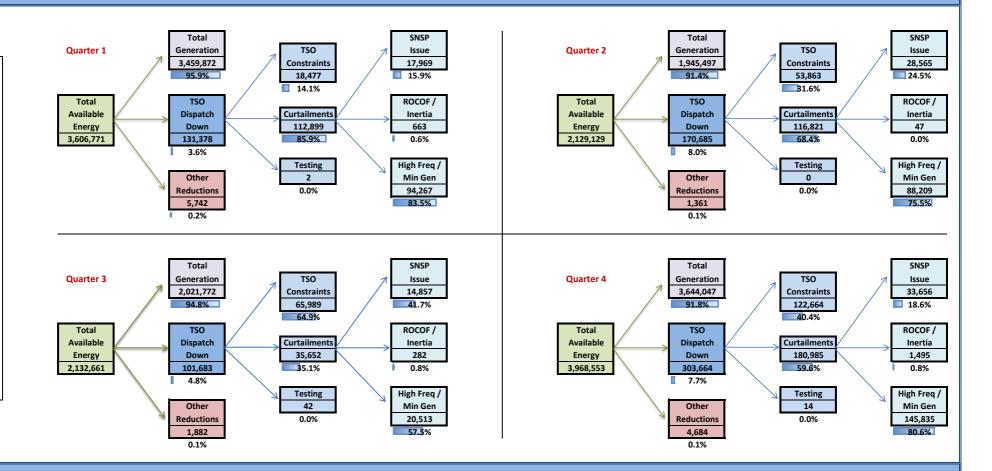


| Volumes (MWh)       | Jan       | Feb       | Mar       | Qtr1      | Apr     | May     | Jun     | Qtr2      | Jul     | Aug     | Sep     | Qtr3      | Oct       | Nov       | Dec       | Qtr4      | 2018       |
|---------------------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|------------|
| Available Energy    | 1,490,190 | 1,073,431 | 1,043,149 | 3,606,771 | 982,486 | 688,780 | 457,863 | 2,129,129 | 441,170 | 742,929 | 948,562 | 2,132,661 | 1,094,519 | 1,480,028 | 1,394,005 | 3,968,553 | 11,837,113 |
| Generation          | 1,423,116 | 1,046,496 | 990,259   | 3,459,872 | 879,237 | 652,498 | 413,762 | 1,945,497 | 431,240 | 718,012 | 872,519 | 2,021,772 | 1,002,656 | 1,378,292 | 1,263,099 | 3,644,047 | 11,071,187 |
| TSO Dispatch Down   | 58,539    | 23,379    | 49,460    | 131,378   | 97,123  | 34,250  | 39,311  | 170,685   | 8,688   | 22,637  | 70,359  | 101,683   | 84,551    | 94,733    | 124,380   | 303,664   | 707,410    |
| Other Reductions    | 3,960     | 1,492     | 290       | 5,742     | 817     | 108     | 436     | 1,361     | 425     | 380     | 1,077   | 1,882     | 3,222     | 796       | 665       | 4,684     | 13,668     |
| TSO Dispatch Down:  | -         |           |           |           | -       | -       |         |           |         | ŀ       |         |           |           | !<br>!    |           |           |            |
| TSO Constraints     | 11,003    | 3,142     | 4,332     | 18,477    | 9,879   | 16,519  | 27,465  | 53,863    | 4,781   | 18,765  | 42,444  | 65,989    | 46,586    | 36,863    | 39,216    | 122,664   | 260,994    |
| Curtailments        | 47,534    | 20,237    | 45,128    | 112,899   | 87,244  | 17,731  | 11,846  | 116,821   | 3,907   | 3,872   | 27,873  | 35,652    | 37,965    | 57,870    | 85,150    | 180,985   | 446,358    |
| TSO Testing         | 2         | -         | -         | 2         | -       | -       | -       | -         | -       | 0       | 42      | 42        | 0         | 0         | 14        | 14        | 59         |
| Curtailments:       |           |           |           |           |         |         |         |           |         | ļ       |         |           |           |           |           |           |            |
| SNSP Issue          | 8,391     | 2,165     | 7,413     | 17,969    | 28,564  | 2       | -       | 28,565    | -       | 335     | 14,521  | 14,857    | 579       | 8,514     | 24,562    | 33,656    | 95,047     |
| ROCOF / Inertia     | 1         | 550       | 112       | 663       | 47      | -       | -       | 47        | 59      | 89      | 134     | 282       | 209       | - [       | 1,286     | 1,495     | 2,487      |
| High Freq / Min Gen | 39,142    | 17,522    | 37,602    | 94,267    | 58,633  | 17,729  | 11,846  | 88,209    | 3,848   | 3,448   | 13,218  | 20,513    | 37,176    | 49,356    | 59,302    | 145,835   | 348,823    |

