



LIFE18 ENV/IT/000201  
With the contribution of the LIFE programme of the European Union

# LIFE E-VIA

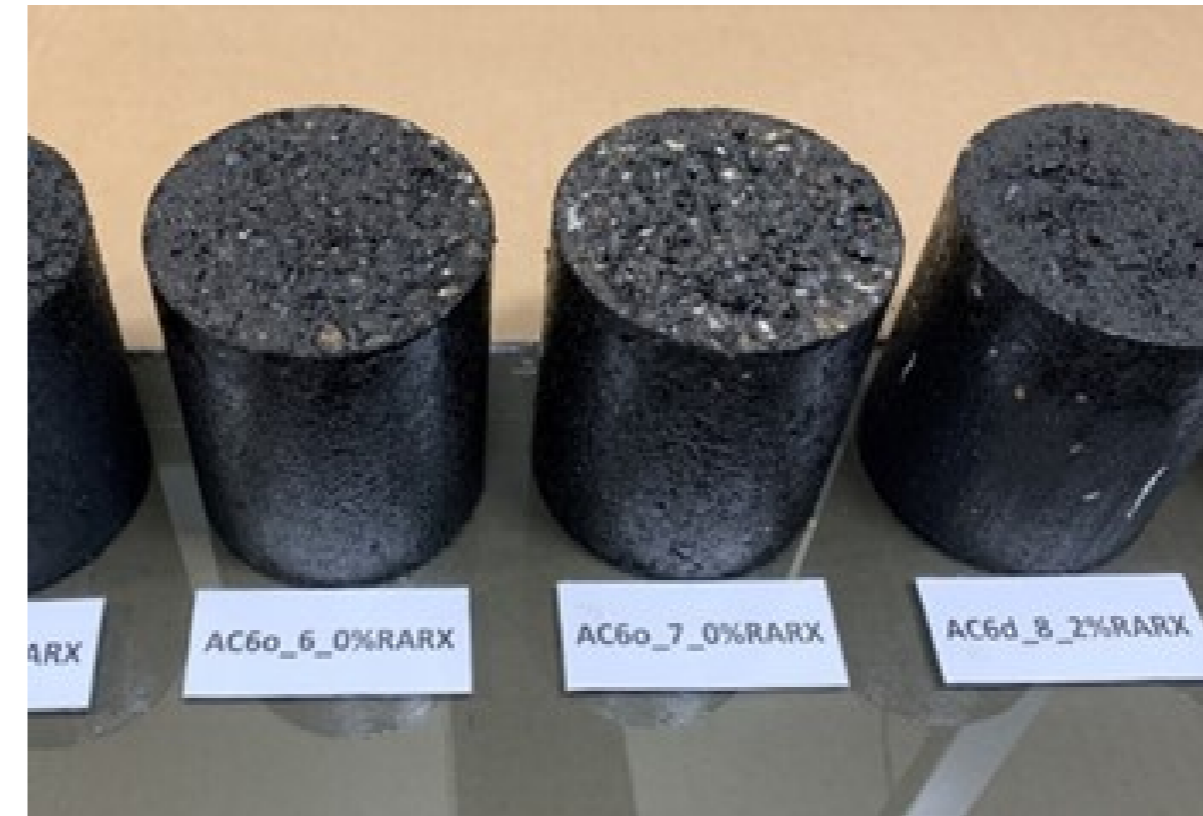
