

ELECTRICITY CONSUMPTION AND RENEWABLE GENERATION IN NORTHERN IRELAND: YEAR ENDING DECEMBER 2019

This publication presents information on Renewable Electricity Generation for Northern Ireland. It details information on the percentage of electricity consumption in Northern Ireland that was generated from renewable sources as well as information on the type of renewable generation. This publication aids reporting on performance against the 2011-15 Programme for Government target which is to “Encourage achievement of 20% of electricity consumption from renewable sources by 2015” and the Executive’s 2010-20 Strategic Energy Framework which includes a target to achieve 40% of electricity consumption from renewable sources by 2020.

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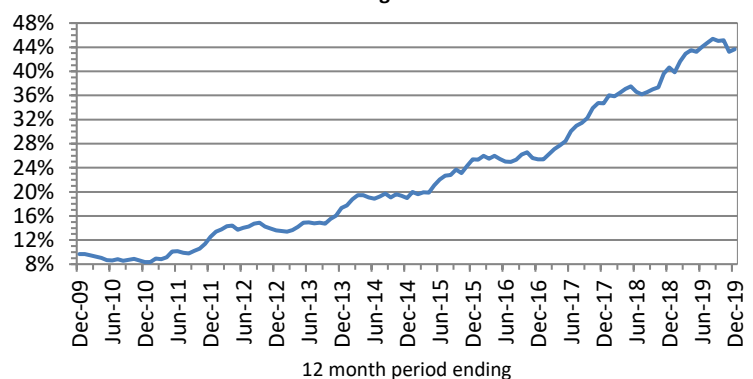
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Key Points

- For the 12 month period January 2019 to December 2019, 43.7% of total electricity consumption in Northern Ireland was generated from renewable sources located in Northern Ireland. This represents an increase of 3.0 percentage points on the previous 12 month period (January 2018 to December 2018).

**Rolling 12 month Average % of Total Electricity Consumption
Generated from Indigenous Renewable Sources**



- Of all renewable electricity generated within Northern Ireland over the 12 month period January 2019 to December 2019, 84.5% was generated from wind.
- In December 2019, 51.0% of total electricity consumption in Northern Ireland was generated from renewable sources located in Northern Ireland. This is higher than the corresponding figure for the previous month (34.9% in November 2019) and higher than the corresponding figure for the same month one year ago (46.4% in December 2018).

Reader Information

Purpose	Report on renewable electricity generation as a percentage of electricity consumption in Northern Ireland.
Authors	Sean Donnelly
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Target audience	Department for the Economy (DfE), elected representatives, academics, the media and general public.
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Technical Notes

This statistics release is the fourteenth publication presenting information on renewable electricity generation in Northern Ireland. This publication aims to provide a consistent and regular means for disseminating information on renewable electricity generation in Northern Ireland.

Data Collection

The information presented in this bulletin is derived from data provided to DfE on a monthly basis by Northern Ireland Electricity Networks Ltd (NIE Networks). The monthly renewable electricity generation data is derived by aggregating output from renewable electricity generators who are connected to the transmission and distribution network using a combination of data held by NIE Networks and SONI. The renewable electricity generation data details the total amount of renewable electricity generated by such generators in Northern Ireland, by type of generation, for each month.

Electricity produced by those who generate their own electricity (mainly for their own use but some of which may 'spill' onto the distribution network) is excluded as information about such 'microgeneration' or consumption is not available to NIE Networks.

Taking into account that there are a growing number of microgenerators of renewable electricity, the data presented in this bulletin therefore represents the minimum amount of renewable electricity generation in Northern Ireland.

It is also worth noting that some imported electricity that is consumed in Northern Ireland will have been generated from renewable sources outside Northern Ireland. However, the full extent of this is unknown and therefore cannot be reported separately.

Electricity consumption data is calculated by NIE Networks by aggregating actual and estimated meter readings across both domestic and non-domestic sectors in Northern Ireland. The NIE Networks electricity consumption data includes all electricity consumed in Northern Ireland across both domestic and non-domestic sectors regardless of where the electricity was generated (i.e. it will also include consumption of any imported electricity).

Rounding

Percentages have been rounded and, as a consequence, some percentages may not sum to 100.

Data Quality

Information provided by NIE Networks that is presented in this bulletin has been validated and quality assured by NIE Networks prior to provision to DfE.

Following receipt, DfE perform checks to verify that information is consistent both within and across returns. Trend analyses are used to monitor annual variations and emerging trends. Any queries arising from these checks are presented to NIE Networks for clarification and if required, returns may be amended and/or re-submitted. Monthly data received from NIE Networks may be subject to revision and any revisions will be incorporated into future publications.

