



# A 3-YEARS EU HORIZON VERT PROJECT TENDER SEPTEMBER 2021

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VERT Forum 2024 Lars Christian Larsen  
VERT President and WP-Leader (WP1)



Project funded by



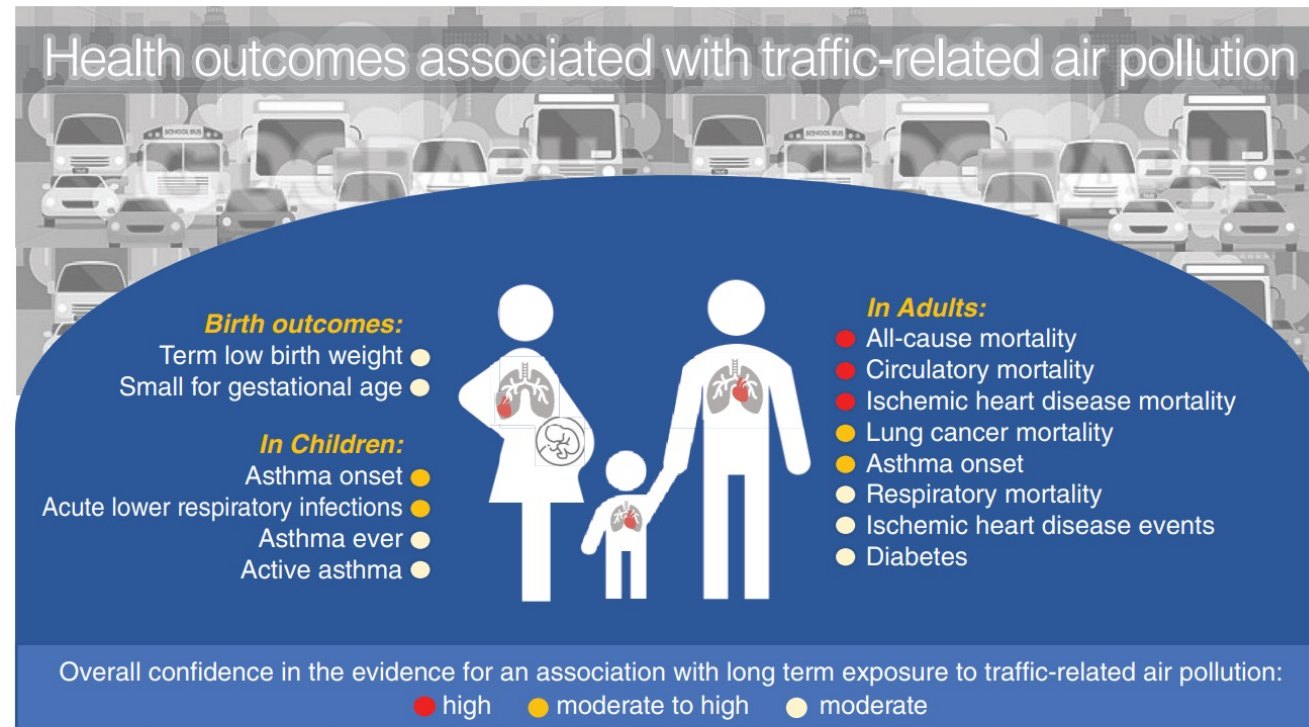
Schweizerische Eidgenossenschaft  
Confédération suisse  
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Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER,  
State Secretariat for Education,  
Research and Innovation SERI

# FOCUS ON CLEANER URBAN MOBILITY

- Relevance of traffic related air pollution
- Recent study of Health Effects Institute [www.healtheffects.org](http://www.healtheffects.org)



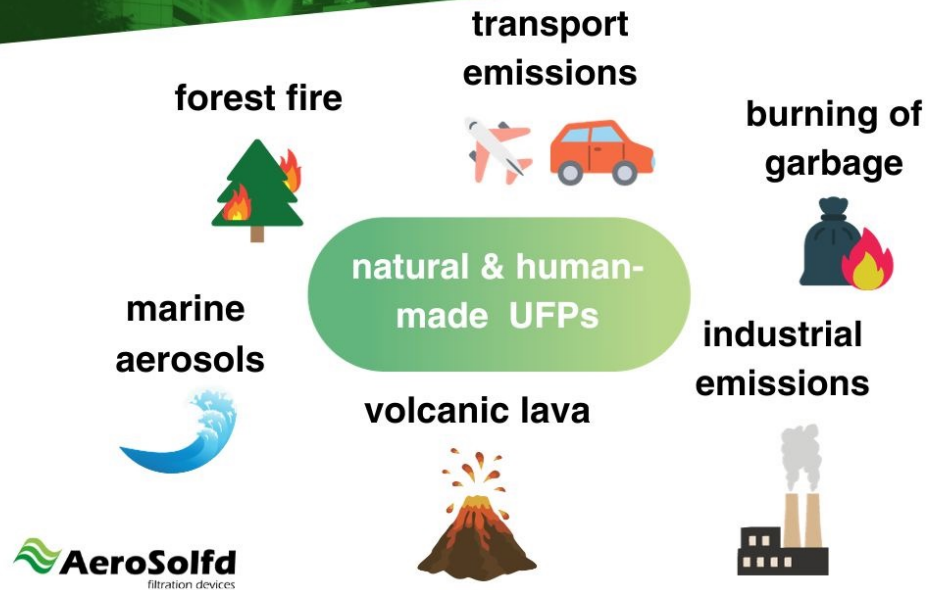
**Executive Summary Figure. Overall confidence in the evidence for an association between long-term exposure to TRAP and selected health outcomes.** Health outcomes for which the overall confidence in the evidence was low to moderate, low, or very low are not in the figure.

