The Great Smog of London 1952 onwards

A foul-smelling dirty-yellow brown smog descended on London lasting 5 days from Friday 5 December to Tuesday 9 December 1952. This was what became known as the Great Smog of London. Smog is a term which describes the combination of smoke and fog which was first coined in the early 1900s (National Geographic, n.d.).

Masses of potentially poisonous gasses and pollutants were released by factories and the large quantities of coal being burned resulted in smoke pouring from many houses and factories in London. Normally the smoke would rise and disperse however due to the weather conditions of an anticyclone, a high-pressure inversion, the smoke became trapped (Met Office, n.d.). Sulphurous coal smoke could not rise creating a dense smog. Each of the 5 days 1000 tonnes of smoke particles, 140 tonnes of carbon dioxide, 140 tonnes of hydrochloric acid and 14 tonnes of fluorine compounds were emitted. And 370 tonnes of sulphur dioxide were converted to 800 tonnes of sulphuric acid. Sulphur dioxide alone can impact the respiratory system and cause breathing issues and sulphuric acid can also have this effect. Sulphuric acid is also corrosive and can affect the skin, eyes, and mucous membranes (Polivka, 2018). The smog described as 'thick pea-souper' due to its colour paralysed London transportation except the underground (History, n.d.). During the London smog pollution levels were 5-19 times above current regulatory standards/guidelines in some rapidly developing regions (Bell and Davis, 2001). Experts estimate that the Great smog of London claimed between 8,000 – 12,000 lives. The elderly and the young were particularly at risk along with already heavy smokers. Bronchitis and pneumonia deaths increased by sevenfold. And as the smog was worst in London's East End its death rate increased by ninefold (History, n.d.).

This severe 5-day smog resulted in a change in legislation restricting the burning of coal in urban areas and permitted local council to set up smoke-free zones know as the Clean Air Act 1956. Further examples of changes in this legislation include 'Measurement of grit and dust emitted from furnaces' and 'Prohibition of dark smoke from chimneys' (Clean Air Act 1956, n.d.). This was many years later and was again followed by 1968 Clean air act which added further prohibitions on smoke emission (Met Office, n.d.).

The Clean Air Act was in response to the smog many years previous which caused many health concerns. The issue of smog has significantly reduced as the generation of power and heat has changed over the years. However, sulphur dioxide/acid levels nowadays are recognised in the issue of acid rain. Aid rain is a 'form of precipitation with acidic components' that fall from the atmosphere in wet or dry forms (US EPA, n.d.). To address this issue protocol on further reduction on sulphur has been established in Europe. This includes the 1994 Oslo Protocol that builds on the 1985 Helsinki Protocol which aims to reduce sulphur emission (UNECE, n.d.).

For Europe, air pollution is the largest environmental health risk and EU laws have been set to tackle this problem. The National Emission Ceilings (NEC) Directive has set up emission reduction targets for five pollutants; sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter (Europa, n.d). These pollutants are targeted as they are responsible for acidification, eutrophication and ground-level ozone pollution. This Directive is expected to reduce 50% of negative health impacts of Air pollution in Europe when fully implemented and will have a positive impact on soil and ecosystems. It's the main legislative instrument set in 2016 which aims to achieve its objectives of Europe's Clean Air Programme by 2030.

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