| Percentages         | Jan   | Feb   | Mar   | Qtr1  | Apr   | May    | Jun    | Qtr2  | Jul   | Aug   | Sep   | Qtr3  | Oct   | Nov   | Dec   | Qtr4  | 2018  |
|---------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generation          | 95.5% | 97.5% | 94.9% | 95.9% | 89.5% | 94.7%  | 90.4%  | 91.4% | 97.7% | 96.6% | 92.0% | 94.8% | 91.6% | 93.1% | 90.6% | 91.8% | 93.5% |
| TSO Dispatch Down   | 3.9%  | 2.2%  | 4.7%  | 3.6%  | 9.9%  | 5.0%   | 8.6%   | 8.0%  | 2.0%  | 3.0%  | 7.4%  | 4.8%  | 7.7%  | 6.4%  | 8.9%  | 7.7%  | 6.0%  |
| Other Reductions    | 0.3%  | 0.1%  | 0.0%  | 0.2%  | 0.1%  | 0.0%   | 0.1%   | 0.1%  | 0.1%  | 0.1%  | 0.1%  | 0.1%  | 0.3%  | 0.1%  | 0.0%  | 0.1%  | 0.1%  |
| TSO Dispatch Down:  |       |       |       |       |       |        |        |       |       |       |       |       |       |       |       |       |       |
| TSO Constraints     | 18.8% | 13.4% | 8.8%  | 14.1% | 10.2% | 48.2%  | 69.9%  | 31.6% | 55.0% | 82.9% | 60.3% | 64.9% | 55.1% | 38.9% | 31.5% | 40.4% | 36.9% |
| Curtailments        | 81.2% | 86.6% | 91.2% | 85.9% | 89.8% | 51.8%  | 30.1%  | 68.4% | 45.0% | 17.1% | 39.6% | 35.1% | 44.9% | 61.1% | 68.5% | 59.6% | 63.1% |
| TSO Testing         | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%   | 0.0%   | 0.0%  | 0.0%  | 0.0%  | 0.1%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  |
| Curtailments:       |       | į     |       |       |       |        |        |       |       |       |       |       |       |       |       |       |       |
| SNSP Issue          | 17.7% | 10.7% | 16.4% | 15.9% | 32.7% | 0.0%   | 0.0%   | 24.5% | 0.0%  | 8.7%  | 52.1% | 41.7% | 1.5%  | 14.7% | 28.8% | 18.6% | 21.3% |
| ROCOF / Inertia     | 0.0%  | 2.7%  | 0.2%  | 0.6%  | 0.1%  | 0.0%   | 0.0%   | 0.0%  | 1.5%  | 2.3%  | 0.5%  | 0.8%  | 0.6%  | 0.0%  | 1.5%  | 0.8%  | 0.6%  |
| High Freq / Min Gen | 82.3% | 86.6% | 83.3% | 83.5% | 67.2% | 100.0% | 100.0% | 75.5% | 98.5% | 89.0% | 47.4% | 57.5% | 97.9% | 85.3% | 69.6% | 80.6% | 78.1% |









### Historical Wind Dispatch Down (Constraint and Curtailment) Percentages for Ireland (IE), Northern Ireland (NI) and All Island (AI)

