EV charging on-street – review of experience in various cities around Europe

POLIS
CITIES AND REGIONS FOR TRANSPORT INNOVATION

2020
CiViTAS
Cleaner and better transport in cities
PARK4SUMP

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Pedro Gomes
18 May 2022

What is POLIS?

Peer-to-peer exchange

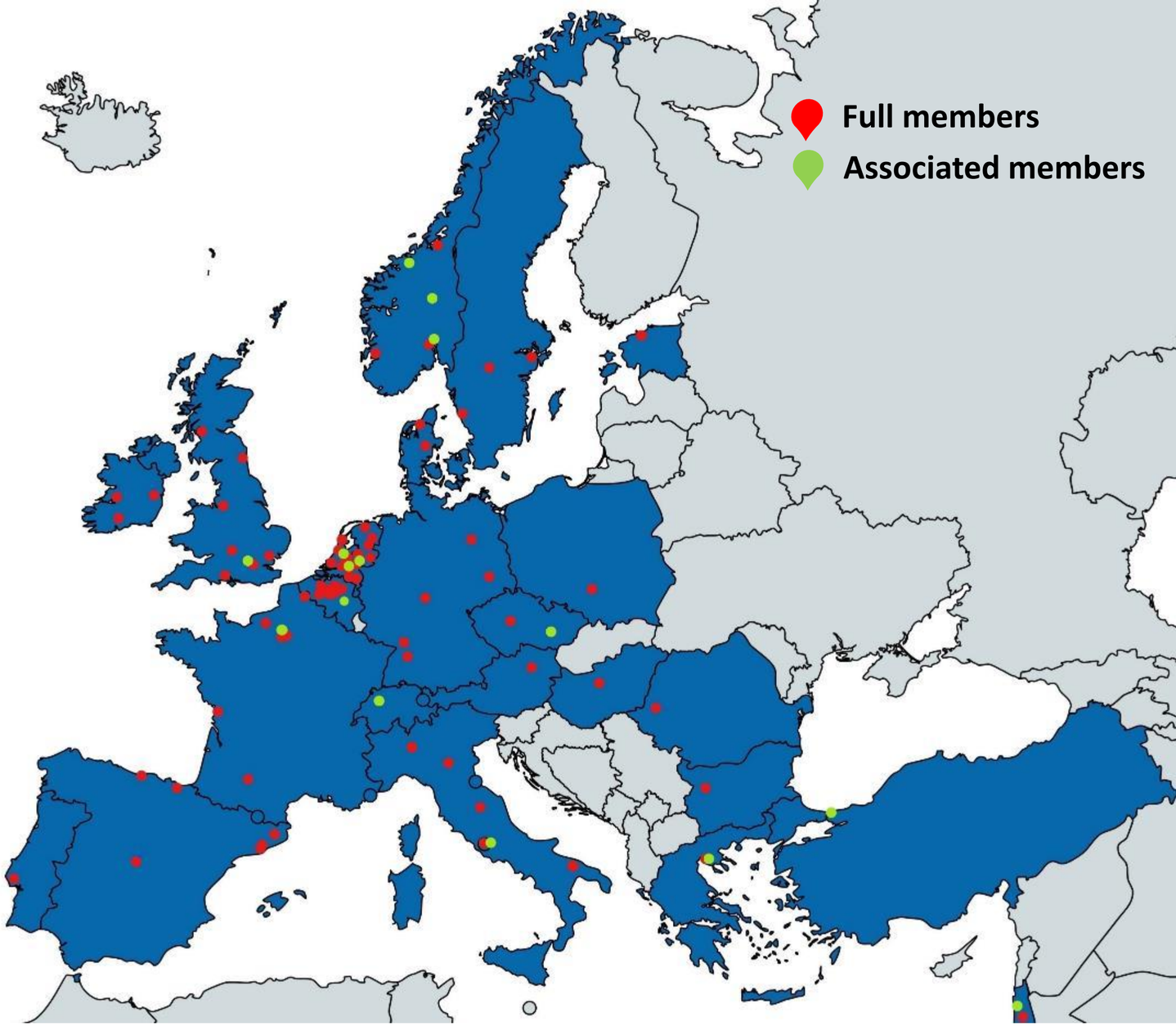
Policy & Advocacy

Research

Innovation

102 Cities, regions and related entities

SUSTAINABLE URBAN MOBILITY INNOVATION



Our working groups

Environment & Health

Active Travel & Health

Clean Vehicles & Air Quality

Traffic Efficiency

Traffic Efficiency (ITS, traffic management, automation, MaaS, data,…)

Access

Access (public transport, infrastructure, pricing…)

Parking

Safety & Security

Safety & Security (street and road safety, protecting vulnerable users, gender…)

