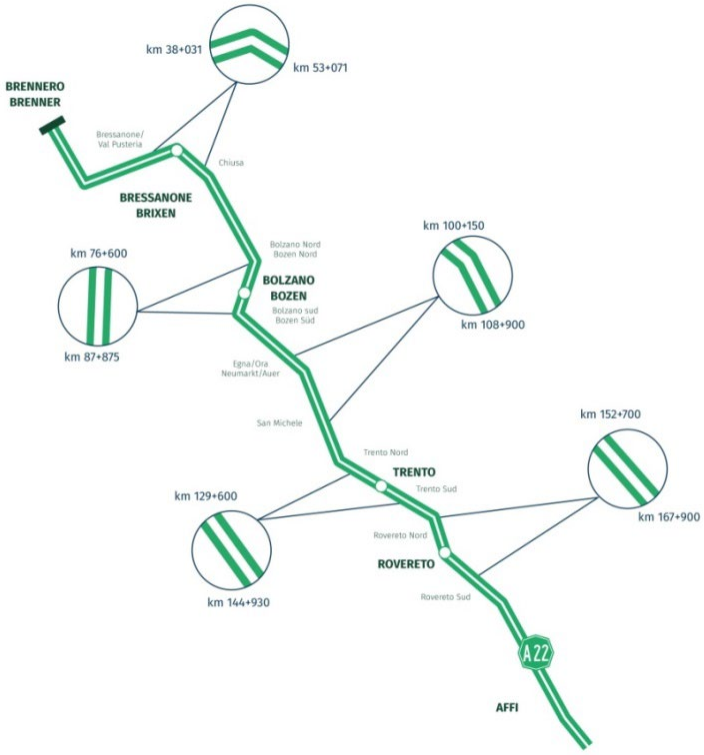
Low-cost sensors for air quality measurement

Autostrada del Brennero installed low-cost sensors to monitor air quality in the framework of dynamic speed reduction measures.

From 2016 to 2021 Autostrada del Brennero coordinated the European project BrennerLEC (Brenner Lower Emissions Corridor), co-funded by the European Commission. Its main aim was the creation of a lower emissions corridor (LEC) along the A22 motorway section through the Trentino-Alto Adige region, by implementing on an experimental basis dynamic traffic management systems for the improvement of air quality, climate protection and noise protection in some pilot sections (LEZ - lower emission zones).

In 2022, a strategic and operational collaboration between the Brenner Motorway, the environmental agencies of Trento and Bolzano, CISMA, the University of Trento and NOI Techpark was initiated, aimed at maintaining and extending the scope of the experimental measures tested in BrennerLEC. The activities envisaged by BrennerLEC after-LIFE concern the monitoring of the benefits associated with the traffic management measures, the preparation of an annual report on air quality at the major population centres affected by the motorway route and the annual emission balance of nitrogen oxides and climate-altering gases for each motorway section in Trentino-Alto Adige, as well as the maintenance and continuous implementation of the technological system developed within the BrennerLEC project.



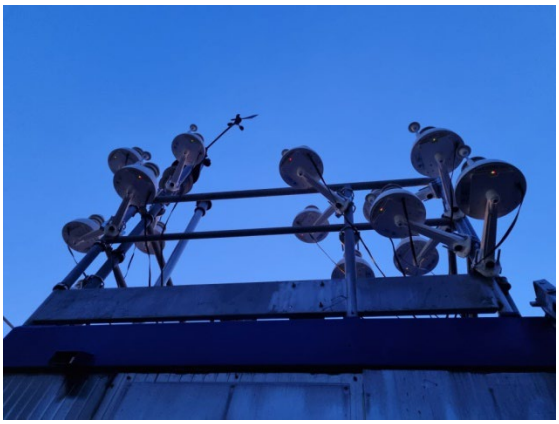
In particular, dynamic speed reduction measures for environmental purposes are being implemented as part of the initiative on the motorway sections near the towns of Bressanone (Area 1), Bolzano (Area 2), Egna (Area 3), Trento (Area 4) and Rovereto (Area 5).

The dynamic speed reduction measure for traffic purposes has been extended to 150 km between Vipiteno and Ala.

The main work within the BrennerLEC after-LIFE initiative is to infrastructure the new sections so that dynamic speed reduction measures can be applied. Part of these activities have been included in the Meidian project, like the Installation of low-cost sensors for air quality measurement.

10 new AIRquino multi-parameter sensors needed to be purchased for air quality measurements to be installed in the new stretches, and revamping activities needed to be carried out on 13 multi-parameter sensors already in the company's possession and used within the BrennerLEC project.

The pictures below show how the purchased and revamped sensors have been put on a measurement station of the environmental agency of the autonomous province of Trento to be intercalibrated.



After intercalibration, the sensors were installed along the motorway.