MARCH 2023

# JUST TRANSITION WEBINAR REPORT

## Making EV charging a reality for people with disabilities

### EMPOWERING EVERYONE

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# WHY DO WE SAY: Inclusive EV-Charging matters

As electric vehicles are rolled out quicker than ever before, guaranteeing accessibility of recharging infrastructure is critical to ensuring some of those most reliant on cars are not locked out of the shift to cleaner fuels.

As part of the Green Deal, the European Commission aims to reduce transport Greenhouse Gas (GHG) Emissions by 90% by 2050, and while electromobility does not provide a 'silver bullet' in this ambition, the rollout of electric and zero-emission vehicles will play a role. Progress in international policy appears to be underway and the recent sales ban on new internal combustion engine-powered (ICE) vehicles from 2035 onwards suggests electrification is accelerating fast,

However, per the Alternative Fuels Infrastructure Regulation (AFIR), the uptake of Electric Vehicles (EVs) must include sufficient recharging infrastructure — something that calls for two questions: what is 'sufficient' and whom is it supposed to be sufficient for?

When assessing the adequacy and suitability of new electromobility infrastructure, taking the demands and requirements of a spectrum of users is critical. Understanding and catering for disabled people is thus essential. There are over 100 million persons with disabilities living in the European Union, and more than 150 million persons older than 50 years of age. Meanwhile, it is estimated that by 2035 up to 50% of all drivers or passengers with a disability are expected to be partially or wholly reliant on public charging infrastructure.

> **Recharging infrastructure is being expanded incredibly fast, but it must be done in coordination with a just transition**
>
> **Pedro Gomes**

Yet, as the Disability Rights Forum asserts, accessibility is frequently seen as 'less important' than other crucial aspects of transport development, and many policies have no specific regulations or definitions for access for disabled people, with few providers holding any specific disabled access plans.

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While 'disability' is a broad term to describe a range of physical, cognitive, and neurological challenges, there is a range of ways for the needs of disabled users to be integrated into the design of EV recharging infrastructure. Yet, these groups — who are often those most dependent on private car travel — are often omitted from design and development in meaningful ways.

Indeed, research by POLIS member Transport for London revealed many disabled drivers rely on their vehicles for their independence, yet many have particular concerns about the ability to use public charge points.

This is a topic POLIS, through the Air Quality and Clean Vehicles Working Group, has explored in depth previously — investigating the actions playing out on the ground in our European cities and regions. To explore this issue further, a POLIS' Just Transition webinar brought together experts from the U.S. Access Board and ENIL (European Network on Independent Living) to present inspiring examples, followed by a panel discussion with representatives from the European Disability Forum and the Portuguese Mission Structure for the Promotion of Accessibility.

# A GROWING EUROPEAN FOCUS ON DISABILITY RIGHTS?

There appears to be growing attention to accessibility, and incorporation of disability rights across European transport legislation.

The EU Green Deal notes the importance of a 'just and inclusive transition for all', while the European Sustainable and Smart Mobility Strategy (2020) showcases the range of key actions for making new mobility solutions affordable, accessible, and safe for all.

Underpinning this, as signatories to the United Nations Convention on the Rights of Persons with Disabilities, the European Union (EU) and all Member States are legally obliged to take appropriate measures to ensure to persons with disabilities access.

Behind this shift have been continued efforts from disability rights groups such as **Motability** and the **Disability Rights Forum**, who have vigorously campaigned for increased attention to the need of disabled people in mobility policy, and visibility of disabled people in decision-making.

Indeed, research from these groups has brought to the fore, some of the significant mobility challenges facing disabled people, including the profound and disproportionate impact of COVID-19 on disabled people, the role of community transport schemes, and electric recharging standards for accessibility.

