AIR POLLUTION IN IRELAND

MAJOR AIR POLLUTANTS

- **PM** – Particulate Matter
- Nitric oxide (NO), Nitrogen dioxide (NO_2) – Oxides of Nitrogen - NOx
- **SO_2** – Sulphur Dioxide
- **O_3** – Ozone
- **VOC** – Volatile Organic Compounds
- **PAHs** – Polycyclic Aromatic Hydrocarbons
- **NH_3** – Ammonia
- **CO** – Carbon Monoxide
- **CH_4** – Methane ▲
- **N_2O** – Nitrous Oxide ▲
- **HFCs** – Hydrofluorocarbons ▲
- **CO_2** – Carbon Dioxide ▲

▲ Greenhouse gases (GHGs)

KEY AIR POLLUTANT SOURCES

- Residential
- Transport
- Industry
- Commercial
- Agriculture
- Power
- Waste
- Natural
- Shipping
- Aircraft

** please note that the order of pollutant or pollutant sources is not a reflection of their quantity or level of impact*

TRANSFORMATION AND MOVEMENT OF AIR POLLUTANTS

Air pollutants can react in the atmosphere to form new pollutants

Sunshine + Nitrogen Oxides + Volatile Organics = Ozone

Sunshine + NO_x + VOC = O_3

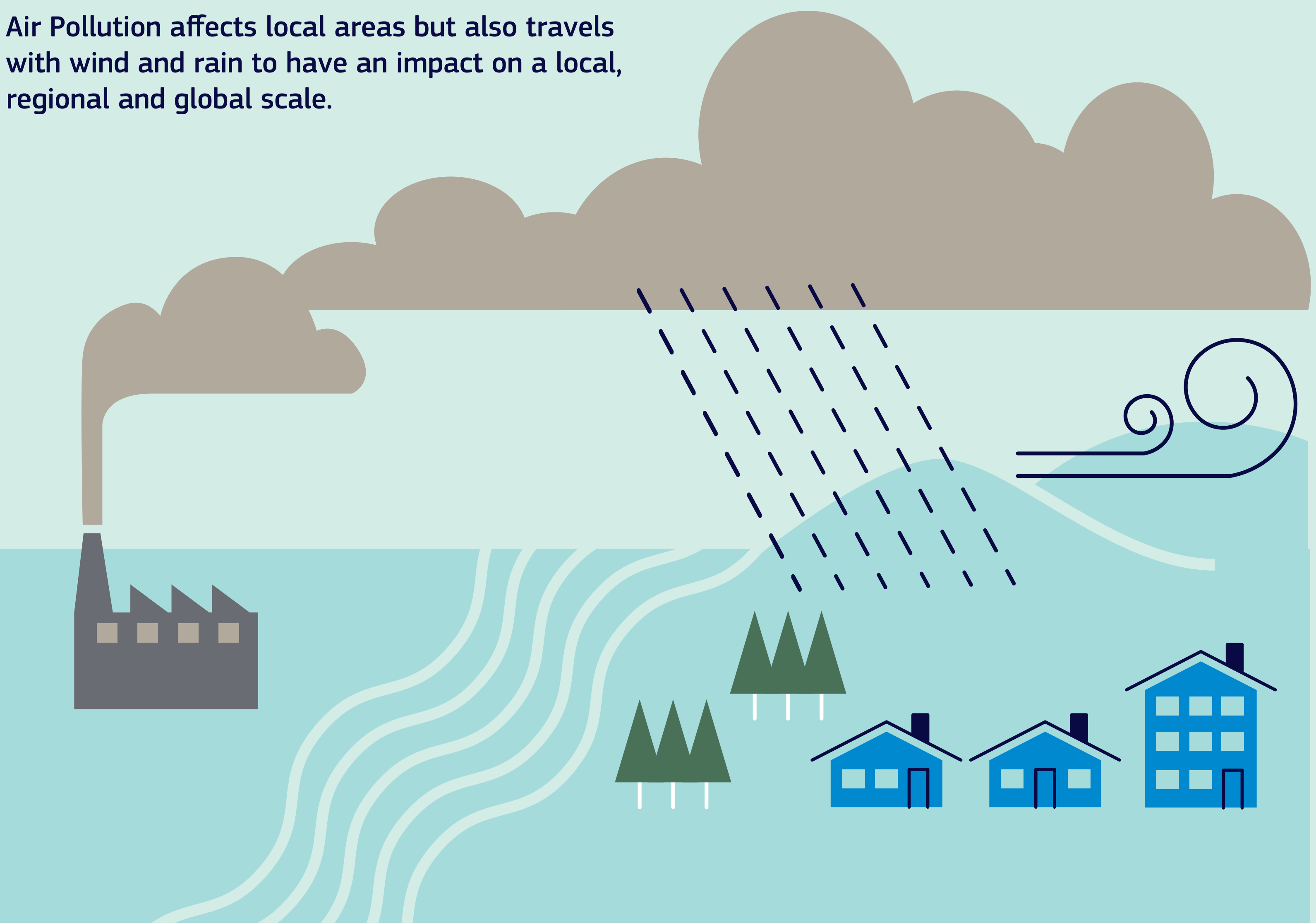
Ozone high in the stratosphere protects us from harmful UV rays, but ozone created at ground level due to other pollutants can have detrimental impacts on health, vegetation and crops

