ostensibly as a 'holding company' for selected CSSs. This is located within the National

Treasury Management Agency (NTMA). There is a dearth of public information on the activities of this new non-statutory body<sup>27</sup> and on the process of limited state asset privatisation being pursued. The maintenance of almost total secrecy seems to be the order of the day.

This dearth of public information and lack of public scrutiny is both damaging and dangerous, but it is probably less detrimental to the public interest than the publication of volumes of reports, decisions and briefings that are designed and intended to mislead, conceal and obfuscate. The CER has never hidden its activities. It may have been tardy in revealing the quantitative basis for some of its analyses, been quick to reject or dismiss any critique of its approach or been less than comprehensive in presenting the basis for its decisions, but much of the relevant information is now in the public domain. It could be said that it is 'hidden in broad daylight'. But the sheer volume of material in the public domain – and the manner in which it is presented to avoid revealing the underlying reality – deters and discourages the necessary scrutiny.

This is a defining characteristic of the formulation and implementation of much of public policy and regulation in Ireland. But Ireland is not unique in this respect. This happens to some extent or other in all EU member-states and at the EU level. It is simply that in Ireland, governing politicians, policy-makers, regulators and the representatives of the rent seeking sectional interests have turned it in to an art-form. These players (or 'stakeholders', in the modern parlance) will not change their ways on their own initiative. They will doggedly pursue their set course of action until they run out of road. And even then their replacements often find a way of extending the road. Genuine change will only be prompted by a major and unanticipated external shock – or a sudden, but profound, change in public sentiment. The 'credit crunch' revealed the fundamental flaws in the Euro project. The painfully slow and generally inadequate progress being made to remedy these flaws may provoke an unhelpful change in public sentiment.

Any major changes, or the events that provoke them, in energy policy and regulation are unlikely to be as dramatic, but it would be unwise for governing politicians, policy-makers and regulators to assume that these changes will not be provoked – or that they are not badly required.

## References:

- Bohn, R.E., Caramanis, M.C., and Schweppe, F.C. (1984) 'Optimal Pricing in Electrical Networks over Space and Time', *Rand Journal of Economics*, 13(3).
- Congleton, R.D., Hillman, A.L., and Konrad, K.A., (2008) *Forty Years of Research on Rent Seeking*, Vols. 1 & 2, Springer.
- Doumah, P. and Pollitt, M.G., (2001) 'The Restructuring and Privatisation of Electricity Distribution and Supply Businesses in England and Wales: A Social Cost-Benefit Analysis', *Fiscal Studies*, 22(1), 107-146.
- ECOTEC Research & Consulting Limited (2001), *The Effects of the Liberalisation of the Electricity and Gas Sectors on Employment*, Report to the European Commission.

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<sup>27</sup> This is a link to the information that is formally in the public domain:

<http://www.ntma.ie/business-areas/new-economy-and-recovery-authority/>

The limited information available on a body such as this with such an apparently broad range of responsibilities should be a cause of concern for citizens and their public representatives.

- Energy Information Administration of the U.S. Department of Energy (1997), *Electricity Reform Abroad and U.S. Investment*.
- Fabrizio, K.R., Rose, N.L., and Wolfram, C.D., (2007) 'Do Markets Reduce Costs? Assessing the Impact of Regulatory Restructuring on US Electric Generation Efficiency', *American Economic Review*, 97(4), 1250-1277.
- FitzGerald, J. (2011) "A Review of Irish Energy Policy", Research Series, No. 21, Dublin: Economics and Social Research institute.
- Hall, D. (1999) 'Electricity restructuring, privatisation and liberalisation: some international experiences', Public Services International Research Unit.
- Harmsen, R. and Jepma, C. (2011) 'North West European gas market: integrated already.' *European Energy Review*.
- Heather, P., (2012) 'Continental European Gas Hubs: Are they fit for purpose?', Oxford Institute for Energy Studies, NG 63.
- Helm, D.R. and Tindall, T. (2009) 'The evolution of infrastructure and utility ownership and its implications', *Oxford Review of Economic Policy*, 25 (3), 411-434.
- Hunt, S and Shuttleworth, G. (1996) *Competition and Choice in Electricity*, Wiley.
- Makholm, J.D., (2012) *The Political Economy of Pipelines: a century of comparative institutional development*, University of Chicago Press.
- McCarthy, C. (2011) 'Interconnector Tariffs and Competition in the Irish Gas Market', report for Shannon LNG.
- Murphy, K.M., Shliefer. A., and Vishny. R.W. (1993) 'Why is Rent-Seeking So Costly to Growth', *American Economic Review*, 83, 409-414.
- Newbury, D.M. (2012), 'Progress on the UK Electricity Market Reform', Cambridge Electricity Policy Research Group Working Paper, June 2012.
- Newbury, D.M., and Pollitt, M.J. (1997) 'The Restructuring and Privatization of the U.K. Electricity Supply – Was it Worth It?', The World Bank Group: Finance, Private Sector and Infrastructure Network, Note No. 124.
- Noël, P. (2009) 'A Market between Us: Reducing the Political Cost of Europe's Dependence on Russian Gas', Cambridge Electricity Policy Group Working Paper 0916.
- Review Group on State Assets and Liabilities (2011) *Report to the Minister for Finance*, Dublin: The Stationery Office.
- Rodgers, H. and Stern, J. (2011) 'The Transition to Hub-Based Gas Pricing in Continental Europe', Oxford Institute for Energy Studies, NG49.
- Schülke, C. (2010), '*The EU's Major Electricity and Gas Utilities since Market Liberalisation*', Institut Français des Relations Internationales (IFRI).
- Shuttleworth, G., (2000) 'Opening European Electricity and Gas Markets', National Economics Research Associates.
- Sustainable Energy Authority of Ireland (SEAI (2012)) '*Electricity and Gas Prices in Ireland – 2<sup>nd</sup> Semester 2011*, Energy Policy Statistical Support Unit.