

NORTHERN IRELAND'S GENERATORS - MANAGING SECURITY OF SUPPLY IN A PERIOD OF TRANSITION

Introduction

Northern Ireland's electricity customers at present face greater security of supply risks than they did at privatisation or than they should do in the future. At privatisation, capacity exceeded demand by a substantial margin and the largest infeed was 300 MW. Demand has grown and the two largest infeeds – Moyle and Coolkeeragh - are 400 MW. With interconnection to offset the new vulnerability and new sources of generation coming on stream this vulnerability should gradually reduce. But for the next ten years it will require vigilance and careful management. This paper describes the issues and the Authority's proposals. It invites comments and views from the industry and the wider public.

Background

When the Electricity Supply industry in Northern Ireland was privatised in 1992 all the electricity generating capacity was contracted to NIE's Power Procurement Business (PPB). PPB had a monopsony right to buy all the electricity produced by the four conventional power stations existing at the time of privatisation, and a monopolist's exclusive right to sell that electricity to suppliers, including NIE's supply business.

PPB's right to buy this electricity was set out in power purchase agreements (the PPAs) with each power station operator. The price paid by PPB to the power station operators under the PPAs directly influenced the price that customers paid to their electricity suppliers.

The PPAs provided for availability payments to be made by PPB to each of the power station operators in respect of all of the earnings streams that might have been available to the power stations in a competitive market. The PPAs did not, therefore, provide for additional payments for system support services, (i.e. spinning reserve, reactive power, outage co-ordination and black start capability) or capacity. The payments for these services were included in the PPAs and recovered in the electricity charges paid by all customers. There was little transparency in the payments made to the power station operators and consequently in the make up of customers' charges.

Even without liberalisation this system has been (and would be further) eroded by the passing of time through the retirement of old power stations, the introduction of new uncontracted capacity (including renewable generation) and increased interconnection with Great Britain and the Irish Republic.

The liberalisation of the electricity market, as a result of the EU Electricity Directives, has put the process of evolution of the PPAs into a time frame. Liberalisation and the introduction of external and non-contracted generation have led to a gradual unbundling of the payments made under the PPAs. The unbundling was necessary for two reasons. First because independent power plants within Northern Ireland are also entitled to receive payments for the capacity and system support services etc. they provide. Secondly because all Northern Ireland customers benefit from the services provided by the capacity currently contracted to PPB and therefore should make a fair contribution to those costs. Consequently the system operator acquires such services from all thermal capacity in Northern Ireland and recovers the revenue from all Northern Ireland customers. In addition all customers contribute to the legacy costs of privatisation.

The EU Directives also created the circumstances in which energy companies in Northern Ireland and the Irish Republic rapidly turned the island of Ireland into a single business area, thereby providing the context in which the two Governments and the Northern Ireland Authority for Energy Regulation (the Authority) and the Commission for Energy Regulation (CER) are seeking to establish the Single Electricity Market (the SEM) in 2007.

Purpose

The purpose of this consultation paper is to identify the deficiencies in the present arrangements for generation in Northern Ireland in light of the rapid emergence of a Single Electricity Market and to propose remedies for such deficiencies.

It complements past and future papers we have produced and will produce in relation to the Single Electricity Market. The issues identified and the solutions proposed are not intended to preclude future refinement and development of the principles pertaining to the Single Electricity Market, especially if in the course of time a single regulatory structure is put in place to regulate the single market.

A Gradual Process

Provided the necessary legislative framework and operational measures are in place, it is anticipated that the Single Electricity Market will go live on 1 July 2007. From that date all electricity – perhaps excluding some de minimis generation - will be sold by generators (or their agents) and bought by suppliers through a ‘pool’ mechanism. Individual power stations throughout the island will be dispatched through a single merit order dispatch (subject to system constraints). Further information about the intended market can be found in the consultation paper issued jointly by the Authority and CER on 31 March 2005.

However, the amount of electricity currently exported across the interconnector with the Irish Republic is close to the maximum physical capacity of the network, and the amount traded is greater still. A second cross-border transmission line is proposed but it is unlikely to be operational before 2012. Any increase in the available transfer capacity before then is likely to be incremental.

The benefits of a larger single market add urgency to the work to remove the physical impediments to creating a fully integrated market spanning the island. But while that process is under way Northern Ireland will have to continue to manage many of the problems of supply, security and generation adequacy on its own.

The Generation Market

In addition to the PPAs established at the time of privatisation and a contract with Scottish Power for the transfer of energy across the Moyle Interconnector (subject to its construction), PPB was obligated to enter contracts with renewable generators under two Non Fossil Fuel Obligations (NFFO) Orders.

