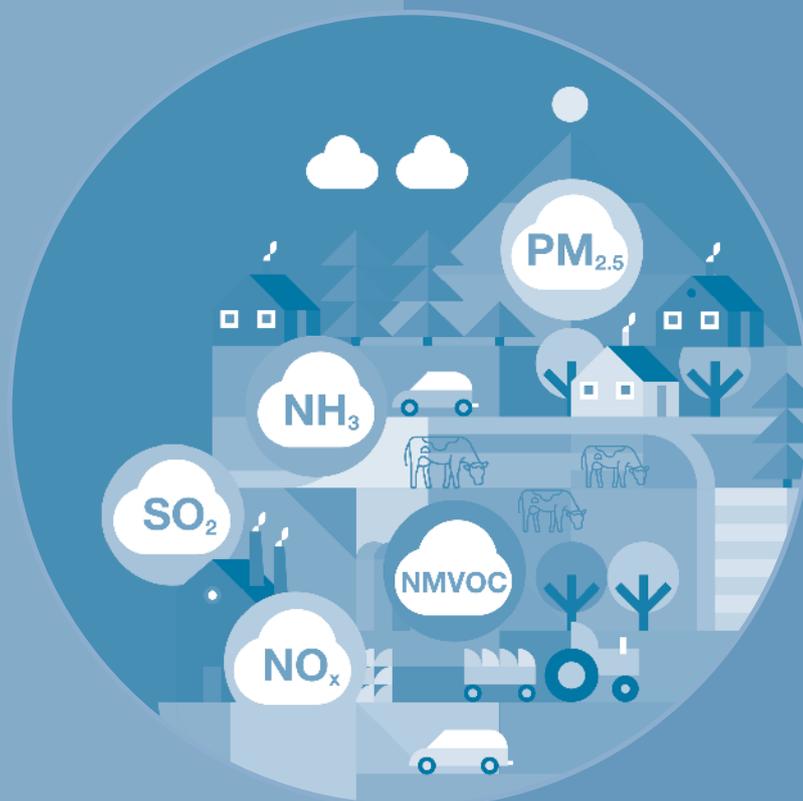


# Air Pollutant Emissions in Ireland

1990-2030

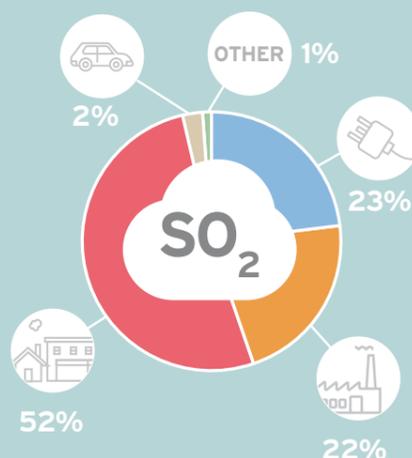
June 2020



## SULPHUR DIOXIDE (SO<sub>2</sub>)

Major precursor to acid deposition, which is associated with the acidification of soils and surface waters and the accelerated corrosion of buildings and monuments. Derived from the sulphur in fossil fuels such as coal and oil used in combustion activities.

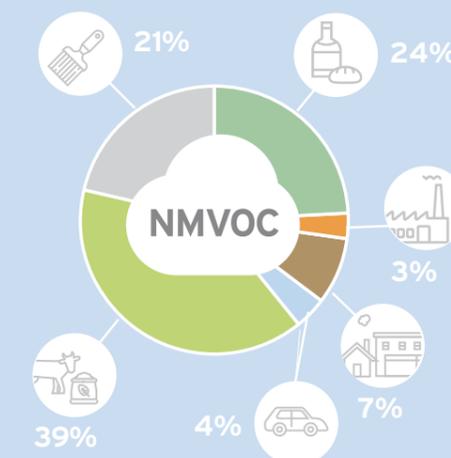
Emissions have decreased by 93.3% since 1990. Emissions from electricity generation have decreased by 97.2% and Residential & Commercial emissions have reduced by 83.5%. Fuel switching and reduced sulphur content of fuels responsible for reductions.



## Non-Methane Volatile Organic Compounds (NMVOC)

Are emitted by a wide array of products including paints, paint strippers, glues, cleaning agents and adhesives. They also arise as a product of incomplete combustion of fuels and from the storage and handling of animal manure and fertilisers in agriculture. Production of food and beverages also an important source.

