

The Opportunity

As cities try to accelerate their efforts to reach carbon neutrality, they need to accurately measure the effectiveness of new policies and processes designed to produce sustainable outcomes. Today, this "carbon accounting" requires significant effort, cost, and time, blunting its effectiveness.

Vianova's Emission Reduction tool provides a no-code experience to identify the potential impact of a policy prior to implementation, and to monitor the results after implementation, enabling cities to expedite policy evaluation and decision-making.

The first pilots of the project test the optimal approaches to managing shared and micro-mobility. Rather than focusing solely on "mitigating the bad" aspects of shared mobility, the Emissions Reduction tool helps cities "optimize the good" by setting policies to maximize positive benefits such as CO2 reduction.

The Team

AEBEL

- Dutch-led, global strategic advisory firm specializing in Big Data
- Global experience in public transport and ticketing
- Expertise in climate accounting and strategic planning for cities looking to meet their sustainability targets

VIANOVA

- France based mobility SaaS start-up
- +60 clients across Europe and overseas using our platform to manage shared mobility services
- Expertise in GDPR-compliant mobility data management and analysis
- +25 employees with backgrounds in software, urban planning and transport

The Methodology

1. Create a CO2 Model

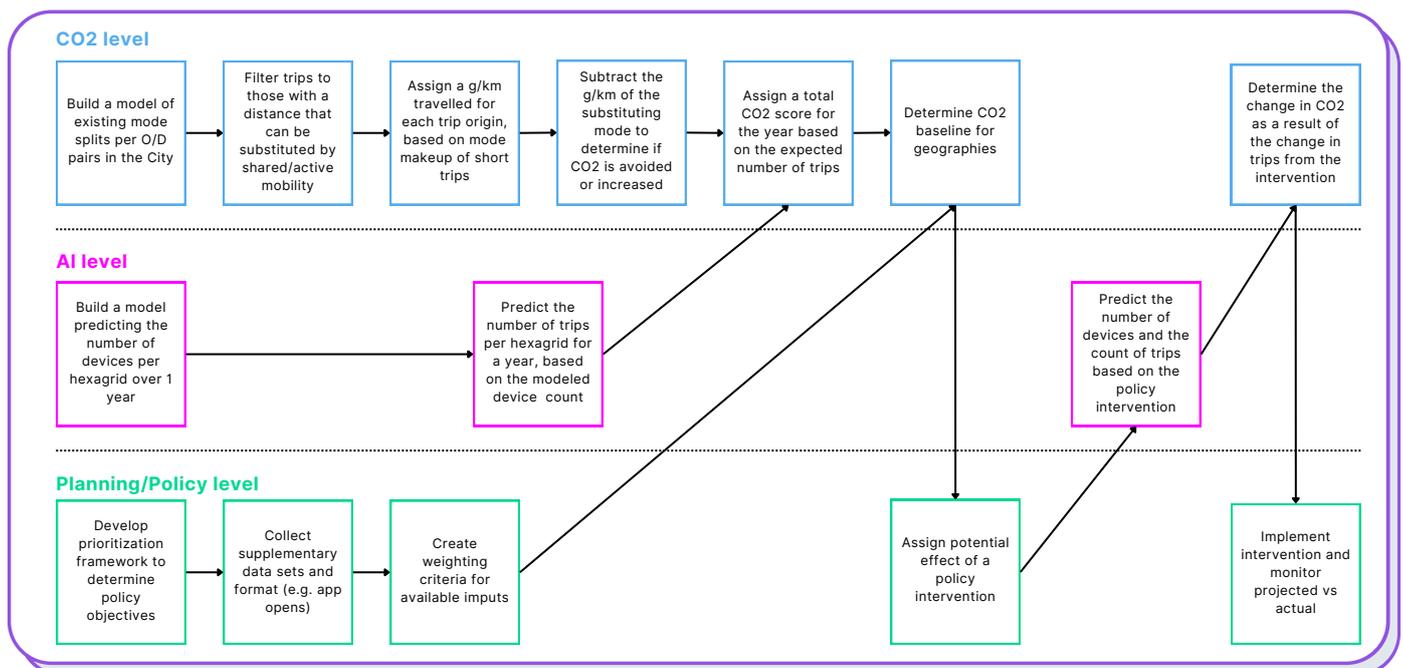
The Emissions Reduction process begins by creating a "mode shift" model, providing a granular assessment of the existing share of trips taken by car, public transport, walking, cycling, or other modes. We calculate a CO2 score for small geographical zones across the city, and determine the potential amount of CO2 saved by a single trip "converted" from the existing mode to something new or different, such as shared micro-mobility.

2. Implement an AI-based Prediction

Using historic shared mobility data and our unique Machine Learning model, the solution creates a year-long prediction of the number of devices in a geography, and the resulting number of trips. This baseline can be further used to set a forecast for the amount of CO2 avoided by shared mobility modes.

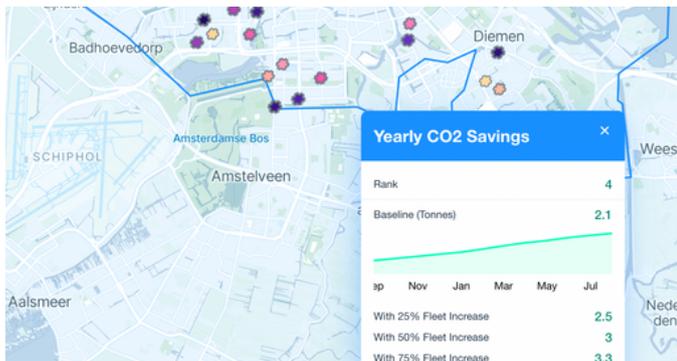
3. Apply a Policy and Gauge its Impact

Vianova and its city partners use the Emissions Reduction solution to model the outcomes of policy interventions and infrastructure improvements, and their impact on fleet sizes, trip volumes, and CO2 emissions. Tracking outcomes over time enables us to improve the model's predictive capabilities, producing better recommendations.