|                          |      | 2011  |       |       | 2012  |       |       | 2013  |       |       | 2014  |       |       | 2015       |       |       | 2016                  |       |       | 2017                  |       |       | 2018    |        |
|--------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|-------|-------|-----------------------|-------|-------|-----------------------|-------|-------|---------|--------|
| Month                    | NI   | IE    | ΑI    | NI    | IE    | ΑI    | NI    | IE    | AI    | NI    | IE    | ΑI    | NI    | IE         | ΑI    | NI    | IE                    | ΑI    | NI    | IE                    | AI    | NI    | IE      | ΑI     |
| Jan                      | 0.0% | 0.8%  | 0.6%  | 0.5%  | 2.2%  | 1.9%  | 0.7%  | 0.4%  | 0.5%  | 2.9%  | 4.9%  | 4.5%  | 4.3%  | 4.3%       | 4.3%  | 3.4%  | 3.5%                  | 3.5%  | 2.4%  | 1.9%                  | 2.0%  | 5.7%  | 3.5%    | 3.9%   |
| Feb                      | 0.0% | 0.6%  | 0.5%  | 0.2%  | 2.8%  | 2.2%  | 0.3%  | 0.7%  | 0.6%  | 3.2%  | 3.7%  | 3.6%  | 4.6%  | 4.1%       | 4.2%  | 2.3%  | 3.3%                  | 3.1%  | 2.0%  | 1.7%                  | 1.7%  | 2.9%  | 2.0%    | 2.2%   |
| Mar                      | 2.7% | 1.8%  | 2.0%  | 0.8%  | 2.4%  | 2.0%  | 0.6%  | 0.3%  | 0.3%  | 1.8%  | 4.0%  | 3.5%  | 11.4% | 8.0%       | 8.8%  | 0.9%  | 2.4%                  | 2.1%  | 3.0%  | 3.4%                  | 3.3%  | 5.9%  | 4.4%    | 4.7%   |
| Qtr1                     | 0.7% | 1.0%  | 0.9%  | 0.5%  | 2.4%  | 2.0%  | 0.6%  | 0.4%  | 0.5%  | 2.7%  | 4.2%  | 3.9%  | 6.9%  | 5.4%       | 5.8%  | 2.4%  | 3.2%                  | 3.0%  | 2.4%  | 2.3%                  | 2.4%  | 4.9%  | 3.3%    | 3.6%   |
| Apr                      | 1.3% | 1.2%  | 1.3%  | 0.2%  | 1.4%  | 1.2%  | 2.6%  | 4.7%  | 4.3%  | 1.8%  | 4.2%  | 3.7%  | 2.8%  | 1.8%       | 2.0%  | 0.8%  | 1.4%                  | 1.3%  | 4.2%  | 3.5%                  | 3.6%  | 19.2% | 7.4%    | 9.8%   |
| May                      | 2.2% | 3.5%  | 3.2%  | 0.6%  | 1.6%  | 1.4%  | 3.7%  | 6.1%  | 5.6%  | 1.5%  | 2.8%  | 2.5%  | 3.8%  | 4.5%       | 4.3%  | 1.1%  | 1.2%                  | 1.2%  | 3.6%  | 3.5%                  | 3.5%  | 6.1%  | 4.7%    | 5.0%   |
| Jun                      | 0.4% | 0.8%  | 0.7%  | 0.4%  | 4.0%  | 3.3%  | 1.9%  | 3.7%  | 3.4%  | 0.6%  | 3.3%  | 2.7%  | 4.2%  | 5.0%       | 4.8%  | 0.3%  | 0.7%                  | 0.7%  | 4.7%  | 3.9%                  | 4.1%  | 11.0% | 8.0%    | 8.6%   |
| Qtr2                     | 1.6% | 2.3%  | 2.2%  | 0.4%  | 2.2%  | 1.9%  | 2.9%  | 5.0%  | 4.6%  | 1.5%  | 3.4%  | 3.0%  | 3.7%  | 3.9%       | 3.8%  | 0.8%  | 1.2%                  | 1.1%  | 4.2%  | 3.7%                  | 3.8%  | 13.0% | 6.6%    | 8.0%   |
| Jul                      | 0.2% | 3.3%  | 2.8%  | 0.5%  | 1.9%  | 1.6%  | 0.8%  | 4.2%  | 3.4%  | 1.6%  | 3.9%  | 3.4%  | 2.8%  | 3.8%       | 3.7%  | 6.2%  | 2.3%                  | 3.1%  | 4.4%  | 2.8%                  | 3.2%  | 2.1%  | 1.9%    | 2.0%   |
| Aug                      | 0.0% | 0.7%  | 0.5%  | 4.0%  | 4.2%  | 4.1%  | 2.4%  | 5.4%  | 4.7%  | 3.8%  | 3.5%  | 3.6%  | 5.0%  | 5.8%       | 5.6%  | 7.0%  | 4.6%                  | 5.0%  | 3.1%  | 2.8%                  | 2.9%  | 5.8%  | 2.2%    | 3.0%   |
| Sep                      | 2.4% | 3.9%  | 3.7%  | 0.4%  | 4.8%  | 3.7%  | 0.5%  | 4.2%  | 3.3%  | 0.1%  | 2.2%  | 1.8%  | 1.5%  | 2.7%       | 2.5%  | 5.8%  | 5.6%                  | 5.6%  | 4.2%  | 5.4%                  | 5.1%  | 13.1% | 5.5%    | 7.4%   |