Data contained within this publication are not National Statistics.

Main Uses of Data

Data contained in this release are published to aid reporting on progress against the 2011-15 Programme for Government target which is to "Encourage achievement of 20% of electricity consumption from renewable sources by 2015" and the Executive's 2010-20 Strategic Energy Framework which includes a target to "achieve 40% of electricity consumption from renewable sources by 2020".

The data allow the Department, elected representatives and the general public to assess the current status and trends in renewable electricity generation in Northern Ireland. These data are useful to policy makers and provide the necessary information to assess the effectiveness of any programmes/policies in this area. Additionally, renewable electricity generation information is used to inform the media, special interest groups and academics, and by DfE to respond to Assembly questions and ad hoc queries from the public.

Feedback

As we want to engage with users of our statistics, we invite you to feedback your comments on this publication to:

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Renewable Electricity Generation

Headline Measure – Rolling 12 month average

For the 12 month period January 2019 to December 2019, 43.7% of total electricity consumption¹ in Northern Ireland was generated from renewable sources². This represents an increase of 3.0 percentage points on the previous 12 month period (January 2018 to December 2018).

Figure 1: Rolling 12 month Average % Electricity Consumption from Renewable Sources

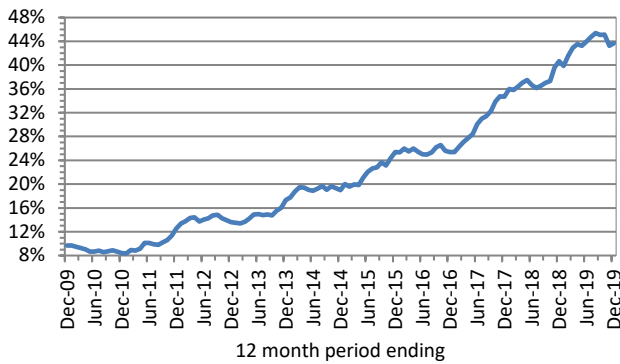


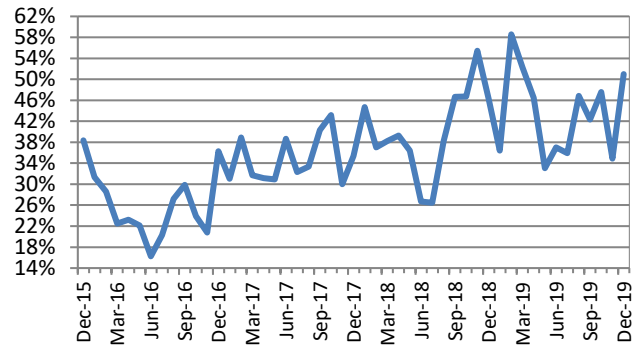
Figure 1 above shows that in the 12 month period ending December 2009, some 9.7% of total electricity consumption in Northern Ireland was generated from renewable sources. This proportion has grown considerably with the value for the 12 month period ending December 2019 (at 43.7%) being some four and a half times higher.

Headline Measure – monthly

In December 2019, 51.0% of total electricity consumption in Northern Ireland was generated from renewable sources located in Northern Ireland. This is higher than the corresponding figure for the previous month (34.9% in November 2019) and higher than the corresponding figure for the same month one year ago (46.4% in December 2018).

The monthly proportion exceeded 40% in seven of the twelve individual months and exceeded 50% in three of the twelve individual months over the period January 2019 to December 2019 with a **record high for an individual month of 58.6% in February 2019**.

Figure 2: Monthly % of Electricity Consumption from Renewable Sources (Dec 2015 – Dec 2019)

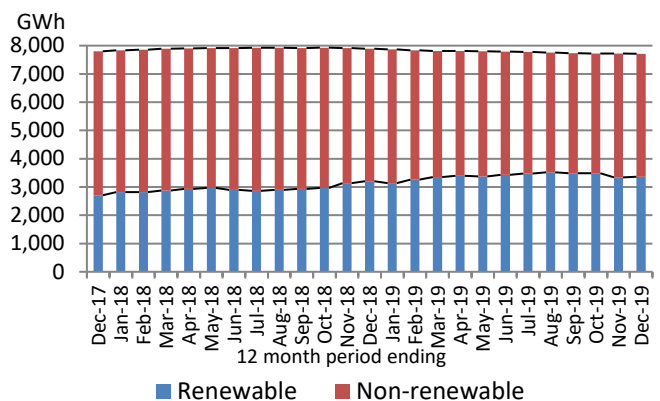


Renewable electricity generation varies markedly from month to month, as shown above. This variation is due to factors such as weather and also new renewable generation facilities coming on line at various points. The rolling 12 month average helps to take account of monthly variations to provide a better measure of the underlying trend.

