Submission on CER Proposal for I-SEM

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Gorecki (2013) points out that the problems facing the SEM today do not differ substantially from those present at the outset of the market in 2007. There is still a desire to deliver electricity efficiently while successfully limiting market power, encouraging entry, and ensuring adequate capacity. The main change since 2007 has been the increased penetration of renewables, especially wind.

Inroads have been made in controlling market power by making the incumbents (ESB in Ireland and Viridian in Northern Ireland) offer contracts for differences and forcing ESB to divest some of its assets. Entry is facilitated by maintaining regulatory credibility, the provision of a capacity payments regime, allowing new generators to enter without having to assemble a client base (thanks to the characteristics of the pool) and dispatching generators based on merit order, since the most recent generators are also likely to be more efficient. Allowing new generators to access the electricity grid easily is vital. In Ireland's case the grid is owned by ESB, but managed by the independent agency EirGrid to ensure no discrimination in grid access.

The following issues remain crucial in moving to an electricity market that is consistent with the EU Target Model:

1. Market power could decrease if interconnection is expanded. However, there is growing concern that the EU electricity market as a whole is becoming more concentrated (Meeus, 2011). Deane *et al.,* 2014 suggest that in GB market power has resulted in electricity costs been substantially higher for households than would be the case under perfect competition[1]. Thus whatever market structure develops in Europe, action will be needed to prevent the abuse of market power. Clearly, if Ireland were part of the GB market today, households would face the same excessive retail margin that GB customers are currently experiencing. As discussed below, there are concerns that the current suggested changes to the SEM could actually increase the opportunity for firms to exploit market power, to the disadvantage of consumers.
2. Even though there is excess capacity in the Irish electricity system at the moment, it could be argued that it is a short-run situation, mostly due to the recession. The closest market to Ireland is that of Great Britain, which is facing a generation shortage in the medium term, so encouraging new entry remains important. This argues for a continuing mechanism for incentivising the provision of adequate capacity.
3. Ease of market access remains vital.
4. With the current design, large amounts of wind can lead to marginal prices of electricity frequently going to 0, potentially reducing the incentives for new thermal generation to invest, even though thermal generation is necessary to maintain a secure system.

[1] This research shows a significantly lower margin charged to Irish households than in GB suggesting that the SEM has been more effective in dealing with issues of market power.

The central role of these issues suggests that, when considering how best to implement the EU Target Model, tradeoffs will arise. On the one hand, options that are closer to the current configuration of the SEM will avoid large market changes: given that evaluations of the SEM indicate that it has worked fairly well (Gorecki 2013) this means that there is an advantage to maintaining key features of that market. Market participants' learning curve should therefore be fairly flat. On the other hand, the option closest to the current SEM (gross pool with net settlement market) essentially uses 'fixes' to adapt the current market to the target model. As discussed by the regulators (Utility Regulator and CER, 2014), coordination with European markets to determine the amount and direction of the interconnection flow is based on the day-ahead market, which might not be very liquid. It is therefore possible that interconnection flows in this option will not exploit the interconnection capacity efficiently.

In deciding on how to develop the SEM to better integrate with the wider EU electricity market an important issue is the transactions costs involved in developing the technology needed to underpin the new market. In countries such as Germany and the UK this may seem a trivial issue. However, the sums involved are largely independent of country size and, whereas for Germany €200 million may be a small price to pay for the technology needed to make a new market work, in the case of Ireland it would represent a significant addition to consumers' bills. For example, the technology needed to allow consumers change electricity supplier probably cost around €100 million in the last decade but the consumer benefits from switching are unlikely to ever recoup this investment. Thus, in making choices about how to modify the SEM, serious attention needs to be given to the costs of the change, not just for the administrators of the system, but for all the participants.

Avoiding abuses of market power should still be a central concern. There are basically two ways of doing so in the new Integrated Single Electricity Market (I-SEM) proposed by the CER: one is relying on the efficiency and fluidity of forward markets and the second is monitoring and controlling bids. A further possibility, reliance on competition law, would not be effective due to the length of time needed for cases to move through courts.

The current CER proposals envisage an exclusive, but not a mandatory, day ahead market. However, given the small size of the Irish market electricity market, the limited number of players and the structure of the retail market it is hard to see how this market will be liquid. Of its nature it will be less transparent than the mandatory pool, which would make it very difficult to develop suitable bidding rules. If the necessary liquidity required to make the market work were to require major intervention by the regulator, this would raise questions about how useful the market would be in delivering an efficient allocation of resources.

Before coming to conclusions on how this proposed market will work, significant further research is required. This needs to identify whether the market is likely to deliver an efficient despatch of the electricity system and of the interconnectors and whether it will deal adequately with the issue of market power. The proposed new market needs to work without requiring extremely complex intervention by the regulator.

In addition to the proposals on replacing the pool, the CER are proposing a new Capacity Remuneration Mechanism (CPM) to replace the current capacity payments system.