| Qtr3                     | 1.5% | 3.1%  | 2.8%  | 1.5%  | 3.8%  | 3.3%  | 1.3%  | 4.6%  | 3.9%  | 2.4%  | 3.3%  | 3.1%  | 3.1%  | 4.1%       | 3.9%  | 6.3%  | 4.4%                  | 4.8%  | 3.9%  | 3.9%                  | 3.9%  | 8.7%  | 3.6%    | 4.8%   |
| Oct                      | 2.4% | 4.7%  | 4.3%  | 0.0%  | 0.3%  | 0.2%  | 1.6%  | 5.9%  | 5.0%  | 4.5%  | 8.2%  | 7.4%  | 4.2%  | 3.8%       | 3.9%  | 1.9%  | 1.8%                  | 1.8%  | 14.6% | 9.2%                  | 10.6% | 10.2% | 6.9%    | 7.7%   |
| Nov                      | 1.2% | 2.3%  | 2.1%  | 0.1%  | 1.0%  | 0.8%  | 4.0%  | 3.0%  | 3.2%  | 2.0%  | 3.2%  | 3.0%  | 6.9%  | 6.8%       | 6.9%  | 2.7%  | 1.0%                  | 1.3%  | 3.2%  | 2.5%                  | 2.6%  | 10.2% | 5.2%    | 6.4%   |
| Dec                      | 0.7% | 2.2%  | 1.9%  | 0.8%  | 2.8%  | 2.5%  | 2.0%  | 4.4%  | 3.8%  | 4.5%  | 5.0%  | 4.9%  | 6.2%  | 6.3%       | 6.3%  | 3.8%  | 3.1%                  | 3.3%  | 5.3%  | 2.5%                  | 3.1%  | 14.9% | 7.2%    | 8.9%   |
| Qtr4                     | 1.4% | 2.9%  | 2.6%  | 0.4%  | 1.6%  | 1.4%  | 2.4%  | 4.5%  | 4.0%  | 3.9%  | 5.7%  | 5.3%  | 6.1%  | 6.0%       | 6.0%  | 3.0%  | 2.1%                  | 2.3%  | 8.5%  | 4.9%                  | 5.7%  | 11.7% | 6.4%    | 7.7%   |
| Year Total DD            | 1.3% | 2.4%  | 2.2%  | 0.7%  | 2.5%  | 2.1%  | 1.9%  | 3.5%  | 3.2%  | 2.8%  | 4.4%  | 4.1%  | 5.3%  | 5.1%       | 5.1%  | 3.2%  | 2.8%                  | 2.9%  | 5.0%  | 3.7%                  | 4.0%  | 9.4%  | 5.0%    | 6.0%   |
| Constraints              | 0.3% | 0.5%  | 0.4%  | 0.3%  | 0.9%  | 0.8%  | 0.5%  | 1.0%  | 0.9%  | 1.0%  | 1.5%  | 1.4%  | 1.9%  | 1.8%       | 1.8%  | 1.3%  | 1.4%                  | 1.4%  | 1.9%  | 1.0%                  | 1.2%  | 4.0%  | 1.7%    | 2.2%   |
| Curtailments             | 1.1% | 2.0%  | 1.8%  | 0.4%  | 1.5%  | 1.3%  | 1.3%  | 2.5%  | 2.3%  | 1.8%  | 2.9%  | 2.6%  | 3.4%  | 3.3%       | 3.3%  | 1.9%  | 1.4%                  | 1.5%  | 3.1%  | 2.6%                  | 2.7%  | 5.4%  | 3.3%    | 3.8%   |
| Wind Installed           | 512  | 1,585 | 2.097 | 600   | 1,703 | 2,303 | 640   | 1.923 | 2,563 | 729   | 2,266 | 2.996 | 751   | 2,447      | 3,198 | 943   | 2,779                 | 3,722 | 1,154 | 3.314                 | 4.467 | 1.276 | 3.666   | 4,942  |
| Capacity (MW)            |      | ,     | ,     |       | ,     | ,     |       | ,     | ,     |       | ,     | ,     |       |            | -,    |       | ,                     | -,    |       | -,-                   | , .   | , -   |         |        |
| Wind Generation<br>(GWh) | 943  | 4,256 | 5,198 | 1,020 | 4,102 | 5,122 | 1,259 | 4,642 | 5,901 | 1,453 | 5,116 | 6,568 | 1,803 | 6,537      | 8,339 | 1,725 | 6,115                 | 7,840 | 2,051 | 7,229                 | 9,280 | 2,391 | 8,685   | 11,076 |
| Wind Capacity<br>Factors | 21%  | 31%   | 28%   | 21%   | 28%   | 27%   | 23%   | 29%   | 28%   | 24%   | 28%   | 27%   | 28%   | 32%        | 31%   | 23%   | 27%                   | 26%   | 22%   | 27%                   | 26%   | 22%   | 28%     | 27%    |
| SNSP<br>Limit            |      | 50%   |       | ,     | 50%   |       |       | 50%   |       |       | 50%   |       | 55%   | Trial fror | n Oct |       | erm fror<br>rial fron | -     |       | erm fror<br>rial fron | -     | 65% F | erm fro | m Apr  |

