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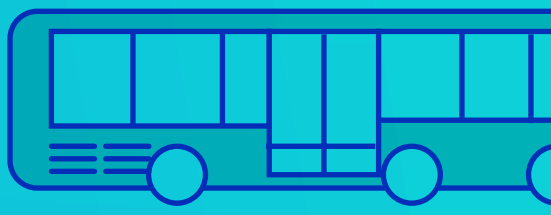

5 fast and fair solutions for cleaning up urban transport

CleanCities

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Contents

4 **Executive Summary**

5 **I. Introduction:** current crises hit vulnerable groups the hardest

7 **II. Methodology:** a systematic best practice review based on three assessment criteria

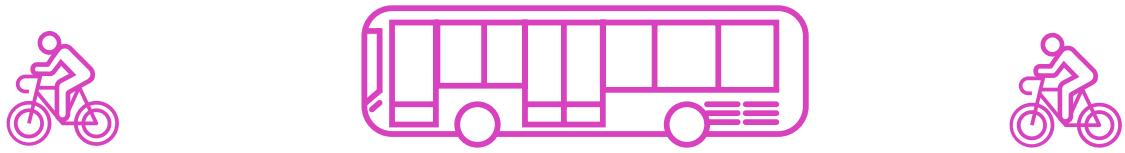
9 **III. Analysis:** The short list of policies every city should consider

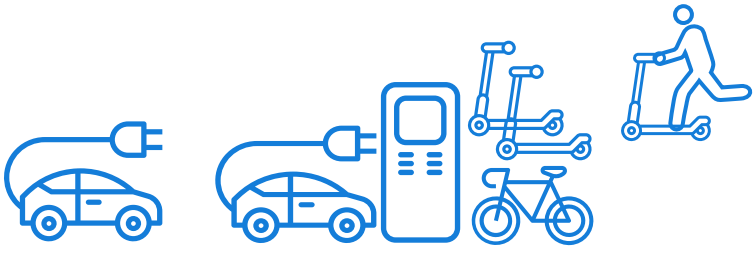
12 **Conclusions and policy recommendations**

13 **Annex I** – Long list and descriptive summary of best practice measures

16 **Annex II** – Long list and Impact of best practice measures

20 **Annex III** – Cost-effectiveness calculations





Executive Summary

People in cities across Europe are currently facing multiple crises : **cost of living pressures**, health impacts from illegal **air pollution** and the **climate emergency**. Each of these can **disproportionately affect marginalised groups**, i.e. low-income households, people living in poorly connected areas, people of colour and citizens with disabilities. Evidence shows that these groups suffer most from the adverse health effects of polluting road transport, yet they are often contributing the least to the problem.

Therefore, we believe that urban transport policies must be designed in a way that pays **special attention to the needs of these groups.** This will help prevent those from being unfairly affected and secure strong public backing for political measures.

For this briefing the Clean Cities Campaign has conducted a **systematic best practice review** which shows that **proven solutions for these challenges already exist**, and can be rolled out across European cities. A long list of relevant policies has been established and then assessed on three criteria: the speed with which they can be enacted, their fairness with regard to vulnerable groups and their cost-effectiveness. This has resulted in the following **short list of five solutions that are a win-win** for the rapid and fair introduction of clean transport policies in cities:

1. **Mobility credits and scrappage schemes** that provide targeted financial support to replace polluting cars with active and public transport and, where necessary, cleaner vehicles,
2. **Bike purchase support schemes**,
3. **Reduced public transport fares**,
4. **Shared mobility hubs in poorly connected areas**,
5. **Social leasing of electric vehicles.**

Based on these findings, the Clean Cities Campaign calls on city leaders and governments to:

- **Prioritise equity objectives and indicators** in transport policies,
- **Urgently establish a short-term policy package** that combines several of the proven measures listed above,
- **Set a clear target for zero-emission urban transport by 2030** – the most effective route to healthy, liveable and fairer cities.

	MEASURE	Timeline	Equity			Cost-effectiveness
			Affordability	Connection	Accessibility	
	Scrappage schemes	Short term	⊕	⊕	⊕	○ neutral
	Reduced costs for bicycle purchase	Short term	⊕	⊕	?	⊕
	Public transport	Short term	⊕	⊕	?	⊕
	Shared mobility hubs	Medium term	⊕	⊕	⊕	?
	Social leasing of electric vehicles	Medium-long term	⊕	⊕	⊕	⊕

