

Low-emission zones in France and Europe

Overview, challenges and avenues for sustainable urban logistics

Master 2 research thesis by Lucas Belliard, September 2021, under the supervision of Laetitia Dablanc (Logistics City Chair) and Xavier Desjardins (Sorbonne University)

Purpose of the study

The principle of a low emission zone (LEZ) is based on the prohibition or authorization, subject to payment, for vehicles to circulate on a territory (from a regional to a local scale), based on their compliance with certain emission standards for atmospheric pollutants such as particulate matter (PM) and/or nitrogen oxides (NOx). This paper **presents a study of the place of trucks and light commercial vehicles in low emission zones and other types of traffic restrictions in France and Europe**. In the first part, the functioning of the zones -both general and specific- is explained as well as the different issues raised by these zones for the logistics sector. The different **European countries are compared (and ranked)** according to the efficiency of their EPZ for logistics. In the second part, the different current and future solutions to improve the resilience of the logistics sector to the increasing number of zones will be discussed.

Hypotheses and research questions

Low-emission zones are often perceived by logistics professionals as an obstacle and an economic danger, while on the other side of the equation, the agents in charge of their deployment sometimes find themselves helpless in the face of the magnitude of a task they do not necessarily understand. This paper was written under the assumption that low-emission zones can become real levers for a sustainable transition of urban logistics -rather than representing a simple operational and economic obstacle- at the price of certain conditions. These conditions include: a better knowledge of the issues and solutions on the part of elected officials, project managers, and all urban logistics stakeholders; and close collaboration between various public and private agents during the development of the LEZ. By posing the following problem: "to what extent can the EPZ constitute a productive lever for the sustainable transition of urban logistics, and not a brake for the latter", the dissertation aims precisely at understanding the stakes, at exposing them, and at bringing to the various actors concerned, elements of answer and reflection which constitute the conditions exposed previously.

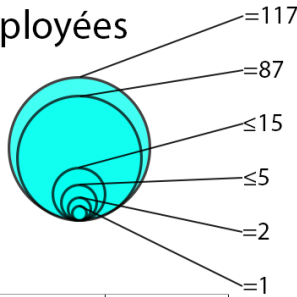
Methodology

This dissertation is based on numerous semi-structured interviews, as well as several participations in seminars and other commissions (online or face-to-face). A significant amount of work has been done to identify and create matrices of EPZs in Europe and their characteristics, bringing a more quantitative approach to the thesis.

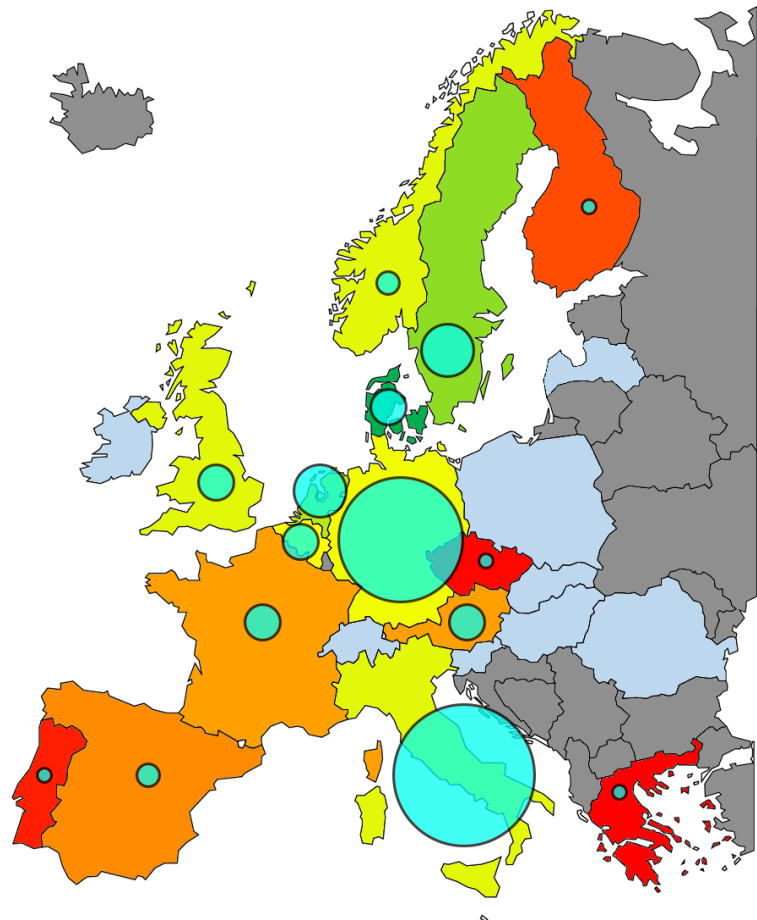
Results

The results suggest that **there is significant room for improvement in the process of setting up a logistics EPZ in France, which is poorly ranked** (Figure 1). Several factors considered counterproductive during the zone set-up stage, but also several promising avenues were identified and outlined in order to question the process and improve it. It also appears that many options for carriers to adapt to existing zones already exist, and that not all of them are necessarily known by logisticians. Thus, it appears that many solutions to make EPZs real levers capable of making urban logistics more sustainable - without constituting too great an economic brake - already exist. It therefore seems crucial that consultation and collaboration between all the players concerned should be at the heart of the EPZs, both in their development and in their application.

Nombre de ZFE déployées



Pays	Indice d'efficacité des ZFE
Grèce	0.9
Tchéquie	0.95
Portugal	1.15
Finlande	1.5
Espagne	2
Autriche	2.15
France	2.15
Belgique	2.9
Allemagne	2.95
Italie	3
Norvège	3
Royaume-Uni	3
Pays-Bas	3.15
Suède	3.3
Danemark	3.8
Sans système de régulation	
Dotés d'autres systèmes de régulation	



Author : Lucas Belliard