# WHAT IS THE ALTERNATIVE FUELS INFRASTRUCTURE REGULATION (AFIR)?

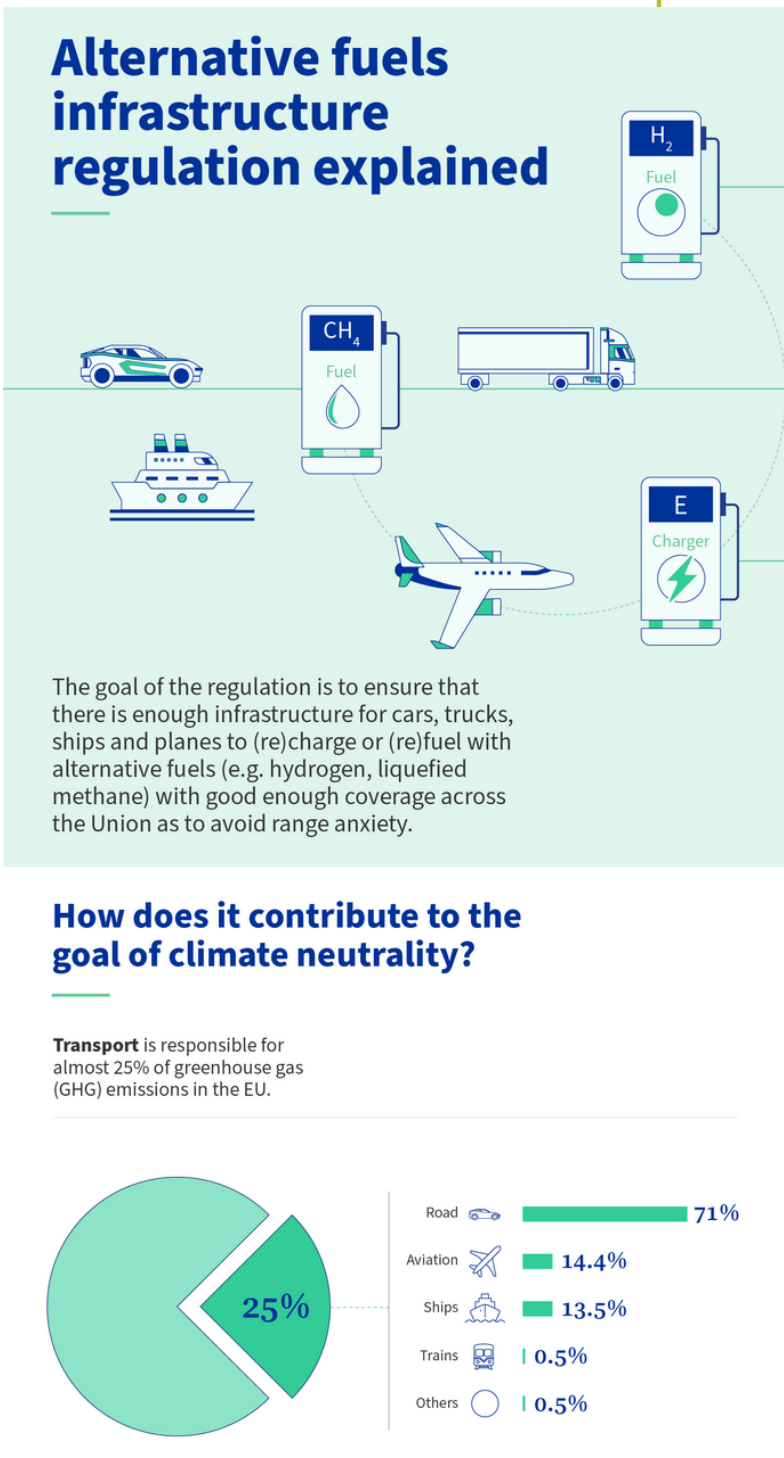
The proposed AFIR sets a framework for EU-wide and national infrastructure plans by defining an EU-wide approach for trans-European corridors (TEN-T) related to road, rail, aviation, and waterways.

The AFIR sends the right signals to meet the EV demand on the roads. The sales of EVs in the EU continue to grow. Combined with the proposed ban on sales of internal combustion engines by 2035, it is key to speed up the roll-out of recharging infrastructure across Member States. This will require the deployment of operational and accessible recharging points where they are needed, and capable of delivering the right power output. Combining fleet-based targets with distance-based targets on the TEN-T ensures that the roll-out of recharging stations matches the uptake of EVs.

