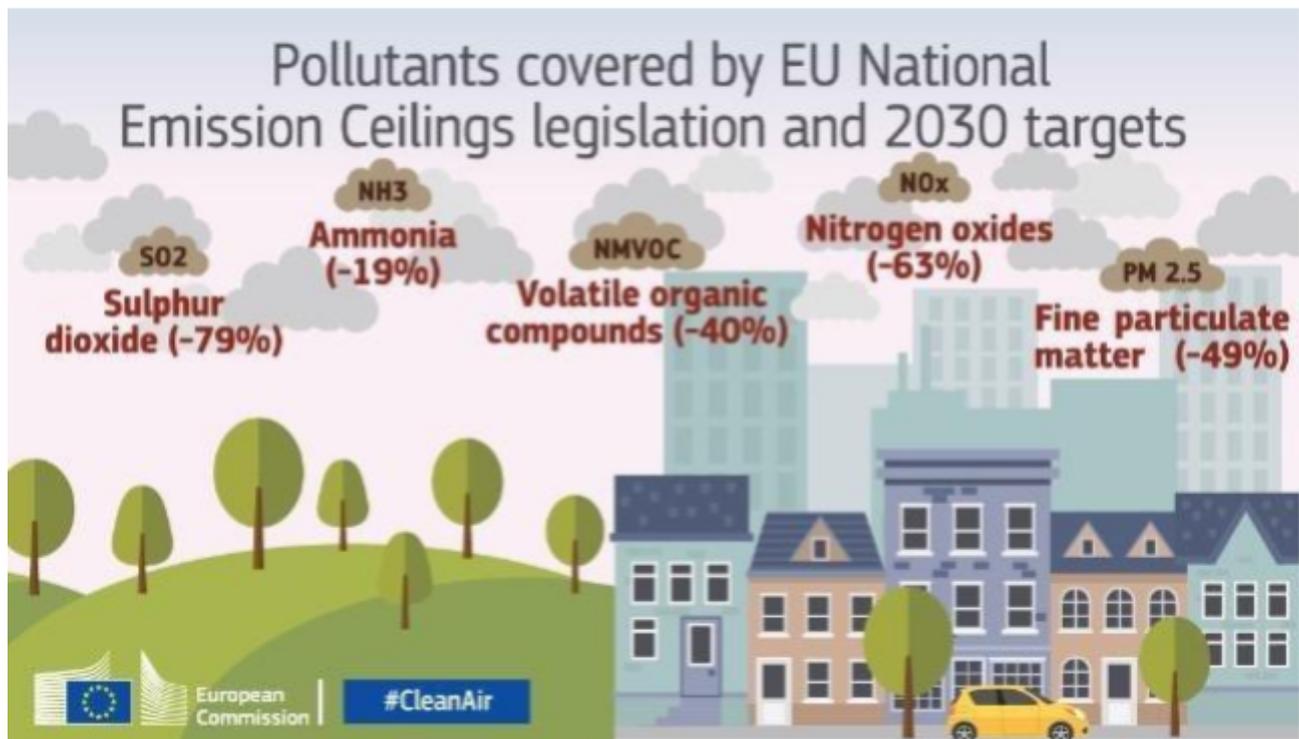


Air Pollution Primer

Background to the [Consultation on the December 2020 Update to the National Air Pollution Control Programme](#). Submissions to airquality@decc.gov.ie, closing 5.30pm 22 January 2021.

- The [National Emissions reduction Commitments Directive 2016](#) is an instrument of European Union (EU) law which obliges Member States to **estimate, project, and reduce** total national emissions of five key air pollutants.

2030 Emissions Reduction Commitments for the entire EU



Source: [European Commission, Reduction of National Emissions](#)

- Each EU Member State has committed to reduce total national emissions of these pollutants by a set percentage relative to the respective State’s emissions in 2005.

For example, Ireland has committed to reduce annual ammonia (NH₃) emissions by at least 1% in the period 2020-2029. From 2030, Ireland’s ammonia emissions must be at least 5% lower than in 2005.

Ireland’s Emissions Reduction Commitments

Table 1: National Emissions Ceiling Directive reduction commitments from 2020 and 2030 (EU reference 2.3.1.)

