



# EFFICIENCY, COMPETITION AND LONG TERM CONTRACTS IN ELECTRICITY MARKETS

WORKSHOP ORGANIZED BY THE LOYOLA DE PALACIO PROGRAM  
OF THE EUROPEAN UNIVERSITY INSTITUTE  
AND GIS LARSEN

Florence, 15-16 January, 2009

## Summary and Conclusions

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The first ever Loyola de Palacio Workshop at the European University Institute addressed in partnership with GIS LARSEN (Paris) the issue of long-term supply contracts in European decentralized electricity markets. Three sessions and two roundtables gathered over two days 42 experts to discuss current problems and possible solutions under the Chattam House rule. The first session discussed the contribution of long-term supply contracts to the fulfillment of different policy objectives such as long-term generation adequacy, security of supply and sustainably low prices for energy intensive industries. The second session addressed from a more academic perspective the effects of these contracts in an imperfectly competitive market setting and their relative strength and weaknesses as compared to vertical integration. The last session focused on the current action of national and community competition authorities *vis-à-vis* these contracts, both under state aid or the antitrust rules, and in comparison with the US jurisprudence. Key conclusions from the debate among regulators, competition authorities, the IEA, lawyers, industry, financial and academic delegates are reported here.

The current financial crisis will only slow down the long term trend of rising world electricity demand but might significantly hamper investment decisions in the short-term and lead to a supply crunch once the economy recovers. Overall, \$ 1 trillion a year of investment worldwide would be needed by 2030 to meet consumer needs. The timing of investment decisions is therefore a key aspect, reinforced by the ageing of base load capacities (essentially coal and nuclear). The fulfillment of climate policy commitments might also require a massive wave of investment in high-fixed cost technologies

such as coal capture and storage (CCS) or nuclear. Investment in the next decade will thus be critical to a low-carbon future in the longer term and long-term supply contracts might be needed to achieve these goals under current investment conditions.

There has been a fairly wide consensus among participants on the fact that the current willingness of market players to resort to more durable vertical arrangements such as vertical integration and long-term contracts stems from the current shortcomings of the liberalization process. In particular, the under-development of sufficiently liquid and stable forward contract markets, available at time horizons matching the life span of new investments, yields risks of anti-competitive market abuse and does not allow for an optimal allocation of investment risks. This has tended to lead market players to invest in less capital intensive technologies such as combined-cycle gas turbine (CCGT), especially in case of high correlation between gas and electricity prices and high risk aversion. Power generation technologies indeed have different risk and returns characteristics which yield different needs in terms of secure dispatch. Absent long-term contracts, the operational and contractual flexibility of CCGT has tended to make it the preferred technology for new entrants. The availability of long-term contracts therefore seems to greatly improve incentives to diversify away from CCGT by investing in coal and nuclear and facilitate project financing. However, it has been recalled that contractual arrangements might often be less important determinants of investment decisions than the local state of supply and demand conditions or risk aversion profiles.

From the **buyer side**, the volatility of organized spot and forward markets limited the viability of the pure supplier model and undermined the competitiveness of energy intensive users. In view of these concerns, long-term bilateral supply contracts could help producers and large buyers to mutually hedge price and quantity risks and reduce transaction costs from repeated spot contracting, especially when contractors are risk adverse.

However, it seems that **producer and buyer interests are not completely converging** and that suitable contractual structures must be found to accommodate diverging needs, e.g. collective buying schemes, joint ventures or consumer/producer cooperatives backed by long-term contracts. Producers willing to contract for 15 or 20 years to sink high fixed costs investments face problems of counterparty credibility and a misalignment of contracting incentives with some potential buyers. The ability to pass through fuel price risks also appears as a key issue from the producer side. Facing the risk of new retail entry, electricity resellers without consumer franchise do not appear as credible counterparties for such very long-term fixed price fixed quantity contracts due to the difficulties encountered when managing their downstream retail commitments. Reseller thus tend to favor hedging through call options, indexed price contracts or tolling contracts, probably complemented by a portfolio of generation assets. A natural response to the misalignment of contracting incentives between producers and retailers has indeed been vertical re-integration in several markets (e.g. UK, NZ). Vertical re-integration occurs

when the costs and risks of contracting (transaction costs, contractual incompleteness and bounded rationality, hold-up costs, regulatory risks, market power costs) exceed those of ownership (agency costs, costs of collective decision-making, costs of risk bearing). The virtues of vertical integration are plenty for individual market players. It improves not only investment and risk management but also provides a natural and self sustaining hedge against wholesale prices and quantity risks, as well as market power and asymmetric information costs, as it internalizes these risks and costs to the firm. It enables better matching of load profiles and supply security preferences. It also enhances scale differences between integrated firms and retail entrants, thereby reducing integrated firms' exposure to predation.

**Energy intensive industries** appeared as more suitable counterparties for long-term contracting. Their need to access base load electricity at the lowest cost possible through long-term contracts with nuclear producers was much highlighted. Competing on a global scale, energy intensive users may indeed face worldwide competitors with largely lower and less volatile fuel prices, which is detrimental to the competitiveness of European industries. It has been recognized that long-term contracts cannot solve all problems as fixed price contracts may also create margin risks for energy intensive users, but the current state of organized wholesale markets and the need to mitigate CO2 price risks make them willing to share limited amount of risks with producers for investments in new hydropower and nuclear plants.

