



Energy Statistics for Scotland

Q1 2020 Figures

June 2020

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Next update: 24th September 2020
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We have recently launched a Scottish energy statistics hub, which is a 'one-stop shop' for all Scottish energy data. It will be updated as new data is available.

Scottish Energy Statistics Hub:

<https://scotland.shinyapps.io/sg-energy>

Scottish Energy Strategy.

<https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/>

Key Points:

As a result of the **covid-19 lockdown**, **electricity use** in Scotland **declined** significantly. Since lockdown until the end of phase 1, average daily electricity demand in Scotland in **2020** is **16% lower** than the equivalent period in **2019**. In 2020, average daily demand is **24% lower after lockdown** than **before**. Even though more people are working from home, the presumed increase in domestic consumption is more than offset by the inactivity from non-essential commercial and industrial premises.

- **Renewable electricity generation** in Scotland hit a **new record high** in **Q1 2020**, with **11.6 TWh** generated between **January** and **March 2020**. This is **up 28%** on the same period last year, and is enough to power almost half of Scotland's total electricity consumption for a year. Increases in rainfall and wind speed contributed to this - compared to Q1 2019, **onshore wind** generation is **up 25%**, **hydro** generation is **up 38%** and **offshore wind** generation **increased by 54%**.

- This follows on from **2019**, which was a record year for Scotland in terms of renewable electricity generation, with **over 30 TWh** of generation. This contributed to **90.1%** of gross **electricity** consumption coming from **renewable** sources, up **13.4 percentage points** from 2018.

- Despite rapid growth in renewable electricity generation, growth in renewable electricity **capacity** has slowed – in **March 2020** Scotland had **11.9 GW** installed capacity, **up just 0.1 GW** from **June 2019**.

- In **2018**, each **kilowatt hour** of electricity generated in Scotland added an estimated **44.6 grams** of **carbon dioxide** into the atmosphere (gCO₂e/kWh). This remains **below** the **50 gCO₂e/kWh ambition** for 2020 outlined in the Climate Change Plan. However, grid intensity almost doubled from **24.0 gCO₂e/kWh** in 2017, due to **a rise in gas to generate electricity** in 2018, compensating for a fall in nuclear generation because of long-term outages at Hunterston B.

Revisions:

Overall renewable energy target was revised to **21.1%** from 20.9%

Renewable electricity target was revised to **90.1%** from 90.0%

Energy productivity was revised to **0.5%** from 0.4%.

Energy consumption was revised to **12.2%** from 12.1%

Energy Targets:

	Latest	Target
Overall renewable energy target Total Scottish energy consumption from renewables	21.1% in 2018	50% by 2030
Renewable electricity target Gross electricity consumption from renewables	90.1% in 2019	100% by 2020
Renewable heat target Non-electrical heat demand from renewables	6.3% in 2018	11% by 2020
Energy consumption target Reduction in total energy consumption from 2005-07	↓ 12.2% in 2018	↓ 12% by 2020
Energy productivity target % change in gross value added achieved from the input of one gigawatt hour of energy from 2015.	↑ 0.5% in 2018	↑ 30% in 2030

Sources

Renewable energy target: <https://scotland.shinyapps.io/Energy/?Section=WholeSystem&Chart=RenEnTgt>
Renewable electricity target: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=RenElecTarget>
Renewable heat target: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenHeat&Chart=RenHeat>
Energy Consumption target: <https://scotland.shinyapps.io/Energy/?Section=EnergyEfficiency&Subsection=DemandReduction&Chart=EnConsumptionTgt>
Energy productivity target: <https://scotland.shinyapps.io/Energy/?Section=WholeSystem&Chart=EnProd>

Renewable electricity generation in Scotland hit a new **record high** in **Q1 2020**, with **11.6 TWh** generated between January and March 2020. This is **up 28%** on the same period last year, and is equivalent to about half of Scotland's total electricity consumption for a year.