? = *depends on local infrastructure and affected vehicles*

Introduction

Current crises hit vulnerable groups the hardest

Photo: Sorin Gheorghita / Unsplash

European city leaders are currently dealing with the impacts of concurrent crises which are making life for many residents challenging. The war in Ukraine has triggered a cost of living crisis which affects the life and mobility of millions of Europeans.[1] This adds to an air pollution crisis from fossil fuel combustion, in particular from road transport. The EU's *Third Clean Air Outlook* shows that compliance with the latest air quality guidelines of the World Health Organization (WHO) is still far away.[2]

This public health crisis has been exacerbated by increased wood burning and the re-opening of coal mines in several countries.[3] At the same time, some low-emission zones (LEZs) have been relaxed – such as the London congestion charge that has been suspended at night – leading to an increase in traffic and therefore in emissions.[4] Plans to improve low-emission zones (LEZs) have also been delayed, for example in Paris[5] and Greater Manchester.[6] The climate emergency continues to get worse, with 2022 being the 5th hottest year ever registered.[7]

At the same time, certain groups of commuters do not have access to viable alternatives to private car use and are therefore locked into 'forced car ownership'[8] (see details below) which is causing persistently high levels of air pollution and traffic congestion.

Cities are at the forefront of taking action

European cities are at the forefront of addressing these crises. They have been putting in place a wide range of measures to promote active, public and shared transport (as the Clean Cities Campaign's 2022 City Ranking showed[9]), and a group of 100 EU cities have joined an official EU mission to become climate-neutral by 2030.[10] Policies that restrict the use of (the most) polluting cars in cities have seen a particularly strong uptake given their proven effectiveness in tackling emissions,[11] with 325 low-emission zones already in place (a 42% increase since 2019) and zero-emission zones planned in 35 European cities by 2030.[12] Since the beginning of the Covid-19 pandemic and the war in Ukraine, many city leaders have stepped up efforts to wean transport off fossil fuels, including through new pop-up cycling infrastructure, car-free days and cheaper public transport.[13]

Marginalised groups pollute less, but suffer more

Emissions from road transport have a strong social dimension. A large, growing body of research shows that low-income households emit the least amount of air pollution[14] (and CO_2)[15] while being exposed to the highest levels and being more vulnerable.[16] This fact – illustrated in Figure 1 below – raises the equity dimension of air pollution, which this briefing aims to address. In this briefing, low-income households are defined as households earning less than 60% of European median salary.[17]

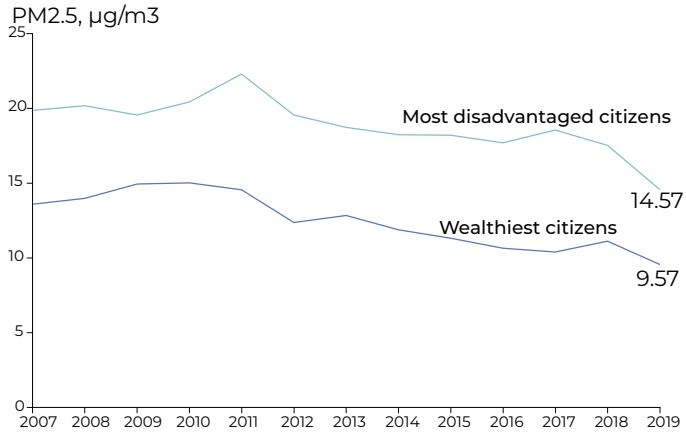


Figure 1: Unequal exposure to air pollution in Europe.

Definition: "Most disadvantaged" designates the poorest quintile of the population while "Wealthiest" designates the richest quintile

Source: European Environmental Agency, 2022

Research shows that in many cases, poorer neighbourhoods and/or ethnic minorities are exposed to higher levels of air pollution:

- This is particularly true for London[18] and several other UK cities[19] such as Birmingham, Leeds, Liverpool, (for particulate matter, PM2.5 and nitrogen dioxide, NO_2) but also for cities such as The Hague, Amsterdam and Lille for NO_2,[20] or Grenoble for PM2.5.[21]
- Research in Madrid shows higher exposure to PM10 and PM2.5 for low-income households, and overall increased exposure to air pollution for more vulnerable people like children.[22]

The Curieuzenair project[23] revealed similar results for Brussels: areas with higher population density experience higher NO_2 levels while areas with people with higher income have better air quality.

In addition, research shows disproportionate health effects and economic costs on less affluent people.

