



Department
for Environment
Food & Rural Affairs

Power Generation – a Defra perspective

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06 December 2016



Forestry Commission
England



Environment
Agency

Defra's Strategy

*“We want Britain to be a great place for living in... with **clean water and air**, beautiful countryside to enjoy and a rich variety of plants and wildlife ...as well as a great place to make a living whether as a rural start-up, a small business in a tech city, a public sector employee or a multi-national corporation.*

*We're about the future... sustaining natural resources so that they are there for our children and grandchildren to enjoy ...and the present... protecting homes from flooding, promoting farming practices that avoid disease and protect animal welfare, **improving air quality.**”*

Air Quality - Why it matters and its control

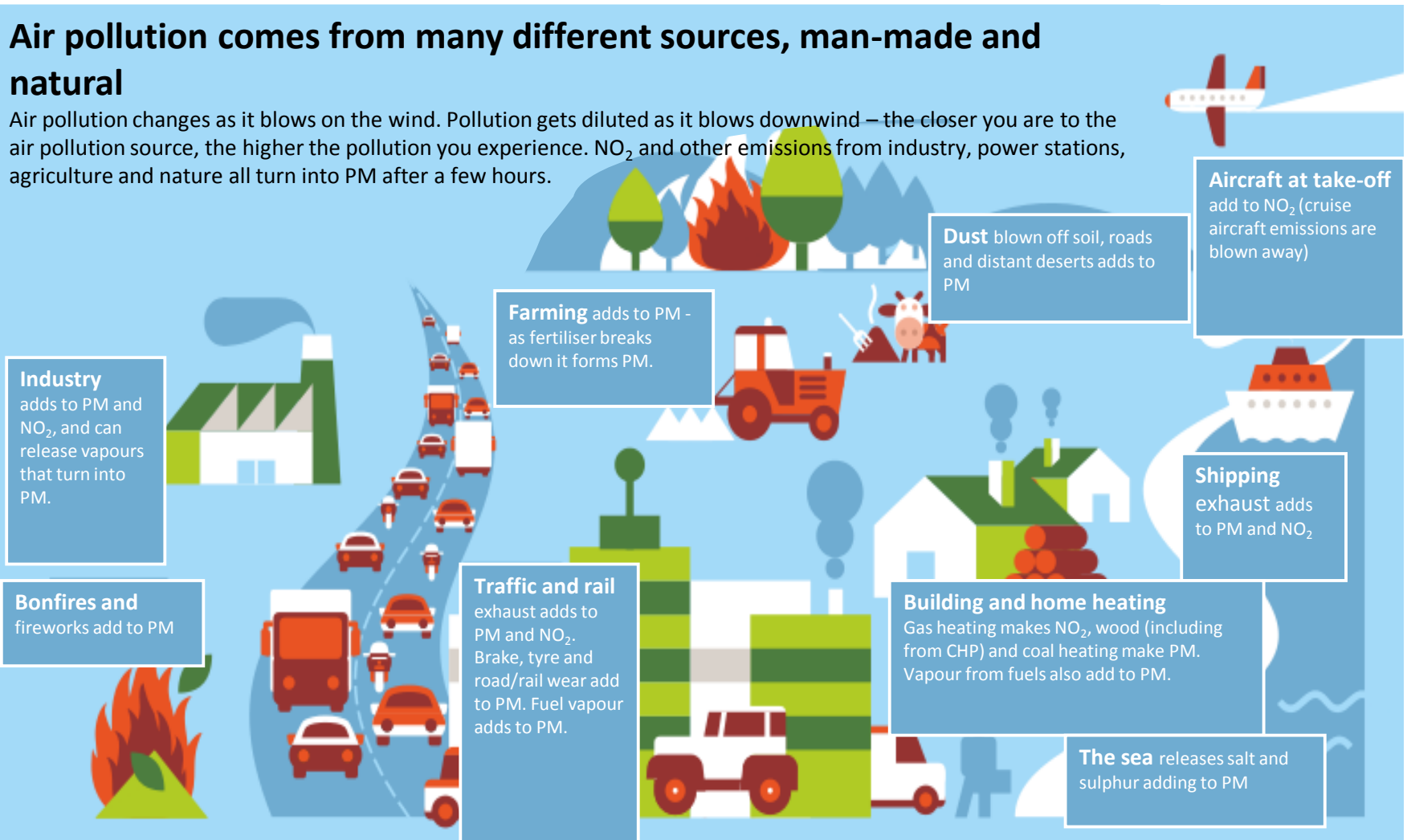
- Over 50,000 premature deaths a year, cost of around £30bn a year
- Causal links to heart/lung conditions
- Fourth biggest factor in reducing life expectancy
- Major impacts on ecosystems

- Total emission limits set under International agreement – the Gothenburg Protocol
- Legally binding local concentration limits for certain pollutants
- Regulation to limit emissions from specific point sources such as factories and power stations