In the current capacity payment mechanism there is, essentially, a pool of money and it is divided between those generators that are available in each time period. Because the pool of funds is fixed and because there are a significant number of generating units the effect of any one generator not being available, or pulling out, is not sufficient to raise the average payment to available generators by a large amount. Thus there is no incentive in the current system to try to game it.

The new proposed mechanism for capacity would involve firms bidding for financial contracts to provide capacity and the system operator would be required to contract ahead to ensure sufficient capacity would be available in future time periods. The total cost of the capacity mechanism would depend on the bids received from generators making up the capacity needed.

Because there is excess generating capacity available today the hope would be that the price for capacity would be bid down, reducing the overall cost of the mechanism. However, this does not take account of the market structure and the costs and incentives faced by the different players.

The authorities contracting for future capacity face a huge cost if, in any one period, they do not have adequate capacity available and the lights go off (Leahy and Tol, 2011). Thus they need to contract for adequate capacity even if the price is very high. This reflects the fact that the value of loss of load is exceptionally high. On the other hand the owners of the generators face a much smaller cost if they fail to get a contract – they lose capacity payments for just one time period. Because the contracts would be offered on an annual basis the cost of failing to get a contract in any one year would be the loss of payment for capacity for a single year. The firm can always enter a new bid for the following year. This loss of payment for one year by a generator would be much less than the cost to society (and hence to the regulatory authorities) from the lights going off.

The number of owners of dispatchable generators is small in the Irish system.[2] While there is significant excess capacity on the system at least one owner of generation plant is in a position where, if they did not bid, there would not be adequate capacity to keep the lights on in winter peaks. For this operator the optimal strategy would be to bid an exceptionally high price on all of its generation knowing that at least some of this generation would receive the price they bid. If this price were sufficiently high it would more than compensate for the failure to get a contract for the rest of the capacity. For the other limited number of operators of generation plant they would know what would be the optimal strategy for the leading player. In this case their preferred strategy would be to also bid high. While they might lose out to one of the other competitors in the first year, they could recoup their losses by appropriate bidding in the second year. Without collusion between the players the most likely outcome of this process would be a gradual escalation of prices to levels well above that needed to adequately remunerate capacity.

While the high price could incentivise new entry in the future if the price were expected to remain high, the unstable nature of the equilibrium in the market would probably make new investors slow to enter the market. Knowing that the market was already potentially oversupplied, new entry could trigger a collapse in the price, which would hurt existing players: however, it would prove even more painful for the new entrant. Thus new entry would be seriously discouraged.

[2] It is also small in most other national electricity systems, including the GB system.

What makes this proposed alternative mechanism for remunerating capacity so much more vulnerable to firms exerting market power is that there is no upper limit to the total pot of capacity payments. Also there appears to be no easy way that a "bidding code" could be developed, as in the case of the current wholesale market, which would prevent gaming. While the new mechanism might result in a fall in the total capacity payments under conditions of excess supply, it might be even more likely to lead to an increase in the cost of capacity payments. Under conditions of a shortage of capacity the risk of very high prices would be even greater.

On this basis the current regime of capacity payments seems preferable to the current proposed alternative.

An important objective of the development of a new I-SEM is that it should result in better use of the interconnectors. However, this aspect of the proposal also needs further research.

More Detailed Comment on Capacity Remuneration Mechanism

There are clearly potential issues with market power in the proposed capacity mechanism. (The footnote on page 1 of the Cramton and Stoft paper, cited by the CER, acknowledges this problem.) It is quite possible that the price could go very high, with the dominant player secure that some but not all its capacity would be needed to ensure the lights stay on. The players know that, in a repeated game, the costs of the lights going off are huge for the system operator whereas the costs for generators of not getting an option in one year are much smaller. Thus the system operator must contract for adequate capacity no matter what the cost, provided that that cost is less than the very high cost of the lights going off.

Our cursory review of the literature suggests that there is no obvious solution to the problem of market power and we feel that it would be very difficult to find a satisfactory solution to mitigate the problem. We consider here some solutions that might be put forward. However, as we indicate, in each case we feel that they would not work

The ESB could be required to bid a particular price. However, this would only result in everyone else bidding just below the ESB, with the ESB becoming the residual supplier of capacity. This might not be the most efficient solution. Also it would effectively mean that the CER would be setting both the price and the quantity. This would be totally unsatisfactory – the CER would be left deciding the returns to individual generators without having any economic basis for the decision.

