



# Energy Statistics for Scotland

## Q1 2021 Figures

June 2021

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Update expected: 30<sup>th</sup> September 2021

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The Scottish energy statistics hub 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/>

### Revisions:

Renewable energy target was revised to **23.9%** from 24.0%.

Renewable electricity target was revised to **95.9%** from 97.4%.

Energy consumption relative to the baseline was revised to **13.8%** from 13.4%.

Change in energy productivity relative to the baseline was revised to **3.7%** from 3.2%.

### Key Points:

- As a result of the **covid-19 lockdown**, **electricity use** in Scotland **declined** significantly. In the first 6 months of the year, average daily **electricity demand** in Scotland in **2021** is similar to **2020**, and **down 10%** compared to **2019**. The trend in electricity consumption mirrors the level of lockdown restriction in place with the lowest electricity consumption levels reported when the most stringent lockdown restrictions were in place.
- **Final figures** for **2019** show that the equivalent of **88.4%** of **gross electricity consumption** came from renewable sources. Provisional figures for **2020** have been revised with the latest data and show that the equivalent of **95.9%** of **gross electricity consumption** came from renewable sources – an **increase of 7.5 percentage points** from **2019**.
- **Renewable electricity generation** in **Q1 2021** in Scotland **dropped** for the first time since **2016** – **8.8 TWh** were **generated** between **January and March 2021**. This is **down 24%** on the same period last year, and is likely due to decreases in wind and rain levels compared to previous years.
- **Renewable electricity capacity** has **levelled off** after a consistent upward trend since 2000. In **March 2021** Scotland had **11.9 GW** installed capacity, **up just 0.2 GW** from **June 2020**. However, there is a further **14.6 GWh** of renewable electricity **capacity** at various stages of development in the **pipeline**.
- In **2019**, each **kilowatt hour** of electricity generated in Scotland added an estimated **40.9 grams** of **carbon dioxide** into the atmosphere (gCO<sub>2</sub>e/kWh). This remains **below** the **50 gCO<sub>2</sub>e/kWh ambition** for **2020** outlined in the Climate Change Plan. However, remains above the **2017 low** of **22.9 gCO<sub>2</sub>e/kWh**. This is due to increased fossil fuel generation to compensate a fall in nuclear generation since 2017.

### Energy Targets:

	Latest	Target
<b>Overall renewable energy target</b> Total Scottish energy consumption from renewables	Provisional* <b>23.9%</b> in 2019	<b>50%</b> by 2030
<b>Renewable electricity target</b> Gross electricity consumption from renewables	Provisional* <b>95.9%</b> in 2020	<b>100%</b> by 2020
<b>Renewable heat target</b> Non-electrical heat demand from renewables	Provisional* <b>6.5%</b> in 2019	<b>11%</b> by 2020
<b>Energy consumption target</b> Reduction in total energy consumption from 2005-07	Provisional* <b>↓13.8%</b> in 2019	<b>↓12%</b> by 2020
<b>Energy productivity target</b> % change in gross value added achieved from the input of one gigawatt hour of energy from 2015.	Provisional* <b>↑3.7%</b> in 2019	<b>↑30%</b> in 2030

\*Final figures will be published in **September 2021**, other than for the **Renewable Electricity Target** which will be published **December 2021**

### Sources

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

**Renewable Electricity Generation** in the **first quarter** of the year **fell** for the **first time since 2016**.

**8,768 GWh** of renewable electricity was generated in **2021 Q1**, **down 24%** from **2020 Q1**. This is likely due to milder weather in winter compared to previous years.

Provisional figures for 2020 show that **95.9%** of gross electricity consumption came from renewable sources, up **7.5 percentage points** from 2019.

Final figures for 2019 show that 88.4% of gross electricity consumption came from renewable sources.