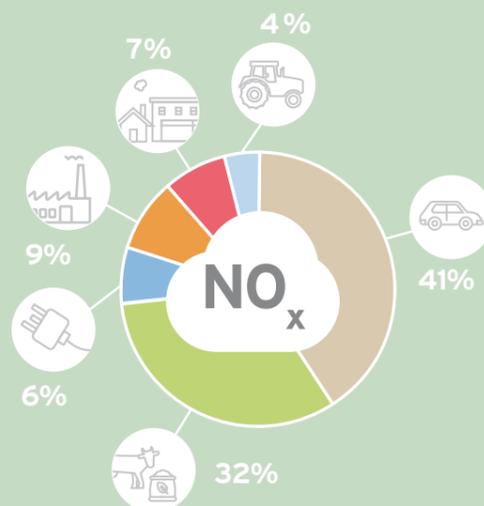
Emissions are 23.3% lower than 1990. Agriculture is the largest source accounting for 39.4%. Production of food and beverages (beer and spirits) accounts for 24.4%.



## NITROGEN OXIDES (NO<sub>x</sub>)

Contribute to acidification of soils and surface waters, tropospheric ozone formation and nitrogen saturation in terrestrial ecosystems.

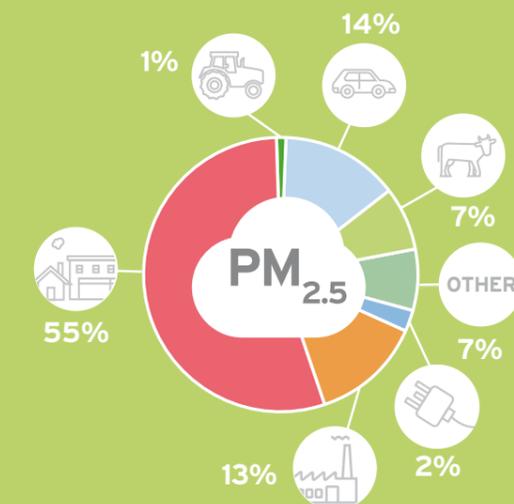
Emissions have reduced by 38.4% since 1990. Transport is largest source accounting for 40.6% of total emissions. Agriculture also significant source due to dung, urine, manures and fertilizer nitrogen application. Abatement technology in electricity generation and transport has led to reductions.



## PARTICULATE MATTER < 2.5µm (PM<sub>2.5</sub>)

There are many sources of particulate matter (dust) including vehicle exhaust emissions, soil and road surfaces, construction works and industrial emissions. Particulate matter can be formed from reactions between different pollutant gases e.g. ammonia. Fine particulate matter PM<sub>2.5</sub> is responsible for significant negative impacts on human health.

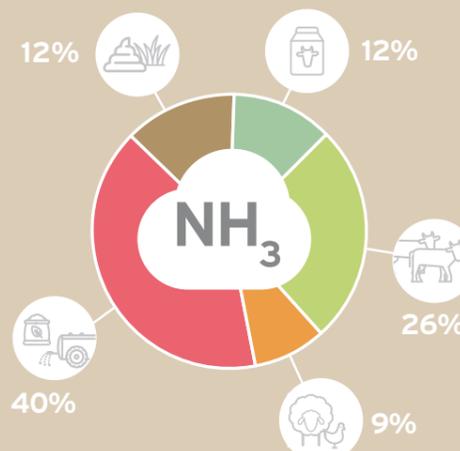
The main source is combustion of fuels in the residential & commercial sectors. Fuel switching from coal and peat to kerosene and natural gas has resulted in a significant reduction in emissions.



## AMMONIA (NH<sub>3</sub>)

Associated with acid deposition and the formation of secondary particulate matter. The agriculture sector accounts for virtually all (99%) of ammonia emissions in Ireland.

Emissions are 8.7% per cent higher than in 1990. Animal manures produce about 90 per cent of ammonia emissions in agriculture and nitrogen fertilisers account for the remainder. National emissions are thus largely determined by cattle population and nitrogen fertilizer use. Road transport accounts for <1% of national ammonia emissions as a result of three way catalysts in passenger cars.



## KEY MESSAGES

Ireland remains compliant with emission reduction targets for



for the time being.

For 2030, **NMVOC** and **NH<sub>3</sub>** are projected to be in non compliance with emission ceilings and will require additional measures over and above those outlined in the Climate Action Plan. The **NO<sub>x</sub>** ceiling on the other hand will require full implementation of Climate Action Plan measures including electric vehicle targets, otherwise the emission ceiling will not be met.

Energy efficiency measures across society, more fuel efficient vehicles and widespread adoption of electric vehicles, will have **sizeable impacts on reducing emissions into the future**, in particular **NO<sub>x</sub>** and **PM<sub>2.5</sub>**.

Expansion of the agriculture sector has led to the breach of **NH<sub>3</sub>** emission ceilings. Further expansion projected into the future will result in continued non compliance with emission ceilings.

On-farm abatement measures to reduce emissions require immediate widespread implementation.



NH<sub>3</sub>



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