



Regulatory intervention on the dynamic European gas market—neoclassical economics or transaction cost economics? ☆

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ABSTRACT

Shifts at the international gas market indicate that the transaction cost perspective provides better underpinnings for European gas regulation than the current neoclassical perspective. Three implications are that policymakers should: (1) allow alternative coordination measures to complement market exchange; (2) recognize that less than perfect competition outcomes may be optimal and (3) be more reticent in prescribing interventionist measures. Finally, the analysis provides the foundations for the empirical research required to complement this paper's theoretical approach.

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1. Introduction

The European gas market is in a state of flux. Structural and regulatory reform measures are introduced to facilitate competition in gas markets traditionally managed by governments and incumbent operators (cf. Stern, 1998). Competition is introduced to better secure the public service obligations—supply security, competitiveness and sustainability. This liberalization approach is not working as hoped and anticipated, as indicated by several benchmarking reports published by the European Commission (cf. EC, 2004, 2005) and DG Competition's Energy Sector Inquiry (EC, 2007b). The benchmark reports signal a disappointing progress of competition, predominantly due to insufficient implementation of the Gas Directives as well as a lack of integration and coordination between Member States. The Sector Inquiry into the competition on gas and electricity markets corroborates the benchmark results by concluding that the second Directive has been implemented incompletely. It furthermore concludes that this Directive fails to address all structural issues. These problems are still relevant today, as indicated in the 2007 progress report on the internal market (EC, 2008). These problems induce discussion regarding the appropriateness of the regulatory regime currently in place for the European gas market.

This paper examines this issue in light of the dynamic nature of the European gas market. Specifically, it examines the suitability

of current gas regulation given the changes that have recently taken place at the international gas market.

This paper is structured as follows. Sections 2 and 3 describe the shifting contexts for gas regulation. Section 2 argues that current gas regulation is built on neoclassical guiding principles and points out that the market context at the time current gas regulation was developed has facilitated the neoclassical emphasis on liberalization and (perfect) competition. Section 3 argues that a number of structural market shifts have created a new context for regulation. In this new regulatory context, investments, uncertainty and risks are important elements of a proper regulatory regime. Section 3 concludes that these elements are not explicitly recognized in current regulation. Transaction cost economics (TCE) has been built around these criteria, which is why the remainder of the paper examines whether TCE provides a more appropriate theoretical perspective to underpin European gas regulation.

After concisely setting out TCE's analytical framework in Section 4, Section 5 combines the neoclassical and TCE perspectives into a comprehensive framework that determines when to use which theoretical perspective. Section 6 applies this framework to the European gas market by examining its transactional characteristics. It shows that all TCE criteria apply to European gas. Hence, TCE provides the lens through which the European gas market should be analyzed.

Accordingly, the main message of this paper is that current European gas regulation will not result in the market behavior that is required in the new context. Consequently, European gas regulation needs to move away from its neoclassical underpinnings. Section 7 provides three important lessons for policymakers in order to better align European gas regulation with the TCE perspective. Section 8 concludes and provides the

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foundations for the empirical research required to complement this paper's theoretical analysis.

2. The context for current gas regulation

Current European gas regulation builds in large part on neoclassical theoretical underpinnings, in particular, the structure–conduct–performance paradigm (Bain, 1956). According to this paradigm, the market structure, the number and relative sizes of firms in an industry, drives firm conduct like output decisions and pricing behavior. Firm conduct subsequently yields an industry's overall economic performance in terms of for instance efficiency and profitability (CIEP, 2006). For example, the neoclassical assumption regarding market structure is that firms integrate horizontally and/or vertically in response to or anticipation of market power. In other words, integration impedes competition and must therefore be prevented or removed. To this end, ownership unbundling, and resulting market entry is supposed to improve competition by changing the market structure through a complete removal of integration (EC, 2003, 2007c). Firm conduct should subsequently change too, as a result of which market performance should become more competitive and efficient.