Governance & Integration

Governance & Integration

Urban Freight

Small and medium sized cities platform

Regions Working Group

Main urban mobility challenges & policy goals

AIR QUALITY

MODAL SHIFT

SAFER ROADS

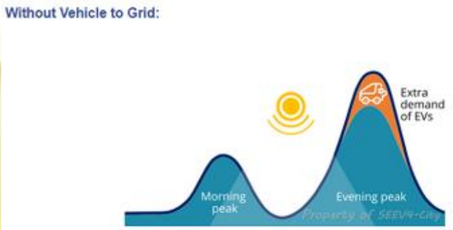
DECARBONISATION

CV&AQ challenges & priorities - Electromobility

- Revisions/adoptions of the **relevant policies:**
  - **“Fit for 55” package** - 55% GEE emissions reductions until 2030
  - AFID/AFIR, RED, TEN-T, Energy Taxation Directive, EPBD
  - Clean Energy for all
- **Future-proof** recharging infrastructure concepts
- **Public vs. private** recharging infrastructure/**Shared** recharging infrastructure
- **User experience/user acceptance** of the recharging infrastructure
- **Clean energy/**energy decentralization/consumer vs. Prosumer
- **Acessibility** for all including people with disabilities and elderly

Multimodal | Captive Fleets | Charging infra | Smart grid

Total emissions city traffic in Rotterdam



www.polisnetwork.eu

Electromobility involves many things!

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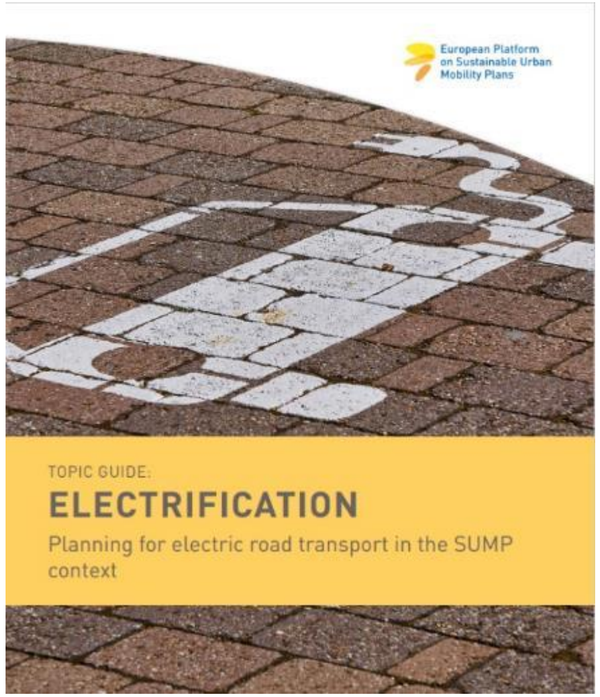
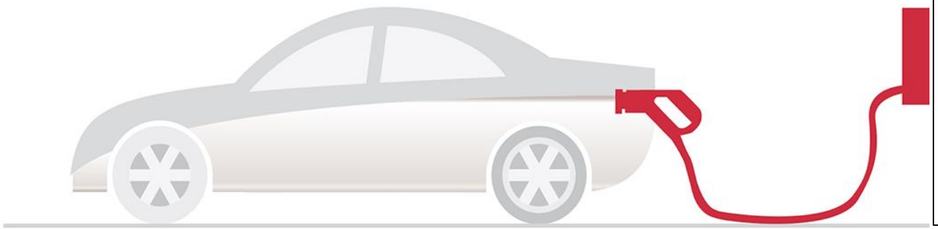
Where does Electrification fit?





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Electromobility in city context:  & 

➔ Low Emission Zones (LEZ) / Zero Emission Zones (ZEZ)

➔ Expansion of EV charging infrastructure

➔ Captive/Municipal fleet electrification

➔ Ensure oversight on local *MaaS* ecosystems

➔ Management of public space - ensure accessibility!

Electromobility in city context

What does the user want?

- Charging during “off-peak” hours (during the night and nearby) – **convenience**
- Charging in accessible locations with multiple valences – **comfort**
- Adequate cost (kWh vs. minute billing) – **equity**
- Knowledge about location, operability and availability of EV chargers – **information**
- User-friendly, interoperable, transparent pricing infrastructure - **easiness**

What can cities offer?

- Public and private charging infrastructure in accessible places – **accessibility**
- Possibility of partial charging in places of frequent use – **opportunity**
- Reallocation of public space – **prioritization**

Development of a comprehensive public charging network by Public Authorities

- **Public Tender/Regulation** or **case by case** depending on CPO requests – there is no “one-size-fits-all”
- **Permitting tariffs/taxation** - how much to charge? “Free” parking places for the CPO?
- Land use planning/**Integration with existing urban furniture** - avoid additional barriers for the elderly and people with disabilities
- **Grid connection** – requirements, liaison with DSOs
- Promote **Smart grids**/renewable local energy generation
- CPO proposals for permitting - **streamline processes and timings**
- Promote EM in **Urban Logistics** (UCC with last-mile delivery via EVs)
- **Regulations and governance** (data collection/management, open-source and *MaaS*…)

