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PFAS as a test bed for the EU Green Deal zero pollution ambition from refractory and mobile organic chemicals: technologies, solutions and strategies developed under the H2020 project SCENARIOS

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In the last decade, per- and polyfluoroalkyl substances (PFAS) have been added to the list of pollutants of concern because they are persistent and potentially carcinogenic and have a high bioaccumulation rate. PFASs are detected in numerous environmental matrices, confirming their high persistence and mobility in the environment. In addition, the chemical structure of PFAS and their reactivity pose a technological challenge for remediation efforts. SCENARIOS is an H2020 research and innovation project involving 19 partners from 11 countries. The main objective is to fill knowledge gaps and achieve breakthrough TRL advances in toxicological assessment, congener detection and remediation of PFAS with unprecedented energy balance and virtually no external chemical additives, supporting EU countries in decision-making related to environmental safety and human health. The project will evaluate and develop state-of-the-art technologies and strategies for the detection, quantification, control, and elimination of PFAS in soil, vadose zone, and water by targeting outcomes within the 4 remediation quadrants: In-situ Soil, In-situ Water, Ex-situ Soil, and Ex-situ Water. Likewise, the project is developing a set of solutions to control pollution and remediate PFAS contaminated soils (agricultural and industrial) and groundwater. All these solutions will comply with the principle of green chemistry, zeroenergy, sustainability and circular economy. This paper presents the project progress in PFAS detection, monitoring and remediation.

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