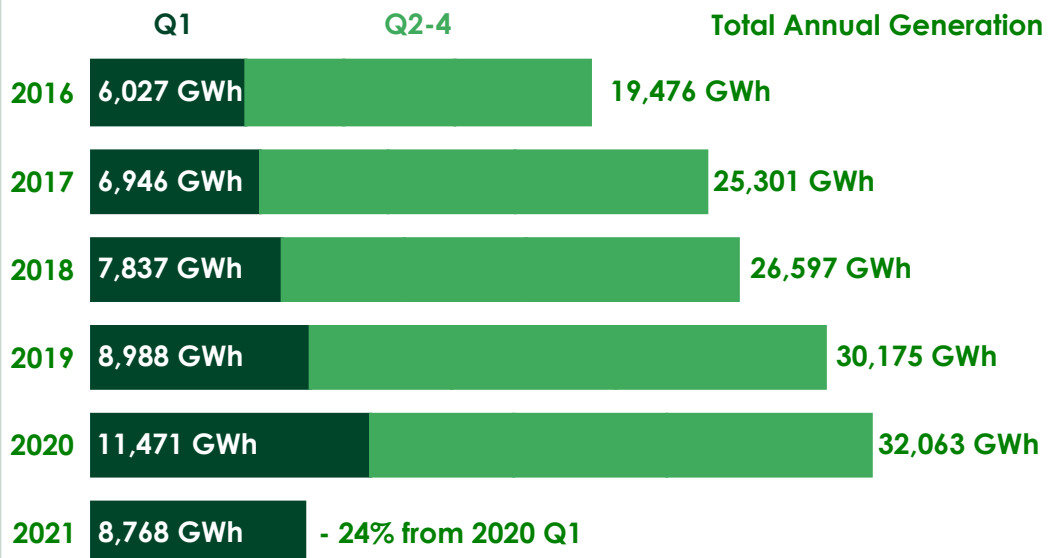
Scotland has a target to deliver the equivalent of **100%** of gross electricity consumption from renewables by **2020**.

**Renewable electricity capacity** remains stable – in **March 2021** Scotland had **11.9 GW** installed capacity, **up just 0.2 GW** from June 2020.