This follows on from **2019**, which was a **record year** for Scotland in terms of renewable electricity generation, with over **30 TWh** of generation.

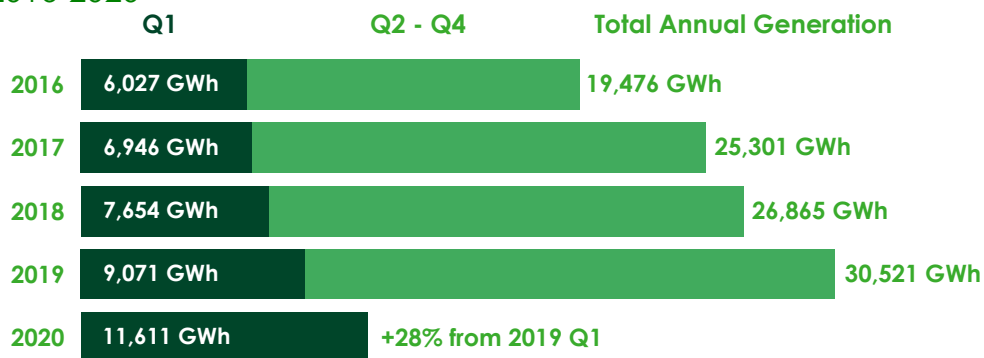
In 2019, **90.1%** of gross electricity consumption came from renewable sources, up **13.4 percentage points** from 2018.

Scotland has a target to deliver the equivalent of **100%** of gross electricity consumption from renewables by **2020**.

Despite rapid growth in renewable electricity generation, growth in **capacity** has slowed – in **March 2020** Scotland had **11.9 GW** installed capacity, **up just 0.1 GW** from June 2019.

