














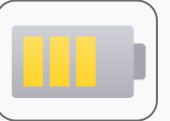




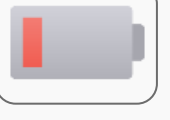









Why and how a Telco provider could enter the e-mobility market

Right to play of telcos

		Electricity Providers	Automotive OEMs	Fuel stations
 Nationwide usable infrastructure for AC				
 Nationwide usable infrastructure for DC				
 Nationwide service structure				
 ICT-infrastructure				
 Customer basis				

- Telcos have a large fleet of vehicles that needs to be electrified
- Telcos have a large number of premises with parking lots
- Fuel stations are often in remote areas of cities and in general don't have medium-high voltage connections
- Utilities in most cases have only regional service structure
- The combination of nationwide locations, usable electricity infrastructure and qualified service personnel is a unique advantage of a Telco operators

Comfort charge

Deutsche Telekom's Charge point operator



01

Deutsche Telekom has **entered the e-mobility market** and found **Comfort Charge GmbH** 2017

02

Comfort Charge built a public charging station network in Germany utilizing **Deutsche Telekom assets** and existing **organizational structures** for cost and time **advantages**

03

Comfort Charge offers E2E services for third party charge point operators (CPO) and e-mobility service provider (EM(S)P) and business customers in general

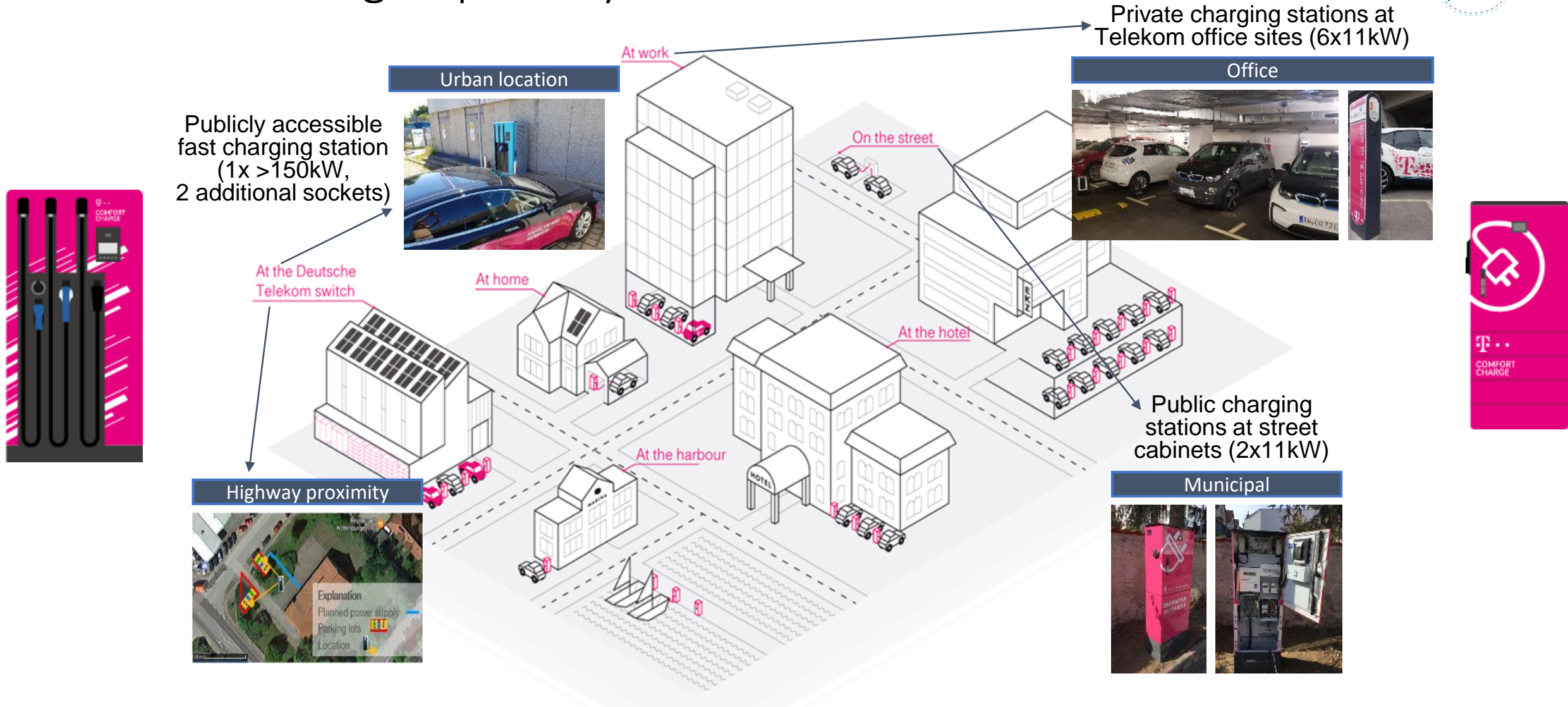
Comfort charge's network focus



Current	Charge time for 100km	Power Kilowatt	Current Volt	Amperage	Comment
AC	7 hours	2,3 kW	230 V	10 A	Household plug
	90min	11 kW	400 V	16 A	Comfort Charge on-street
	45min	22 kW	400 V	32 A	Comfort Charge on-street (one of two used)
DC	20min	50 kW	500 V	100 A	Still standard for most BEV in 2018
	10min	100 kW	500 V	200 A	Comfort Charge CCS without heat monitoring
	8min	120 kW	500 V	240 A	Currently maximum at Tesla Super-Charger
	7min	150 kW	500 V	300 A	Comfort Charge CCS with heat monitoring
	3min	320 kW	920 V	350 A	First model announced for 2019

at on-street infrastructure
 at medium-high voltage transformers
 currently out of focus

