



2011 TLAF Assumptions

EirGrid & SONI

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1. Introduction

Transmission Loss Adjustment Factors (TLAFs) are calculated annually by EirGrid and SONI. They are applied to all generators participating in the all-island Single Electricity Market.

In recent times the energy industry has requested that EirGrid conduct a study to calculate TLAF data for a year further into the future, separate from the annual calculation but using the same methodology. The year chosen was 2011.

The generation dispatch is the key driver for TLAFs. This report deals with the various inputs and assumptions involved in calculating the dispatch for 2011.

2. Data Sources

System model data was taken from the following sources:

- The Republic of Ireland system model was taken from the *Transmission Forecast Statement 2008-2014* document.
- Northern Ireland model data was taken from the *2008-2014 Seven Year Statement* network data files.

3. Generation Assumptions

The TLAF dispatch is a key aspect of the TLAF calculation. The distribution of generation determines where transmission losses are allocated so great care must be invested to make sure that all existing and expected generation units are modeled in the correct fashion.

3.2 New Generation

A number of new generators were included in the 2011 model.

3.2.1 New Gas-Fired Generators

The following gas-fired generators were expected to have connected by 2011:

- The 431 MW Aghada CCGT – this will be connected at the new Longpoint 220 kV station;
- The 445 MW Whitegen CCGT - this will be connected at the new Glanagow 220 kV station;
- A new 400 MW unit was assumed to have connected at the Louth 220/110 kV station;
- A new 400 MW unit was assumed to have connected at the Kilroot 275/110 kV station;
- Two new Kilroot Open-Cycle Gas Turbines (OCGT) – 40 MW each.

3.2.2 Wind Generation

The distribution of wind generation on the system has a significant effect on the way transmission losses are distributed. The modeling of wind generation is therefore an important element of the TLAF calculation. All wind generation scheduled to connect by 2011 was included.

Wind generation was modeled with a flat profile of a 32% load factor - similar to the 2009 TLAF work.

4. Interconnection

4.1 Moyle

Moyle power flows were determined by SONI and were similar to those that were used for the 2009 TLAF calculation. These flows were based on actual metered data taken from 2008.

4.2 North-South Interconnector

Even though the planned second north-south interconnector is not expected to be built in 2012, it was included in the 2011 TLAF model to assess the impact of this significant change on network topology. In recent system models power flows on circuits between the Republic of Ireland and Northern Ireland have been predominantly north to south. However in the 2011 model south to north flows have been more prevalent.

4.3 East-West Interconnector

The planned East-West interconnector was not included in the model.

4.4. The North-South 110 kV Phase Shifting Transformers (PSTs)

The two 110 kV PSTs (the Letterkenny-Strabane 110 kV and Corraclassy-Enniskillen 110 kV circuits) were modeled with zero power flows at all times.

5. Dispatch

The Plexos pricing model was used to determine a 2011 hourly dispatch. The application is the recognized market pricing analyst's tool.

SONI provided the expected Northern Ireland generator portfolio for 2011 – this data included connection dates and locations for new wind and conventional generation.

EirGrid provided the Republic of Ireland model data and created the all-island Plexos dispatch, which was then approved by SONI.

The Plexos dispatch was unconstrained – no network constraints were applied. Security and reserve constraints were adhered to however.

The dispatch output from Plexos was then processed to produce a single day and a single night dispatch for every month of 2011 – making 24 scenarios.