DRAFT CLEAN AIR STRATEGY 2018 CONSULTATION

A submission from the Royal Society of Chemistry to the Department of Environment Food and Rural Affairs (Defra)

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We provide a partial response below that covers specific matters relating to Understanding ŭKŜ tℕ2ōfŜϒ ó/KI·LJűŜℕ мúΣ tℕ2ŭŜŐűλyƎ ŭKŜ bI·ŭλ2yℚă IŜI·fűK ó/KI·LJűŜℕ нú I·yŘ {ŜŎdzℕλyƎ /fŜI·yˇ Growth and Innovation (Chapter 4). We provide a narrative response, in order to highlight issues that we as a scientific community think are important to consider when developing the final Clean Air Strategy and detailed National Air Pollution Control Programme.

Chapter 1: Understanding the Problem

Chemical emissions into the air change frequently and unpredictably as society and technology evolve.

A clean air strategy must have sufficient scientific and technical 'surveillance' capability to anticipate and identify emergent pollution sources early in order to develop and evaluate possible interventions, to increase the ability to prevent air quality problems.

Whilst welcoming extra investment for air quality modelling, we caution against an over–reliance on modeling for air pollution information and encourage a substantial expansion in the use of

make, as they are driven by a range of factors, particularly uncertainties in technology, society and economics. It is difficult to forecast the evolution of existing pollution sources, such as the current vehicle fleet, and there remains a high potential for new sources or activities to emerge.

A detailed understanding of pollutants and their chemistry is important for interpreting health and environmental effects, regulating emissions, and developing pollution-reducing technologies. U.K. chemists, supported initially by Defra in the 1990s, have developed the ámaster chemical mechanismáó a / aúΣ øKλŎK LJℕ2ØλŘŜă űKŜ ø2ℕtŘ℺ă Y2ăű ŘŜűl·λtŜŘ ŘŜăŎℕ⅄LJűλ2y of air pollution chemistry. It describes 7000 species[1] and more than 15000 reactions and is the gold standard against which global forecast and policy models are tested. The MCM includes descriptions of the chemical reactions involved in degradation of volatile organic

content from non-exhaust emissions (e.g. road, tyre and brake wear) may increase. There is a need better to understand the impacts of changing the mixture as well as the overall amount of PM mass.

Chapter 2: Protecting the Nation's Health

Accurate monitoring and measurement of atmospheric pollutants is vital for ensuring regulatory compliance and can help us to understand further the relationship between poor health and air pollution.

We welcome the ambition in the specific objectives for $PM_{2.5}$ (particulate matter with a diameter of 2.5 micrometers or less) using the World Health Organisation (WHO) lower limit value of 10 microgram / m^3. At the same time, we argue that it is vital to establish the extent to which this lower target would be attainable in densely populated cities, even in a fully electrified transport future noting the uncertainties associated with non

may in future require the adoption of individual exposure targets or differential limit

Contact

The Royal Society of Chemistry would be happy to discuss any of the points raised in our response in more detail. Please direct any questions to Dr. Steven Lipworth, Policy Advisor, Environment & Regulation: lipworths@rsc.org, 020 7440 3337.