It also seeks to ensure coherence in the approach member states use to handle national, regional and sub-regional specificities related to the transport modes via their National Policy Frameworks.

However, as the webinar panel explored, there is a clear capacity to develop standards further, particularly around the focus afforded to accessibility.

*More here - to check the complete infographic Fit for 55: towards more sustainable transport by the General Secretariat of the Council of the European Union (European Union, 2023), click here. The infographic is partially shown on the right side of this page.*



# KNOWING THE *LINGO*

**AC Level 2**: A charger that uses a 240-volt alternating-current (AC) electrical circuit to deliver electricity to the EV.

**Charge Point Operator (CPO)**: The entity that operates and maintains the chargers and supporting equipment and facilities at one or more charging stations. In some cases, the Recharging Station Operator and the Recharging Network Provider are the same entity.

**e-Mobility Service Provider (eMSP)**: A company offering an EV charging service to EV drivers, by providing access to multiple recharging points around a geographic area.

**Recharger**: A device with one or more recharging ports and connectors for recharging EVs. A recharger is also called electric vehicle supply equipment (EVSE) or EV recharger.

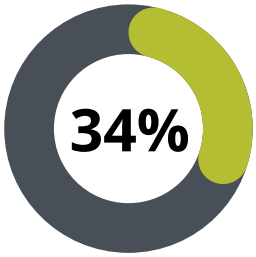
**Recharging Network**: A collection of chargers located on one or more properties (ies) that are connected via digital communications to manage the facilitation of payment, the facilitation of electrical recharging, and any related data requests.

**Combined Recharging System (CCS)**: A standard connector interface that allows direct current fast chargers to connect to, communicate with, and charge EVs.

**Open Charge Point Interface**: An open-source communication protocol that governs the communication between multiple recharging networks, other communication networks, and software applications to provide information and services for EV drivers.

**Plug and Charge**: A method of initiating charging, whereby EV charging customers plug a connector into their vehicle and their identity is authenticated, a charging session initiates, and payment is transacted automatically, without any other customer actions required.

# ACCESSIBILITY GUIDELINES FOR EV DESIGN




**This is the percentage of disabled drivers or passengers that will not have access to home off-street parking and will depend on on-street or public recharging infrastructure**

Attention to the design of EV infrastructure is essential if disability rights are to be truly mainstreamed into the future of electromobility.

To explore how such standards can be measured and implemented, Juliet Shoultz, from the U.S. Access Board, presented the Design Recommendations for Accessible Electric Vehicle Charging Stations, a technical assistance document to assist in the design and construction of electric vehicle recharging stations that are accessible to and usable by people with disabilities.

She walked participants through each detail of an EV recharging station, and how each operable part, location and system design can be adapted to be more accessible.

The U.S. Access Board is an independent federal agency that issues accessibility guidelines by the Americans with Disabilities Act (ADA), Architectural Barriers Act (ABA), and Rehabilitation Act of 1973 (and other laws).

'The U.S. Access Board published these design recommendations because our current standards do not explicitly address EV recharging stations: we want to ensure designers can make stations accessible to everyone. We always think about safety when we are designing transportation systems, yet accessibility is not always afforded the same attention,' said Shoultz.

Indeed, Shoultz stressed the difference between conventional parking spaces, traditional refuel stations, and EV recharging spots.

Unlike gas stations where an attendant may be available to assist with refuelling vehicles, EV recharging stations are often unattended. Thus, the accessibility of EV recharging stations is important for enabling independent use by drivers with disabilities, including people who have limited or no hand dexterity, limb differences, or upper extremity amputations and use adaptive driving controls.