Source: HEI Speical Report 23 Executive Summary (2022) – Systematic Review and Meta-analysis of Selected Health Effects of Long-Term Exposure to Traffic-Related Air Pollution

# PRIORITY

- Many sources, but here focus on traffic related air pollution

## ULTRAFINE PARTICLE SOURCES



Source: [https://www.linkedin.com/posts/eu-project-aerosolfd\\_ufps-cleanair-emissions-activity-7110896677342851072-4nCC?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/eu-project-aerosolfd_ufps-cleanair-emissions-activity-7110896677342851072-4nCC?utm_source=share&utm_medium=member_desktop)

## BACKGROUND AND MOTIVATION

- Ultrafine Particles are major health concern of EU policy
  - limit value for PM<sub>2.5</sub> reduced from 20 to 10 µg/m<sup>3</sup>
- Traffic related particle emission has priority
- Particle emissions of petrol engines have been neglected
  - Introduction of E-Mobility is slowing down
  - Clean Diesel market has been spoiled
- Petrol engines might become a major source in city centers
- No retrofit tool is available

# VERT JOINED THE AEROSOLFD IN 2022

- VERT has demonstrated the expertise
- VERT to provide a GPF retrofit solution for petrol cars
  - Filtration > 95% with new type GPF
  - Cost < 10% of commercial value of the car
- This work is funded by the SWISS SERI  
State Secretariat for Education, Research and Innovation

# PARTNERS IN AEROSOLFD

- AeroSolfd – Fast track to cleaner urban air by market ready filtration solutions

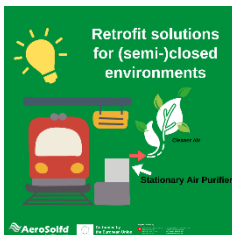
Reducing  
1. tailpipe  
emissions



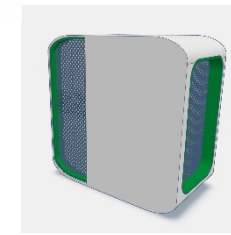
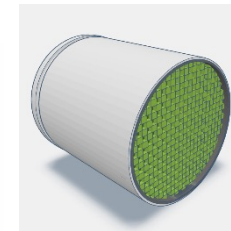
2. brake  
emissions



3. pollution  
at metro  
stations



Measure	Assess	D&C&E	Demo-site	Retrofit
      EXCELENCIA SEVERO OCHOA  	      	<p>Lead:</p>  	   skupina Jovani holding Ljubljana     Ayuntamiento de Valladolid    	      

