Green Deal Collider: Sustainable Futures

Project or team name: Urban Mobility Hub – Boost Smart Sustainable City

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Project category: cities.

Potential for impact

We are creating a modular and completely customizable dashboard for **measuring and predicting** both short-term and long-term **GHG emissions**. We also use (current+historic) weather data, traffic cameras and geodata. **Our greatest impact for cities** will come in the form of **real-time** information, giving policymakers stronger grounds for testing out new urban solutions, legislations and campaigns to alter human behavior aiming CO2 reduction**. Our biggest mission**: to reduce CO2 generated by city traffic (which represents 23% of global GHG emissions).

Novelty

Dashboards are developed and ready to use, aiming to be compatible and integratable with any city. The technology of multi-modal data fusion is invented by combining the noise and traffic sensors with video cameras to build efficent carbon meters that are now mostly developed on electrochemical technology.

The dashboard functionality encompasses:
- Data analysis (Overview of the current and future situation):
    - AI-based model for future prediction (inputs all the collected data);
    - Evaluate & Compute emissions according to the vehicle class using [HBEFA model](#) (Handbook Emission Factors for Road Transport) or [Climatiq REST API](#).
- Automatic decision making:
    - Traffic Signal Control (Smart automatic decisions driven by the predictions).

Feasibility

We have validated the need for the project from Estonian cities' officials and willingness to pay for the product. However, by year 2030, GHGs generated by traffic need to be reduced by 55% in the whole European region. Therefore, there is a high demand for our solution to be applied in mostly Euporean cities.

After creating the dashboard for Tallinn, selling it to them, improving based on their feedback and doing much more research, we wish to tackle bigger cities next, as they have a bigger impact on the global GHG emissions.

Inclusivity (industry, potential users, multiple disciplines engaged)

Sensor providers; Representatives from Estonian Environment Agency, Ministry of Economic Affairs and Communications, Ministry of the Environment, Green Capital 2023, Estonian Environmental Research Centre, Environmental Investment Centre, Tartu City Government **are potential users either directly or indirectly.** They have validated our project.