Annual Renewable Energy Constraint and Curtailment Report 2014

Non – Technical Summary

07/10/2015

EIRGRID SONI

EirGrid and SONI are the Transmission System Operators in Ireland and Northern Ireland respectively. We have prepared this report on the dispatch-down of renewable energy in 2014, as required under European and national legislation.

In Ireland and Northern Ireland renewable energy is predominately sourced from wind. Other sources include hydroelectricity, solar photovoltaic, biomass and waste. These latter sources of energy are generally maximised in dispatch and due to their small overall contribution to renewable energy they are excluded from the report.

Dispatch-down of wind energy refers to the amount of wind energy that is available but cannot be produced. Dispatch-down due to overall power system limitations is referred to as curtailment. Dispatch-down due to a local network limitation is referred to as a constraint.

EirGrid and SONI have a role in facilitating EU and government energy policy. In relation to renewable energy sources we must ensure that generation from these are prioritised. We must also ensure that the power system is safe and secure at all times.

There are times when not all energy from wind generators can be used. For example, if there is too much renewable energy, then this could cause instability to the system. Alternatively, in some locations there may not be enough capacity in the transmission circuits to safely carry the power from a group of wind farms. In these cases, EirGrid and SONI may have to instruct the wind farms to generate less than they could.

Each year we must report to our regulators, the Commission for Energy Regulation in Ireland and Utility Regulator in Northern Ireland on this. This report details the measures taken to dispatch-down renewable energy for system security reasons, and on the corrective measures that we intend to take in order to prevent inappropriate dispatching-down.

In 2014, the total wind energy generated in Ireland and Northern Ireland was 6,436 GWh. An estimated 273 GWh of wind energy was dispatched-down. This represents 4% of the total available wind energy in 2014, and is an increase of about 77 GWh on the 2013 figure.

In Ireland, the dispatch-down energy from wind resources was 232 GWh; this is equivalent to 4.3% of the total available wind energy. The dispatch-down energy from variable price-taking generation (VPTG) was 165 GWh, and from autonomous generation was 67 GWh. In Northern Ireland, the dispatch-down energy from wind resources was 41 GWh; this is equivalent to 2.8% of the total available wind energy. The dispatch-down energy from variable price-taking generation (VPTG) was 27 GWh, and from autonomous generation was 14 GWh.

The increase in dispatch down of wind generation is predominately due to the increase in wind generation capacity connected to the system. The total capacity of wind generation rose by 374 MW in 2014.

The level of demand is another important factor which can vary from year to year. However, the year-on-year changes were relatively small. The average demand in Ireland in 2014 was just 0.5% higher than in 2013 and in Northern Ireland it was 1.3% lower than in 2013.

The principal benefits of the Moyle and East West interconnectors are in reducing the price of electricity in Single Electricity Market and in improving security of supply. Additionally, they also facilitate the reduction of wind curtailment through the use of System Operator trades directly with National Grid Electricity Transmission or through the TSOs' trading partner in Great Britain.

The fundamental issues which give rise to curtailment are being addressed by the DS3 programme (Delivering a Secure, Sustainable Electricity System). This programme will securely and efficiently increase the level of wind generation which can be accommodated on the system and other system wide limitations.

This programme is based on the published Facilitation of Renewables studies.
In order to address the network limitations which give rise to constraint of wind energy, reinforcement of the network is required.

Temporary outages of transmission equipment are sometimes necessary to allow the connection of new windfarms to the network or for network improvement works. These works can lead to reduced network capacity and consequentially increased levels of dispatch-down in the short-term.

The figure below shows the total annual dispatch-down energy by both volume and month for 2014.