

POLIS

CITIES AND REGIONS FOR TRANSPORT INNOVATION



solutions
plus

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Process of setting up an electric vehicle charging infrastructure
Sustainable Transport Forum recommendations for Public Authorities

Content

- Background and scope
- Defining the deployment approach
- The role of local authority
- Organizing tender procedure
- Specific tender requirements

Background and scope

➤ Context and EU legislation

1. (↓ 55% GHG emissions by 2030)
2. Alternative Fuels Infrastructure Regulation
- 3.3M public recharging stations in 2030, 9M in 2035

➤ Sustainable Transport Forum

1. Sub-group on best practices of public authorities

➤ Recommendations handbook



Defining the deployment approach

- **Develop long-term mobility strategies & cooperation**
 1. Develop a long-term mobility vision and strategy with clear goals
 2. Align deployment strategies between different levels of government and between neighboring nations, regions, and cities

- **The building blocks of a suitable recharging network**
 1. Providing flexibility for electric vehicle users
 2. Reducing overall deployment costs and nuisance



Good practice:

MRA-Elektrisch, founded in 2012 to support municipalities in North-Holland, Flevoland and Utrecht for knowledge and experience sharing (templates, demonstrations, joint procurement...). There are now ~10k public charging points via MRA-E!

Monitoring by MRA-e: evdata.nl

Dashboard **July 2021**

Charging infrastructure usage trends



-4.6%
467,260
Number of charging sessions



-6%
24,040
Number of used charging points



+4.2%
85,917
Number of unique users (RFIDs)

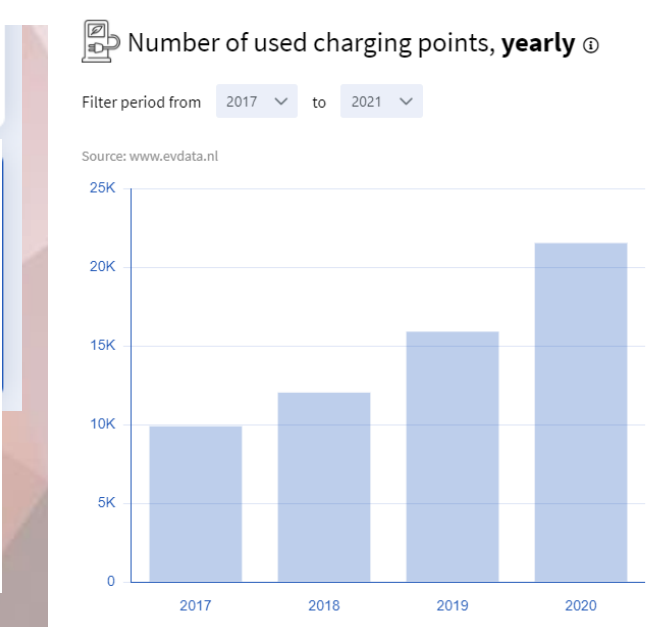
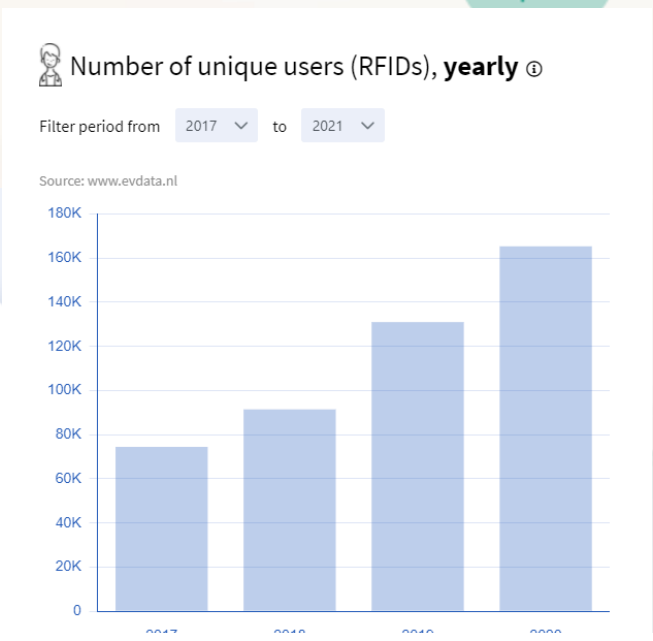
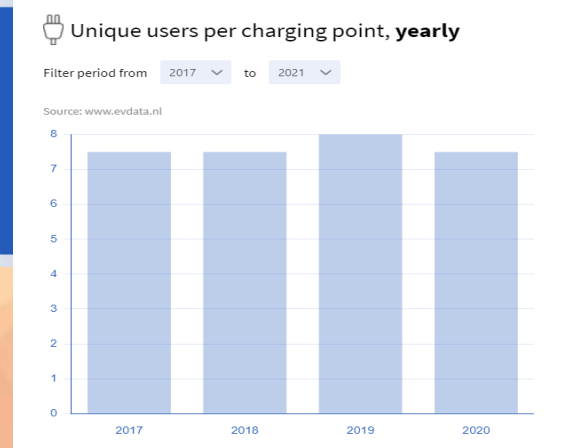