#### Notes:

"Dispatch Down" consists of TSO constraints, curtailments and wind testing.

The darker shaded cells indicate higher dispatch-down percentages in order to produce a graphical representation similar to a heat map.

A more accurate methodology for calculating wind dispatch down was implemented from 2016. Figures from previous years are best estimates.

Wind installed capacities, generation and capacity factors are indicative and based on the latest available information.

SNSP (System Non-Synchronous Penetration) is the sum of non-synchronous generation (such as wind, solar and HVDC imports) as a percentage of total demand and exports.

When the SNSP limit is raised, a trial period takes place before it becomes permanent.

During the trial period, the system is operated at this increased SNSP limit except in times of extreme system events or during system testing.

For more infomration see annual and quarterly dispatch down reports.

User Guide Available at: http://www.eirgridgroup.com/how-the-grid-works/renewables/



# **All Island Quarterly Wind Dispatch Down Report 2018**

## **Regional Wind Dispatch Down Percentages**

| Region | Jan  | Feb  | Mar  | Qtr1 | Apr   | May  | Jun   | Qtr2  | Jul  | Aug  | Sep   | Qtr3  | Oct   | Nov   | Dec   | Qtr4  | 2018 |
|--------|------|------|------|------|-------|------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|------|
| NI     | 5.7% | 2.9% | 5.9% | 4.9% | 19.2% | 6.1% | 11.0% | 13.0% | 2.1% | 5.8% | 13.1% | 8.7%  | 10.2% | 10.2% | 14.9% | 11.7% | 9.4% |
| М      | 5.5% | 3.1% | 5.6% | 4.8% | 7.6%  | 3.5% | 3.0%  | 5.3%  | 1.6% | 1.1% | 4.5%  | 2.7%  | 4.4%  | 5.3%  | 6.5%  | 5.5%  | 4.8% |
| NE     | 2.3% | 2.4% | 5.3% | 3.2% | 9.5%  | 2.1% | 1.9%  | 5.3%  | 1.0% | 1.1% | 4.6%  | 2.7%  | 4.6%  | 3.9%  | 6.4%  | 5.0%  | 4.1% |
| NW     | 5.7% | 2.3% | 6.4% | 4.9% | 10.6% | 5.3% | 13.1% | 9.4%  | 6.8% | 8.2% | 15.0% | 11.1% | 12.6% | 11.8% | 14.5% | 12.9% | 9.4% |
| SE     | 4.2% | 2.9% | 5.3% | 4.1% | 8.8%  | 4.0% | 2.6%  | 5.9%  | 0.9% | 0.6% | 5.2%  | 2.6%  | 4.4%  | 4.2%  | 6.8%  | 5.2%  | 4.5% |
| SW     | 3.2% | 1.9% | 4.3% | 3.1% | 5.6%  | 8.7% | 15.2% | 8.8%  | 1.8% | 2.3% | 4.4%  | 3.1%  | 10.1% | 4.8%  | 8.1%  | 7.3%  | 5.6% |
| W      | 3.3% | 1.9% | 4.9% | 3.3% | 12.5% | 2.3% | 3.5%  | 7.2%  | 2.1% | 2.2% | 6.8%  | 4.0%  | 5.8%  | 6.8%  | 7.1%  | 6.6%  | 5.3% |

User Guide Available at: http://www.eirgridgroup.com/how-the-grid-works/renewables/