Some examples from POLIS Member cities

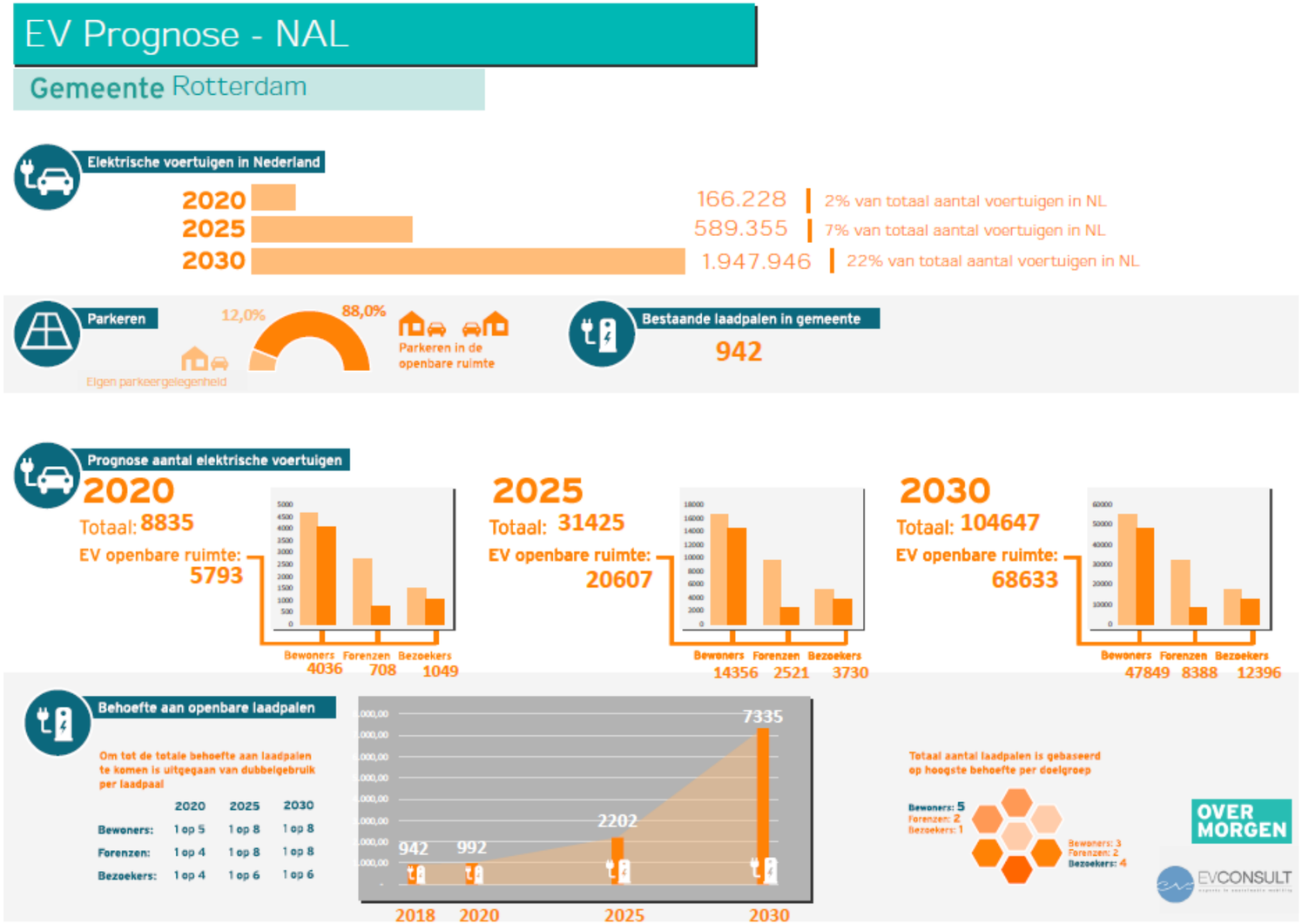
Rotterdam

Policy how to meet up to the charging demand

- Aim: no shortage of charging facilities
- Charging locations to be found:
  1. **Private parking**
     - own driveway
     - private garages
  2. **Semi-public**
  3. **In the public space**
     - on street
     - public parking garages and P&R
- Trend:
  - **From demand-driven** (if a Rotterdam inhabitant buys an electric car)
    to
  - **Data-driven** (predicted demand based on real usage)
- Fast charging mostly around the city, inner city for taxi and small logistics