- Air pollution has twice the impact on lung function for members of lower-income households according to a study published in the European Respiratory Journal,[24] and the mortality rate has been found to be higher for this group as indicated by research in Madrid and Barcelona.[25]
- The economic impact of air pollution will be harder to bear for low-income households since it amounts to 1276 euro per city and resident per year (i.e. 385 million euros/year/city) on average.[26]

Urban transport policies should take extra care of vulnerable groups

The Clean Cities Campaign considers that targeted help is needed to support the groups that are more at risk, as defined in Chapter 2. This is all the more important considering that certain groups (particularly among commuters) are locked into 'forced car ownership'. This term refers to the fact that due to a lack of viable transport alternatives, certain citizens have no choice but to own a car.[27] Research in London shows a clear correlation between poor access to public transport and increased car ownership rates.[28]

At the same time, these groups often suffer from 'transport poverty' , which is defined as an individuals' and households' inability or difficulty to meet the costs of private or public transport, or their lack of or limited access to transport needed for their access to essential socio-economic services and activities, taking into account the national and spatial context.[29]

Consequently, the priority is to provide alternatives to these groups as a matter of priority, allowing them to access essential services, participate in society and reach their workplaces. Alternatives to cars should be prioritised, unless no viable alternative to car use can be made available.

II. Methodology

A systematic best practice review based on three assessment criteria

Photo: Viktor Keri / Unsplash

A wide range of policies is available to cities that tackle polluting road transport. The EU's urban mobility platform *Eltis* contains more than 220 articles on case studies of best practice examples in various European cities.[30] For this briefing, a systematic approach has been followed in order to identify relevant best practice policies, assess their effectiveness with regard to the challenges outlined above and establish a shortlist of the most suitable, proven measures that European cities should implement. The review process is illustrated in Figure 2

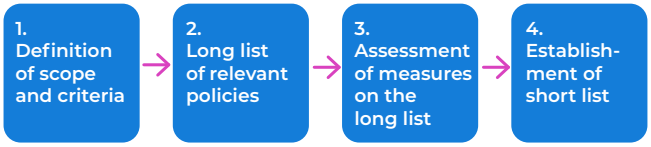


Figure 2: Summary of the review process

Criteria & research question

Given the challenges laid out above, what matters in the current context is the following:

- Relevant policies must **address equity issues** by benefiting vulnerable groups first,
- Given the urgency of the current crises, the measures should also be suitable for a **rapid roll-out**, ideally within a few weeks or months,
- And as public funds are scarce, **cost-effective solutions are needed.**

These three dimensions are respectively reflected in the equity, timeline and cost effectiveness criteria which are described in Table 1.

Equity	Timeline	Cost-effectiveness
Affordability - low-income households: *make sure that all people can afford to move* **Connection** - people in poorly connected areas*: all neighbourhoods are connected* **Accessibility** - people with disabilities & the elderly*: all people have mobility options*	**Short-term***:* 2 to 3 months **Medium-term:** deployable in 3 months or within a year **Long-term:** only deployable in several years	**Cost-benefit metric** *Revenues* - costs per beneficiary/vehicle/etc.

Table 1:
Indicators for assessing the best practice measures

These three dimensions of equity tackle the different aspects of **transport poverty** as defined in the introduction.

In short, the **equity** criterion explores who the measure is designed for, more precisely whether it is helping the people more at risk.* This is based on the definition of 'equity' used by the EU's *Eltis* platform on how to perform social impact assessments[31] and the principles of inclusive mobility.[32] **

The **timeline** indicator shows how quickly a given measure can be deployed based on existing examples, while the one on **cost-effectiveness** also considers the costs and benefits of the measures for society where possible.

This leads to the following research question:

Research question
Which measures can cities take that provide equitable, rapid and cost-effective solutions to address both the cost of living and air pollution/ climate crisis?

Scope of the review to identify and assess relevant policies

The following approach has been followed to identify best practice examples of measures that fulfil the criteria developed above (equity, connection, cost-effectiveness):

1. First, every relevant case study on the EU's urban mobility platform *Eltis* has been reviewed (222 in total, the cut off date was 16th of January 2023).
2. Secondly, measures have been retrieved through a screening of media articles in French, Spanish, Italian, Dutch in addition to English over the past year via the Meltwater media monitoring tool.***
3. Finally, the partners of the Clean Cities Campaign have shared best practice examples and experience from across Europe, which have been analysed and included where relevant.

* DG MOVE (2022) lists the more at risk groups as being: women; citizens with poor IT literacy or limited access to the internet; persons with disabilities and with reduced mobility (e.g. older people); people living in remote areas (notable rural areas); segregated localities or in less developed regions; young people and children; and people on low income, in particular at risk of poverty and social exclusion. Link.

** 'Equity' is here used as defined by Di Ciommo & Shiftan (2017) and has key components for equity in transport such as: the benefits and costs that are being distributed and the population groups over which benefits and costs are distributed. Link.

