ET3 - Urban Logistics: Societal impact and Pollutants of Urban Logistics Measures on Last Mile Delivery

1. Target

- Private or public companies with urban logistic sites
- Courier type carriers
- Pick-up service networks

2. Objective

More and more cities are adopting binding traffic regulations or implementing incentives or voluntary charters to organize last mile deliveries. The objective of this study is the quantification of the societal benefit resulting from a modification of the logistic scheme taking in consideration local restrictions of circulation, incentives or aligment with actions mentioned in the urban logistics charters when they exist.
This study implies a preliminary analysis of local regulations or incentives used to establish assumptions about the type of action to implement (massification of freight, use of urban logistic area, alternative delivery methods,...). When a target scenario is identified, quantification of the societal footprint is realized through the monetization of different negative externalities generated by transport activities for the actual scheme and after implementation of action plan.

A comparison of the results for the two last-mile delivery scheme allows an assessment of the environmental and societal benefit. Monetization approach makes it possible to calculate an overall footprint including all externalities.
The study can be conducted with realistic assumptions or data characterizing actual flows, if available.

3. Methodology, Pre-requisites and Organisation

This study requires that applicants define, upstream of the study, the logistical applicable constraints (city regulation, choice of actions it wishes to achieve under existing charters…).

Representative transport flows in the city are determined in co-operation with the applicant according to its operating delivery scheme and taking into account the list of actions he has chosen to implement (massification of freight, night deliveries, use of an urban logistic area, green transportation mode, modal shift ...). When scenarios and their possible variants have been identified, rating of one or more of the following 6 externalities is established using a recognized methodology:


Noise


Accidents

GHG emissions


Congestion


Pollutants and Particles


Upstream Impact

For new engines where there are no default emission values and for green delivery vehicles, assumptions are made for the choice of consumption and emission factors taking into account the most recent bibliographic available data.

4. Study Organisation

Step 1: Identification of the local city regulation (limitation of vehicle types, circulation restriction criteria, low emissions area ...), identification of representative flows for last miles deliveries, identification of actions chosen in coherence with the applicable charters. Flow modeling corresponding to the new logistics scheme. If necessary, look for consumption and emission factors for new engines.

Step 2: Calculation in monetary value (€ / t.km) of the cost for each externality for the initial logistic scheme and the one corresponding to the selected actions. Comparison of the full societal cost, partial or by type of externality. Quantification of the robustness of assumptions and improvement if necessary.

Step 3: Oral presentation to the applicant of the study results

5. Delivrables

The deliverable consists of a study report describing scenarios, reference data, calculation assumptions and the detailed results (by externalities, by scenarios and possible variants). Recommendations can be establsihed to facilitate the deployment of a solution. The robustness of the assumptions is also evaluated.

6. Our Resources

The study is conducted by TK Blue experts who participate in International and European working groups (GLEC, ...). The TK'Blue methodology for quantifying externalities is based on internationally recognized methods and the most recent reference data (Ricardo AEA report, ...). Calculations are carried out in accordance with the applicable standards and regulations: The GHG/CO_{2e} calculator complies with French regulations and the European standard NF EN 16258.

7. References

They trust us :

8. For more information :

Contact : Bastien LAMOUCHE – Manager of Methodological and Studies Department
bastien.lamouche@tkblueagency.com - + 33 1 45 63 48 90