

# ENERGY STRATEGY E-BULLETIN

**ISSUE 11: MAY 2021**

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- The framework for decarbonising energy.
- Greenhouse gases or carbon emissions?
- How does this affect pathways for energy decarbonisation?
- Have your say on our energy future!



## WELCOME TO THE ENERGY STRATEGY E-BULLETIN

Now that we have published our Energy Strategy Options Consultation, we are taking this opportunity to take a step back and look at the bigger picture of how energy fits into the wider decarbonisation agenda. We use this bulletin to explore common terms and draw comparisons between some of the key definitions and approaches to decarbonisation.

We're also providing details about the upcoming workshops on the Options Consultation. Hope to see you there!



**Thomas Byrne**  
Director, Energy Strategy

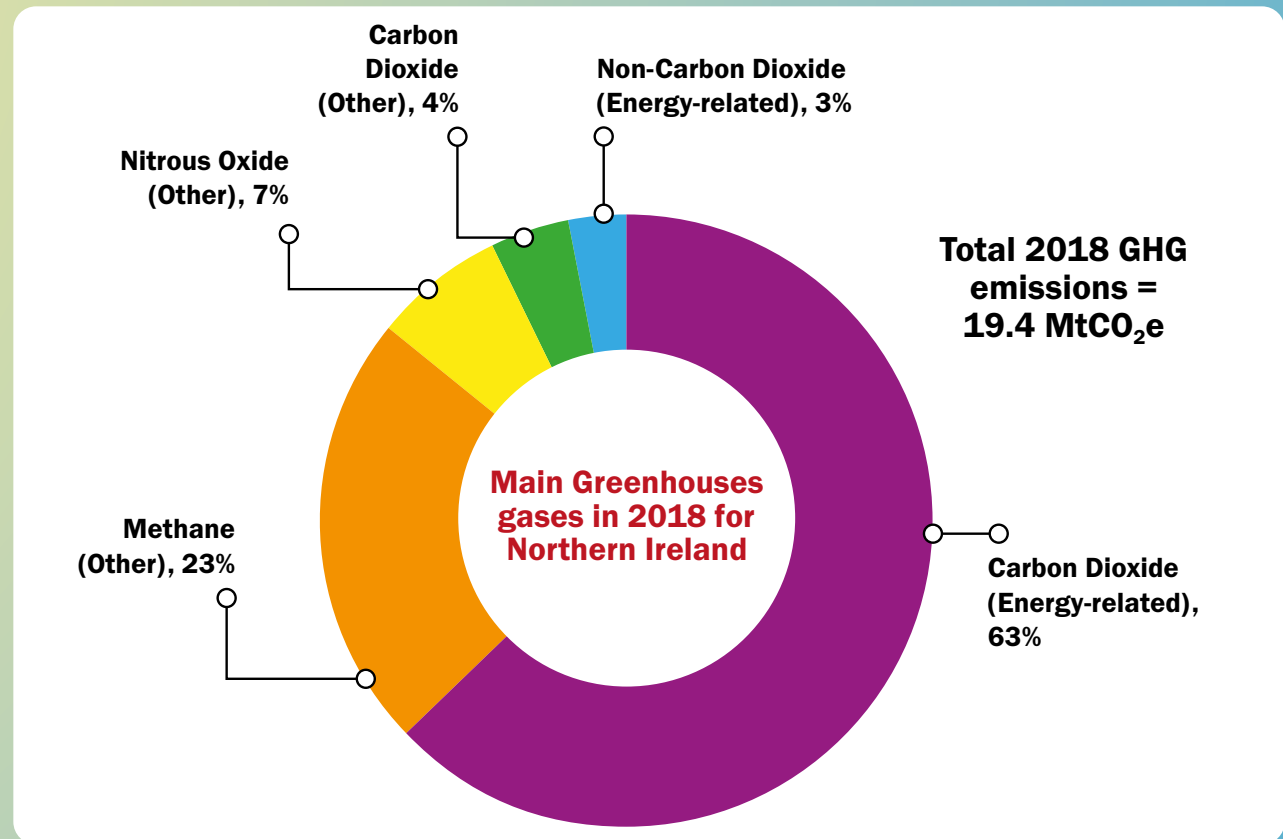


## GREENHOUSE GASES OR CARBON EMISSIONS?

We often refer to decarbonisation, and reporting greenhouse gas emissions uses a metric of ‘million tonnes of **carbon** dioxide equivalent’, or MtCO<sub>2</sub>e. However, greenhouse gas emissions include seven different gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>).<sup>1</sup>

In 2018 Northern Ireland’s total greenhouse emissions were estimated to be 19.4 MtCO<sub>2</sub>e<sup>2</sup>.