*** Media Monitoring - Meltwater. Link.

III. Analysis

The short list of policies every city should consider

Photo: Linus Mimietz / Unsplash

There are different approaches to tackling the issues laid out above: providing clean transport alternatives, lowering the costs of transport, or (temporarily) exempting those who cannot make the change immediately. In order of priority, these measures should:

1. **make healthy alternatives to (polluting) private cars available;**
2. **make these alternatives affordable;**
3. **and provide sufficient time for specific groups, as listed below, in order to switch to cleaner cars.**

These approaches are based on the EU's guidelines for Sustainable Urban Mobility Plans.[33]
The application of the criteria developed in Chapter II has led to the establishment of a long list (see Annex I). Subsequently the Clean Cities Campaign decided upon the following short list of policies.

While the impact of the short-listed measures is assessed in the Table 2 below, the impact of the other measures listed in Annex I is assessed in Annex II.

It is important to stress that some of the measures should not be considered as magic bullets, as their impact also depends on other factors. For instance, reducing public transport fares is a solution, but public transport should also offer good service levels, high frequencies and fast connections in order to be an attractive alternative.

When it comes to switching to zero-emission cars, local initiatives like non-profit cooperatives for electric car sharing in Spain should be prioritised and promoted.* Schemes such as social leasing in France should clearly present the conditions for participating, and protect the rights of the beneficiaries.

* Som Mobilitat for example, more here: Link.

Table 2: Shortlist of best practice measure

Description of the measure			
Measure	**Definition**	**Examples**	**Minimum requirements & challenges**
Mobility credits – also in the form of scrappage schemes	Targeted financial schemes providing grants to specific groups to scrap or retrofit their older vehicles and use cleaner modes of transport or vehicles.*	• United Kingdom: London, including 5,000£ for wheelchair accessible vehicles • France: Greater Paris, Région Sud - free train rides (for 6 months) • Belgium: Brussels Region • Spain: Barcelona • Germany: Berlin/Bolt campaign • Finland: Premiums for EVs, (e)bikes and public transport	1. An LEZ has to be in place 2. Funding has to be made available 3. Research on targeted groups has to be made beforehand
Reduced costs for bicycle purchase	Around 300 subsidy schemes exist across Europe that can be offered to individuals, public entities or even businesses. They can be used for buying certain types of bikes, replacing cars by bikes, etc.[34]	• Finland: Scrapping premium of 1000 EUR for individuals switching from cars to EVs or e-bikes. • France: subsidy of up to 300 EUR for e-bikes if the applicant meets certain income requirements • Italy: up to 500 EUR help for all types of bikes. • Portugal: Reduced VAT for bikes (from 23% to 6%)	1. Funding has to be available 2. Infrastructure needs to be available
Public transport – reduced fares for targeted groups in priority	Reduced fares for at risk groups	• Austria: Climate ticket for unlimited public transport use, prices ranging from 821 EUR (for risk groups) to 1095 EUR for a year • Austria: 365 euro ticket for unlimited public transport use in Vienna • Portugal, Poland: Lisbon, Warsaw: free public transport for children, students and the elderly	1. Public transport network 2. Available funding 3. Demand needs to exist
Shared mobility hubs in poorly connected areas	Setting up multimodal hubs with shared (e)-bikes, micromobility vehicles, and (e)cars in areas where poorer people are affected by transport poverty and forced car ownership	• Scotland: "Shared Transport for all" scheme in Edinburgh & Glasgow • Germany: Bremen • EU-wide: other examples	1. Political will to provide alternatives 2. Hubs have to be built and shared services bundled or made available 3. Ensure that offer matches demand
Social leasing of electric vehicles	Long-term leasing of EVs made more accessible for low-income households	France: plans to support the social leasing of 130,000 vehicles, leasing at 100 EUR/month	1. Needs political will and funds 2. Charging infrastructure needs to be present for this to be convenient

* Definition from Transport for London, 2022.