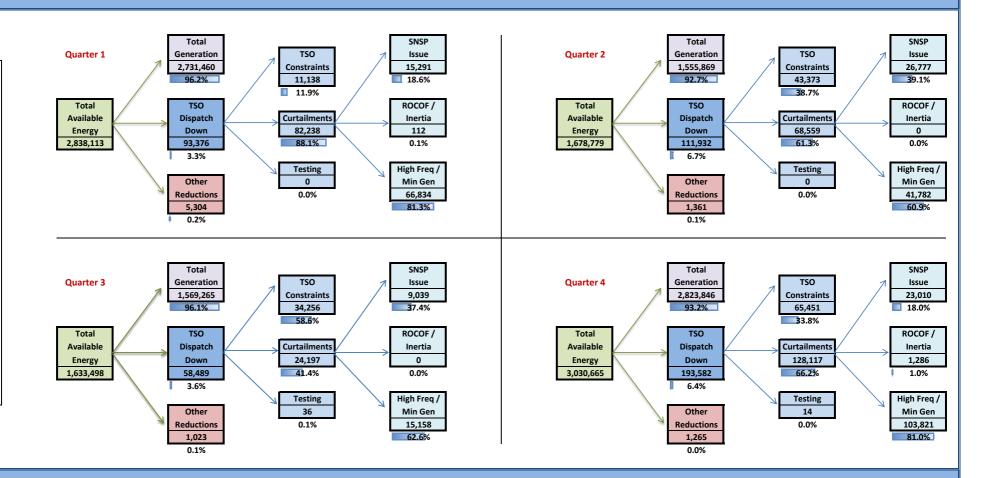


| Volumes (MWh)       | Jan       | Feb     | Mar     | Qtr1      | Apr     | May     | Jun     | Qtr2      | Jul     | Aug     | Sep     | Qtr3      | Oct     | Nov       | Dec       | Qtr4      | 2018      |
|---------------------|-----------|---------|---------|-----------|---------|---------|---------|-----------|---------|---------|---------|-----------|---------|-----------|-----------|-----------|-----------|
| Available Energy    | 1,175,475 | 854,291 | 808,347 | 2,838,113 | 778,765 | 535,941 | 364,073 | 1,678,779 | 349,969 | 576,950 | 706,579 | 1,633,498 | 820,718 | 1,124,051 | 1,085,897 | 3,030,665 | 9,181,056 |
| Generation          | 1,127,424 | 834,092 | 769,944 | 2,731,460 | 715,881 | 509,379 | 330,608 | 1,555,869 | 342,413 | 562,603 | 664,248 | 1,569,265 | 760,478 | 1,060,713 | 1,002,655 | 2,823,846 | 8,680,439 |
| TSO Dispatch Down   | 40,756    | 17,041  | 35,579  | 93,376    | 57,920  | 24,982  | 29,029  | 111,932   | 6,745   | 12,971  | 38,773  | 58,489    | 56,621  | 58,541    | 78,420    | 193,582   | 457,379   |
| Other Reductions    | 3,606     | 1,450   | 249     | 5,304     | 817     | 108     | 436     | 1,361     | 107     | 165     | 751     | 1,023     | 625     | 323       | 317       | 1,265     | 8,953     |
| TSO Dispatch Down:  | ļ         |         |         |           |         |         |         |           |         |         |         |           |         |           |           |           |           |
| TSO Constraints     | 8,274     | 1,328   | 1,536   | 11,138    | 7,553   | 13,087  | 22,733  | 43,373    | 3,512   | 10,001  | 20,742  | 34,256    | 29,780  | 14,389    | 21,282    | 65,451    | 154,218   |
| Curtailments        | 32,482    | 15,713  | 34,043  | 82,238    | 50,367  | 11,895  | 6,296   | 68,559    | 3,233   | 2,970   | 17,994  | 24,197    | 26,841  | 44,152    | 57,124    | 128,117   | 303,110   |
| TSO Testing         | -         | -       | -       | -         | -       | -       | -       | -         | -       | 0       | 36      | 36        | -       | 0         | 14        | 14        | 51        |
| Curtailments:       |           |         |         |           |         |         |         |           |         |         |         |           |         |           |           |           |           |
| SNSP Issue          | 6,544     | 1,480   | 7,268   | 15,291    | 26,775  | 2       | -       | 26,777    | -       | 198     | 8,841   | 9,039     | 273     | 5,558     | 17,179    | 23,010    | 74,117    |
| ROCOF / Inertia     | -         | -       | 112     | 112       | -       | -       | -       | -         | -       | -       | -       | -         | -       | -         | 1,286     | 1,286     | 1,398     |
| High Freq / Min Gen | 25,938    | 14,234  | 26,662  | 66,834    | 23,592  | 11,894  | 6,296   | 41,782    | 3,233   | 2,772   | 9,154   | 15,158    | 26,568  | 38,594    | 38,659    | 103,821   | 227,595   |