Two Concrete Use Cases to Pilot the solution

Amsterdam (NL)



"Where are the best spots to put mobility hubs in order to maximize CO2 reduction?"

While the center of Amsterdam sees exceptionally high cycling and public transport usage, there are outlying areas that remain car-dependent. In order to achieve targets, the City hopes to shift these users to shared bikes, mopeds, and cars through the use of mobility hubs.

The team built two sets of 30 recommendations for mobility hub locations, using a mix of CO2 savings potential, predicted demand, and app opens which did not lead to trips. The model proposed locations optimization for different objectives - hubs which maximize potential CO2 savings and hubs which can support better public space management by organizing demand.

The model can be further refined as new data from other shared mobility sources becomes available.

Tallinn (EE)



"What would be the CO2 effect of closing missing links in the cycling network?"

While Tallinn has a robust cycling network, gaps in the network affect its utility. The team built a model of existing usage, then identified those corridors in the city where trips under 5 kilometers were disproportionately taken by car.

Using shared mobility data from electric bikes and scooters, the team was able to identify 50 gaps in the cycle path network and simulate the effect of 2%, 5%, and 10% growth in usage of the corridors, for both shared devices and private bicycles.

The corridors identified can be further investigated by the City for future infrastructure improvements or targeted mode shift strategies. When a change is implemented, the tool can be used to monitor the results.

Clear Insights to Deliver Greener Initiatives



Easy Set Up

Builds on travel demand models and surveys already built by cities



Simple Customization

Easy to modify and update with new input



Works With Standardized Data

Builds on travel demand models and surveys already tested by cities



Ready to Evolve

Methodology can be re-applied for new modes and use cases



Proven Data Science

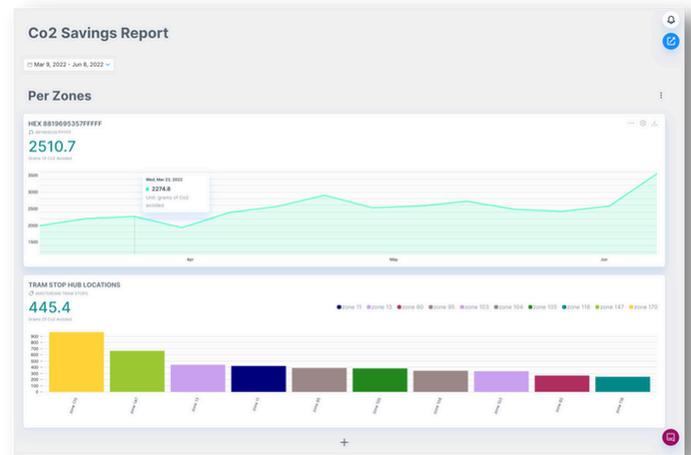
Prophet-based to optimize speed and accuracy

Seamless Integration Into the Powerful Vianova Platform

Simple Reporting and Monitoring

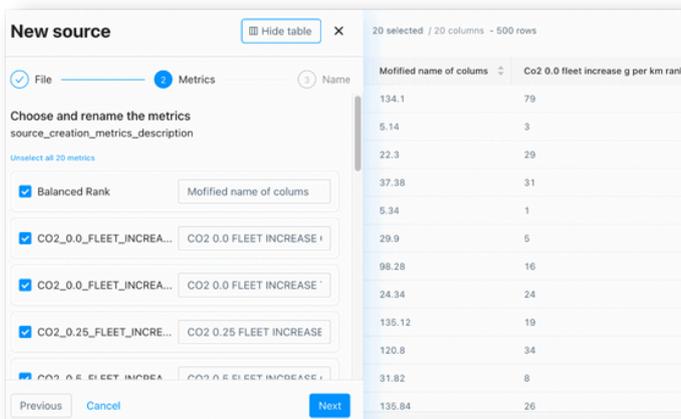
The Emissions Reduction solution is built to integrate seamlessly with the existing features of Vianova's innovative platform, including a simple yet powerful reporting tool.

Users can create widgets quickly to monitor the real-time effect of policies and track against the projected CO2 savings to help retrain the model for future use and enhanced planning.



An Enhanced Experience Through Bring-Your-Own-Data

As part of the platform experience, customers have the ability to "bring their own data" to the analysis of our intelligence layers. Simple uploading and customization of any CSV or GeoJSON allows for limitless analysis alongside the artificial intelligence layers. Users can supplement our data with their own from sources such as:



- Traffic counters
- Demographic data
- Service complaints
- Charging station data
- Condition assessments
- Air quality monitors
- Survey results on travel patterns
- Public transport schedules

Interested in Learning More?

The Emissions Reduction solution is designed to be procured as an add-on to the existing Vianova platform, trusted by cities and mobility operators across the world. Replacing complicated and time-intensive studies, the Emissions Reduction solution works quickly to project results.

Contact us for a specific price quote, which will be based on the complexity of your question and the availability of data to deliver your results quickly.

Acknowledgement

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