Assessment according to best practice criteria					
Measure	Time-line	Equity			Cost-effectiveness
		Affordability	Connection	Accessibility	
Mobility credits – also in the form of scrappage schemes	Short term	**Positive** – provide financial help to low-income	**Positive**- enables people to circulate in city centres, including low-emission zones	**Positive** - People with reduced mobility benefit from it, and special support schemes (e.g. for vehicles adapted to wheelchairs) can be set up	**Neutral** **= 3,348 EUR per vehicle** **= 8 to 9 kg of NOx/vehicle removed** **= 0.03 to 0.042 kg of PM2.5 removed** (sources and calculations in Annex III)
Reduced costs for bicycle purchase	Short term	**Positive** - as it provides financial assistance	**Positive -** depending also on infrastructure	**Depends on local context** - and selected bikes	**Positive** – cycling has proven to generate societal benefits of 1 EUR / km travelled while car costs 1 EUR / km travelled (based on Benelux data)[48]
Public transport – reduced fares for targeted groups in priority	Short term	**Positive** - as it is the purpose of the measure and is cheaper for risk groups	**Positive** - but also depends on the infrastructure and services	**Depends on local infrastructure**	**Positive** - costs of 84 EUR/ beneficiary/year in Vienna.[49]
Shared mobility hubs in poorly connected areas	Medium term	**Positive** - make clean alternatives cheaper	**Positive** - if targeted at poorly connected areas	**Positive** - various vehicles will answer various needs	**Depends on local approach**- investment costs vary between a few thousand euros (if no large infrastructure is required) to a few hundreds of thousands euros (if additional vehicles or infrastructure such as charge points are required).[50]
Social leasing of electric vehicles	Medium to long term	**Positive** - provided financial help to low-income households	**Positive** - enables people to circulate in areas such as low-emission zones	**Positive** - People with reduced mobility benefit from it	**Positive** - access to EVs for lower-income households **= 7,700 EUR/vehicle for ca. 130,000 vehicles per year**

IV. Conclusions & policy recommendations

Research shows that the current crises are disproportionately affecting certain groups such as low-income households, citizens living in poorly connected areas and people with disabilities. This is despite the fact that these groups are generally responsible for a smaller share of the fossil-fuel consumption and emissions that create the problems in the first place.[35]

Successful transport policies must therefore be designed in a way that pays special attention to the needs of these groups. Such policies already exist and have been tested and proven in many European cities.

The Clean Cities Campaign calls on city leaders and governments to:

1. **Prioritise equity objectives and indicators in urban transport policies**, reflecting the fact that solutions already exist to tackle air pollution and the climate crisis, which give special support to those who need it.

2. **Urgently put in place and fund a short-term policy package** that combines several of the proven measures identified above:
   - **Mobility credits & scrappage schemes**
   - **Reduced costs for bicycles**
   - **Reduced public transport fares**
   - **Shared mobility hubs**
   - **Social leasing of electric vehicles**

   Priority should be given to the measures that promote active, healthy mobility. This should include redirecting funding from subsidies for cars (especially polluting ones) to measures recommended above in order to use public money efficiently (as already recommended by the Clean Cities Campaign in 2022).[36]

3. **Set a clear target for zero-emission urban transport by 2030 -** the fastest route to tackling the multiple crises and building cities that are healthy, liveable and fairer for everyone.

Annex I – Long list and descriptive summary of best practice measures

Type of measure	Measure	Definition	Examples	Minimum requirements & challenges	Transferability	Time-line
To make cheaper - Financial schemes	Mobility credits	Similarly to a scrappage scheme, low-income households would get a certain amount of money to replace their cars by a cleaner mode of transport	Spain: Barcelona Germany: Berlin/Bolt campaign Finland: Scrapping premium for EVs, (e)bikes and public transport	1. Necessary funding needs to be available 2. Alternatives need to be sufficiently available and convenient	**Medium:** requires significant funding and pre-existing infrastructure to be possible and convenient	Medium term
	Scrappage schemes	Targeted financial scheme providing grants to successful applicants to scrap or retrofit their older vehicles and use cleaner, greener modes of transport.*	United Kingdom: London France: Greater Paris, Région Sud - free train rides (6 months) Belgium: Brussels Capital Region	1. An LEZ has to be in place 2.Funding has to be made available 3.Research on targeted groups has to be made beforehand	**High:** provided that the minimum requirements are met	Short term
	Bicycle leasing	Companies to organise leasing of bicycle for employees' daily commuting	"Fresh Bike" programme in Lund, Sweden	1. Sufficient biking infrastructure (and bikes availability) 2. Political will to promote cycling 3. Ensuring that enough people will participate to make it useful	**High:** provided that the minimum requirements are met	Short term
	Kilometre allowance	In order to incentivise cycling for daily commuting, volunteer employees benefit from an allowance for each kilometre cycled to work (public transport tickets can also be covered).	The Plan de Mobilité (Initially *Plan de Déplacement d'Entreprise*) in France was set up in 2017 and offered a 0.25EUR kilometric allowance for each volunteer employee cycling to work. The allowances given to an employee cannot exceed 200EUR a year (exempt from taxes). Public Transport tickets were also covered when complementary to cycling. The programme was later on expanded from private to public sector. The programme has also been expanded to e-bikes, and the allowance is considered to be raise to 385 EUR (since e-bikes cover more distance)	1. Volunteer companies 2. Volunteer employees 3. Decent cycling infrastructure and reasonable distance	**High:** minimum requirements can be challenges, otherwise not technical	Medium term
	Work-related costs scheme	An employer provides its employees with an allowance free from tax to buy a bike	Netherlands (national policy): up to 1.18% of the wage, tax-free in order to buy a bike or e-bike	1. Sufficient cycling infrastructure 2. Enough volunteer employees	**High:** minimum requirements can be challenges, otherwise not technical	Short term

* Definition from Transport for London, 2022.