Renewable electricity generation

2016-2020



2020 Q1 was also a record for generation for:

Onshore Wind



7,385 GWh
+25% from 2019 Q1

Offshore Wind



1,262 GWh
+54% from 2019 Q1

Hydro



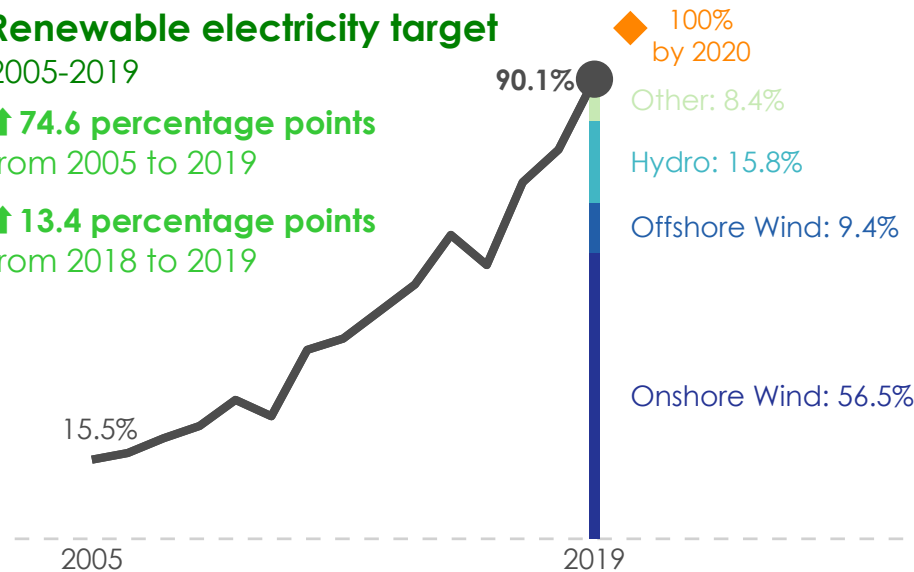
2,264 GWh
+38% from 2019 Q1

Renewable electricity target

2005-2019

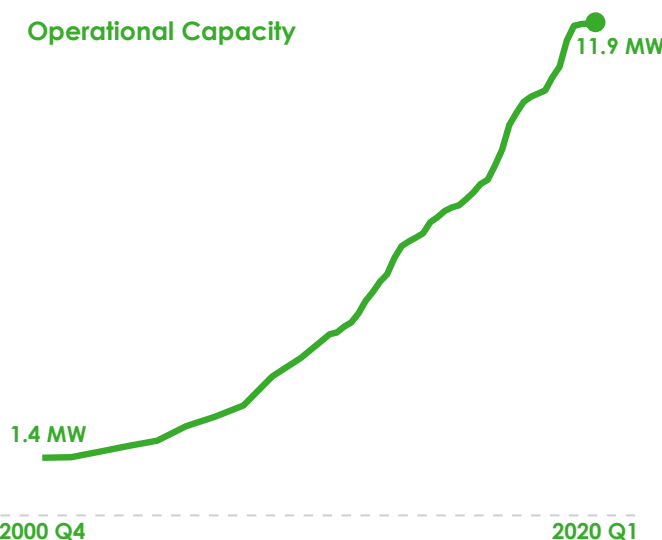
↑ 74.6 percentage points
from 2005 to 2019

↑ 13.4 percentage points
from 2018 to 2019



Renewable electricity capacity, March 2020

Operational Capacity



Pipeline Capacity



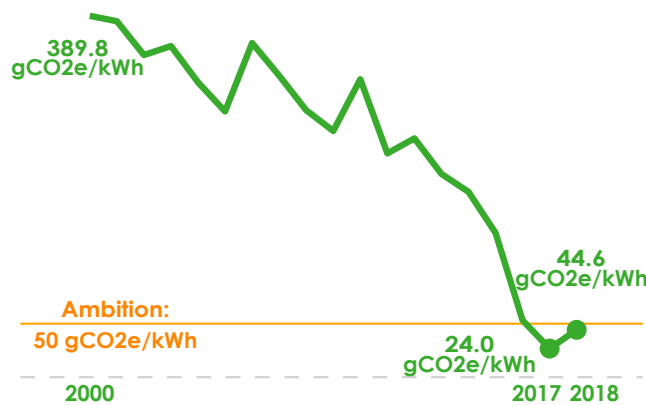
In **2018**, each kilowatt hour of electricity generated in Scotland added an estimated **44.6** grams of carbon dioxide into the atmosphere (gCO₂e/kWh).

However, grid intensity almost doubled from **24.0 gCO₂e/kWh** in **2017**, due to a **rise** in **gas** to **generate electricity** in **2018**, compensating for a fall in nuclear generation

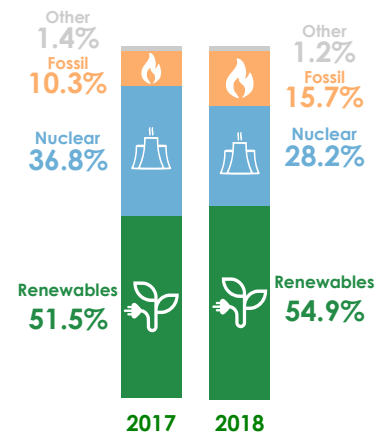
As a result of the covid-19 lockdown, electricity use in Scotland declined significantly. Since lockdown, average daily electricity demand in Scotland in **2020** is **16% lower** than the equivalent period in **2019**. In **2020**, average daily demand is **24% lower after lockdown** than **before**.