**14.6 GWh** of renewable electricity capacity is in the **pipeline**, with **2.0 GWh** currently **under construction**

### Renewable electricity generation

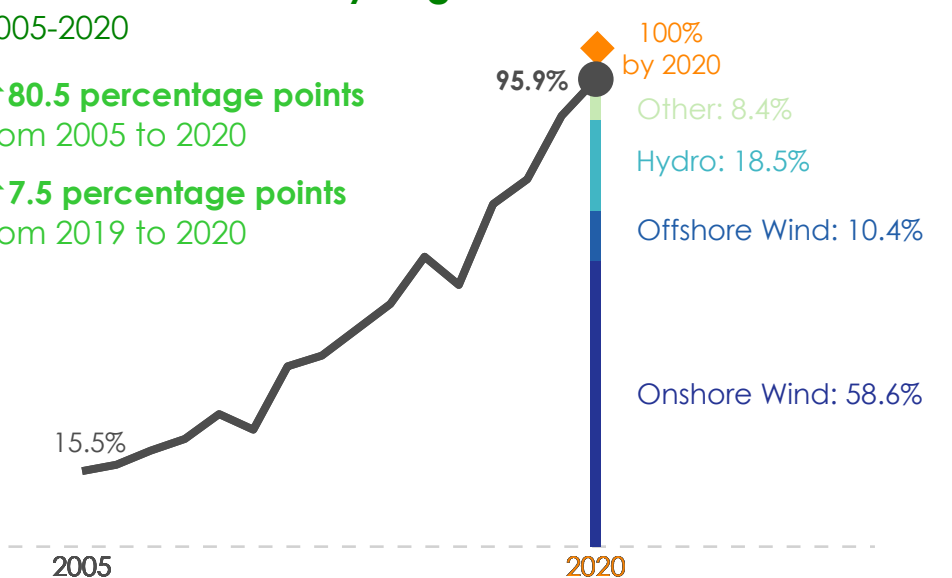
2016-2021



### Renewable electricity target

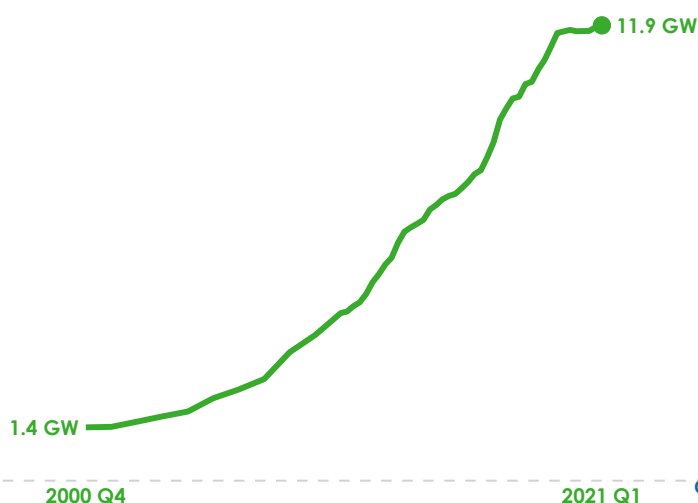
2005-2020

**↑80.5 percentage points** from 2005 to 2020  
**↑7.5 percentage points** from 2019 to 2020



### Renewable electricity capacity, March 2021

Operational Capacity



Pipeline Capacity



**Sources**

Renewable electricity target: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=RenElecTarget>  
 Renewable electricity generation: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=RenElecGen>  
 Renewable electricity capacity: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=RenElecCapacity>  
 Renewable electricity pipeline: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=RenElecPipeline>

In **2019**, each kilowatt hour of electricity generated in Scotland added an estimated **40.9** grams of carbon dioxide into the atmosphere (gCO<sub>2</sub>e/kWh).

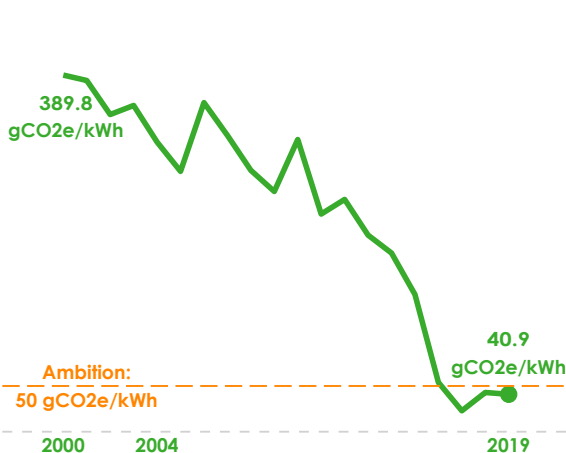
This has **fallen 2.0 gCO<sub>2</sub>e/kWh** from **2018**, however **remains above** the **2017 low** of 22.9 gCO<sub>2</sub>e/kWh. This is due to **increased fossil fuel** generation to compensate a **fall in nuclear generation** since **2017**.

As a result of covid-19 restrictions, electricity use in Scotland declined significantly. In the first 6 months of the year, average daily electricity demand in Scotland in **2021** is similar to 2020, and down 10% compared to **2019**.

Since the first lockdown, electricity demand has followed a pattern of dropping as restrictions tighten, and rising again as restrictions loosen, returning almost to 2019 levels during the lightest level of restrictions.