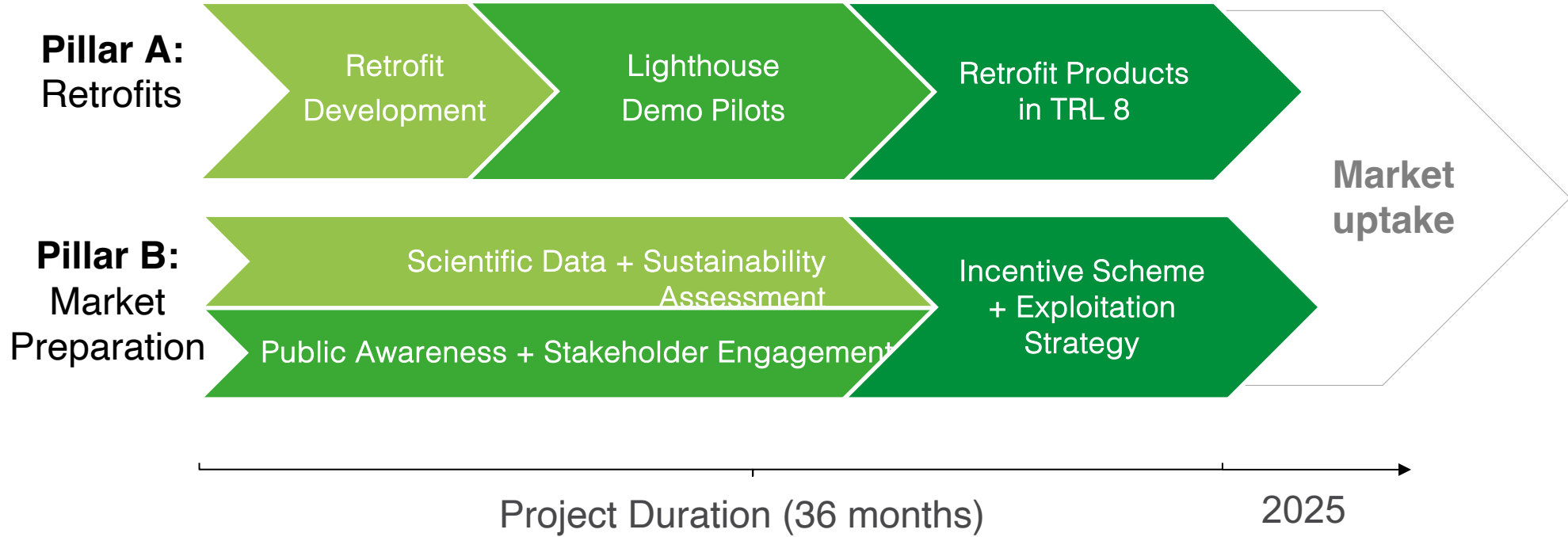


Budget in Mio€

- EU: 5.0
  - Swiss: 2.2
  - Industry: 1.0
- 8.2**

2022/05 –  
2025/04

# HOW – ROAD TOWARDS MARKET



# MAIN WORKING PACKAGES

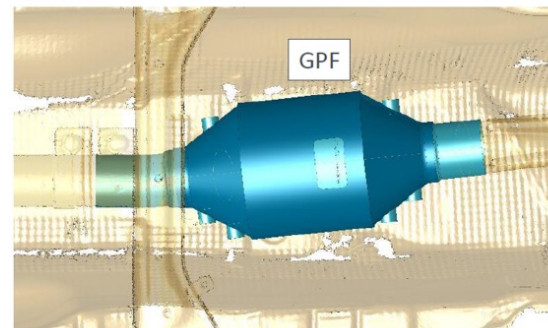
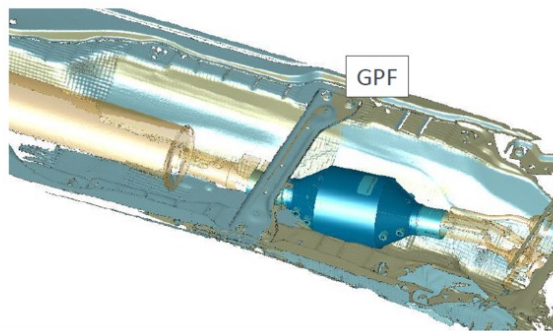
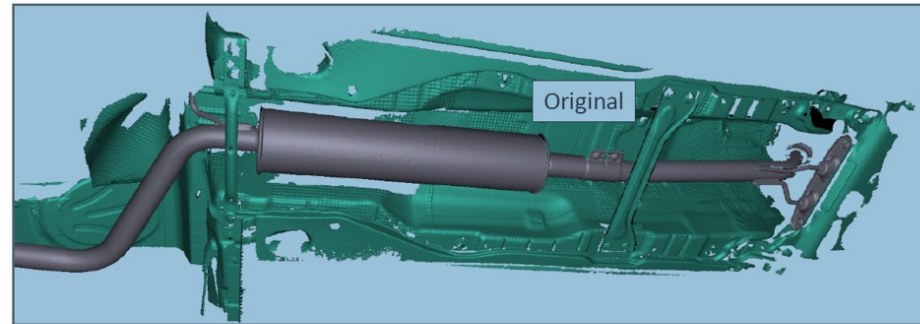
- In depth emission research of 4 representative cars
- Secondary emissions PAH and other toxics
- Statistic emission analysis of 1000 cars for benefit/cost evaluation
- Fleet of 20 cars in Switzerland
- Fleet of 20 cars in Germany
- Fleet of 10 cars in Israel
- Dissemination by papers, conferences, videos
- Prepare the market implementation in LEZ in large cities



# The quick and dirty work

- Designed a GPF exhaust retrofit solution for the range of test vehicles

Example of a GPF retrofit (implemented by HJS)



# See the Video

Project funded by