Rotterdam

Prognosis in figures Rotterdam



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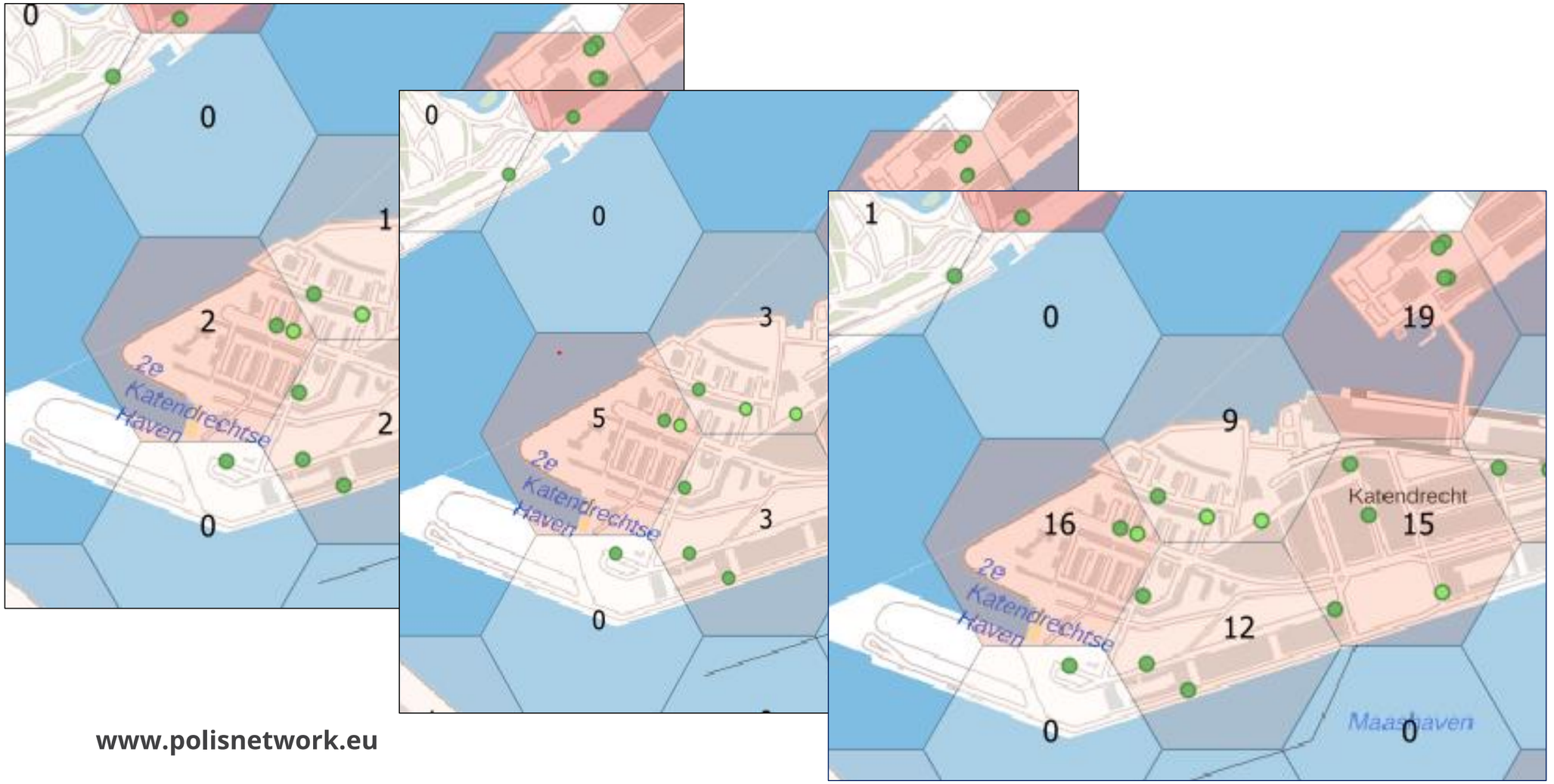
Rotterdam

Prognosis geographical distribution



Kop van Katendrecht
2020: 7 charging poles
2025: 15 charging poles
2030: 52 charging poles

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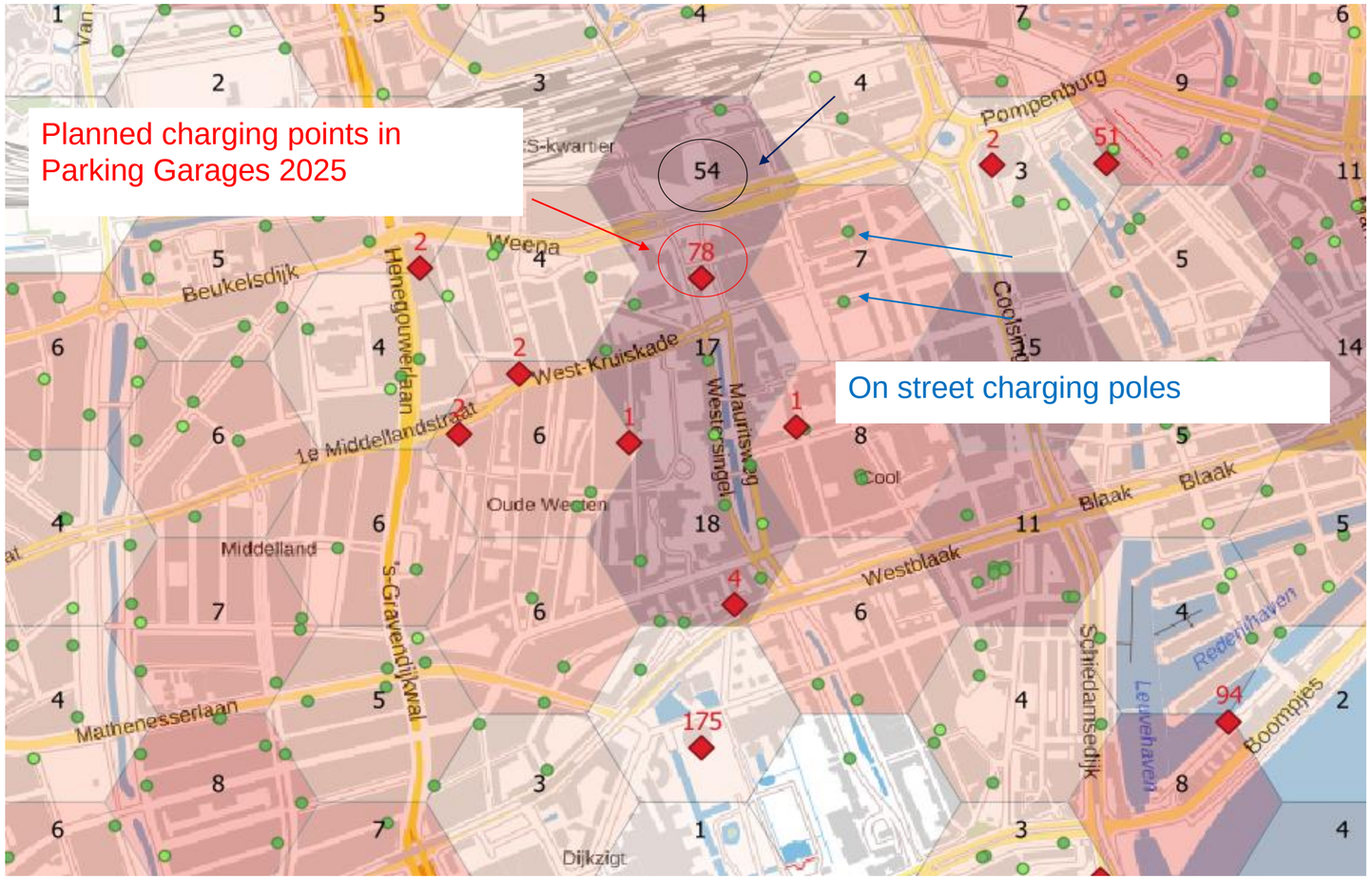
Rotterdam