| Percentages         |       | F-1-  | Mar   | Qtr1  | A     | 84     | l      | Qtr2  | 11     | A     | C     | 04-2  | 0-4   | N     | D     | 04=4  | 2018  |
|---------------------|-------|-------|-------|-------|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Percentages         | Jan   | Feb   | iviar | Qtri  | Apr   | May    | Jun    | Qtr2  | Jul    | Aug   | Sep   | Qtr3  | Oct   | Nov   | Dec   | Qtr4  | 2018  |
| Generation          | 95.9% | 97.6% | 95.2% | 96.2% | 91.9% | 95.0%  | 90.8%  | 92.7% | 97.8%  | 97.5% | 94.0% | 96.1% | 92.7% | 94.4% | 92.3% | 93.2% | 94.5% |
| TSO Dispatch Down   | 3.5%  | 2.0%  | 4.4%  | 3.3%  | 7.4%  | 4.7%   | 8.0%   | 6.7%  | 1.9%   | 2.2%  | 5.5%  | 3.6%  | 6.9%  | 5.2%  | 7.2%  | 6.4%  | 5.0%  |
| Other Reductions    | 0.3%  | 0.2%  | 0.0%  | 0.2%  | 0.1%  | 0.0%   | 0.1%   | 0.1%  | 0.0%   | 0.0%  | 0.1%  | 0.1%  | 0.1%  | 0.0%  | 0.0%  | 0.0%  | 0.1%  |
| TSO Dispatch Down:  |       |       |       |       |       |        |        |       |        |       |       |       |       |       |       |       |       |
| TSO Constraints     | 20.3% | 7.8%  | 4.3%  | 11.9% | 13.0% | 52.4%  | 78.3%  | 38.7% | 52.1%  | 77.1% | 53.5% | 58.6% | 52.6% | 24.6% | 27.1% | 33.8% | 33.7% |
| Curtailments        | 79.7% | 92.2% | 95.7% | 88.1% | 87.0% | 47.6%  | 21.7%  | 61.3% | 47.9%  | 22.9% | 46.4% | 41.4% | 47.4% | 75.4% | 72.8% | 66.2% | 66.3% |
| TSO Testing         | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%   | 0.0%   | 0.0%  | 0.0%   | 0.0%  | 0.1%  | 0.1%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  |
| Curtailments:       |       |       |       |       |       |        |        |       |        |       |       |       |       |       |       |       |       |
| SNSP Issue          | 20.1% | 9.4%  | 21.3% | 18.6% | 53.2% | 0.0%   | 0.0%   | 39.1% | 0.0%   | 6.7%  | 49.1% | 37.4% | 1.0%  | 12.6% | 30.1% | 18.0% | 24.5% |
| ROCOF / Inertia     | 0.0%  | 0.0%  | 0.3%  | 0.1%  | 0.0%  | 0.0%   | 0.0%   | 0.0%  | 0.0%   | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 2.3%  | 1.0%  | 0.5%  |
| High Freq / Min Gen | 79.9% | 90.6% | 78.3% | 81.3% | 46.8% | 100.0% | 100.0% | 60.9% | 100.0% | 93.3% | 50.9% | 62.6% | 99.0% | 87.4% | 67.7% | 81.0% | 75.1% |









## **Northern Ireland Quarterly Wind Dispatch Down Report 2018**

| Volumes (MWh)       | Jan     | Feb     | Mar     | Qtr1    | Apr     | Mav     | Jun    | Qtr2    | Jul    | Aug     | Sep     | Qtr3    | Oct     | Nov     | Dec     | Qtr4    | 2018      |
|---------------------|---------|---------|---------|---------|---------|---------|--------|---------|--------|---------|---------|---------|---------|---------|---------|---------|-----------|
| Available Energy    | 314,716 | 219,140 | 234,802 | 768,658 | 203,721 | 152,839 | 93,789 | 450,349 | 91,201 | 165.979 | 241,983 | 499,163 | 273,802 | 355,977 | 308,109 | 937,888 | 2,656,057 |
| Generation          | 295,693 | 212,404 | 220,315 | 728,412 | 163,356 | 143,119 | 83,153 | 389,629 | 88,827 | 155,409 | 208,271 | 452,507 | 242,178 | 317,579 | 260,444 | 820,201 | 2,390,748 |
| TSO Dispatch Down   | 17,784  | 6,338   | 13,881  | 38,003  | 39,203  | 9,268   | 10,282 | 58,753  | 1,943  | 9,666   | 31,586  | 43,194  | 27,929  | 36,193  | 45,960  | 110,082 | 250,032   |
| Other Reductions    | 354     | 43      | 41      | 438     | -       | -       | -      | -       | 317    | 215     | 326     | 858     | 2,598   | 473     | 348     | 3,419   | 4,715     |
| TSO Dispatch Down:  | ļ       |         |         |         | ļ       | ļ       |        |         |        |         |         |         |         |         |         |         |           |
| TSO Constraints     | 2,729   | 1,814   | 2,796   | 7,339   | 2,326   | 3,432   | 4,732  | 10,490  | 1,269  | 8,764   | 21,702  | 31,734  | 16,806  | 22,474  | 17,934  | 57,213  | 106,776   |
| Curtailments        | 15,053  | 4,523   | 11,085  | 30,661  | 36,877  | 5,836   | 5,550  | 48,263  | 674    | 902     | 9,879   | 11,455  | 11,124  | 13,719  | 28,026  | 52,869  | 143,247   |
| TSO Testing         | 2       | -       | -       | 2       | -       | -       | -      | -       | -      | -       | 5       | 5       | 0       | -       | -       | 0       | 8         |
| Curtailments:       |         |         |         |         |         |         |        |         |        |         |         |         |         |         |         |         |           |
| SNSP Issue          | 1,848   | 685     | 145     | 2,678   | 1,788   | 0       | -      | 1,788   | -      | 137     | 5,681   | 5,817   | 306     | 2,957   | 7,383   | 10,646  | 20,930    |
| ROCOF / Inertia     | 1       | 550     | -       | 551     | 47      | -       | -      | 47      | 59     | 89      | 134     | 282     | 209     | -       | -       | 209     | 1,089     |
| High Freq / Min Gen | 13,204  | 3,289   | 10,940  | 27,432  | 35,042  | 5,836   | 5,550  | 46,427  | 615    | 676     | 4,064   | 5,355   | 10,608  | 10,762  | 20,643  | 42,013  | 121,228   |