Volume – Rolling 12 month period

For the 12 month period January 2019 to December 2019, some 7,713 Gigawatt hours (GWh) of total electricity was consumed in Northern Ireland. Over the same period, some 3,368 GWh was generated from renewable sources within Northern Ireland (Figure 3).

Figure 3: Rolling 12 month Volume of Electricity Consumed by Source (Dec 2017 – Dec 2019)



Volume – monthly

In December 2019, some 715 GWh of total electricity was consumed in Northern Ireland, with 365 GWh generated from renewable sources within Northern Ireland in the same month. This is higher than the corresponding figure for renewable electricity generated in the previous month (246 GWh in November 2019) and higher than the corresponding figure for the same month one year ago (334 GWh in December 2018).

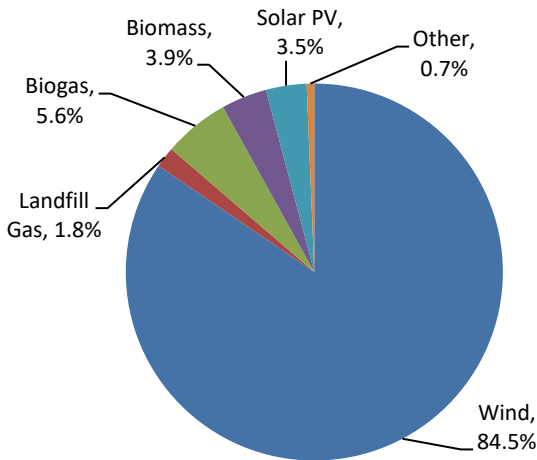
¹ This is the total amount of electricity consumption in Northern Ireland as recorded via metered data by NIE Networks.

² Electricity generated from renewable sources is for those renewable generators physically located within Northern Ireland and recorded by NIE Networks and SONI. It excludes micro-generation, non-export generating stations and any imported electricity derived from known or unknown renewable sources.

Renewable Generation by Type of Generation

The vast majority of renewable electricity generated within Northern Ireland comes from Wind sources (84.5% over the 12 month period January 2019 to December 2019). A number of other renewable sources contribute to the overall total as shown in Figure 4 below.

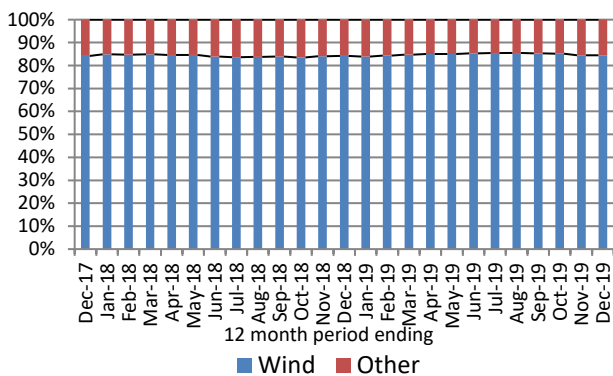
Figure 4: Renewable Electricity Generation by Type of Generation (January 2019 to December 2019)



Other includes Hydro and Combined Heat & Power (CHP)

Whilst renewable electricity generated from wind continues to be the predominant source of such generation in Northern Ireland, the proportion from other (non-wind) sources is also notable as Figure 5 below shows.

Figure 5: Rolling 12 month Percentage of Renewable Electricity Generation by Type of Generation (December 2017 – December 2019)

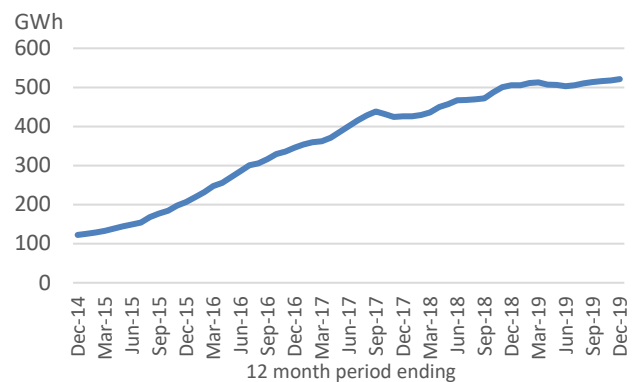


The proportion of renewable electricity generated from sources other than wind has been fairly steady at around 14.5% to 16.5% for each rolling 12 month period ending between December 2017 and December 2019.

