

9 NETWORK CAPABILITY FOR TRANSFERS WITH NORTHERN IRELAND / SINGLE ELECTRICITY MARKET

As described in Chapter 2, the system is connected to the Northern Ireland system by a 275 kV double circuit and two 110 kV standby connections. Increased interconnector capacity is planned for about 2012.

This chapter presents the results of the analyses carried out to determine the capability of the grid to transfer power to and from Northern Ireland.

Under current arrangements, transfer capability between the two systems is of interest to those who wish to access interconnector capacity. Following introduction of the Single Electricity Market (SEM) in 2007 the interconnectors will become internal circuits in the new market. The results described in this chapter will give an indication of the capability of the grid to facilitate SEM trade between the two jurisdictions.

The results in this chapter are dependent on the assumptions made about generation and demand, and on the completion dates of transmission reinforcement projects as described in previous chapters.

9.1 CAPABILITY RESULTS FOR TRANSFERS TO AND FROM NORTHERN IRELAND

The results for transfer capabilities from and to Northern Ireland for 2007, 2009 and 2012 are presented in Tables 9-1 and 9-2 respectively. The results presented in this chapter are classified as:

- Very high — more than 400 MW;
- High — between 250 and 400 MW;
- Medium — between 100 and 250 MW;
- Low — less than 100 MW.

The figures in brackets in the tables provide a cross reference between the medium or low transfer capabilities and the relevant additional information on the constraints provided in Appendix F.

Under the SEM, if, when the market is balanced, generation exceeds demand in Northern Ireland and consequently generation is lower than demand in the Republic of Ireland, there will be a power transfer from Northern Ireland to the Republic of Ireland. To model the various possible profiles of reduced generation in the Republic of Ireland, the capability of the network to transfer power from Northern Ireland to the three existing blocks of generation – in Dublin, the South, and the West - was analysed in turn.

Table 9-1 Total Transfer Capability for Power Transfers from Northern Ireland

Transfer To	Generation Block	2007	2009	2012
	Dublin		Very High	Very High
West		Very High	Very High	Very High
South		Low (P1)	Low (P1)	Very High

Alternatively, if market balance results in less generation than demand in Northern Ireland, there will be a power transfer from the Republic of Ireland to Northern Ireland. Therefore, to model the various possible generation profiles, analysis was carried out on the capability of the network to transfer power to Northern Ireland from the same fifteen 220 kV stations that were examined for generation opportunities.

Table 9-2 Total Transfer Capability for Power Transfers to Northern Ireland

Transfer From	Station	2007	2009	2012
	Arklow		Very High	Medium (C3)
Carrickmines		Low (P1)	Low (P1)	Very High
Cashla		Medium (P2)	Low (C4)	Medium (C4)
Clashavoon		High	Medium (P5)	High
Cullenagh		High	Medium (P5)	High
Finglas		Low (P1)	Medium (P1)	Very High
Flagford		Very High	Very High	Very High
Gorman		Medium (P1)	Low (P1)	Very High
Great Island		Very High	Medium (P5)	Very High
Killonan		High	Medium (P5)	High
Knockraha		High	Medium (P5)	Very High
Louth		Very High	Very High	Very High
Maynooth		Low (P1)	Low (P1)	Very High
Shannonbridge		Medium (P5)	Medium (P5)	Medium (F3)
Tarbert		High	Medium (P5)	Very High

9.2 OPPORTUNITIES FOR TRANSFERS TO AND FROM NORTHERN IRELAND

The grid has considerable capability to accommodate power transfers from Northern Ireland that replace generation in Dublin or the west. It should be noted that the risk of system separation, described in Section 2.3.6, and the capability of the grid in Northern Ireland were not taken into account in the analysis. Therefore such high transfers may not be feasible. The second interconnector will overcome the system separation issue. Users should contact System Operator Northern Ireland (SONI) for information on the capability of the Northern Ireland system to accommodate transfers.

Transfers from Northern Ireland that replace generation in the south are low in 2007 and 2009. This would limit the ability of generators in Northern Ireland competing with

generators in the south. This constraint will be significantly reduced following the construction of the Moneypoint-Tarbert cable and the 400/220 kV station near Nenagh.

The capability of the network in 2007 and 2009 to accommodate power transfers to Northern Ireland is limited from a number of stations examined. The 2012 results indicate that following the completion of the second interconnector and the 400 kV line from Woodland to Cavan, the opportunity for transfers to Northern Ireland are greatly improved. The three stations with limited opportunities are constrained by local circuit capacities. The TSO is bringing forward plans that will deal with two of the constraints limiting transfers from Arklow and Cashla. It will keep the remaining constraint under review and progress reinforcement plans if required.

9.3 IMPACT OF CHANGES SINCE THE DATA FREEZE

It is unlikely that the changes since the data freeze at the end of December 2005 will have any impact on the results presented.