LIFE GySTRA - Global system for Sustainable TRAffic emissions management

LIFE16 ENV/ES/000082

Project description Environmental issues Beneficiaries Administrative data
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Project description:

Background

Air-quality issues are experienced in practically all major European cities. This has negative consequences across the EU for the environment/climate, human health, and the economy. Traffic is responsible for 60% of the total emissions in major urban areas [TERM 2012] with air pollutants from vehicles including CO2, CO, NOx and particulate matter (PM).

There have been significant efforts to reduce traffic emissions since an EU Directive in 1970 on “measures to be taken against air pollution by emissions from motor vehicles”. However, the reality is that tests for vehicle emissions are not conducted under real driving conditions. This is true both for the manufacturers’ tests conducted before vehicles are brought to market and for the routine controls conducted once a vehicle has entered circulation.

More detailed systems are needed that are able to correctly monitor and measure all the emissions of vehicles in real time under true driving conditions. This can be a key tool for supporting the implementation of effective policies to reach European air-quality objectives.

Objectives

GySTRA LIFE aims to create an innovative remote-sensing device able to continuously monitor emissions of NO, CO, CO2, PM and NO2 in real driving conditions. It thus aims to be able to identify high emitting vehicles and require them to be repaired as part of a highly replicable urban air quality management model.

The project will develop and test a new tool (the RSD+) that will remotely measure real driving emissions in two pilot schemes:

- A public model in the Spanish city of Madrid – in which 700 000 vehicles per year will be monitored with two RSD+ devices, enabling the Spanish government to notify high emitters and requiring them to repair their vehicle or face a fine; and
- A fleet model in the Austrian city of Graz – in which a fleet of 150 buses will be measured continuously, enabling the city council to better control urban emissions.

The tool will use remote-sensing technology to measure emissions at fixed locations, with high accuracy and on a large scale. All vehicle measurements will be recorded. This will enable emissions savings to be calculated as well as providing the basis for a new, more robust and cleaner transport policy.

Expected results:

- A new RSD+ prototype which complies with EU standards and is accurate to within 15% for all targeted emissions: NO, CO, HC and PM, and NO2;
- The prototype will be small and versatile and be capable of being installed in fixed locations;
- A highly replicable urban air quality model able to identify high emitting vehicles and reduce traffic emissions;
- It is expected that 5% of the 700 000 vehicles monitored in the Madrid pilot will be identified as high emitters. Their repair should achieve the following annual emissions reductions: CO - 617 tonnes/yr (14.8%); HC - 89 tonnes/yr (2.8%); and NO – 518 tonnes/yr (22.7%);
- On the basis of a recent study, it is expected that 6-7% of the fleet of 150 buses in Graz will be identified as high emitters. Repairs should reduce their emissions by up to 84%, contributing to a reduction of the emissions of the fleet as a whole of up to 17%. Fuel savings of 3-5% are also expected for the repaired vehicles; and
- By helping to reduce emissions from urban traffic, the project will contribute to the implementation of the EU Air Quality Directive.

Results

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Environmental issues addressed:

Themes

Air & Noise - Air pollutants
Air & Noise - Air quality monitoring

Keywords

monitoring system, air quality management, air pollution, air quality

monitoring, traffic emission

Target EU Legislation

- Air
- Directive 2008/50/EC - Ambient air quality and cleaner air for Europe (21.05.2008)

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	Fundacin CARTIF
Type of organisation	Research institution
Description	Fundación CARTIF is a private, non-profit applied research centre. Its main goals are to identify technology needs, develop R&D-based knowledge and disseminate innovation in order to support technological innovation in industry, mainly among SMEs.
Partners	Stadt Graz, Austria Jefatura Central de Tráfico, Spain Remote Sensing Lab, S.L., Spain Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, Spain

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Administrative data:

Project reference	LIFE16 ENV/ES/000082
Duration	01-SEP-2017 to 30-NOV -2020
Total budget	1,567,625.00 €
EU contribution	798,719.00 €
Project location	Steiermark(Österreich) Madrid(España)

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