| _                   |       |       | !     |       |       |        |        |       |       | !     | !     | _     |       |       |       |       |       |
|---------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Percentages         | Jan   | Feb   | Mar   | Qtr1  | Apr   | May    | Jun    | Qtr2  | Jul   | Aug   | Sep   | Qtr3  | Oct   | Nov   | Dec   | Qtr4  | 2018  |
| Generation          | 94.0% | 96.9% | 93.8% | 94.8% | 80.2% | 93.6%  | 88.7%  | 86.5% | 97.4% | 93.6% | 86.1% | 90.7% | 88.5% | 89.2% | 84.5% | 87.5% | 90.0% |
| TSO Dispatch Down   | 5.7%  | 2.9%  | 5.9%  | 4.9%  | 19.2% | 6.1%   | 11.0%  | 13.0% | 2.1%  | 5.8%  | 13.1% | 8.7%  | 10.2% | 10.2% | 14.9% | 11.7% | 9.4%  |
| Other Reductions    | 0.1%  | 0.0%  | 0.0%  | 0.1%  | 0.0%  | 0.0%   | 0.0%   | 0.0%  | 0.3%  | 0.1%  | 0.1%  | 0.2%  | 0.9%  | 0.1%  | 0.1%  | 0.4%  | 0.2%  |
| TSO Dispatch Down:  |       |       |       |       |       |        |        |       |       |       |       |       |       |       |       |       |       |
| TSO Constraints     | 15.3% | 28.6% | 20.1% | 19.3% | 5.9%  | 37.0%  | 46.0%  | 17.9% | 65.3% | 90.7% | 68.7% | 73.5% | 60.2% | 62.1% | 39.0% | 52.0% | 42.7% |
| Curtailments        | 84.6% | 71.4% | 79.9% | 80.7% | 94.1% | 63.0%  | 54.0%  | 82.1% | 34.7% | 9.3%  | 31.3% | 26.5% | 39.8% | 37.9% | 61.0% | 48.0% | 57.3% |
| TSO Testing         | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%   | 0.0%   | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%  |
| Curtailments:       |       |       |       |       |       |        |        |       |       |       |       |       |       |       |       |       |       |
| SNSP Issue          | 12.3% | 15.1% | 1.3%  | 8.7%  | 4.8%  | 0.0%   | 0.0%   | 3.7%  | 0.0%  | 15.2% | 57.5% | 50.8% | 2.7%  | 21.6% | 26.3% | 20.1% | 14.6% |
| ROCOF / Inertia     | 0.0%  | 12.2% | 0.0%  | 1.8%  | 0.1%  | 0.0%   | 0.0%   | 0.1%  | 8.8%  | 9.8%  | 1.4%  | 2.5%  | 1.9%  | 0.0%  | 0.0%  | 0.4%  | 0.8%  |
| High Freq / Min Gen | 87.7% | 72.7% | 98.7% | 89.5% | 95.0% | 100.0% | 100.0% | 96.2% | 91.2% | 75.0% | 41.1% | 46.8% | 95.4% | 78.4% | 73.7% | 79.5% | 84.6% |

User Guide Available at: http://www.eirgridgroup.com/how-the-grid-works/renewables/