Energy-related<sup>3</sup> greenhouse gas emissions accounted for approximately two-thirds (66%) of this total. Delving more deeply, carbon dioxide is not only the single largest source of greenhouse gas emissions (68% in 2018) in Northern Ireland, but it accounts for the vast majority – 96% - of energy-related emissions. The focus for the Energy Strategy is therefore on CO<sub>2</sub>.



1 Public Flourish Studio website - [Interactive data visualisation showing GHG emissions for Northern Ireland in 2018 by sector and gas.](#)

2 National Atmospheric Emissions Inventory website - [Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland 1990 - 2018](#)

3 Defined as GHG emissions assigned to Business; Energy Supply; Industrial Process; Public; Residential and Transport. Source: Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 - 2018. National Atmospheric Emissions Inventory website - [Greenhouse Gas Reports](#)

## HOW DOES THIS AFFECT PATHWAYS FOR ENERGY DECARBONISATION?

The Committee for Climate Change (CCC) recently conducted a comprehensive analysis<sup>4</sup> of potential pathways or scenarios to underpin their advice on the Sixth Carbon Budget. The CCC scenarios demonstrate that there are multiple pathways to meet the UK net-zero 2050 target, of which the CCC's Balanced Pathway has been used as the basis for their advice. From analysis based on the Balanced Net-Zero Pathway, Northern Ireland needs to achieve at least an 82% reduction in total greenhouse emissions by 2050 compared to 1990 levels to make a fair and equitable contribution to the UK target.

However, regarding carbon dioxide, which is the single largest source of greenhouse gas emissions in Northern Ireland, the CCC states that Northern Ireland could achieve net-zero carbon (CO<sub>2</sub>) emissions by 2050 as part of the Balanced Pathway.

For the Sixth Carbon Budget period (2033-2037), the CCC has therefore recommended a supplementary target of 70% reduction in CO<sub>2</sub> from 1990 levels for Northern Ireland to contribute to a 100% reduction by 2050.

The consultation on a new Energy Strategy therefore proposes a goal to meet “net zero carbon energy”. For Northern Ireland to achieve net-zero carbon dioxide by 2050 there is a requirement for an annual net decrease of 0.4 MtCO<sub>2</sub>, based on current levels.

In developing the Energy Strategy consultation, we have also supported the development of an energy system model for Northern Ireland. This new Northern Ireland Energy Transition Model (NI ETM) has been created to support pathway modelling for the decarbonisation of the broader energy sector.

The NI ETM is open source and can be found here: <https://pro.energytransitionmodel.com/>.

As the CCC remit is economy-wide decarbonisation, its modelling and pathways include land-use and agriculture activities. The ETM is energy-focused and its scope is therefore defined differently<sup>5</sup>. We expect that the ETM will sit alongside the development of a wider series of climate and energy system models that may be developed in the future.

<sup>4</sup> The Committee for Climate Change website - [The Sixth Carbon Budget](#)

<sup>5</sup> In terms of CO<sub>2</sub> emissions, it includes the following activities as used by the [Intergovernmental Panel on Climate Change](#): Fuel Combustion by sector (1.AA); Ammonia Production (2.B.1); Metal Industry (2.C) and Waste Incineration (5.C.1). Of the total carbon emissions for NI, only a small amount (0.5 MtCO<sub>2</sub>) is not included in the scope of the ETM. These are mainly those attributed to land use and therefore not part of the future energy scenario analysis.



## HAVE YOUR SAY ON OUR ENERGY FUTURE!

A series of online 'have your say' events will be held throughout June, giving you the opportunity to comment on our energy future. The sessions are:

- Placing You at the Heart of Our Energy Future – 15th June
- Grow a Green Economy – 16th June
- Do More with Less – 16th June
- Create a Flexible and Integrated Energy System – 17th June
- Replacing Fossil Fuels with Indigenous Renewables – 18th June

We are keen to hear views from a wide range of individuals and organisations so please get involved.

Further information, including how to register, will be sent to the Energy Strategy e-bulletin distribution list and posted from the [@economy\\_ni](https://twitter.com/economy_ni)