Sources of air pollution

Air pollution comes from many different sources, man-made and natural

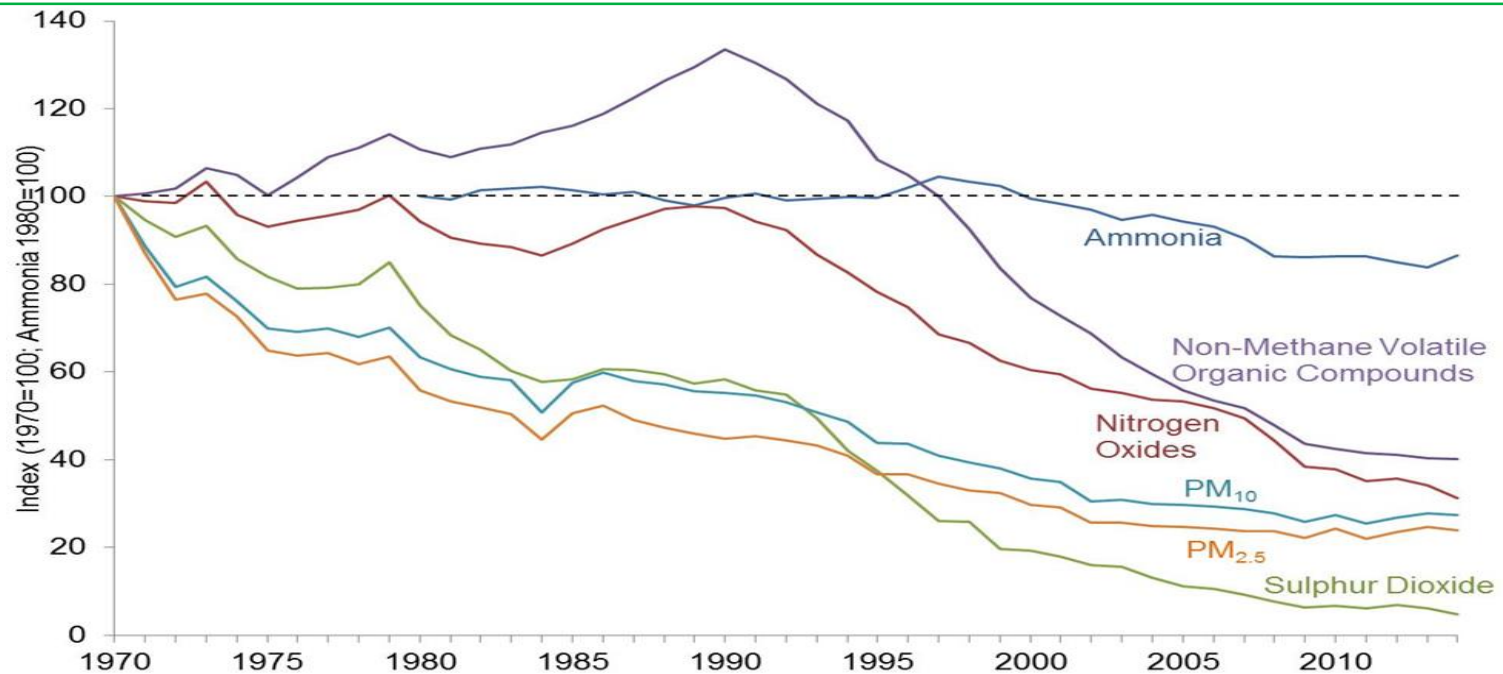
Air pollution changes as it blows on the wind. Pollution gets diluted as it blows downwind – the closer you are to the air pollution source, the higher the pollution you experience. NO₂ and other emissions from industry, power stations, agriculture and nature all turn into PM after a few hours.



Adapted from www.developpement-durable.gouv.fr

Progress so far

- Significant emission reductions already achieved
 - Between 2005 and 2014 emissions of nitrogen oxides fell by 41% and particulate matter by 3%.
 - SO₂ emissions have fallen 56% since 2005 (92% since 1990) largely through abatement of power station emissions



What next?

25 Year Environment Plan

- *Consultation on Framework*

Legally binding air pollutant reduction targets for 2020, 2030

- *NO_x, SO₂, PM_{2.5}, Ammonia, VOC*

Proposals on Medium Combustion plants and generators

- *Consultation open*

EU Exit

National emissions reductions targets

- Legally binding reduction targets for 2020 and 2030 (compared to 2005 baseline)

Pollutant	2014	2020 target	2030 target
VOC	28%	32%	39%
SO ₂	56%	59%	88%
NO _x	41%	55%	73%
Ammonia	8%	8%	16%
PM _{2.5}	3%	30%	46%

- Timeline
 - Plan of how to achieve 2020/2030 targets needed by Summer 2018
 - Develop plan over next 12-18 months with input from stakeholders before formal consultation

Reducing emissions from Medium Combustion Plants and Generators

- Defra consultation open 16 November 2016- 8 February 2017
- Gov.uk website or <https://consult.defra.gov.uk/airquality/medium-combustion-plant-and-controls-on-generators/>
- Joint consultation because some generators are MCPs



Medium Combustion Plant Directive

- Will help to achieve 2030 national emissions ceilings through cost effective emissions reductions. Supported by UK in negotiations
- Combustion plants with a thermal rated input in the range of 1MW to 50MW
- Introduces ELVs which differ for new and existing plant, as well as for different combinations of plant size, plant type and fuel type
- Requirements to register/permit, test and monitor emissions, record information on operation and secondary abatement
- Requirements apply from;
 - 20 December 2018 for new plant
 - 1 Jan 2024 + ELVs from 2025 for existing 1-5MW
 - 1 Jan 2029 +ELVs from 2030 for existing 5-50MW
- Plant operating <500 hours/year not required to meet MCPD ELVs, however *additional* requirements apply for generators....



Generator proposals



- Response to projected rapid increase in generators with high NOx emissions (mainly diesel) resulting from energy market incentives
- Aimed at assisting compliance with ambient air quality limits and curbing emissions from sites with electricity generating plant 1- 50MW_{th} aggregated
- Introduce single NOx emissions limit for all generators + controls to protect ambient air quality
- From 2019;
 - ELV for generators operating on/after 1st Dec 2016 (some exceptions)
 - Controls to protect local air quality for other high NOx generators (ELVs from 2025 and 2030 depending on thermal input)
- Exemptions for back-up generators testing for up to 50 hours per year + generators on licenced nuclear sites
- Questions to; Control.Pollution@defra.gsi.gov.uk



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