Long-term supply contracts and innovative contractual structures such as producer/consumer cooperatives, though useful for individual market players, may however have ambiguous effects on market building and these effects crucially depend on the structuring of contract clauses (e.g. duration, exclusivity or destination).

These contracts might indeed create customer foreclosure, limit the development of spot markets and prevent the development of transparent price mechanisms, as has been pointed by the Sector Enquiry. Traditional long-term contracts include Take and Pay contracts, Take or Pay contracts and virtual power plants. They all impact liquidity levels on spot markets in different ways. If all these contracts lead somehow to varying degree of foreclosure, they also have diverse effects on consumer surplus, investment, risk management, entry and spot prices.

**From a competition point of view**, contract clauses regarding duration, flexibility mechanisms, exclusive dealing and use restrictions are particularly relevant. Anti-competitive effects of long-term contracts are linked with the market position of contractors and it has been widely agreed that the dominant position of certain contractors are a bigger problem than the duration of supply contracts itself. As a result, long-term contracts should not represent more than a certain percentage of the market to allow for efficient entry, this percentage remaining open for discussion.

In a similar vein **competitive foreclosure effects** are possible. It has also been highlighted that long-term bilateral contracts could crowd out the development of bilateral financial forward contracts which appear to have the same effects on risk mitigation but without creating anti-competitive foreclosure effects, though this was highly debated.

**State aid problems** may also arise for certain purchasing consortia and stranded power purchase agreements, especially in Eastern Europe. As concerns vertical integration, it tends to mitigate wholesale market power and support retail competition among incumbent players but limits retail entry and regulators' ability to monitor wholesale prices as such prices are marginalized and other relevant variables such as generation costs are less easily observable.

A useful parallel with international liberalized gas markets showed that the relationship between liberalization processes and long-term contracts is not straightforward. With an increased number of market participants and the concurrent cost reduction in the Liquefied Natural Gas (LNG) value-added chain, asset specificity of investments has decreased and firms which face less hold-up risks tend to move from long-term contracts towards short-term trading. No inherent conflict between liberalization and infrastructure investments was depicted in this industry, even if some public policy actions may be justified for ensuring security of supply in the new Member States facing a stronger dependence to one exporter. This supports the idea that the forecasts of sustainable high wholesale and CO<sub>2</sub> prices allow for high fixed cost generation investment without long-term contracts if a higher level of liquidity is quickly brought on to electricity markets. Overall, long-term contracts thus appear both as a barrier to liberalization and as a cure from the shortcomings of restructuring in European energy markets. Long-term contracting, vertical integration and spot trading should thus be seen as natural complements to support both investment and competition in decentralized electricity markets, though some delegates thought that investment should be favored over competition in the forthcoming period.

National and community competition authorities must thus balance pro and anti-competitive effects of long-term supply contracts taking into account the extent of vertical integration, spot trading and retail competition. At the beginning of liberalization, long-term contracts were often part of liberalization packages to smooth the transition towards competitive electricity markets and facilitate competitive entry in retail. In the European Union, stranded power purchase agreements, for instance in Portugal, Poland and Hungary have been or are still being reviewed under the state aid rules, the issue being around the compensation schemes for the operators which suffered from liberalisation due to their long-term commitments or guarantees. As concerns anti-competitive foreclosure effects attached to new long-term contracts reviewed under the antitrust rules (especially Art 82 EC), a methodology of analysis seems to be emerging. A multiple-step approach is increasingly used to reduce regulation costs and balance anti-competitive effects with potential efficiency gains.

However, if some insights from the competition economics of long-term contracts in energy seem to be included in the analysis, European competition policy is constrained by the procedural aspect of the legal process (e.g. burden and standard of proof) and the remedies imposed remain open for discussion. Furthermore, the regulation of long-term contracts should not add legal uncertainty to the problem of contracting inherent in decentralized electricity markets and some viewed as suitable the publication of non-binding guidelines on acceptable contract forms.

Indeed, considerable uncertainties still remain on the treatment of energy intensive users and incumbent generators investing in new high fixed costs capacities. The challenges now also lie in the devising of new indicators to truly quantify and then balance pro and anti-competitive effects of long-term contracts. Some delegates showed concerns that competition authorities could use competition policy as an industrial policy tool, especially with the use of remedies that would be more than proportionate to the infringements committed.

**The more lenient treatment of long-term contracts in the US compared to the European Union** and the different position on the application of the ‘essential facility’ doctrine on electricity transmission networks, revealing different conceptions on competition on merits and responsibility of dominant incumbents, were also highlighted.

Last, the link between **security of supply and long-term contracts** appeared somewhat unclear. By facilitating investments in high-fixed costs projects, long-term contracts contribute to fuel mix diversity and infrastructure development. It has been pointed out that competition so far has not provided in Europe the incentives for investments to cope with a severe disruption in gas supplies on a market basis. In theory, some generators could specialize in redundant capacities and sell security of supply in the same way as insurance company but the systematic involvement of governments during these random events seems to preclude market players and financial intermediaries from developing appropriate market-based mechanisms. Other delegates thought that only planning could fulfill security of supply and that European mechanisms should be established. Improvement of market designs are thus as much needed as a smart competition policy for ensuring security of supply.

All the papers and presentation of the workshop can be downloaded from:  
<http://www.eui.eu/RSCAS/e-texts/ldp20090115/200901-Prog-LdeP-Larsen.pdf>



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