NECD Reduction Commitments for the 2020 and 2030 Periods relative to 2005 Base Year	SO ₂	NO _x	NM VOC	NH ₃	PM _{2.5}
Ceilings from 2020-2029	65%	49%	25%	1%	18%
Ceilings from 2030	85%	69%	32%	5%	41%

Source: [DECC, National Air Pollution Control Programme Report - Update of the 2019 NAPCP \(2020\) p.12](#)

- How a Member State intends to achieve these reductions must be reported in a National Air Pollution Control Programme (NAPCP).
- The [NAPCP submitted by Ireland on 13 February 2020](#) (more than 10 months after the 1 April 2019 deadline) **failed to show how Ireland would reach its commitments for Nitrous Oxides (NO_x), Non-Methane Volatile Organic Compounds (NMVOC), and especially Ammonia (NH₃).**
- As a result, the Government is obliged to submit an Update showing what additional measures it will take to achieve the reductions it has previously committed to. This [Update](#) is currently the subject of a [public consultation](#).

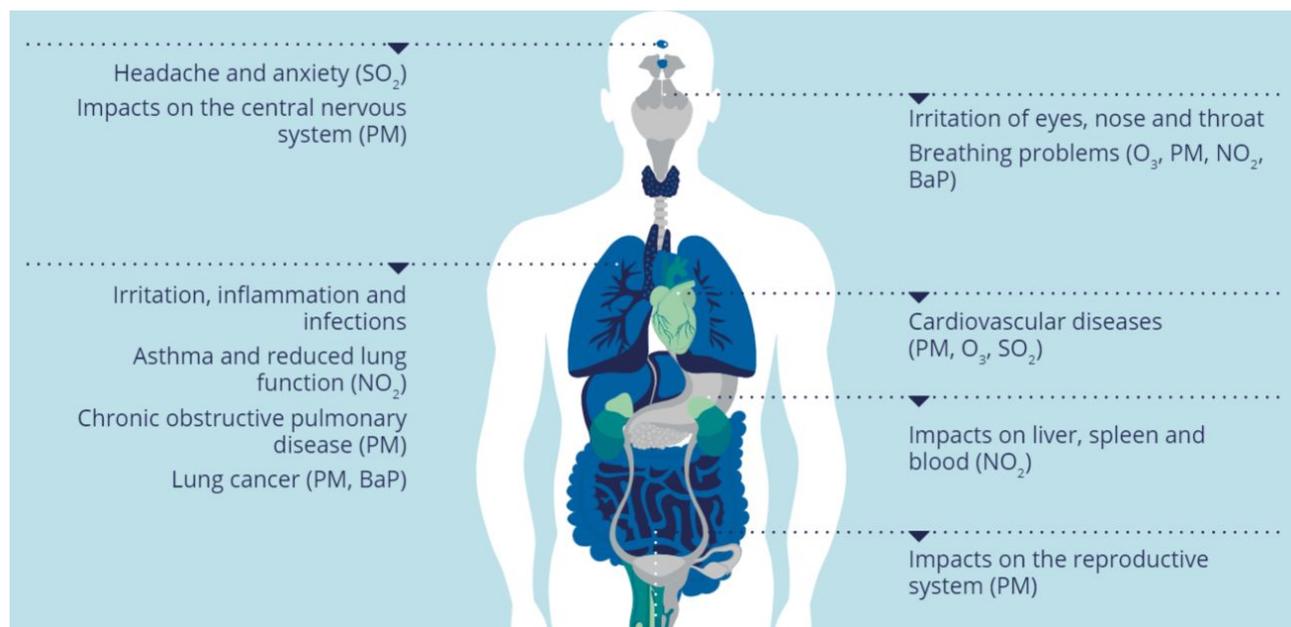
- **NH₃**: Agriculture was responsible for 99% of NH₃ emissions in Ireland in 2018 (see table at the end of this document for breakdown). Emissions have been rising since 2011 and the Department of the Environment, Climate and Communications (DECC) acknowledges that this trend is largely due to Government policies promoting expansion of the sector (especially policies which encourage growing the cattle herd).
- The Department of Agriculture, Food and the Marine (DAFM) published a plan on 9 December 2020, known as '[AgClimatise](#)', advertised as a roadmap to address all climate and air pollution impacts of agricultural activity. Although described as a 'living document' (i.e. subject to rolling revision at unspecified points in the future), [objective analysis by a scientist at MaREI](#) finds the plan to be wholly inadequate.
- According to Dr Hannah Daly, AgClimatise at best sets out how to stabilise, not reduce, methane emissions from agriculture. For this reason, Dr Daly considers the strategy to be inconsistent with the Paris Agreement 2015, the Programme for Government 2020, and less ambitious than the Climate Action Plan 2019. Given the [close relationship between methane and Ammonia emissions](#), AgClimatise is also unlikely to meaningfully reduce Ammonia emissions.
- It is also worth noting that AgClimatise has been discredited by the Government itself. In the same week that the plan was published, the Minister of State for Land Use and Biodiversity (at DAFM) [said the plan should be disregarded as it will be superseded within a year](#). The Minister for the Environment later [made similar comments](#), claiming the next plan 'will result in a smaller national herd'. These comments are not official policy however, and offer no clarity to farmers or other people concerned about the climate crisis.

