

# Comments on Capacity Payments Proposals

John Fitz Gerald, ESRI, 20 February 2007

There are a number of issues which arise in the proposals on capacity payments and on the cost of a BNE peaking plant.

1. The logic behind the capacity payments scheme is that capacity payments should make it profitable to invest in a peaking plant if capacity is below the desired level and unprofitable if it is above that threshold.<sup>1</sup> In principle, where capacity is 1MW below target, that 1MW of investment should be incentivised by the capacity payment regime. However, as it might be the last MW of capacity in the dispatch order it might not run at all in the year. Thus for it to be built, it should be able to get all its costs back from the capacity payment. (The exception to that is the payment for reserve and ancillary services.) Thus the proposal to deduct an estimate of potential profits over and above energy costs (from actually producing electricity) from the capacity payments seems inappropriate, as it reduces, perhaps even eliminates the incentive to build peaking plants.
2. The decision to opt entirely for *Methodology 2* over *Methodology 3* is questionable. If the SEM market were to survive indefinitely as currently outlined, investors in peaking capacity would face a very different risk on their investment than would investors in base load plant. If any modelling is done of the expected life cycle costs and benefits for an investor, it should separate out the sources of revenue and take account of differential risk. Both types of plant face the possibility of serious plant failure outside of their guarantees from the manufacturer.

A peak generator that will run for very few hours in the year will receive the bulk of its revenue from the capacity payments. As it may well be setting the system marginal cost when it does run, it will earn very little surplus from generating.

By contrast a base load plant will earn much of its surplus in early years from a surplus over energy costs when it generates. The length of time it will earn these profits will depend inter alia on how fuel prices develop and the speed with which newer, more efficient plants enter the market.

As a result, a new base load generator faces considerable uncertainty about future fuel and carbon prices as well as about the rate at which new firms enter the market and how technical progress will affect their efficiency. It also faces regulatory uncertainty about how long the promised capacity payments regime will persist. A peaking plant only faces the regulatory uncertainty.

These arguments suggest that the cost of capital for a new peaking plant should be much below that for a base load plant. While because of regulatory risk and risk of plant failure it may not be as low as would be suggested for a

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<sup>1</sup> Obviously they also have a vital incentive effect driving new investment across the spectrum, including base load.

totally safe investment, the cost of capital assumed in *Methodology 2* must be too high.

If regulatory uncertainty is important for new entrants, consideration should be given to how such risks could be reduced or hedged in the interests of both investors and consumers.

The decision to run with *Methodology 2* rather than *Methodology 3* has met with the approval of most if not all those who have commented. However, no comments have been received from the consumer interest.

3. The assumption that any new peaking plant will be an independent plant seems unduly restrictive. Because of the very different nature of a peaking plant to a base load plant, there may be substantial economies of scale arising from co-location with other plant. This has been the pattern in Ireland North and South in the past (and I suspect elsewhere) reflecting such economies of scale. Because the cost of ignoring such economies of scale would be reflected in capacity payments to all generators, it could substantially but unwarrantedly raise the costs for consumers.
4. The issue of the cost of a gas connection and gas capacity is discussed. As a peaking plant will, by definition, produce very little electricity, higher fuel costs could easily be dominated by higher fixed costs. This suggests that a peaking plant should run on gas diesel rather than gas, if connection and storage for gas are not already present at the site of the peaking plant.
5. The costs from underproviding generating capacity may be greater than the cost of overproviding. For this reason, given the uncertainties about the way the market may operate, it may be right to err on the side of generosity in incentivising new investment. However, provision will need to be made to gradually adjust the incentives to provide the correct long-term incentive. That implies that capacity payments will fall. How can this be done while maintaining the credibility of the new market?
6. The effects of the capacity payments regime need to be examined in both a static and a dynamic context. (We are currently modelling some of these questions.)
7. There is a risk that the recent decision permitting ESB to construct a new CCGT at Aghada may damage the credibility of capacity incentives in the All-Island market. By credibility, we mean that the state must be in a position to persuade market participants that it will not change the rules of the game once irreversible investments are in place. If this sort of credibility is lacking, the market is likely to be prone to under-investment. Capacity incentives within the market design may fail to have the desired effect if they are not credible, and credibility may be adversely affected if government is seen as likely to intervene directly when signals for additional capacity investment are likely to be strong (i.e. when the risk of shortages, and hence levels of capacity payments, are high). The Aghada investment decision may be such a case. Nevertheless, if the risk (and expected cost) of shortages is sufficiently high and the new All-Island market cannot deliver new capacity quickly enough, the Irish government may be justified in intervening to boost capacity directly. Given that the Aghada investment seems certain to go ahead, it is important that the government reduce market players' potential uncertainty by explaining

how this decision relates to the start of the new market. In particular, was the decision motivated solely by the perception of a short-term capacity problem, or does it reflect a continuing desire by the state to exert direct control over electricity capacity margins?