**We seek to provide design guidance, capacity building for professionals, and investigate where accessibility is not being pursued**

**Juliet Shoultz**

# WHAT DO WE MEAN BY 'ACCESSIBLE'?

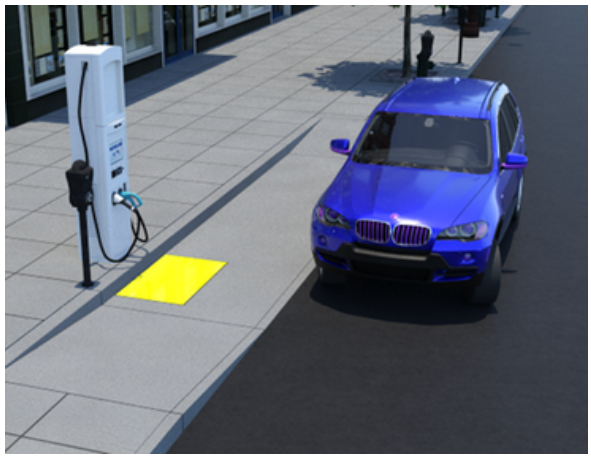
The term 'accessible' is often used in our debates about inclusive transport, however, (particularly when it comes to electrification), defining, measuring, and monitoring accessibility receives less attention.

Here, the specificities of design and installation are critical, yet not often available. Calibrating and monitoring recharging spaces, recharging cables, connectors and digital interfaces, and routes from a car to a building where facilities are located are critical for clear and coherent accessibility standards.

As a result, the Board lays out several recommendations for EV recharging design, suggesting that accessible recharging should include:

- an least 11-feet-wide and 20-feet-long **recharging space**
- an at least 5-feet-wide **adjoining access aisle**
- **accessible operable parts**, including charger and connector
- **clear floor space** at vehicle recharging space level, positioned for an **unobstructed side reach**

'Accessible mobility features primarily concern the size of the vehicle charging space, providing access aisles, how and where the chargers are installed, and the physical operability of the charger,' said Shoultz. 'However, this also means accessible communication features and operable parts, enabling EV chargers to be used by people who are deaf or hard of hearing'.



***Pic 1***

***Pic 2***

**On-Street EV Recharging Station Design. Pic 1, an accessible design with a lowered curb; Pic 2, an inaccessible parking station where the curb is a barrier to a disabled person accessing the charger.**

**Source:** ***U.S. Access Board, https://www.access-board.gov/tad/ev/***

Indeed, their advice echoes similar work from Motability in the UK, which has worked with the British Standards Institution (BSI) to develop a nationally accessible charging standard for EV charge points, and with Designability to create design guidance.

# CO-DESIGNING ACCESSIBLE TRANSPORT:

## What? Where? When? How?

Developing standards and specifications requires working with disabled people themselves, and co-designing processes and services.

'Independent Living means freedom of choice: it is not living by yourself, but it is control over how you live, and this includes the right to travel freely, regardless of access needs,' asserted Laura Alčiauskaitė, ENIL.

'When you work together, you create services which people can actually use; this can be a complex process, but it is worth it.'

The European Network on Independent Living (ENIL) is a user-led network of disabled people, with members throughout Europe — and was a partner in the TRIPS project. ENIL advocates for Independent Living values, principles, and practices, such as the provision of personal assistance and other community supports and services, a barrier-free environment, and adequate technical aids — together making full citizenship of disabled people possible.

The organisation works across a range of issues including independent living, personal assistance, funding, and peer support — to improve the lives and well-being of disabled people, with transport being a specific focus of their work.


**Source (bottom pic):** ***Freedom Drive ENIL***
***https://enil.eu/event/freedom-drive/***

# WHAT IS TRIPS ?

TRIPS (TRansport Innovation for Persons with disabilities needs Satisfaction), is a project that aimed to make transport more accessible for persons with disabilities, elderly voyagers, and all — bringing together 7 groups of persons with disabilities located in 7 European cities and 11 institutional partners spread across 10 countries.

The project revealed that in all the pilot cities disabled passengers are still restricted, especially when it comes to choosing public transport — with people living in largest cities having more options than disabled people living in more remote or rural areas.