- **NO_x**: The most significant source of NO_x emissions in 2018 was transport (41%), followed by agriculture (32%). Although NO_x emissions fell significantly between 2005 and 2011, emissions rose in 2012 and have generally remained at similar levels each year until 2018 (the most recent data available). Declining emissions in the earlier period can generally be attributed to a sharp decline in economic activity during the recession which followed the 2008 financial crisis.
- The proportion of diesel passenger cars, one of the most significant sources of NO_x, has risen rapidly in the past two decades to make up [more than half of the passenger car fleet as of 2017](#). This trend is compounded by the fact that many of these diesel vehicles were sold during [widespread abuses of EU emissions standards by major car manufacturers](#) (known as Dieselgate).
- Successive governments in this period promoted diesel vehicles, by way of lower motor and fuel taxes, on the grounds that diesel engines emitted less GHGs. This shows the potential for climate policy to have negative impacts on air quality if the wider impact of policy is not taken into account.
- The policy expected to deliver the most significant reduction in NO_x emissions is the Climate Action Plan 2019 target to promote the purchase of nearly one million electric vehicles by 2030. However, this target has been [widely criticised as unrealistic](#). The Climate Action Plan 2019 is thin on detail as to how this target will be achieved, contains no interim targets (meaning there is no guarantee that benefits will be felt in the first half of the decade), and in any event the plan is not binding on the Government as it does not currently have a statutory basis.
- In 2019, [annual NOx concentrations breached legal limits set in EU law at a St John's Road West](#) in Dublin. The Environmental Protection Agency, the four Dublin local authorities, and the Minister for the Environment must now draw up a plan to keep the exceedance of the limit 'as

short as possible'. The resulting plan may serve as a model to address NO_x emissions in other urban areas.

- Movement restrictions introduced in response to the Covid-19 pandemic had a significant impact on local NO_x concentrations in early-mid 2020, [falling by as much as 50% in some areas](#). This shows a clear relationship between NO_x emissions and congested traffic. The current Government's interest in promoting remote working may deliver some benefits in this context, though this is another policy which is under development and as such it is difficult to ascertain when and to what extent it might have an impact.
- In addition to addressing the projected non-compliance with respect to the pollutants highlighted above, this consultation also provides an opportunity to raise concerns with air pollution in Ireland more generally.

Health Impacts of Air Pollution



Source: [EEA, Air pollution: how it affects our health \(2020\)](#)

- Despite the fact that the Government, the Minister for the Environment, and local authorities are obliged to maintain good air quality where it exists, air pollution is significantly higher in many areas than it was a decade ago.
- Air pollution impacts all of society but [some groups are affected more than others](#).

Where women are more likely to be primary caregivers they are more likely to be exposed to indoor air pollution (such as from an open fireplace) for longer periods of time, with resulting health impacts.

[Children are more vulnerable to air pollution](#) as they take more breaths and their shorter height means they are closer to many sources of pollution (such as car exhausts).