Grid Emissions

2000 - 2018

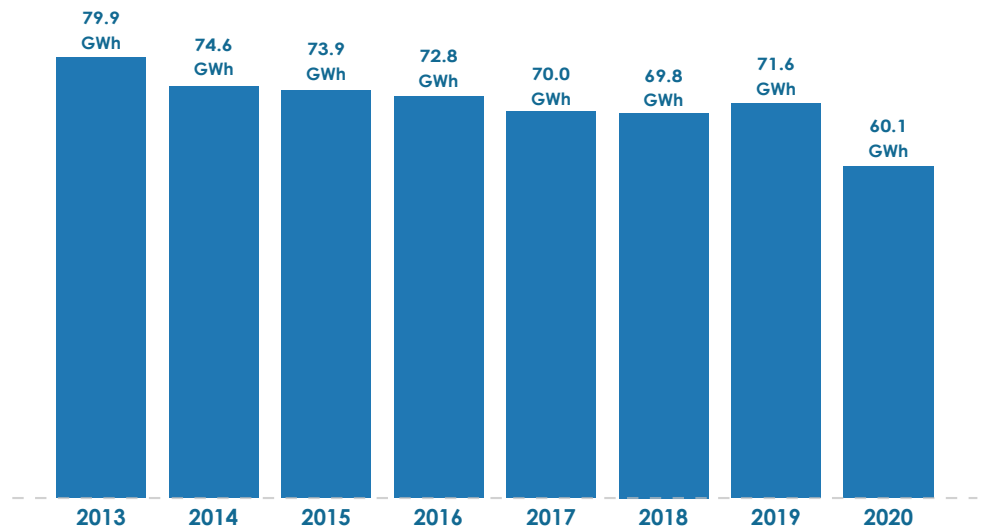


Electricity Generation Fuel Mix



Covid-19 Analysis - Average daily electricity demand

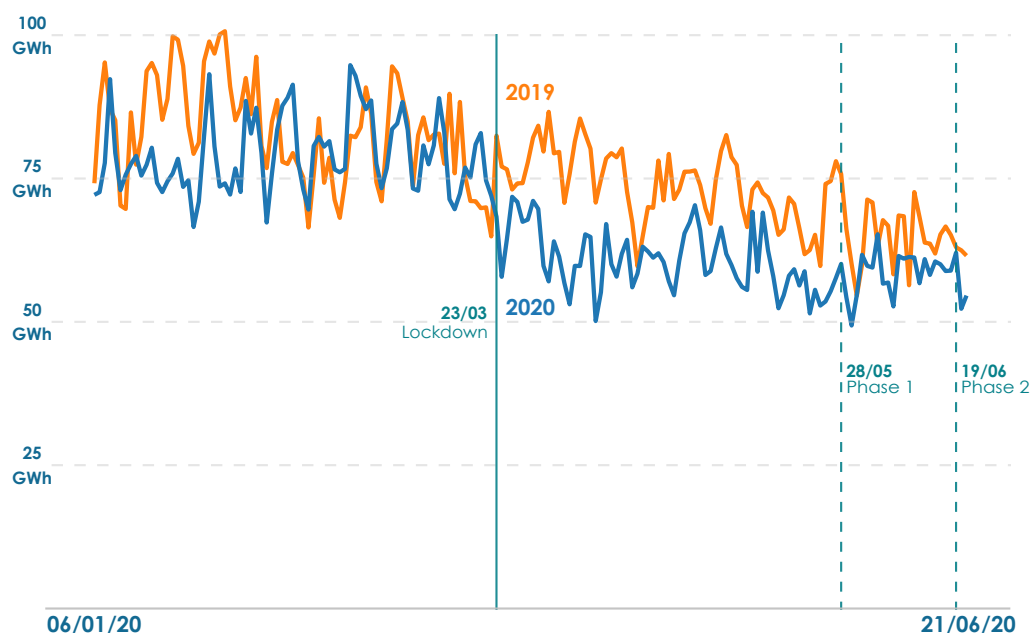
2013 - 2020



*Please note that it is **not** possible to disaggregate domestic and non-domestic consumption from this analysis.

Daily electricity demand

2020 vs. 2019



Sources

Grid emissions: <https://scotland.shinyapps.io/sg-energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=GridEmissions>
 Electricity fuel mix: <https://scotland.shinyapps.io/sg-energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=ElecGen>
 Covid19 electricity analysis: <https://scotland.shinyapps.io/sg-energy/?Section=Covid19&Chart=C19Elec>