



The impact of the new wave of financial regulation for European energy markets

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HIGHLIGHTS

- ▶ The European Commission has put forward a set of financial legislation to stabilize both financial markets and energy prices.
- ▶ This article assesses the impact of this financial regulation on energy markets.
- ▶ It shows that the theoretical and empirical effects of key elements in this legislation are ambiguous.
- ▶ It argues that, if enacted, particular market parties such as energy companies should not be exempted.
- ▶ It concludes that this set of legislation will not necessarily bring about the effects the Commission desires.

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ABSTRACT

As the financial and physical markets for energy have increasingly become intertwined, energy trade is also covered by financial legislation. The European Commission wishes to strengthen this financial regulation of energy trade. It has put forward a set of regulatory proposals aimed at stabilizing financial markets and limiting volatility of energy prices. The most noteworthy are EMIR, MAD, REMIT and the revised MiFID. Key elements are transparency, new trading venues, central clearing obligations and mandatory transaction reporting. This article evaluates the likely outcomes for energy markets, given the new incentives for market parties. It argues that although there is no ground to exempt particular energy market participants such as energy companies from financial legislation, increased regulation will not necessarily bring about the effects the Commission desires. The causal link between derivatives trading and volatility of energy prices is not known precisely and many of the economic effects of the proposed legislation are theoretically and empirically ambiguous. Moreover, potentially conflicting instruments and objectives risk policy inconsistency.

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1. Introduction¹

The volatility of energy prices in recent years has generated political pressure to put these price movements under control. Simultaneously, in the aftermath of the financial crisis, the European Commission has set itself an ambitious regulatory reform agenda for the financial markets. This includes both a strengthening of existing financial regulation, as well as several new proposals. As the financial and physical markets have become intertwined – EU legislation defines many energy contracts as ‘financial instruments’ – regulation in financial markets will affect energy markets too.

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Recognizing this interdependence of financial and energy markets, the proposed set of financial legislation has two objectives. First, it wishes to reduce systemic risk in financial markets and avert some of the domino effects that unfolded in the recent crisis. Second, as this financial legislation also covers trade in commodity derivatives, it seeks to curb volatility of energy prices.

The proposed regulatory package contains a number of requirements for market participants. These range from transaction reporting obligations and enhanced transparency to compulsory central clearing. Such requirements pose new incentives for market parties in their trading activities. In turn, the way they react to these incentives affects market outcomes. Because this financial legislation will cover energy trade as well, it is likely to have significant consequences for energy markets. This article addresses the question whether, in light of the potential implications for energy markets, the proposed changes to financial legislation will have the effects the European Commission desires.

This question derives its relevance from three aspects. First, the academic literature has generally focussed on the appropriate regulatory design for specific markets, for instance in relation to the liberalization of European energy markets or the stability of financial markets. As also noted by Diaz-Rainey et al. (2011), little research has been done regarding cross-market effects of financial regulation on energy markets. Now that the line between the traditional financial and energy markets has become blurred, the link between the two deserves more attention.

Second, it may prove useful not just to point out which aspects of energy trading may come under financial regulation, but to take the analysis one step further and examine how participants in the energy markets are likely to react to the incentives this new legislation offers them. The success of regulation hinges on how market participants adapt their behaviour to it, not just the substance of the legislation itself.

Third, to the extent that these proposals are motivated by electoral calls for a strong response to financial instability and energy price volatility, whether or not they will actually bring this about may have political ramifications as well.

Methodologically, the research question will be addressed as follows. As a first step, the legislative proposals, regulations and directives in question will be analysed to sketch the proposed legal framework and distil the most relevant aspects for energy trading parties. Second, the economic literature is drawn upon to assess the theoretical and empirical consequences for market conditions of these regulatory changes. As the aim of the article is to invoke a number of potential market effects to be evaluated empirically in later work, no particular model or theoretical framework is employed at this point.

Although in this article the focus will be on energy, with the utilities serving the retail markets for electricity and natural gas as the main concern, the intertwining of the physical and financial markets has also involved other types of commodities too.² The new financial legislation aims to step up regulation of trading in commodity derivatives as a whole. Some of the conclusions therefore also apply to the markets for other commodities than energy.