The market context at the instigation of European gas liberalization facilitated this competition-oriented emphasis. At least the following three factors made introducing competitive forces through liberalization the new panacea. First, the US and UK experiences in the late 1970s and early 1980s, respectively, were an important impetus for European gas liberalization. In the mid-1980s, Europe's policy emphasis shifted away from governments managing gas markets towards reducing government involvement and unleashing competitive forces. The energy sectors were thought to operate more efficiently when subjected to a market reform that focused on liberalization, privatization and competition (Stern, 1998; Helm, 2007).

Second, the excess supply situation at that time in Europe (the gas bubble) made gas widely available and cheaper, which shifted the balance of power towards the buyers. Furthermore, no government involvement to guarantee supply security was deemed necessary. The fact that large parts of the European gas market were considered mature is a third significant factor. The main differences with an immature market are that in a mature market initial investments have long been amortized and, secondly, that the transport systems required to satisfy energy demand have been built. These settings required an alternative policy (Ellis et al., 2000; IEA, 2000): the emphasis shifted from stimulating investments in new assets towards more efficiently deploying (i.e. sweating) existing assets.

In conjunction, these factors, among others, made introducing competitive forces through liberalization the new panacea. The European Commission's drive to liberalize European gas markets reflects this view. Liberalization was supposed to transform the rigid Continental gas markets managed by incumbents and governments into a single European internal gas market governed by competition.

Anticipated benefits of liberalization were that asset sweating would increase consumer surplus by driving down network costs. In the buyer's market that had developed, such a view was quite understandable and liberalizing in order to reach as closely as possible the perfect competition outcome of prices at marginal operating costs would indeed improve welfare. Furthermore, in a competitive environment, public monopolies would increasingly lose their grip on national markets. Competitive forces would also induce operators to only undertake efficient investments. In consequence, government-initiated investments would be un-

necessary except for network operations. Finally, after seeing the benefits that liberalization entails to Europe, gas producers were expected to welcome European foreign direct investment and technological knowledge into their energy sectors in order to develop their reserves, guaranteeing access to reserves and securing future supplies.

In order to liberalize the European gas markets, two EU Gas Directives have been introduced; a third legislative package has been proposed in September 2007 (EC, 1998, 2003, 2007c). Each piece of legislation builds on the above neoclassical underpinnings.¹

3. A new context for gas regulation

International gas markets are dynamic, for one because the market characteristics may change in time. This section explores some important shifts at the international gas market, and argues that these create a new context for gas regulation. Four main market shifts are highlighted (cf. Helm, 2007):

- a shift in international relations between producers and consumers—the emergence of a seller's market rather than a buyer's market;
- an increasing influence of politics on energy relations;
- a shift in energy policy objectives with security of supply having become the top priority, while climate change has climbed up the ladder too;
- an increasing need for investments along the entire value chain. Total EU-27 investment requirements amount to roughly 1800 billion Euro of which around 12%–216 billion Euro—is required for gas (EC, 2007a).

The first two shifts comprise issues like Europe's increasing import dependence, the growing assertiveness of gas producers and the need for more long-distance gas supplies by pipelines and LNG trains. LNG trade will expand, but pipelines remain the industry's mainstay (Van der Linde, 2007). Gas transit will increase as long as planned and proposed transit-avoiding pipelines like Northstream and Southstream are not in actual operation. In the pre-liberalization structure, investment risks were transferred to consumers, usually through public monopolies. Consequently, investments to guarantee supply security were no problem. However, due to the market shifts, the issue now has become to facilitate new investments rather than sweat them. Furthermore, this has to be done in a gas market dominated by sellers, where political considerations are becoming more important and where supply security and sustainability have become the top priorities for energy policy (cf. De Jong and Van der Linde, 2008). This changes the context for regulation into one of which investments, and relatedly, risks and uncertainties are the pillars. The two sections below elaborate on the consequences of the market shifts.

3.1. Investment characteristics

Investments in gas markets are required along the entire value chain, i.e. in exploration and production, transmission, distribution and ancillary services. Investments in exploration, production and transmission are predominantly irreversible (sunk). Examples

¹ The extent to which these legislative measures reflect the neoclassical view appears to be diminishing. In fact, the second gas Directive, as well as the proposed third one, has made serious amendments to the neoclassical underpinnings. We get back to these in the concluding section.

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