-3.6%
7,985,165
Total kWh charged

Total CO2 savings **6681 tons**

7592 x

One way flight Schiphol Airport - New York

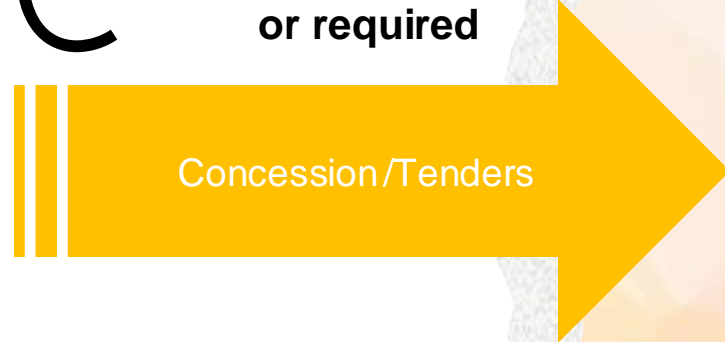


The role of local authority

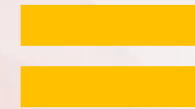


Local Authority / Municipality

€ Zero-emission preferred or required



Outsource



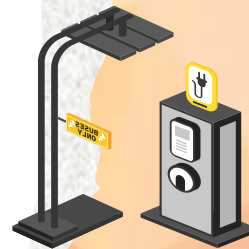
Zero emission Fleet



Innovative



Affordable

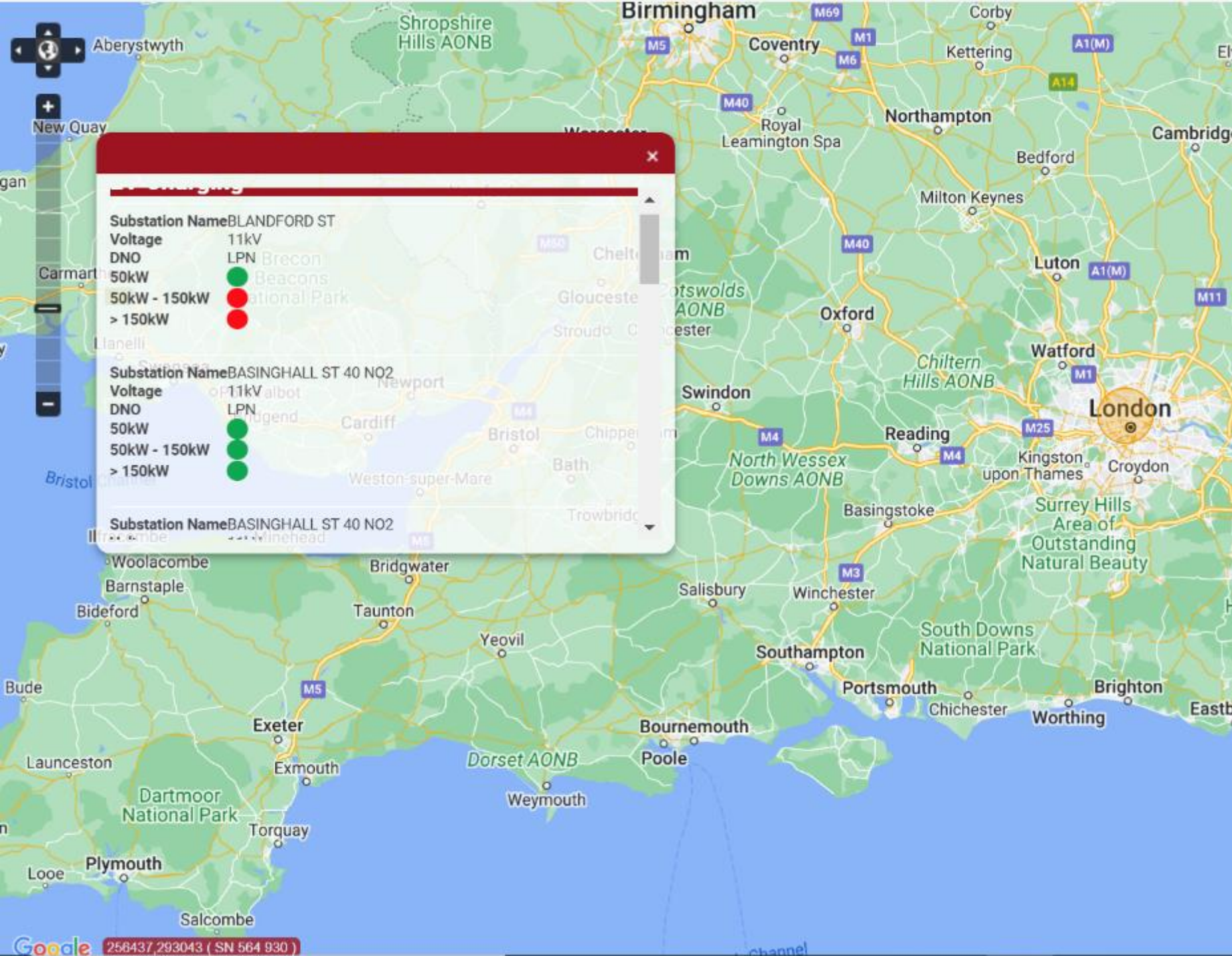


Different charging strategies



High quality





Good practice:

UK Open Power Networks, providing detailed maps of the grid capacity for recharging points (50kW, 100kW, 150kW). Reveals cost-optimal locations that need the least public support. Helps both private users and Public Authorities to make better decisions

Organizing tender procedure

- **Establish roles & cooperation**
 1. Who will develop and own the infrastructure?
 2. Joint procurement
- **Contract models & Policy instruments**
 1. Public service contracting
 2. Joint-venture
 3. Concession
 4. Availability-based
 5. License model
- **Support market competition** (pricing, allocation...)

Shaping the island's charging EV infrastructure