Prognosis charging demand personal vehicles



Rotterdam

- **Rotterdam Mobility Approach is leading**
- **Parking policy and Charging Policy are part of the bigger picture**
  - On street parking
  - Parking spots reserved for charging EVs
  - On a smart visible location, close to the demand (< 200 m)
  - Not in shopping streets or short parking areas
  - Always a public parking place
- **Parking garages and P&R**
  - Tender for 1000 charging points in 2025 (10% of capacity)
  - More for visitors and people working
- **No further advantages for EV parking**

Brussels

Visions and ambitions for EV charging

GOOD CHOICE

D.5
Évoluer vers une sortie des moteurs thermiques

L'ambition est d'assurer que la mise en œuvre de cette action - dont l'objectif est de faire évoluer le parc automobile vers des technologies moins dommageables pour l'environnement et plus adaptées au milieu urbain - s'inscrive dans l'objectif d'une diminution du parc automobile et de réduction de l'usage de la voiture en général.

L'action se décline en mesures concrètes :

- Mener une étude concertée d'impact sur la mobilité, sur les aspects sociaux, économiques et sur l'énergie, en ce compris pour les ménages et entreprises bruxellois, ainsi qu'une étude sur les impacts budgétaires du renouvellement des flottes publiques, dans l'optique d'une sortie du diesel à l'horizon 2030 au plus tard, et de l'essence à l'horizon 2035 au plus tard ;
- Analyser la disponibilité des alternatives aux moteurs à combustibles fossiles et aux carburants diesel/essence, en particulier pour les camionnettes, les poids lourds, les deux-roues motorisés (moto, scooter), les bus et les autocars, dans l'optique d'une sortie du diesel à l'horizon 2030 au plus tard, et de l'essence et du LPG à l'horizon 2035 au plus tard ;
- Evaluer la temporalité de l'évolution du parc, compte tenu de la durée de vie des véhicules en service actuellement ;
- Renforcer les mesures en matière d'exemplarité des pouvoirs publics ;
- Réévaluer les tarifs de la taxe kilométrique poids lourds (Viapass) afin de décourager l'usage des véhicules les plus polluants ;
- Encourager le développement à court et moyen terme des technologies alternatives ainsi que des infrastructures de recharge ;
- Adapter les législations permettant d'évoluer vers une sortie des moteurs thermiques. Les moteurs hybride-essence non rechargeables et les moteurs CNG, au vu de leurs qualités environnementales, ne sont actuellement pas concernés par ce calendrier. Leur bannissement, qui correspondra à un bannissement total des moteurs à carburants fossiles, pourra être envisagé par la suite, en fonction notamment des alternatives technologiques disponibles sur le marché et de l'accessibilité de celles-ci ;
- Etablir des mesures d'accompagnement des automobilistes (aides ciblées, participation, communication, etc.) pour exploiter le potentiel que constitue la sortie du diesel et de l'essence en faveur du transfert modal.

