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EU PROJECT AEROSOLFD – PROGRESSING ON FAST TRACK TO CLEANER URBAN AIR

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AeroSolfd is an EU co-funded innovation action developing retrofit filtration solutions as a fast track to cleaner urban air. The focus is on reducing 1) tailpipe emissions of gasoline cars (EURO 6c and earlier) and 2) brake emissions of urban busses and improving 3) air quality at metro stations. The overarching theme driving the development and preparing a market for the retrofit solutions is a holistic view of sustainability by a social-environmental life cycle analysis.
The 3-year innovation action AeroSolfd started in May 2022. First results can now be reported. We will present the progress in three separate posters and a fourth one for the general project setup.

Poster 1: Reducing Tailpipe Emissions (Lars C Larsen, Lauretta Rubino)
Reducing tailpipe emissions by particle filters is standard for diesel engines. For gasoline engines, filters have recently been introduced, but cars with EURO 6c and earlier will still be on the road for a longer time and don't have a filter. Reducing these tailpipe emissions by a particle filter is a fast track to cleaner urban air. Typical vehicles and engines have been identified and particle filters designed for the available installation spaces and tested on four cars. Now we are seeking vehicles to install the retrofit solution for a field trial. We will present and discuss in one separate poster first results of this AeroSolfd work package.

Poster 2: Reducing Brake Dust Particle Emissions (Hartmut Niemann, Carlos Casado, Martin Lehmann)
Reducing brake emissions of urban busses by a brake dust particle filter addresses non-tailpipe emissions. Whereas methods and technologies for measuring tailpipe and passenger car brake dust emissions have been established over the past years, including a WLTP-like novel brake cycle, Developments towards reducing brake dust emissions from city busses are still at a rather infant state, in particular due to the lack of a defined cycle to assess the emissions in specific cities, including the local topography, traffic etc. This must be reflected in the driving cycle to measure brake emissions later on a dynamometer test rig. We will present and discuss in one separate poster how we derived a brake cycle specific for our partner cities and transferred the data into a cycle to run on a dynamometer as first results of this AeroSolfd work package.

Poster 3: Reducing particle exposure level at metro stations (Teresa Moreno, Christof Asbach, Katie Kedwell) At underground metro stations, dust emissions from the train brakes are a main contributor to poor air quality. But what could be a good tracer for that? We will present and discuss physical and

chemical analyses of particles emitted by a metro disc brake used in Lisbon Metro and of PM2.5 inhaled by passengers at the platform of one a demo stations of this metro system. This enables us to trace the air quality at the metro back to brake emissions. Finally, we will give an outlook on the next steps for demonstrating the application of stationary air purifiers to improve air quality at metro stations. This progress of the AeroSolfd project will be shown on one separate poster.

Poster 4: Environmental-Social Life-Cycle-Assessment (Martin J. Lehmann, Keld A. Jensen, Bias Liguori, Dalia Antunes)
The overall project setup will be displayed in one separate poster. Besides the pilar of product development and demonstration the project AeroSolfd is built up on the second pilar of creating public awareness. A key part is the environmental and social Life-Cycle-Assessment and the teamwork of the partners. Both will be briefly shown.

www.aerosolfd-project.eu