Germany offers \$6.5B in funding for EV charging infrastructure



Good practice:

Malta, Slovakia, and Germany divide concessions into smaller lots to support the entry into the market of new, smaller, market parties, thereby allowing different operators to co-exist and avoiding monopolies from a single CPO



Good practice:

Swiss Federal Roads Office (FEDRO) organised a tender for 100 high power recharging stations along Swiss highways. To avoid ‘cherry picking’ FEDRO made batches of 20, each one with similar commercial attractiveness.

Specific tender requirements

➤ Well-designed and well-positioned recharging points

- 1. Available 24/7, 7 days per week
- 2. Non-discriminatory and accessible to all users
- 3. With dedicated parking
- 4. User-friendly, safe and circular design of the recharging infra



Specific tender requirements

➤ Interoperable infrastructure

- 1. Hardware
- 2. Software

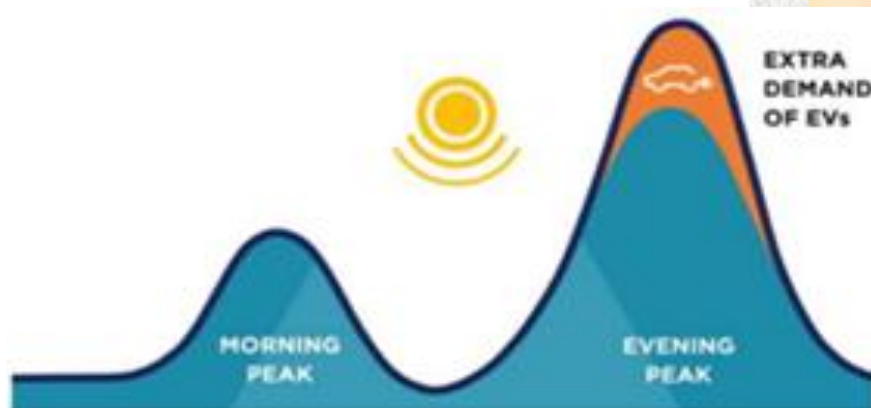


Standard protocols (like OCPP) and contracts between eMSP's and CPO's are needed, to enable (inter)national roaming, allowing users to pay for their session with one payment mean instead of having to register at a lot of different suppliers.