Since 1992, the PPAs for two of the stations have expired – those in respect of Coolkeeragh power station and Power Station West (although their terms were altered during their existence to provide better value for customers) – and the contract with Scottish Power was terminated early. The NFFO contracts will, for the most part, expire in 2009 and have been managed by PPB in such a way as to facilitate the development of green trading and to minimise the burden of these contracts on customers.

The two largest sets of PPAs remain in place, namely those in respect of the Ballylumford and Kilroot power stations.

The Ballylumford PPAs have been renegotiated, with 600 MW of the capacity being replaced by a more efficient CCGT and much of the remaining legacy capacity taken out of contract. Most of the PPAs terminate in 2012 but those relating to the CCGTs can be extended at a much lower level of capacity payments, the effect of which is to allow customers the opportunity to benefit from lower costs once the capital is paid down.

Ballylumford power station is now an efficient and versatile plant and is the mainstay of the system, producing electricity at reasonable cost and with low emissions. The plant owners (Premier Power) bear operating risk, in that their income depends on the plant being available to operate. Where the plant is available, PPB (and, through PPB customers) bear the risk or benefit of the price under the PPA being above or below the market price.

The PPAs in respect of Kilroot power station are unique among the original PPAs in that having not been modified to improve customer value, although the annual availability payments under the Kilroot PPA were reduced from October 2001 as a result of a Government payment of £30m.

It is generally accepted in Northern Ireland that the PPAs have been burdensome on electricity users in Northern Ireland and indeed now account for much of the price differential between Northern Ireland and comparable regions of Great Britain. However, none of the changes to the PPAs was aimed at reducing shareholder value in those contracts to the earliest cancellation dates.

Northern Ireland's electricity customers have honoured the PPAs and almost all of them have over time been improved - if only marginally in most cases - to provide additional value for both customers and shareholders. Shareholders in the older stations that have now closed continued, to some extent, to benefit from the PPAs beyond the early cancellation dates, which it was widely expected in 1992 would be invoked. The proposals set out below do not alter this. They anticipate the counter parties to the remaining PPAs continuing to enjoy the rights conferred on them in 1992 in the context in which such rights were granted, and subject to the expectation that these PPAs are likely to be terminated on their respective early cancellation dates if at that time their continuation would not be in customers' interests.

Security of Supply during market transition

The PPAs put in place at privatisation provided Northern Ireland with an excess of capacity over its requirements and ensured that there would be sufficient generating capacity to meet demand growth. It provided the Authority with effective control over exiting since generators were given powerful incentives to remain in business so long as the contracts remained in force. The weakness of the arrangements was that they did nothing to encourage efficient new entry and indeed it is arguable that by discouraging efficient exiting they actually discouraged efficient new entry.

However, in what remains (for the immediate future, until the cross-border constraint can be resolved) a small market and hence one vulnerable to the effects of the decisions of a single generator to enter or exit the market, the Authority believes it is essential for security of supply reasons that it (given its joint responsibility with the Department) should have powers to secure generation adequacy in order to protect the interests of consumers.

The risk to electricity users should over time be diminished with the steady growth of CHP and renewables, especially dispatchable renewables. If these alternatives build up rapidly to significant levels the need for measures proposed here to deal with conventional power stations will diminish.

SEM & Security of Supply

The introduction of the Single Electricity Market requires Northern Ireland to simultaneously modernise its generation/wholesale market framework while at the same time maintaining sufficient control of exiting so as to prevent a risk to security of supply. Potentially, at least during an initial period (possibly up to ten years and perhaps more) of the single market's operation, there is a tension between these two objectives. This is primarily because the physical constraints on transfers across the interconnector between Northern Ireland and the Irish Republic may impede the development of a fully effective, properly integrated electricity market in Ireland as a whole. The rest of this paper addresses the way in which this double challenge can be managed in the interest of customers.

These two issues need to be considered together because one consequence of the Single Electricity Market should be to encourage efficient exiting. There should be no basis for

retaining inefficient plant that cannot compete for some part of the load curve or the other services that the system requires. On the other hand, until there is a fully mature and integrated single market on the island, exiting - which is efficient in overall market terms - might produce unacceptable risks to security of supply in Northern Ireland.

The PPAs and the SEM

As currently drafted, the remaining PPAs do not appear to fit easily into the liberalised market proposed under the Single Electricity Market.

As an initial part of the changes by which the Single Electricity Market is given effect, the Authority is proposing to bring the early cancellation date under each of the PPAs forward to align them with the SEM implementation date. This will enable (but not necessarily require) the release of existing plant on to the system to operate in the newly formed competitive market.

If a PPA was cancelled prior to the early termination date originally provided for, the generator in question would be required (from cancellation until the original early cancellation date) to participate in the new market. The generator would be obliged to bid into the pool and to obtain capacity payments. Arrangements would also be put in place to reconcile the generator's actual revenue in the new market against that it would otherwise have earned under its PPA in the period prior to the original early cancellation date. The payment to or from the generator in order to achieve such reconciliation would be recovered or recycled through the charges that are levied by NIE on all customers in Northern Ireland.