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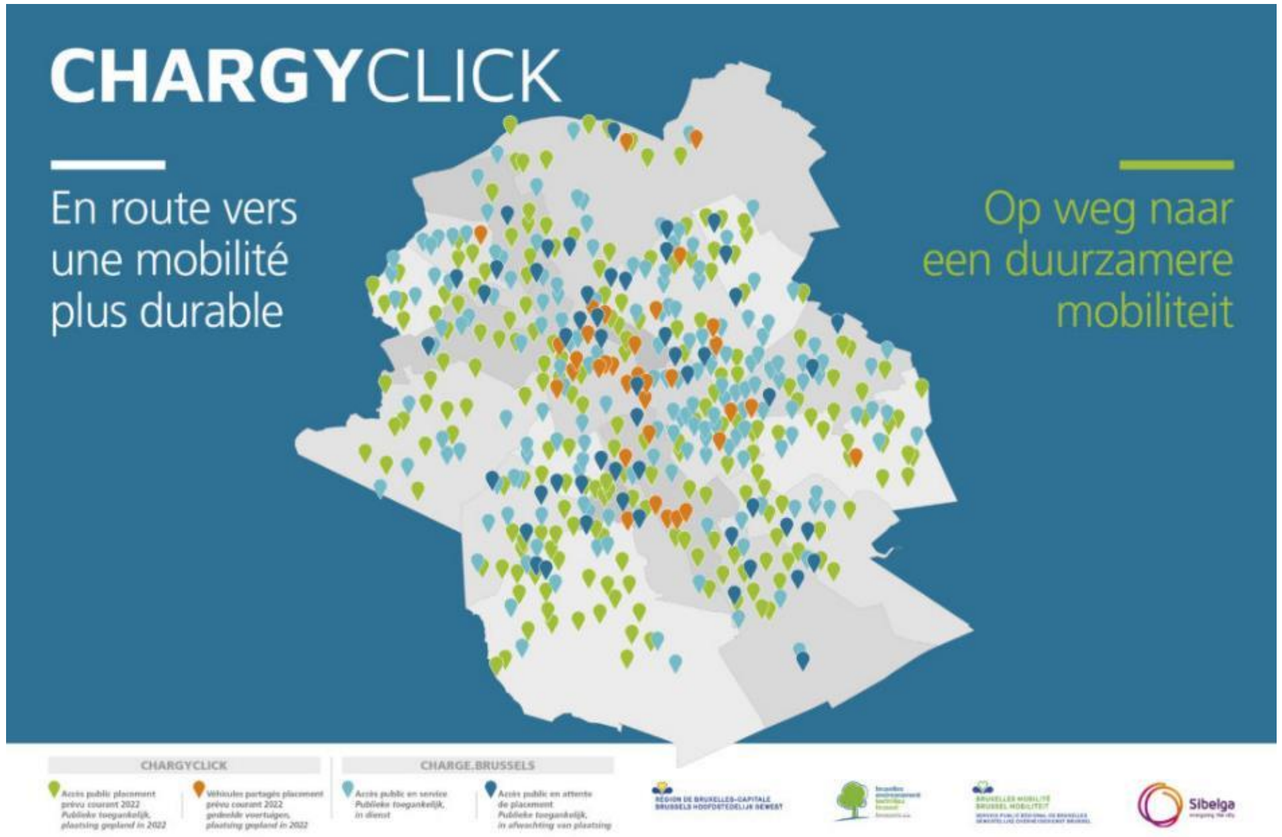
VISION SUR LE DÉPLOIEMENT D'UNE
INFRASTRUCTURE DE RECHARGE
POUR VÉHICULES ÉLECTRIQUES

JUIN 2020

Brussels

In numbers

- charge.brussels project – ongoing: min. 250 charging stations until October 2021
- ChargyClick project – transitional phase in 2022: another 500 charging stations
- Definitive process – from 2023, min. 22 000 charging stations in 2035 at the latest



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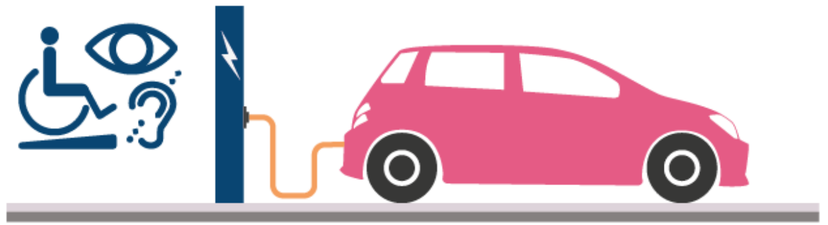
- **Administrative complexity:**
  - 20 road managers (19 municipalities + Region)
  - process to get permits not designed for a large-scale roll-out…
    → simplification process started but change is slow

- **Enforcement of parking regulations for charging → how to work with scan cars?**

- **How to make the shift to electric vehicles as equitable and accessible as possible?**



Brussels

Lots of questions require answers from Cities & Local Authorities…

- **How many parking slots for people with disabilities equipped with charging infrastructure should we provide**? A certain ratio?
- **How to decide where to provide** parking spaces equipped with charging infrastructure for people with disabilities?
- **Charging infrastructure on PRM parking slots:** how to integrate them in a viable business model for the private actors in charge of installing and operating the charging stations (1 PRM spot = 1 car only)?
- **Should PRM parking slots equipped with charging infrastructure be accessible for ICE cars?**
- Is charging infrastructure installed in on-street parking and not on sidewalks **detrimental to the accessibility of the charging devices themselves?**

Amsterdam

- The Municipality of Amsterdam has set out its ‘Strategic Plan for Charging Infrastructure 2020-2030’.
- The Dutch capital, has already ~8 000 EV charging points, of which 3 700 public and 4 100 private;
- Nevertheless, further work is required.

In Amsterdam 80% of the population parks on-street, and will use the public charging infrastructure.