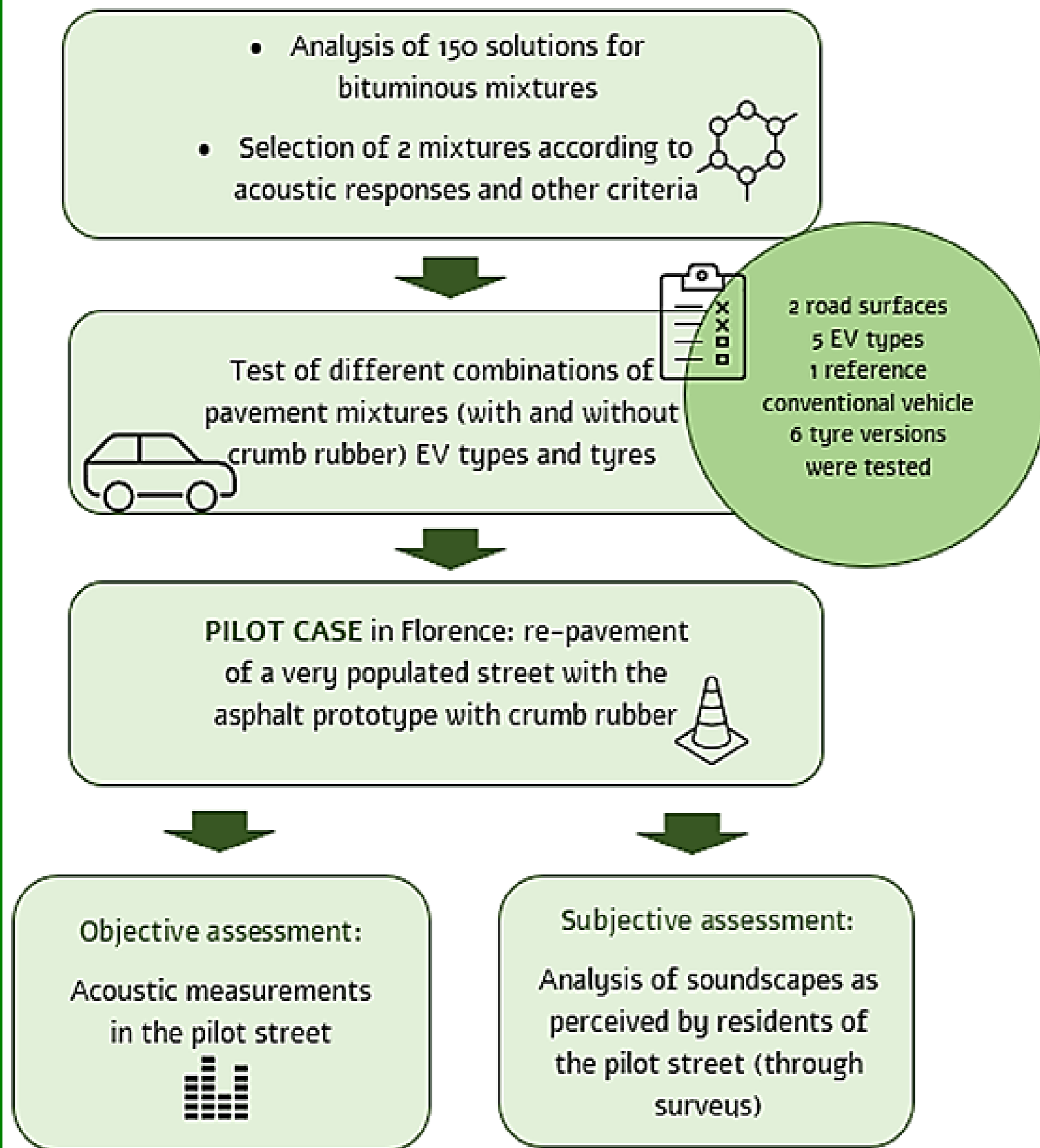
Electric Vehicle noise control by Assessment and optimisation of tyre/road interaction



