Written evidence submitted by the Environment Agency

Microplastics can be classified into two kinds based on their origin. Primary microplastics are particles intentionally produced for direct use e.g. in cosmetics and abrasives, or as raw materials for production of larger plastic items. Secondary microplastics are particles originating from the degradation of larger plastics.

The Environment Agency does not currently explicitly consider micro-plastic in its environmental permits to discharge liquid effluent or waste water to surface water or onto the ground.

From regulated facilities, the Environment Agency permits discharges of waste liquid effluent or waste water (poisonous, noxious or polluting matter, waste matter, or trade or sewage effluent). Permitting end-of-pipe discharges can require expensive investment to comply with these regulatory requirements. Regulation at end of pipe would be premature before there is a better understanding of sources and environmental impacts of microplastics and the costs and benefits of supply-side or end-of-pipe controls. There is a need for better information on the source apportionment of microplastics in the environment and potential effectiveness of control measures.

The Environment Agency is seeking to further understand the issue through supporting and keeping abreast of research. In 2015 the Environment Agency published the findings of their research project: 'Assessing the impacts of exposure to microplastics in fish'. https://www.gov.uk/government/publications/assessing-the-impact-of-exposure-to-microplastics-in-fish. This research confirmed fish are exposed to microplastics either through direct consumption or via feeding on contaminated prey items. Although ingestion of the microplastics did not appear to have negative impacts on the health of adult fish, being rapidly expelled in faeces, the results indicated reductions in body condition of juvenile fish which are currently unexplained. The study also found evidence that fish were exposed to an organic chemical pollutant, Bisphenol A, through the food chain, supporting the proposition that pollutants may be transported on microplastics.

In addition, the Centre for Ecology and Hydrology are currently undertaking research on the Thames studying microplastic pollution. They have investigated a number of water/sediment samples and are now looking at contamination of Environment Agency collected fish samples.

Regarding secondary microplastics, water companies fit screens at waste water treatment works and storm overflows in order to remove litter, including plastics, which could otherwise end up in the marine environment.

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