Amsterdam

- **Amsterdam aims to expand its charging offering from 8 000 to 80 000 charging points**

- **The need for strategic deployment of EV charging takes into account:**
  - the geography of EV usage
  - the sharing economy
  - use of public space, parking
  - and current urban mobility policy agendas

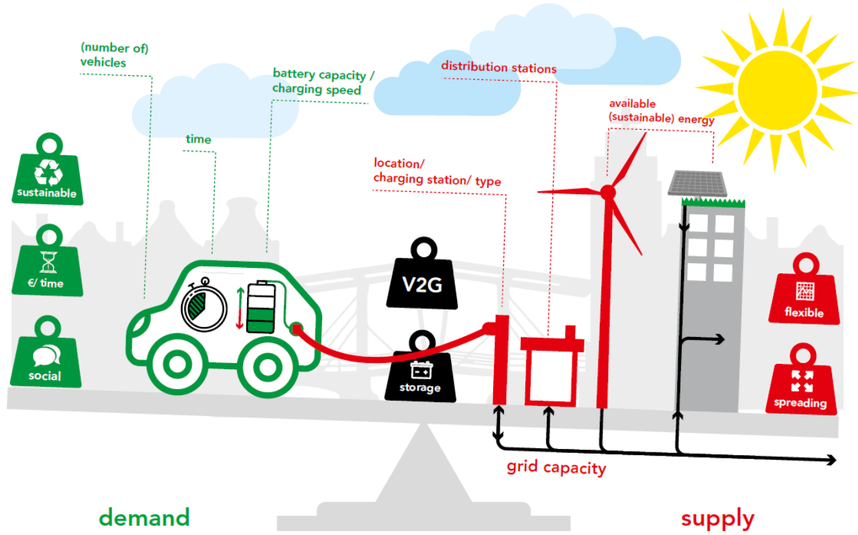
- **Theroll-out adopts 5 core principles:**
  1. Loading done as much as possible on the private and semi-public territory;
  2. Where necessary, Amsterdam will build public charging infrastructure throughout the district.
  3. The installation of public charging infrastructure is done strategically and data-driven;
  4. At strategic locations in the city, facilitate the realization of fast charging points;
  5. Collaborate on a comprehensive network of hydrogen stations.

Amsterdam

- How to make sure users of shared or public charging infrastructure (especially in condominiums) have the same benefits as private house owners with their own driveway and home charger?

- Local energy communities - Smart charging over multiple grid connection points, balancing production and consumption at a city level helps the community and the grid

In Amsterdam the majority of the population lives in multi dwelling buildings and is unable to generate energy on their own house. Shared solar roofs are a solution. The city actively supports local energy communities, e.g. by providing access to city-owned roofs for collective solar production



Take into account other fleets

- Promote charging infrastructure… **if we want to accelerate change!**

Pinterest

CleanMobileEnergy Project

Take into account other fleets

- Promote charging infrastructure… **to properly manage public space also!**

Accessibility for all

GIZMODO | We come from the future

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ENERGY

How to Ensure Electric Vehicle Charging Infrastructure Is Accessible to Everyone

By Molly Taft | 4/07/21 7:00AM | Comments (40) | Alerts

NEWS

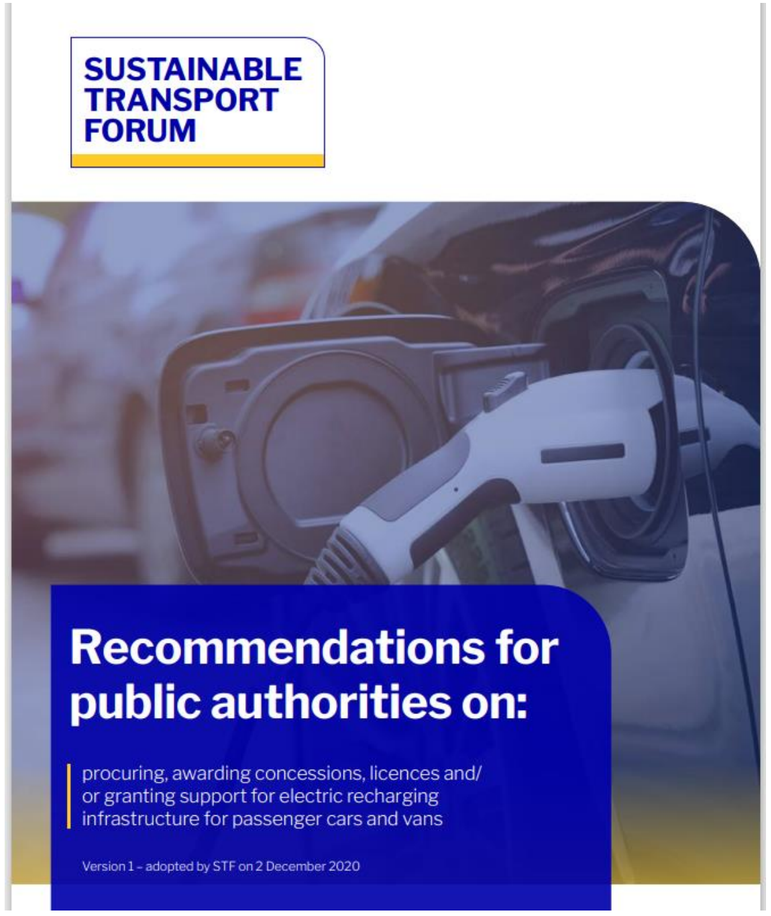
Lack of accessible chargers preventing disabled drivers from going electric