Such arrangements would facilitate the transition from the current contractual arrangement to the new market environment and would protect electricity customers in Northern Ireland since they would be paying no more than the amount currently paid for generation under the PPAs. At the same time the proposals would allow generators to gain experience of the SEM by virtue of their participation earlier than would otherwise have been possible.

Ensuring Security of Supply for Northern Ireland Customers

In the long term, the new arrangements envisaged by the SEM should serve to deliver efficient and sustainable prices in the market which should in turn result in efficient consumption and investment decisions regarding timing of investment and plant type, size

and location. However, in the short term, physical constraints may prevent the market operating as it should.

Until the Single Electricity Market is completely operational and there is no capacity restriction on transfers between the Republic of Ireland and Northern Ireland, Northern Ireland will remain vulnerable to the entry or exit decision of a single generator. In order to maintain security of supply it is essential to ensure that any decision to enter and even more importantly to exit is signalled well in advance. This would enable the consequence of such a decision to be assessed and any adverse effects to be managed. In certain circumstances it may be desirable for the Authority to put in place arrangements to avoid a generator exiting or closing a generation set by providing sufficient incentives for its owner to keep it operating.

It is therefore proposed that generation licences for Northern Ireland generators should be modified to require all generators to provide the Transmission System Operator (TSO) with a statement each year showing their intentions regarding operation.

The licence condition will require the generator to state the earliest date on which it intends permanently to cease or reduce generation; any period during which it intends to temporarily cease or reduce generation at the power station (other than for routine maintenance) and any economic viability issues in relation to the power station. Economic viability issues would be matters, events or circumstances which can reasonably be expected to either increase the cost of making the capacity of the power station available, or reduce the amount of any payment or revenues to be earned by the power station, by an amount which renders the continued operation of the power station uneconomic.

The purpose of the notices would be to enable the TSO, the Department and the Authority to identify risks to security of supply at an early stage. Where the TSO considers and the Authority is satisfied that the proposed exiting of a generator at a particular time would threaten security of supply, the Authority will have the power to direct a suitable party (possibly the TSO) and the generator to enter into a contract for such period as may be determined, to continue to make the capacity available to the market.

It is possible that the threat to a station's viability could emerge very quickly, especially with world prices for primary fuels as volatile as they have been in recent years. The provision for a contract therefore needs to take into account the possible need for short-term protection.

The detailed terms of any such contract are yet to be determined, but the Authority's current view is that it would likely require the generator to efficiently operate and maintain the power station in question, and to use its best endeavours to obtain capacity payments for the capacity and sell electricity into the Single Electricity Market. The generator would be entitled to the difference between its costs and the amount received by it for capacity, any ancillary service revenue it could earn and any sales revenue it earns from the sale of electricity in the market (either from financial arrangements with third parties or from the pool). If the amount received by the generator in the market exceeded its costs, the excess would be payable by the generator to the counter party to the contract.

If the terms of the contract cannot be agreed there would then be a direction from the Authority under the licence, and if that is ignored it would be breach of licence with the consequences that would flow from that.

Such contracts should be an effective means of maintaining short term generation when it is required, without financially burdening power station owners who would otherwise face closure or continuing in a loss making position. The proposals would be in addition to any powers the Department has under Article 37.

Conclusion

To facilitate the development of an effective Single Electricity Market the Authority is proposing to bring the early cancellation date under each of the PPAs forward to align it with the implementation date for the Single Electricity Market. The proposed mechanism for bringing the earliest cancellation date forward will facilitate (if the Authority deems it to be in the interests of Northern Ireland customers) the transition from the current contractual arrangements to the new market environment and if early termination were exercised it would also allow generators to gain experience of the Single Electricity Market earlier than would otherwise have been possible.

Until a fully effective properly integrated electricity system is developed which embraces both parts of the island, possibly encompassing additional links with Great Britain, Northern Ireland's electricity customers face additional security of supply risks. This period may last for ten years or more, although the degree to which Northern Ireland's electricity users are exposed to security of supply risks should progressively diminish throughout the period and

fall away substantially – all else being equal – when transmission constraints between Northern Ireland and the Republic of Ireland have been removed.

However, particularly during the period until the Single Electricity Market is functioning effectively, it will be necessary to ensure that the implications of the decision of owners of conventional power stations to permanently or temporarily cease or reduce generation (for other than routine maintenance) are monitored to ensure that they do not damage the public interest and that mechanisms are developed to mitigate the effects of these decisions on security of supply.

Views on the analysis and the proposals in the paper as well as alternative or complementary measures are invited and should be sent to Donna Hamill, preferably by email to donna.hamill@ofregni.gov.uk to reach Ofreg by 30 June 2005.

Unless specifically requested, views may be published.

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