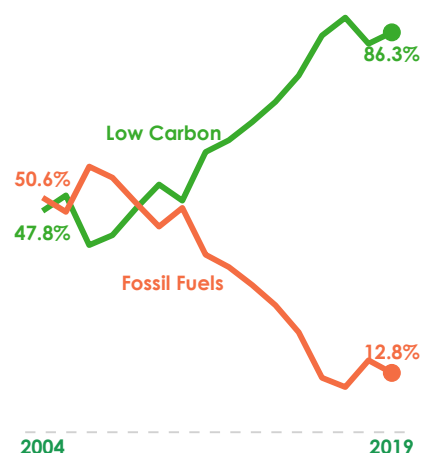
### Grid Emissions

2000 - 2019



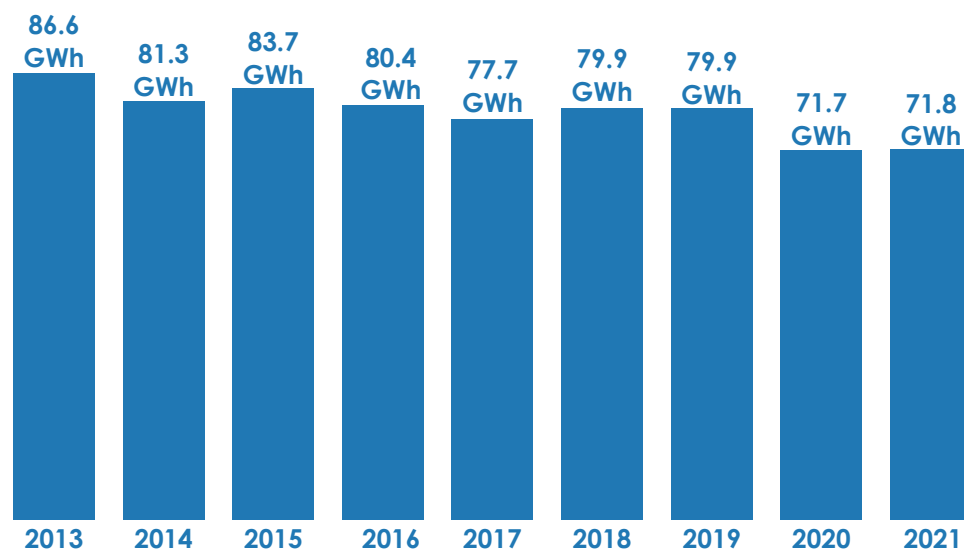
### Electricity Generation: Low Carbon vs Fossil Fuels

2004 - 2019



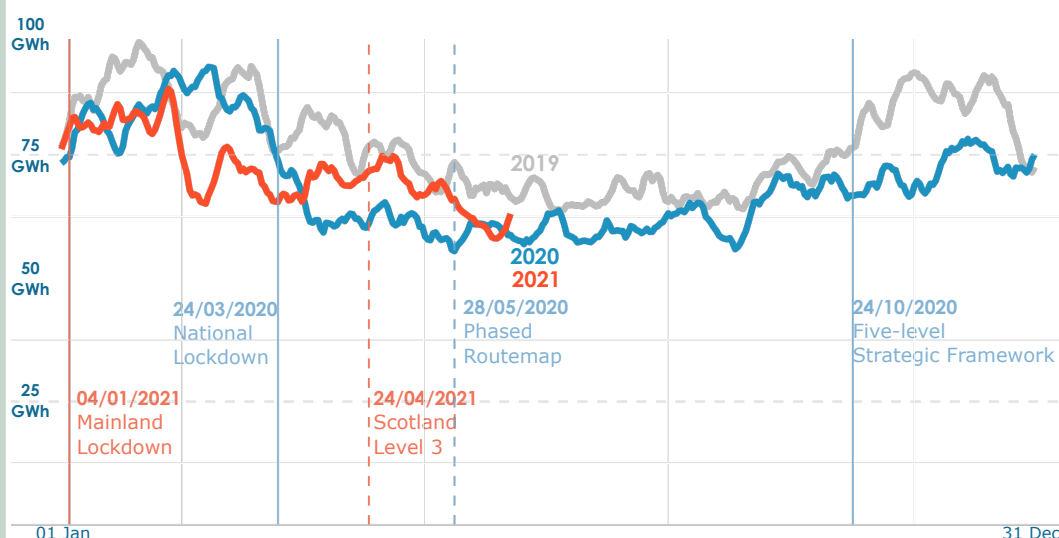
### Covid-19 Analysis: Average daily electricity demand in the first 6 months of the year

2013 - 2021



### Daily Electricity Demand - 7 day rolling average

Scotland, 2019 - 2021



#### Sources

Grid Emissions: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=GridEmissions>  
 Electricity generation: <https://scotland.shinyapps.io/Energy/?Section=RenLowCarbon&Subsection=RenElec&Chart=ElecGen>  
 Covid 19 Electricity Daily Demand: <https://scotland.shinyapps.io/Energy/?Section=SystemSecurity&Chart=C19Elec>