This article will proceed as follows. Section two will illustrate the intertwining of physical and financial markets and the rationale to step up regulation. The third section will outline the recent wave of (financial) legislation that would apply to energy markets. Section four will point out how key elements in this legislation will affect market participants and how their reactions could in turn impact market outcomes. The subsequent section will assess whether these outcomes are in line with the objectives set out by the Commission. In other words, is the proposed regulatory package the appropriate instrument to achieve the Commission's goals? A final section concludes.

2. Intertwinement of physical and financial markets

This section will first deal with the aspects of energy prices that led to the creation of certain financial instruments, called derivatives. It will then illustrate how physical and financial markets have become intertwined. It finishes with a discussion about the potential risks of energy derivatives trading, which motivate the current push for regulation.

² European legislation (Art. 2 (1) COM (2006) 1287) defines commodities as "any goods of a fungible nature that are capable of being delivered, including metals and their ores and alloys, agricultural products, and energy such as electricity."

2.1. Energy price uncertainty

Energy prices are highly volatile and difficult to model. This creates substantial price risk for market parties, especially for those in the retail markets (Pilipovic, 2007).

Price uncertainty has several origins, depending on the energy product. For electricity, chief among the physical characteristics that create extreme volatility is limited storability. Demand has to match supply at all times, which can even create negative prices. Moreover, electricity and natural gas depend on a transmission network to link supplier and consumer. Apart from capacity constraints, the geographical separation of networks leads to substantial price disparities. For the energy markets in general, price drivers are manifold – ranging from single events like political turmoil or a power outage to general policy changes – and difficult to model. Finally, long-run factors, like future availability of reserves, show little or no correlation with short-term price drivers such as sudden supply disruptions or spikes in demand (Kiesel et al., 2009).

As an illustration of the price volatility this results in, it is estimated that whereas daily price volatility of treasuries and stocks is around 0.5–1.5%, it is 1.5–4% for crude oil and natural gas and 30% for electricity (Weron, 2001, 4). Typical spot prices for electricity vary from €25/MW h to €80/MW h within a trading day (EEX, 2011).

The unpredictability of prices creates risk for parties with positions in energy contracts. Therefore, certain contracts, 'derivatives', are used by market participants to make this uncertainty more manageable. A derivative can be defined as "a risk transfer agreement, the value of which is derived from the value of an underlying asset" (ISDA, 2011). An energy derivative does two things (Macey, 1996). First, it transforms uncertainty about energy prices into calculable risk. Second, it transfers this risk to a counterparty that has a comparative advantage in bearing it because of an open position or a different risk appetite.

2.2. Types of derivatives and trading purposes

Derivatives exist in many different forms, but they can be headed under three general types: forwards/futures, swaps and options. Essentially, each type reduces price risk by setting a future transaction of energy at a price that is known in advance.³

Although the underlying product (where the derivative *derives* its value from) can be virtually anything, energy market parties most frequently trade natural gas, electricity, oil, coal and increasingly emission rights.

Two further distinctions deserve attention: the way of settlement and the trading place. Settlement can either take place in cash, whereby the net value of the contract at the time of settlement is exchanged, or physically by delivering the energy. Derivatives can either be traded on an organized exchange or bilaterally, "over the counter" (OTC). Exchange-traded derivatives are standardized, prices on these regulated markets are transparent and trade takes place anonymously. In contrast, OTC-contracts

³ A *forward* contract is the agreement to buy or sell a predetermined amount of energy, at a specified price (the "forward price") at a certain date in the future. *Futures* are basically identical to forwards. The difference often encountered in the literature is that unlike forwards, futures are standardized, exchange-traded, 'marked to market' on a daily basis and involve smaller delivery quantities. However, forwards sometimes exhibit one or more of these aspects too, which makes the distinction rather arbitrary. A *swap* is a transaction whereby parties agree to exchange one thing for the other: a floating price for a fixed price, without actually exchanging the assets that generate these prices. An *option* is a contract that gives the buyer the right, but not the obligation, to buy (a "call" option) or to sell (a "put" option) a set quantity of energy at a predetermined "strike" price, at (or before) a certain date in the future.

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