Type of measure	Measure	Definition	Examples	Minimum requirements & challenges	Transferability	Time-line
To set up – Providing alternatives	**Shared mobility hubs** – in poorly connected areas	Setting up multimodal hubs with shared (e)-bikes, micromobility vehicles, and (e)cars in areas where poorer people are affected by an LEZ and forced car ownership	Scotland: "Shared Transport for all" scheme in Edinburgh & Glasgow Germany: Bremen EU-wide: other examples	1. Political will to provide alternatives 2. Hubs have to be built 3.Demand needs to exist	**Medium:** Minimum requirements are challenges and the solution is slightly technical	Medium term
	On demand taxi vans (Demand Responsive Transport - DRT)	On-demand door-to-door vehicles, usually vans, that link up less connected areas to bus or railway stations	RegioTaxi, Netherlands Regional taxi service that operates in several regions, providing door to door rides (no fixed stops or routes) with lower fares than taxis Mobitwin, Brussels Similarly, this programme offers affordable rides to people with reduced mobility and / or low income to get to the city More examples here	1. Political will to provide alternatives 2. Could be hard to scale up 3.Demand needs to exist	**Medium:** Minimum requirements are challenges and the solution is slightly technical	Medium term
	MaaS: integrated ticket services	Offering itineraries combining different mobility modes (free access bikes and tram for example), while booking only one ticket	Mulhouse: Centralised on "Le Compte Mobilité", 1st of its kind in Europe (regroups Bus, trams, bikes in free access, cars in free service and parking spots). One single payment at end of each month, no payment in advance Helsinki: Centralised under Whim with different payment options: each trip, monthly (49EUR at the time) with limits of time/ distance for taxis and cars and premium monthly	1. Decent infrastructure is needed 2. Transport providers need to be on board 3. Demand needs to match the offer	**Medium:** Minimum requirements are challenges and the solution is slightly technical	Medium term
	MaaS: car-sharing	Free floating vehicles electric car fleets are made available by cities or companies (see examples later) for temporary use. They are usually booked and paid online via apps, with a fix price/ minute (0.24 EUR/minute for ShareNow in France)	Share now list: Vienna, Copenhagen, Paris, Budapest, Amsterdam, Madrid, Berlin, Cologne, Düsseldorf, Frankfurt, Hamburg, Stuttgart, Munich, Milan, Rome, Turin, Naples. Public schemes exist as well: Citiz in Rennes and other French cities. Social cooperatives for EVs in Spain: Barcelona, Madrid, Valladolid	1. Providers need to exist 2. Offer has to match demand 3. The use has to be as simple as possible for the scheme to be attractive	**Medium-high:** Shouldn't require infrastructure change but needs to be scaled up	Medium term

Type of measure	Measure	Definition	Examples	Minimum requirements & challenges	Transferability	Time-line
To set up – Providing alternatives	**MaaS: private/public providers partnership**	Partnership between private and public providers of mobility services	Madrid city transport service partnered up with Bird and combined e-scooters to its existing fleet of bikes	1. Providers need to exist 2. Will to build partnership	**High:** mostly depends on goodwill	Medium term
	Ramp up Metropolitan trains	Increase the offer of metropolitan trains as an alternative to private cars	Strasbourg – provide alternatives with LEZ	1. Existing infrastructure 2. Quality service and connections 3. Needs to be financially accessible	**Medium** if infrastructure exists (due to costs) **Low** if the infrastructure doesn't exist	Medium - Long term (depending on infrastructure)
	Social leasing of electric vehicles	Long-term renting of EVs made more accessible for low-income households	France: plans to suport the social leasing of 130,000 vehicles, leasing at 100 EUR/month	1. Needs political will and funds 2. Charging infrastructure needs to be present for the scheme to be convenient	**Medium** to **Low** given the scale of the measure and the potential need for infrastructure upgrades	Medium-long term
Urban design	**Pop-up infrastructure**	Pop-up cycle lanes (like coronalanes) to incentivise use of bikes	Paris and London, among other cities, did it during the Covid pandemic in 2020	1. Needs to be done safely in order to avoid confusion and accidents 2. Should be planned to become permanent	**High:** as the Covid pandemic demonstrated	Medium term
Exempt	**Targeted LEZ exemptions** – Would apply to at risk groups that cannot afford a new vehicle	At risk groups would include low-income people that occasionally drive in cities and people with disabilities and/or reduced mobility	Occasional exemptions: - Brussels Region grants 24 exemptions / year - Barcelona grants 10 days / year Flexible rules for people with people with disabilities	1. Beneficiaries need to be carefully selected 2. Number of exemptions should be tailored and reasonable 3. It shouldn't open the door to watering down the LEZ	**High:** technically simple	Short term