The project has produced some key tools for practitioners across the urban mobility sector, looking to integrate accessibility into services, including:

- The 'Co-design for All' course, which is a free online programme on how to make use of TRIPS methods to engage persons with disabilities to tackle a broad range of design challenges in any sector
- The Co-design for All toolkit, which provides an overview of the main methods that have been co-created and piloted with seven participating cities in the project
- The Mobility Divide Index (MDI), which is a tool created with and for persons with disabilities to evaluate the accessibility of existing public transport in their cities

Attention to age-related mobility needs was a central part of the project, and their survey on 349 persons living in 28 European countries, revealed investment in public transit planning tools and information resources, and public campaigns to improve social attitudes and transport etiquette towards citizens with all types of disabilities and access need were urgently required.

TRIPS also called for the mandatory participation of disability and accessibility experts in standards development for vehicles, mobility systems, and transport services.

'This was a collaborative project, where co-design was at the heart, and this is how you can do it!', shared Alčiauskaitė:

1. **Set ground rules:** Everyone needs a clear understanding of what co-design is, and how it works
2. **Have a clear goal/work plan:** Know what you want to deliver and when this will happen
3. **Set out responsibilities:** Who is going to do which actions? Make it clear
4. **Make meetings accessible:** This applies to online and in-person events. For example, online events may need to have consideration for those with sensory needs
5. **Ask people!** People with access needs are the ones who know best — reach out and ask them what works for whom
6. **Strive for equal partnership:** Traditionally, people with disability are seen as volunteers or feedback mechanisms. It is key to regard them as equal partners across the process: there are of course project leaders, but a non-hierarchical approach is key
7. **Compensate people for their time:** Meetings and preparation take time and effort, and this needs to be compensated

# KEY TAKEWAYS

1

**Establish criteria and standards**
Currently, there are no universal design standards that define what an accessible charge point looks like. While this is a complex process, given the multiplicity of disability, enforcement and monitoring will not be possible without standards.

2

**One size does not fit all**
Although it might be easier to establish a simple metric of accessible and inclusive recharging infrastructure (in the absence of 100% accessibility), the specific conditions of each city and region must be taken into consideration, as well as the user's needs and the density of the recharging infrastructure already present.

3

**Monitor and enforce**
There is a need for simple and accessible means of reporting and feedback mechanisms.

4

**Strive for meaningful engagement of disabled people**
This should be done from the beginning, and should also involve public authorities, eMSPs, CPOs and all other relevant stakeholders in the e-mobility ecosystem.

5

**Bring in the voices and expertise of disability rights groups**
Such bodies are familiar with working with disabled people and have access to some of the most recent research and understanding of what is needed and can provide key guidance and advice to policymakers.

**Improve avenues for finding recharging infrastructure**

6

Research found that disabled users are not yet able to find information about which charge points are more accessible to them than others, with a lack of support services for them.

**Do not forget Accessible Communication Features**

7

Interaction with a recharging point needs to be accessible to those who are deaf or hard of hearing too. Auditory and tactile communication/ feedback is needed as well as speech functions.

**Remember the accessibility of surrounding facilities**

8

It is not just about an individual's transit from their car to the EV charger; stations should be accessible to other facilities (toilets, shops etc.) at the site, too.