Whilst Figure 5 shows that the proportion of overall renewable electricity generation has not fluctuated much between wind and non-wind sources over the last two years, looking at the actual volumes for non-wind generation over a longer time period highlights some significant changes.

Non-wind renewable generation volumes have seen a substantial increase in recent years (Figure 6). For the 12 month period ending December 2014, some 122.4 GWh of non-wind renewable electricity was generated in Northern Ireland. Five years later, for the 12 month period ending December 2019, non-wind renewable electricity generation in Northern Ireland was over four times higher at 521.1 GWh and was also **the highest rolling 12-month non-wind renewable generation volume on record.**

Figure 6: Rolling 12 month Volume of Non-wind Renewable Electricity Generation (December 2014 – December 2019)



Background Notes

Data sources

1. The source of the data contained in this release is monthly electricity distribution figures compiled by Northern Ireland Networks Ltd (NIE Networks). Of this data, part is supplied by the System Operator for Northern Ireland (SONI). The data is calculated by NIE Networks using monthly generation data (some of which is provided to NIE Networks by SONI) and monthly demand data (by aggregating actual and estimated NIE Networks meter readings across both domestic and non-domestic sectors).

Measuring consumption

2. Figures for consumption of electricity used in this bulletin are calculated by NIE Networks from data on actual and estimated meter readings. These figures represent the most accurate measure of electricity consumption available for Northern Ireland, and are the most appropriate data for measuring the stated targets within both the Programme for Government (2011-2015) and 2010-20 Strategic Energy Framework.

Electricity generation and distribution in Northern Ireland

3. The electricity system consists of the following distinct businesses: generation, transmission, distribution and supply. Generation is provided by private sector companies who own the major power stations and by other generators, such as wind farms. Northern Ireland also has interconnectors between the Scottish and Republic of Ireland grids through which electricity can be imported and exported. Northern Ireland Networks Ltd (part of the ESB Group) owns the transmission and distribution network and operates the distribution network which transports electricity to over 880,000 customers. The transmission network is operated by the System Operator for Northern Ireland. Electricity suppliers buy energy and sell it to customers. Business and domestic consumers in Northern Ireland can choose between a number of private sector electricity suppliers to meet their individual electricity requirements.

Other Renewable Generation - Microgeneration and Non-Export Generating Stations

4. There are some forms of renewable generation which are not covered by the data contained in this report. Due to their particular circumstances, neither NIE Networks nor SONI have information on the electricity generated by some renewable generators. These include microgenerators³ and a small number of generating stations that are unable to export electricity to the grid (non-export stations)⁴.

However, an estimate of the extent of renewable electricity generation in Northern Ireland from microgeneration and non-export generating stations has been provided by Ofgem from their Renewable Obligation Certificate (ROC) register. Assuming that the vast majority of these generators are accredited to the Northern Ireland Renewable Obligation (NIRO) and are therefore receiving ROCs for their renewable generation, this would represent a very good estimate of the volume of renewable electricity from microgeneration and non-export generation in Northern Ireland. However, the NIRO closed to all technologies on 31 September 2017, with exceptions in the form of grace periods which have now ended, and therefore a small number of microgenerators and non-export generating stations may not be accredited to the NIRO and would not be included in the Ofgem figures.

³ Microgeneration is defined here as all those generators with a Declared Net Capacity (DNC) of 50kW or less.

⁴ A small number of generating stations cannot export electricity to the grid and the renewable electricity they generate, therefore, is either consumed on-site or provided to a third party by a private wire network.

The most recent 12 month period for which microgeneration data is available is for April 2018 to March 2019 and during that period an estimated 83.7 GWh of renewable electricity was produced by microgenerators in Northern Ireland⁵ with a further 32.2 GWh of renewable electricity produced by non-export generators⁶. Over the same period, renewable electricity generation as sourced from NIE and SONI was 3,352.3 GWh. Therefore, for the 12 month period April 2018 to March 2019, microgeneration and non-export generation as sourced from the ROC register was equivalent to 3.5% of the renewable generation volume total as sourced from NIE and SONI.

It is also worth noting that microgenerators will consume varying levels of the electricity they generate, with excess generation 'spilling' onto the grid. We have no data to indicate how much of the electricity generated by microgenerators is consumed on-site or the extent of any excess sent to the grid.

⁵ This is the total measured generation for April 2018 to March 2019 that Ofgem have issued ROCs for. Data for some microgenerators may still be undergoing processing or may not have been submitted and such returns are therefore not included in the figure.

⁶ Data is from accredited stations only and no generation from pending applications has been included, therefore actual generation from all stations unable to export renewable electricity to the grid may be higher than indicated.