Another possibility is that the ESB generation portfolio could be broken up. However, we see a number of problems with this. Firstly, with up to four significant players rather than one dominant player, the result of the "game" could well be the same. Given the asymmetry of costs for the system operator and the players, and given the repeated nature of the game, the outcome could well be an equilibrium solution of really high prices. The size of the ESB's portfolio is not, on its own, the problem. Secondly, with increased interconnection, other firms with portfolios of generation greater than the Irish market could become players. In a British Isles context the ESB is a minnow. There is no way that the CER could force divestiture on companies such as EDF in GB who have very large portfolios of generation relative to the size of the Irish market. However, there is ample

evidence that the GB market suffers from the downside of use of market power by incumbents. [3] Thirdly, the evidence world-wide is that companies own portfolios of generators. This suggests that there may be economies of scale. While this portfolio behaviour may all be driven by a desire for market power, we suspect that there are real reasons for this behaviour – economies of scale exist. Forcing all players to be companies with a single generator would, as a result, raise the operating cost of the system.

As mentioned above there is the argument that the capacity auction cannot go to a high price as the possibility of new entrants bidding in will force incumbents to bid less than or equal to Cost of New Entrant (CONE). (This of course only holds if there is a large pool of potential suppliers ready to connect should their bids in the RO auction be accepted.) However the repeated nature of the auction means that the high clearing price is an unstable equilibrium; a new entrant will not enter at CONE, or even substantially above CONE, as the incumbents can bid low the following year and cause the price to collapse. A new entrant has more to lose from this low price than the incumbents and so the possibility of incumbents collapsing the price is credible.

If the market power issue is not effectively addressed in I-SEM, the new market structure could potentially result in higher prices for consumers. The short-term market is likely to deliver higher prices than the current wholesale market. Unless the capacity mechanism delivers a significantly lower cost, then the total cost would be higher for consumers. With market power it could be much higher. Obviously any gains from better use of interconnection would have to be offset against higher costs from generation. Nonetheless, there is a danger that the proposed new market would make consumers worse off than today if the problems, identified here, are not addressed. This danger needs to be flagged and discussed publicly, not least with the EU.

Extensive research in the ESRI and elsewhere highlights how important the cost of capital is in such a capital intensive industry. As a result, there is a high cost to uncertainty of returns for investors, which raises financing costs. This cost must, in turn, be passed on to consumers. The importance of this was central to the decision to implement a capacity mechanism in the SEM. Recognition of the importance of this issue underpinned the decision to go for a REFIT as a support mechanism for wind. [4] The work by Walsh et al., 2014[5], shows how important price uncertainty can be to investment decisions. There is a wide range of international work on this issue by prominent authors such as Dieter Helm. Thus the decision to move from a mechanism which deliberately produced fairly predictable returns to one that possibly produces highly variable returns is likely to result in much higher capital costs for investors. In turn this must be passed on to consumers. To justify these significantly higher costs the new market structure must hold out the prospect of substantial gains elsewhere to offset these costs. It has not been shown that the current proposed market structure will achieve sufficient savings (possibly even delivering higher costs).

[3] For example, Deane, P., J. FitzGerald, L. Malaguzzi Valeri, A. Tuohy and D. Walsh (2014) Irish and British electricity prices; what recent history implies for future prices, Economics of Energy and Environmental Policy,32(3).

[4] Farrell, N.,M. Devine, W. Lee, J. Gleeson and S. Lyons (2013). Specifying An Efficient Renewable Energy Feed-in Tariff, MPRA Paper 49777. Also Devitt, Conor / Malaguzzi Valeri, Laura , 2011, "The Effect of REFIT on Irish Wholesale Electricity Prices" The Economic and Social Review, Vol 42, No 3, Autumn 2011, pp.343-369

[5] Walsh, D.M., O'Sullivan, K., Lee, W.T. and Devine, M.T. (2014). When to invest in carbon capture and storage technology: a mathematical model, Energy Economics, 42: 219-225.

In changing to a new market structure it will be important to consider the transactions costs of the move and the costs of operating the new market for all players compared to the current system. For example, the shift to allowing consumers to change supplier apparently costed around €100 million, and consumers are unlikely to recoup that cost. We need to be certain that the costs of the proposed change in market structure are limited and that they are justified by the potential returns. This is not established.

In proceeding to change the market, the regulator's reputation is an important consideration. Until today the CER has developed a reputation for providing a stable playing field for all involved. We have seen how, elsewhere, frequent changes in market structure and arbitrary changes by regulatory authorities (e.g. Germany) can raise the cost of capital. [6] It will be important that any change by the CER is not seen as arbitrary by either producers or consumers. While the EU rules provide a reason for changing, care needs to be taken that, whatever change is made, is robust in the future, and that Ireland's reputation for sound economic regulation is preserved.

In the light of these concerns, discussed above, and the fact that they cannot easily be put to rest, we believe that it is not safe to go ahead with the CER's I-SEM proposal. In the North the commitment to a totally defective market regime in 1992 sentenced the consumers of the North to pay a massive price for electricity for around 15 years. Once the new defective market had been set up it could not be changed. Ireland should not embark on a potentially defective regime, which may be difficult or costly to change in the future. The option value of delaying and eventually getting an appropriate regime is very high.

[6] It is interesting to look at the returns on bonds by firms, such as RWE, relative to firms operating under less arbitrary regimes.