4. Low-emission zones (LEZs)

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The City of Santa Monica has partnered with a cleantech incubator to pilot the U.S.'s first voluntary zero-emissions delivery zone.

Challenge: Older vehicles present significant air quality concerns in cities. Improving air quality is critical but doing so across political or large geographic boundaries is challenging when policies require large-scale adoption from businesses and the public.

Solution: **Low-emission zones (LEZs)** are defined areas within cities where the use of emitting vehicles is regulated through restrictions or financial charges. LEZs provide a way for cities to pilot urban mobility solutions to tackle air pollution and congestion in a designated zone rather than across a whole city.

Why: Typically used to manage air pollution from all vehicles in a particular zone, both passenger and freight, several jurisdictions around the world have begun piloting zero-emission zones for freight (ZEZ-F) specifically, combining that zone with financial and policy incentives that encourage the deployment of zero-emissions commercial vehicles. LEZs can also play an important role in addressing

Taking Action

- Foster support from residents and local businesses
- Define boundaries and vehicle types
- Define your policy approach
- Ramp-up the policy or widen the zone incrementally
- Ensure low-impact alternatives for residents, businesses exist
- Communicate public benefits

environmental justice inequities by targeting air pollutant emission reductions in communities that need it the most. A 2017 study from the University of Washington found that, on average, communities of color were 2.5 times more likely than white communities to live in an area with traffic-related nitrogen dioxide concentrations above the World Health Organization guideline. Reducing urban freight emissions not only presents opportunities to improve health of citizens overall, but it also presents an opportunity to reduce historic environmental inequities in our cities by targeting high risk neighborhoods.

City spotlights: City of Rotterdam, Netherlands; Shenzhen, China; City of Santa Monica, U.S; Greater London, U.K.

> Under the Netherlands' national climate plan, the City of Rotterdam and 36 of the largest cities in the Netherlands will be required to implement a ZEZ-F by 2025. Since January 1, 2020, the LEZ in Rotterdam bans the most polluting trucks from entering the zone, with no restrictions on passenger cars or vans. To support the development of zero-emissions goods movement sector, Rotterdam offers a combination of educational programs and financial subsidies to support couriers in the transition.
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> Low-emission zones are part of an air quality improvement strategy for Shenzhen, China's leader in freight vehicle electrification. By the end of 2019, the city of more than 12 million had 10 "green logistics zones" and 77,500 battery electric commercial vehicles on the road. Shenzhen has six financial incentives to support zero-emission freight adoption, such as purchase and infrastructure subsidies, and three non-financial incentives that permit zero-emission freight vehicles in zero-emissions zones.
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> In the U.S., the City of Santa Monica partnered with the Los Angeles Cleantech Incubator in April 2020 to pilot a zero-emissions delivery zone for one to three years. This zone, within which businesses can participate voluntarily, is used to pilot a technology, information, and policy ecosystem that includes: green mobility technologies such as e-cargo bikes and electric delivery vehicles, innovative curbside management practices such as prioritization and digital bookings of curb spots, instrumentation to measure and collect data on air pollution and congestion, and innovative business models that support the development of last-mile solutions in the zone.
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> Finally, the U.K.'s Greater London area has one of the largest low-emission zones in the world with coverage of 2,650 km^2. Medium- and heavy-commercial vehicles that do not meet the emissions standard in the LEZ pay a daily charge of US$119-357 to drive within the zone. Central London has also adopted a 22km^2 ultra low emission zone (ULEZ) which incorporates a US$14.88 charge for smaller vehicle types such as cars and motorcycles and has reduced air pollutants by almost half. On October 25, 2021, the ULEZ will expand to cover more of the Greater London area. According to the Mayor of London's Transportation Strategy, the city plans to implement a zero-emissions zone in Central London by 2025 with plans to expand to larger zero-emission zones as soon as 2040.

For implementation:

- To ensure the longevity of the LEZ beyond political cycles, foster support from residents and local businesses.
- Define clear boundaries for the LEZ and the vehicle types enforced in it. Target high congestion areas or population areas where the safety, environmental, and/or health risks are highest.
- Define the policy approach and enforcement model. For instance, will the LEZ ban all vehicles or high-emitting vehicles? Will access be tracked by vehicle registrations or an automated license plate reader?
- It is recommended to introduce LEZs incrementally and grow them progressively over time, either by increasing the strictness of policies or by increasing the geographic coverage of the zone, to reduce resistance to adoption.
- Provide residents and businesses with attractive low-impact alternatives to receive the same level of service. Ensure that the LEZ supports walkability and public transit for residents, and that businesses have access to cost-competitive low-emitting safer last-mile delivery solutions.
- To maintain public support, consistently communicate the public benefits of the LEZ and ensure equitable adoption such that residents and smaller businesses are not at a disadvantage relative to larger businesses or other areas in the city.