Annex II – Long list and impact of best practice measures

Description of the measure			Assessment
Type of measure	Measure	Examples	Timeline
To make cheaper – Financial schemes	Mobility Credits	Spain: Barcelona Germany: Berlin/Bolt campaign Finland: Scrapping premium for EVs, (e)bikes and public transport	Medium term
	Scrappage schemes	*UK*: London *France*: Greater Paris, Région Sud - free train rides *Belgium*: Brussels Capital Region France (national) Finland: Scrapping premium of 1000 EUR for individuals switching from cars to e-bike. France: subsidy up to 200 EUR if the applicant meets certain requirements Italy: up to 500 EUR help for all types of bikes. Portugal: Reduced VAT for bikes (6%)	Short term
	Bicycle leasing	Companies to organise leasing of bicycle for employees' daily commuting	Short term
	Kilometre allowance	In order to incentivise cycling for daily commuting, volunteer employees benefit from an allowance for each kilometre cycled to work (public transport tickets can also be covered).	Medium term
	Work-related costs scheme	An employer provides its employees with an allowance free from tax to buy a bike	Short term

Measure	Assessment based on best practice criteria (cont)			
	Equity			Cost-effectiveness
	Affordability	Connection	Accessibility	
Mobility Credits	Positive - as successful applicants receive financial help	Positive - free floating micromobility vehicles can improve connection	Positive - depends on the vehicles available	Positive - as it relies on a private company's initiative
Scrappage schemes	Positive - provided financial help to low-income Positive - provided financial help to low-income Positive - as it provides financial assistance	Positive - enables people to circulate in LEZs Positive - enables people to circulate in LEZs Depends on infrastructure	Positive - People with reduced mobility benefit from it Positive - People with reduced mobility benefit from it Depends on the type of selected bikes	Neutral = 3,348 EUR per vehicle = 8 to 9 kg of NOx/vehicle removed = 0.03 to 0.042 kg of PM2.5 removed (calculations in Annex III) Positive - incentivise the spread of EVs for lower-income households Depends on the scale of the scheme, and the amount of applicants
Bicycle leasing	Positive - cycling is cheaper than private car and the measure is designed for employees	NA - success of the measure depends on existing infrastructure	Neutral - it depends what kinds of bikes are available	Positive - shared costs of bikes between public authorities and private companies makes it more bearable for everyone, and employees benefits from lower costs as well
Kilometre allowance	Positive - cycling is cheaper than private car and the measure is designed for employees	NA - success of the measure depends on existing infrastructure	Depends on what kinds of bikes are available	Positive - as the cost is supported by companies and benefits users.
Work-related costs scheme	Positive - cycling is cheaper than private car and the measure is designed for employees	NA - success of the measure depends on existing infrastructure	Depends on what kinds of bikes are available	Positive - as the cost of the bike is partly supported by the company

Description of the measure			Assessment
Type of measure	Measure	Examples	Timeline
To set up – Providing alternatives	**Shared mobility hubs**	Scotland: "Shared Transport for all" scheme in Edinburgh & Glasgow EU-wide: other examples	Medium term
	On demand taxi vans (Demand Responsive Transport - DRT)	On-demand door-to-door vehicles, usually vans, that link up less connected areas to bus or railway stations	Medium term
	MaaS: free floating shared vehicles	Integrated ticket services	Medium term
		Car-sharing (private & public)	Medium term
		Madrid city transport service partnered up with Bird and combined e-scooters to its existing fleet of bikes	Medium term
	Public transport	Lisbon free public transport for students and the elderly	Short term
		Metropolitan trains	Medium - long term depending on infrastructure
	Social leasing of electric vehicles	France: plans to support the social leasing of 130,000 vehicles, leasing at 100 EUR/month	Medium - long term
Exempt	**Targeted LEZ exemptions -** Would apply to at risk groups that cannot afford a new vehicle	Brussels Region grants 24 exemptions / year Barcelona grants 10 days / year	Short term
		Flexible rules for people with disabilities and/or reduced mobility	Short term