The failure by most local authorities to provide sufficient, adequate, and culturally appropriate accommodation to Mincéirí/Travellers often results in families resorting to informal halting sites which are typically close to roads. This [results in increased exposure to road traffic pollution](#) and may be a factor in the much shorter life expectancy of the minority compared to the settled community.

Low-income households are more likely to be reliant on solid fuel burning and therefore exposed to higher levels of pollution for longer durations. These households usually do not own their home and cannot benefit from tax incentives to improve insulation or install less polluting methods of heating.

Deaths Attributable to Ambient PM_{2.5} in Ireland

Year	Premature Deaths Attributable to Ambient PM _{2.5}	% All Deaths
2018	1300	4.17
2017	(unavailable)	-
2016	1100	3.59
2015	1100	3.65
2014	1480	5.06
2013	1520	5.15
2012	1200	4.11
2011	1229	4.32

- Since 2011, the European Environment Agency has consistently found that **more than 1,100 deaths a year in Ireland may be attributable to outdoor (ambient) fine particulate matter (PM_{2.5}) pollution alone** (roughly 3.5-5% of all deaths recorded by the Central Statistics Office in each year).

- As solid fuel burning for home heating is the most significant source of PM_{2.5} pollution (see table at the end of this document), any plan to address air pollution must include concrete measures to enable a transition to cleaner methods of home heating.

Sources: [EEA, Air quality in Europe \(2013-2020\)](#);

[CSO, Vital Statistics 2011-2018](#)

- Scientists based at the Centre for Research into Atmospheric Chemistry (CRAC), University College Cork argue that [the only way to effectively address PM2.5 pollution is to begin a transition from burning all kinds of solid fuels](#) across the whole country. The pollutant is not only an urban issue as CRAC research found levels were often higher in small towns and rural areas than in cities.

- 40% of submissions to the consultation on the original NAPCP (February 2020) were from fossil fuel companies (Bord na Móna; Ervia; Gas Networks Ireland; SSE). Three of these companies are involved in the sale of gas.
- Gas heating results in significantly less PM_{2.5} emissions, though it is a major source of GHG emissions, and the cause of a wide array of environmental harms during extraction, processing and transport.

There is a real risk that arguments in favour of expanding gas infrastructure often made in the climate policy context, e.g. that gas is a less-polluting ‘transition fuel’ needed to ensure stability of energy supply, will be replicated in the air pollution context.

- DECC acknowledges that there are opportunities for air quality policies to further the climate action agenda and vice-versa. One such opportunity is for the Department to explicitly rule out expansion of gas infrastructure as a means of reducing air pollution, and instead move to means of home heating which reduce air pollution and GHG emissions in current and future retrofit programmes.

Any significant expansion of the gas network would clearly be inconsistent with the need for urgent climate action, and increases the risk that the State will continue to breach related obligations under national, EU, and international law.

Sources of Relevant Air Pollutants in Ireland

Pollutant	Top Sources in 2018 (most recent data)
NH₃	<ol style="list-style-type: none"> 1. Agri Direct Soils - 40% (e.g. spreading slurry) 2. Agri Other Cattle - 26% 3. Agri Dairy Cattle - 12% 3. Agri N-excreted on pasture - 12%
NMVOC	<ol style="list-style-type: none"> 1. Agriculture - 45% 2. Food & Beverage Industry - 24% (especially manufacture and storage of spirit alcohol) 3. Fugitive & Solvents - 21% (e.g. paints, paint strippers, adhesives)
NO_x	<ol style="list-style-type: none"> 1. Transport - 41% (especially diesel engines) 2. Agriculture - 32% 3. Industrial - 9%
PM_{2.5}	<ol style="list-style-type: none"> 1. Residential & Commercial - 55% (especially burning peat, coal, wet wood) 2. Transport - 14% (exhaust, tyres, brakes) 3. Industrial - 13%
SO₂	<ol style="list-style-type: none"> 1. Residential & Commercial - 52% (especially burning coal) 2. Power stations - 23% 3. Industrial - 22%

Source: [EPA, Ireland's Air Pollutant Emissions - 1990-2030 \(2020\)](#)

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Our politicians are not leaders. They are followers.

That is why mobilisation is the key to change.