## LIFE E-VIA project

LIFE E-VIA project has addressed the problem of road traffic noise, focusing on a future perspective in which electric and hybrid vehicles will be a substantial portion of the traffic flow. The main objective has been to test an optimised solution in a pilot street in Florence for reducing noise in very populated urban areas combining low noise road surfaces with the development of tyres for electric vehicles.

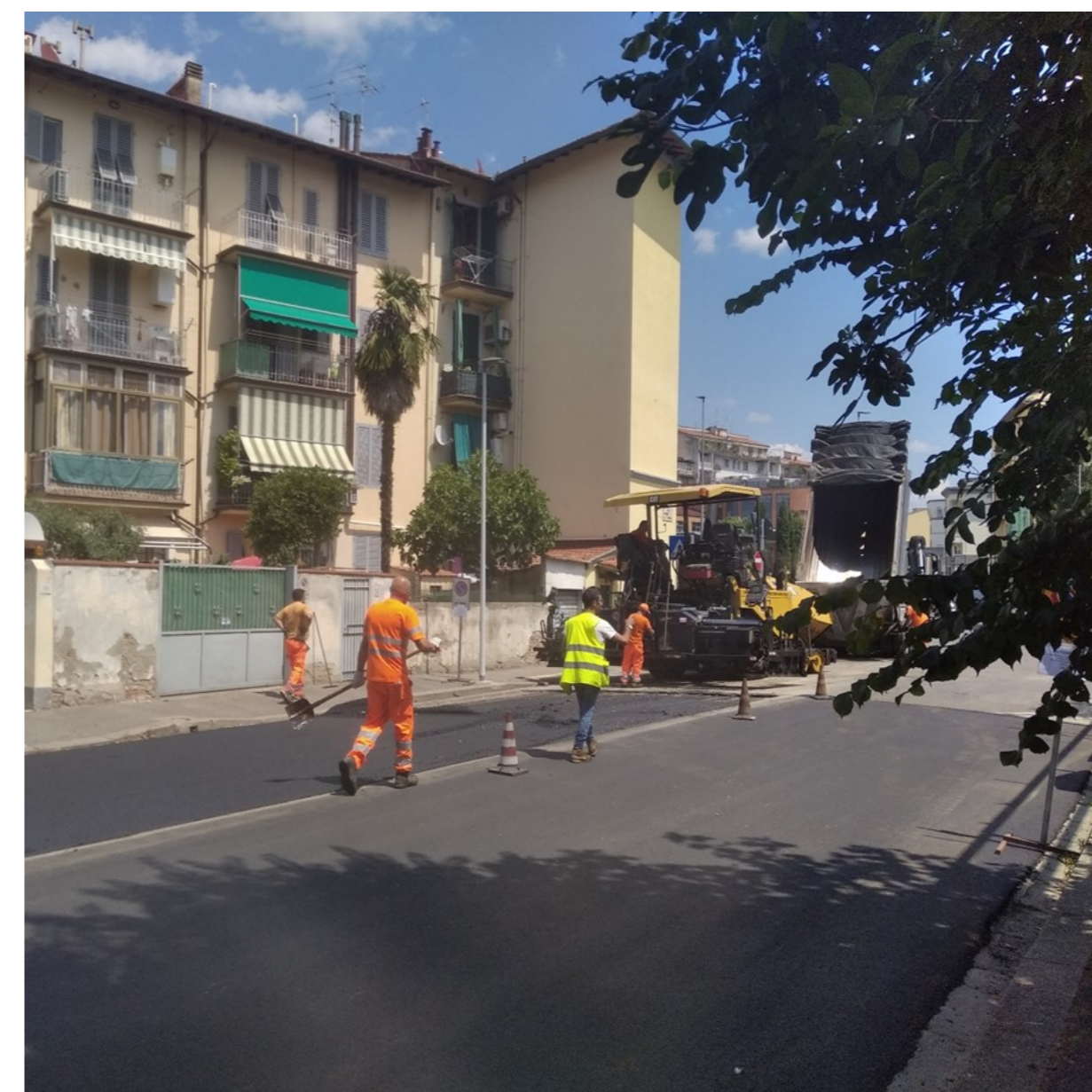
## Key project actions



Analysis of bituminous mixtures



Test road surface in Nantes



Pilot street in Florence

## Key achievements

### Optimized asphalt

According to acoustic measurements performed one year after the re-pavement with the innovative asphalt in the pilot street, a **reduction of 4.4 dB(A)** in the night period ( $L_{night}$ ) has been measured. This benefit affects about 2.000 residents. Results of the survey to residents showed that after the intervention the intensity of traffic noise decreased and the quality of the soundscape improved. 77% of the interviewees assessed the intervention as positive. LCPX measurements results are the following: 90.4 dBA for the reference pavements and 89.3 dB(A) for the E-VIA pavement with crumb rubber, thus complying with the "core" criterion for low-noise pavement of the EU GPP Criteria for Road Design, Construction and Maintenance, 2016 (EUGPPC). According to CPB measurements, the E-VIA pavement is 2.1 dB(A) less noisy than the reference pavements.

### Optimized tyres for electric vehicles

The optimized tyre for EVs led to a **reduction of rolling noise of 0.8 dB(A)** under typical urban driving conditions. This was achieved without noticeable impact on other important performances (e.g. wet grip).

### Policy contributions

A new tool has been developed to evaluate the acoustic impact of a new mobility characterized by the use of EVs and innovative low noise pavement. Experimental results were used to improve the EU-CNOSSOS Common NOise aSSessment methOdS data base.

### Environmental and Social Benefits

Results of the LCA suggest that the LIFE E-VIA solutions reduce the DALY (Disability-adjusted life years) by 33%. Other health as well as environmental benefits were calculated: e.g reduction in fuel consumption, risk for hypertension and self-reported sleep disturbance.

Project results have been widely disseminated through scientific papers, newspaper articles, participations at conferences and other outreach activities (e.g. students contest, workshops).

Website: <https://life-evinia.eu/>



The sole responsibility for the content of communications/publications lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the CINEA nor the European Commission are responsible for any use that may be made of the information contained therein.

# LIFE E-VIA

Electric Vehicle noise control by Assessment and optimisation of tyre/road interaction