Measure	Assessment based on best practice criteria (cont)			
	Equity			Cost-effectiveness
	Affordability	Connection	Accessibility	
Shared mobility hubs	**Positive** – make clean alternatives cheaper	**Positive** – targeted at poorly connected areas	**Positive** – various vehicles will answer various needs	**Depends on local approach** – investment costs vary between a few thousand euros to a few hundreds of thousands euros (if infrastructure such as charge points is required).[37]
On demand taxi vans (Demand Responsive Transport - DRT)	**Positive** – make shared mobility cheaper	**Positive** – targeted at poorly connected areas	**Positive** – accessible to people with reduced mobility	**Positive** – the service is meant to be affordable and is performed by volunteers or financed by public authorities
MaaS: free floating shared vehicles	**Positive** – as all costs are centralised in one ticket and special offers are available	**Positive** – combining different modes of transport improves connection	**Positive** – mixing transport modes improves physical accessibility	**Positive** – in additional to being more convenient, it is a more efficient way of ticketing and booking
	Positive – for occasional use: only 0.24 EUR/minute for ShareNow in France	**Positive** – uses existing road infrastructure and therefore connects people	**Positive** – depending on the type of vehicles available	**Positive** – especially when organised by private companies
	Positive – as it constitutes a cheaper mobility option than car	**Positive** – as free floating fleets allow better connection	**Positive** – by multiplying options, especially with electric assistance	**Positive** – as shared mobility and public transport are cheaper and benefit more people
Public transport	**Positive** – as it is the purpose of the measure	**Positive** – but depends on the infrastructure	**Positive** – although depends on the infrastructure	**Positive** – as these groups are often minorities and it will significantly alleviate the costs on their end
	Positive – as it is cheaper than private car use	**Depends** on infrastructure for the short term	**Depends** on how accessible the existing infrastructure is made	**Unclear** – this measure has significant costs (8 million/year in Strasbourg) but could also benefit a huge amount of people Higher costs if no existing infrastructure
Social leasing of electric vehicles	**Positive** – provided financial help to low-income households	**Positive** – enables people to circulate in LEZs	**Positive** – People with reduced mobility benefit from it	**Positive** – access to EVs for lower-income households **= 7,700 EUR/vehicle for ca. 130,000 vehicles per year**
Targeted LEZ exemptions - Would apply to at risk groups that cannot afford a new vehicle	**Positive** – it alleviates targeted groups from a cost	**Indirectly** – avoids cost to enter the LEZ	**Positive** – should be targeted at reduced mobility people in need	**Positive** – no cost per se
	Positive – it alleviates targeted groups from a cost	**Indirectly** –avoids cost to enter the LEZ	**Positive** – should be targeted at reduced mobility people in need	**Positive** – no cost per se

Annex III – Cost-effectiveness calculations

Scrappage schemes

Based on the figures available in the Transport for London report on the ULEZ scrappage scheme,[38] showing that it affected **15,232 vehicles with a 51 million £ budget.**
The scheme is estimated to have removed Between 140 and 170 tons of NOx, which amounts to **8 to 9 kg of NOx per vehicle.**
Between 0,5 and 0,7 tons of PM2.5, which amounts to **0,03 to 0,042kg of PM2.5 per vehicle.**

Reduced fares for public transport

In **Vienna**, a yearly pass used to cost **449 EUR**[39] meaning that public transport users who bought the **365 EUR** pass saved **84 EUR** in a year of public transport.
In Vienna, 820,000 people benefited from this scheme.[40]
Financing and operation costs amount to 700 million EUR of subsidies from the City of Vienna and the Austrian government every year.[41]

Multimodal hubs

The investment costs of these hubs vary from a few thousand euros (e.g. when only signposting and the relocation of existing sharing services is required) to a few hundreds of thousands of euros (in cases where new infrastructure, e.g. charging hubs, or vehicles are required).[42]

Social leasing

If **130,000 vehicles** per year were offered for social leasing from 2023 to 2027, the estimated cost of the measure would be, according to T&E France[43], **EUR 1 billion** per year, **7,700 EUR/vehicle for ca. 130,000 vehicles per year** (including maintenance and repairs). This measure would gradually take over from the purchase bonus, which is not conditional on income level.
The models concerned will mainly be in the A and B segments.[44] As an example, the cost of **leasing the Renault Zoé is EUR 139/month.**[45]
In France, the average distance travelled by car every year is **12,200km.**[46]
According to the T&E online tool,[47] a petrol car from this size emits 215g of CO2/km travelled whereas an equivalent EV only emits 47g of CO2/km.
When multiplying this 168g saving by the 12 200 km travelled on average, it amounts to **2.049 tons of CO2 saved / year / car.**

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Find out more

The Clean Cities Campaign is a European coalition of organisations hosted by Transport & Environment. Together, we aim to encourage cities to transition to zero-emission mobility by 2030, encouraging European cities to become champions of active, shared and electric mobility for a more liveable and sustainable urban future.

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