Specific tender requirements

➤ Future-proof infrastructure

1. Higher power levels and more energy-dense batteries
2. Smart charging and vehicle-to-grid (V2G)
3. Inductive or wireless recharging





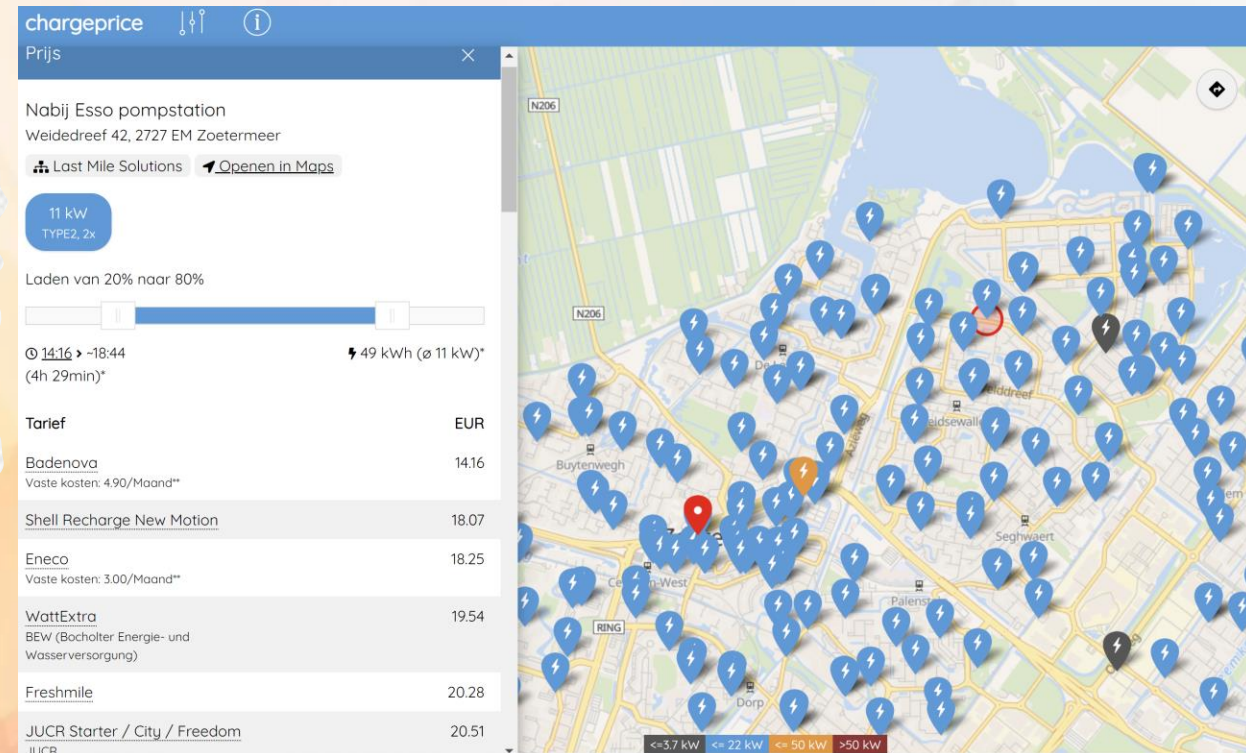
Good practice:

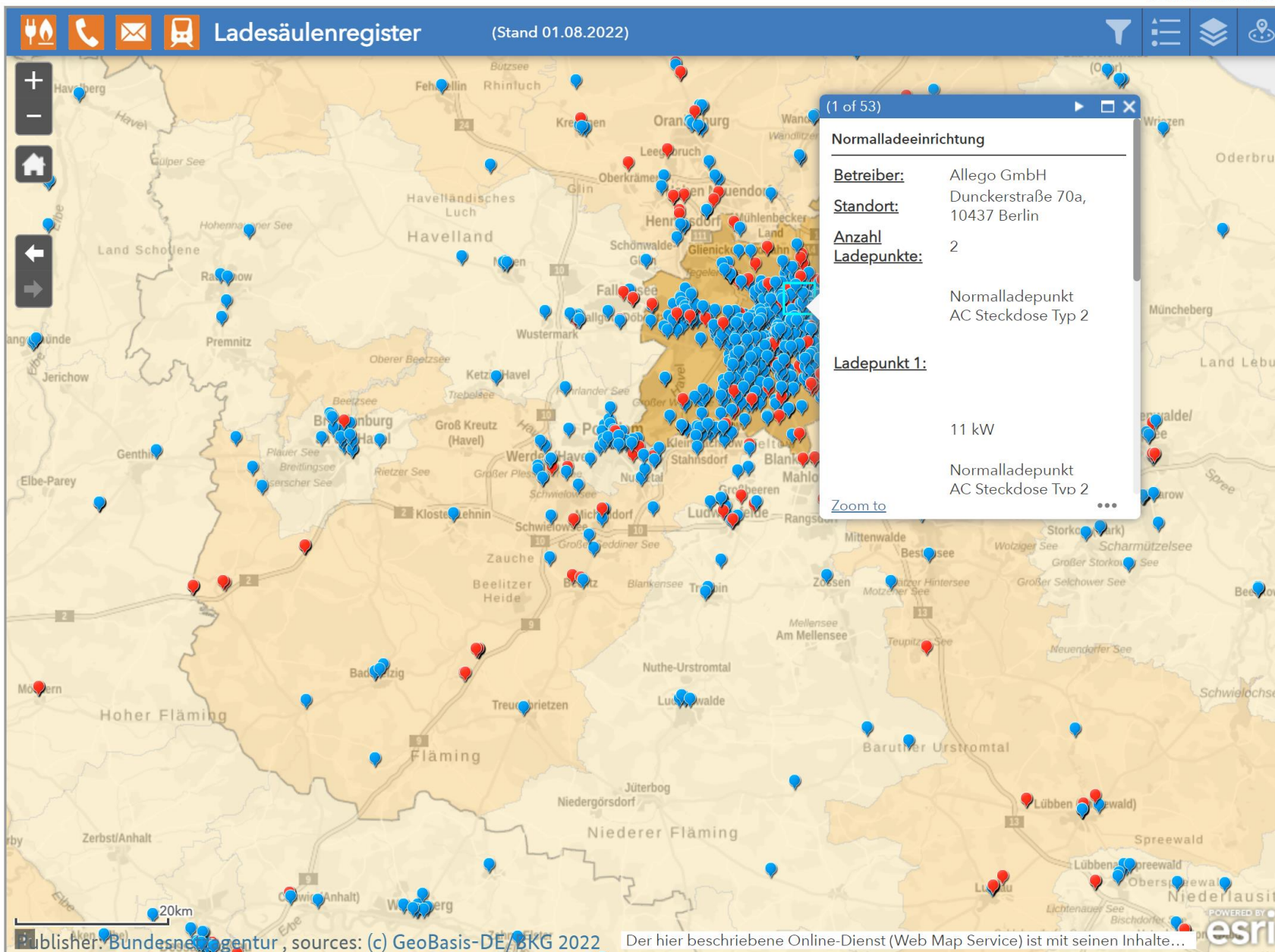
The city of **Oslo** has setup a wireless fast-charging infrastructure for taxis, which can recharge using induction technology of up to 75 kW while waiting for customers. This also facilitates the recharging experience of people with disabilities, which can struggle in terms of accessibility and available space.

Specific tender requirements

➤ User-friendly infrastructure

1. Data requirements about charging points
2. Fair, transparent and easy-to-compare pricing
3. Performance requirements for operators
4. Enforcement mechanisms by Public Authorities
5. Cybersecurity





Good practice:

The city of **Berlin** has set up a CPO independent information platform, operated by the city, with static and dynamic information on recharging Infrastructure in Berlin. This helps users easily find an available recharging point.

In a nutshell...

➤ Checklist of a high-quality recharging infrastructure:

1. Recharging point are well-designed and positioned
2. Infrastructure is interoperable, both in terms of hardware and software
3. Infrastructure is future-proof
4. It is easy to find and use, and users know in advance what they will pay for recharging
5. Infrastructure functions properly, with a high uptime, while errors and bugs are quick resolved
6. It is secure

Thank you!
Gracias!

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