**Make sure to have available funding for purchasing new equipment and retrofitting the current one**

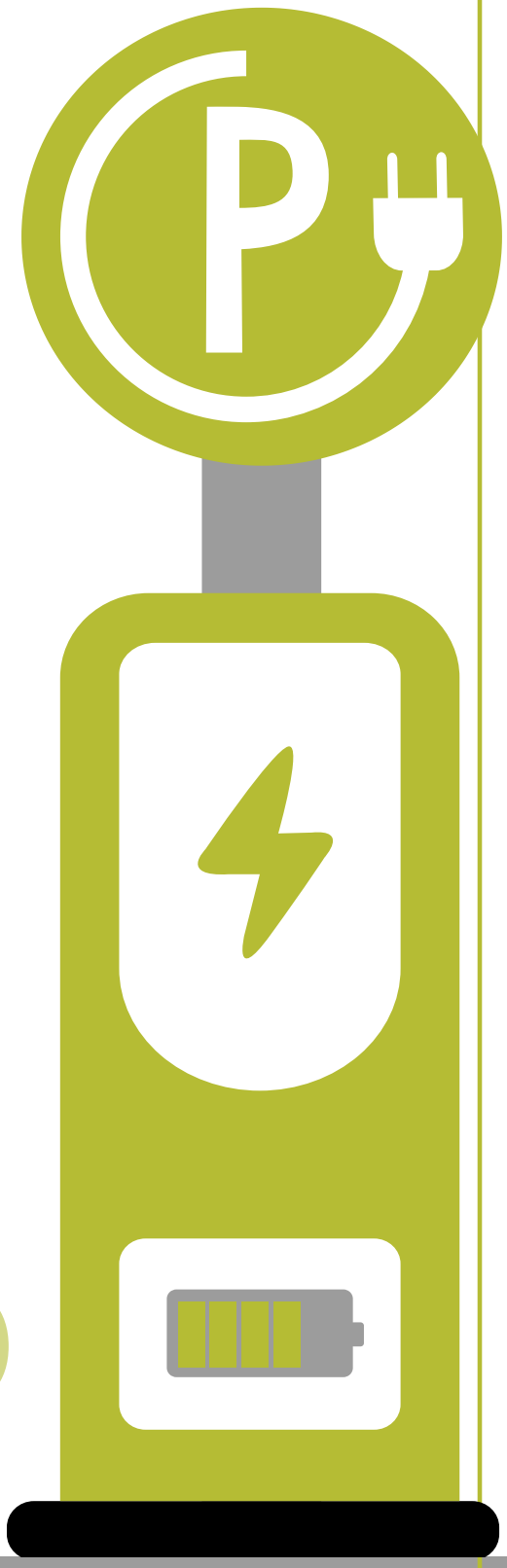
9

Comprehensive progress at a local level requires funding for the changes necessary, including purchasing new equipment and retrofitting the current one. Another determinant issue will be to place as an eligibility prerequisite (to access the funds) the fulfilment of accessibility requirements.

**Get as much data as possible**

10

While there have been initial studies, targeted action needs better data on current and projected needs.



# FIND OUT MORE

- eCharge4Drivers Project D2.2 Accessibility requirements, tariff schemes and incentives, Jaume Roca (B:SM), Jaume Mata (B:SM), Àngel López
- Crowdsourcing parking reports for tidier, safer streets, Harald Sævareid, Nivel AS
- The time is now: Smart charging of electric vehicles, Jaap Burger, Regulatory Assistance Project (RAP)
- INDIMO Digital Mobility Toolbox: Helping stakeholders to make digital mobility inclusive and accessible, Imre Keserü, VUB & Floridea Di Ciommo, cambiaMOs.coop.mad.
- Budgeting mobility for a fairer transformation, Alexandra Gomes, LSE Cities, London School of Economics
- Developing paratransit electrification policies: Case studies analysis, Solène Baffi, CODATU
- The European Accessibility Observatory – White paper | TRIPS (trips-project.eu)
- Views of elderly persons on future mobility- TRIPS_WHITE PAPER_2 (trips-project.eu)
- Industry Roadmap and policy recommendations- D7.1-Industry-Roadmap.pdf (trips-project.eu)
- Electric Vehicle charging infrastructure for people living with disabilities (motability.org.uk)
- Gauging interest for EVs among disabled and elderly drivers (tfl.gov.uk)
- Design Recommendations for Accessible Electric Vehicle Charging Stations, US Access Board
- PAS 1899:2022 Electric vehicles – Accessible charging – Specification, BSI Group
- WISE-ACT Project (Wider Impacts and Scenario Evaluation of Autonomous and Connected Transport) WG2 Thematic Report: Social Challenges

# ABOUT THE JUST TRANSITION WEBINAR SERIES

At the 2021 Annual POLIS Conference in Gothenburg, we launched the Just Transition Agenda.

This webinar series traverses the multifaceted ways affordability, gender-related mobility patterns, age, cognitive capacities (and more), can guide the future of our cities and regions.

From freight to parking, traffic efficiency to active travel, electromobility to safety- and everything in between- we begin to discuss how each sector has its part to play, the challenges ahead, and how cities and regions are treading new ground.

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