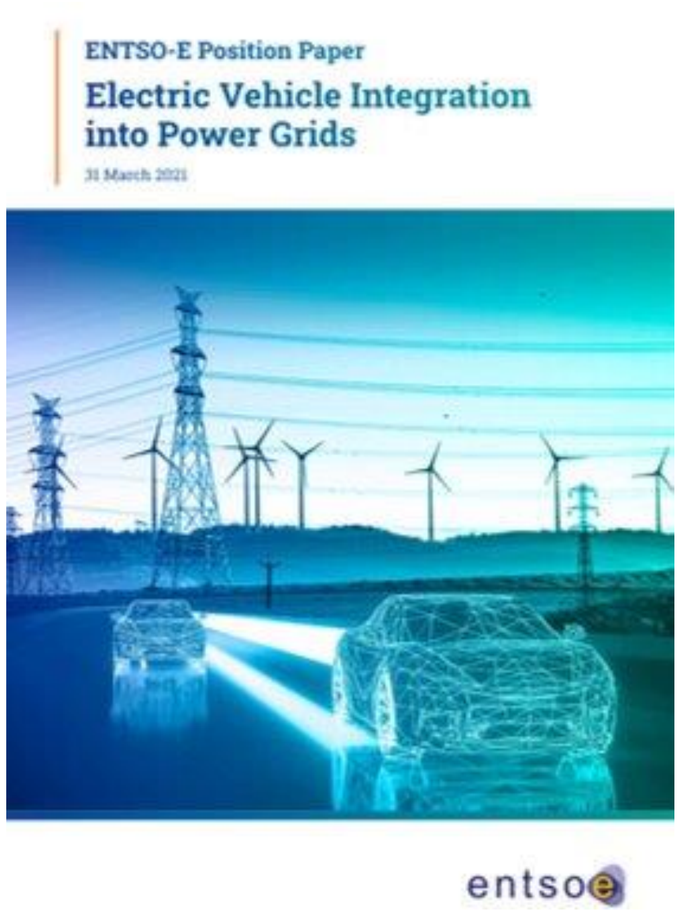
Survey suggests new public charger accessibility rules can't come soon enough, with shortcomings in current infrastructure the main reason more disabled drivers aren't buying electric cars...

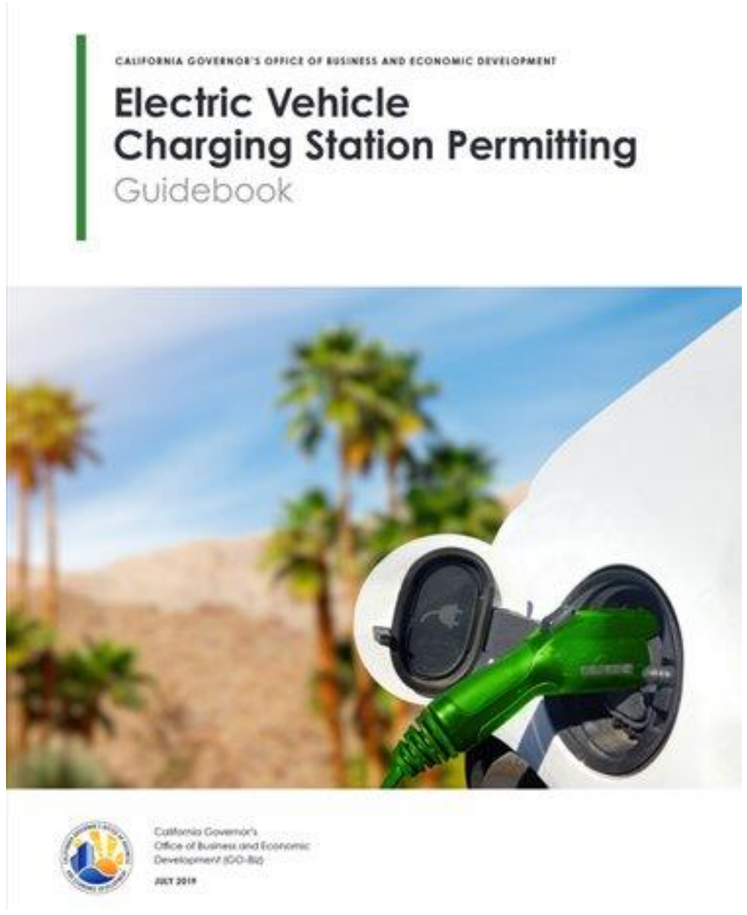
Final thoughts

- Urban areas in Europe show increasing signs of environmental stress - poor air quality, excessive noise and traffic congestion, increasing amounts of GHG emissions, among others
- Reducing emissions from road transport is a crucial aspect of the European Green Deal, and electric mobility plays a key role - up to 13 million EVs expected in 2025 requiring at least 1 million of publicly accessible recharging points
- Public Authorities are major actors in the promotion of Electromobility, but they sometimes lack technical capacity and resources
- Knowledge sharing and cooperation at national and EU-level are fundamental tools (via EU-funded projects and initiatives, networks of cities and regions e.g. POLIS…)

Available resources for Public Authorities







https://transport.ec.europa.eu/transport-themes/clean-transport-urban-transport/sustainable-transport-forum-stf_en

POLIS

Some POLIS EU projects in Electromobility

eCHARGE 4DRIVERS

Improve the experience of EV users
https://echarge4drivers.eu/

solutions plus

City-level demonstration and capacity building
http://www.solutionsplus.eu/

European Alternative Fuels Observatory

Information and support tool
https://alternative-fuels-observatory.ec.europa.eu/

Interreg North-West Europe CleanMobilEnergy
European Regional Development Fund

RES and smart EV charging
https://www.nweurope.eu/cleanmobilenergy/

Thank you! Q&A time

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