$2NH_3 + SO_2$ = Secondary PM

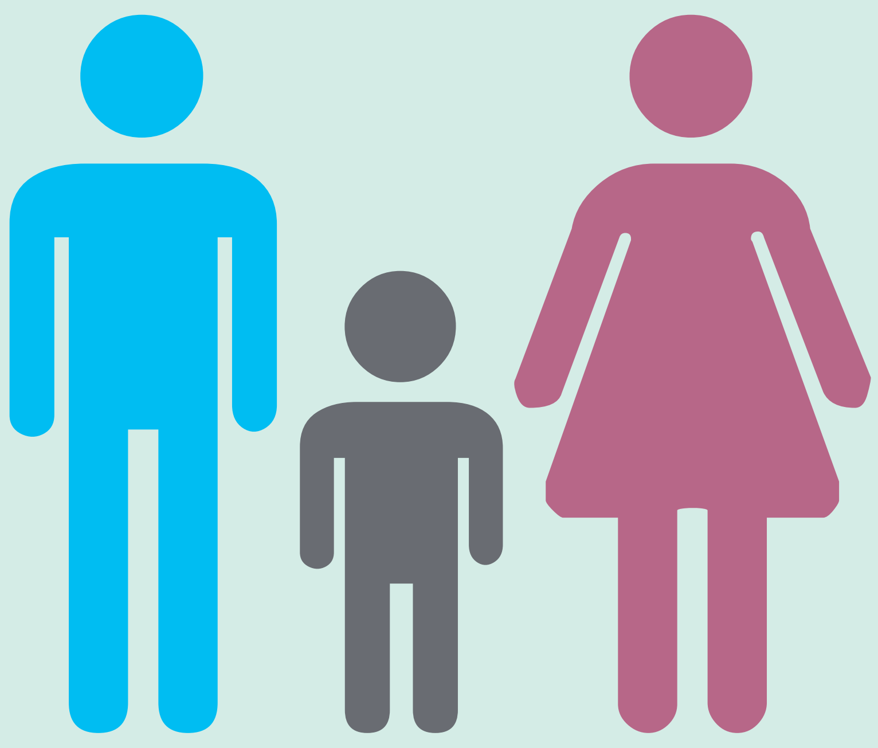
(NH_3 NH_3) + SO_2 = PM

Ammonia as a gas can combine with other gases such as sulphur dioxide to form solid particulates

Air Pollution affects local areas but also travels with wind and rain to have an impact on a local, regional and global scale.



HEALTH IMPACTS



Accepted Health Impacts List

- Headaches, Anxiety (SO_2)
- Central nervous system impact and stroke (PM)
- ENT (Ear, Nose & Throat) irritation and breathing difficulties (O_3, PM, NO_2, SO_2, PAHs)
- Cardiovascular disease (O_3, PM, SO_2)
- Asthma and reduced lung function (PM, O_3)
- Lung cancer (PAHs)
- Impacts on liver, spleen and blood (NO_2)
- Impacts on reproductive system (PM)
- Low birth weight, premature birth (PM)

SUMMARY COSTS/IMPACTS

*"WHO (2015) estimate around **700** premature deaths per annum attributable to ambient air pollution in Ireland, with total health costs (mortality and morbidity) in excess of **€2bn** per annum."*

ENVIRONMENTAL IMPACTS

- Crop Yields
- Water Systems
- Species diversity
- Buildings & Materials
- Forests
- Odour

MANAGING AIR POLLUTION IN IRELAND

Monitoring
The EPA and Local Authorities play a major role in monitoring air quality across Ireland. The EPA also prepare national inventories and projections of Air Pollutants.
www.epa.ie/air/quality

Management
The Irish Government implements European and international air quality legislation as well as preparing national legislation and policy for the control of air pollution.
www.environ.ie/en/Environment/Atmosphere/

Enforcement
The EPA enforce emission limit values from a range of industrial and waste facilities across the country. Local Authorities enforce the ban on bituminous (smoky) coal and investigate reports of air pollution from the public such as smoke, nuisance odours etc.

IMPROVING AIR QUALITY – YOU CAN MAKE A DIFFERENCE

✗	✓
Unfiltered	Filtered
Petrol/Diesel Vehicles	Electric/Hybrid
Cars	Other Modes of Transport
Uninsulated	Insulated
Open Fire	Gas Boiler
Oil	Electric
Smoky Solid Fuel	Low Smoke Solid Fuel
Splash Plate	Trailing Shoe
Fossil Fuels	Renewable Technologies such as heat pumps

Here are some examples of ways in which you can reduce air pollution from a range of different sources

epa Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

Sources: World Health Organisation, European Environment Agency, Environmental Protection Agency, Department of Environment Community and Local Government, United Nations Economic Commission for Europe (UNECE)

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