Comfort charge's publicly accessible network



Publicly accessible fast charging station (1x >150kW, 2 additional sockets)

Urban location

At work

On the street

At home

At the hotel

At the harbour

Highway proximity

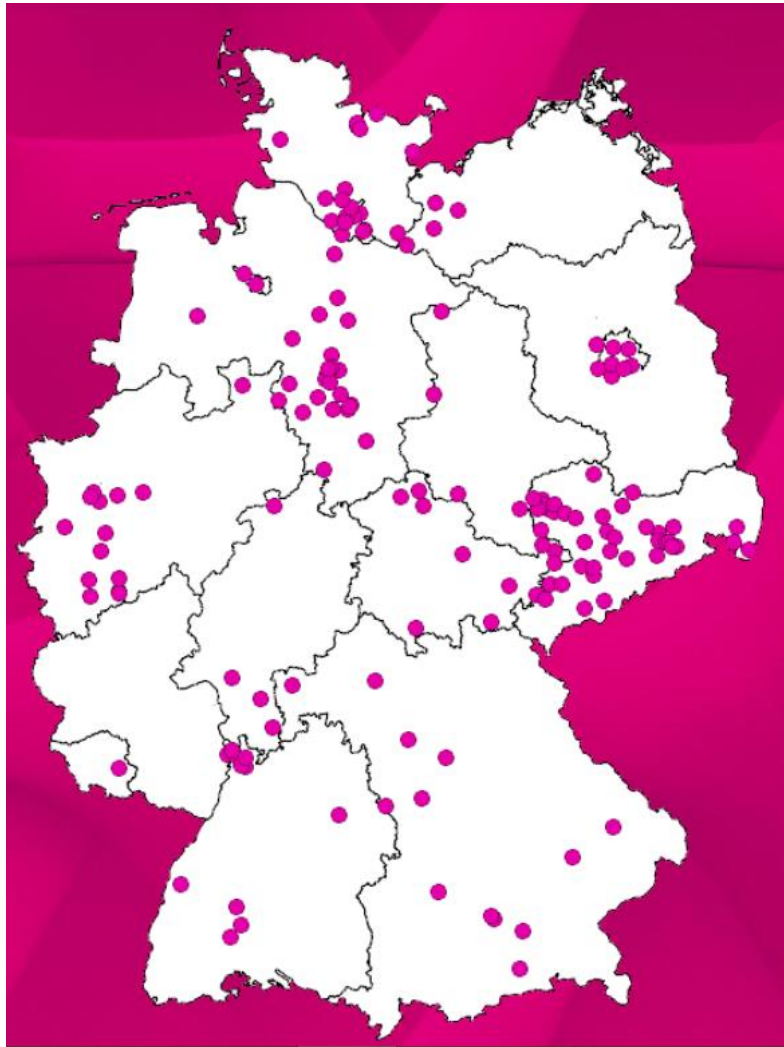
Private charging stations at Telekom office sites (6x11kW)

Office

Public charging stations at street cabinets (2x11kW)

Municipal

Fast charging infrastructure in Germany:



50 new Fast Chargers in 2022!

With more than 160 fast charging stations, Comfort Charge currently operates and runs one of the largest fast charging networks in Germany.

There are currently 10 fast charging stations in Hamburg.

One of them exclusively at Hamburg Airport for the taxi industry.

50 more fast charging stations are planned 2022 in Germany



(Comfort Charge 2022)



Charging solutions for eTaxis and other e-fleets in Hamburg.

Bring all stakeholders together



Polestar is the subsidiary of Volvo Cars. They produce and sell the Polestar 2 and provide this vehicle towards the project.



Taxi entrepreneur from Munich. Own E-Taxi fleet of ten vehicles and five DC charging stations. MTZ provides Know-How towards the project.



Initiation of conveyor/subsidy programs and their implementation for innovative driving solutions in Hamburg.



1) Cooperation Development Associations & Organizations as a partner of the taxi association. 2) Comfort Charge as supplier of DC charging stations. 3) Individual Solutions & Products (ISP) as a provider



Europe's largest provider of taxi fleet management systems.



Jaguar plans on entering in the taxi market with the fully electric I-Pace starting in Hamburg.



Responsible for traffic, approvals in the taxi Industry and trade audit.



Leading taxi intermediary in Hamburg.



Advertising partner from Hamburg. Taxi Ad pays taxi-entrepreneurs 100 € fixed and up to 500 € variable for advertising.



German Taxi Association

Legislation:

Electrification of the eTaxi fleet in Hamburg (June 2020)

Personenbeförderungsgesetz (PBefG)

§ 1a Klimaschutz und Nachhaltigkeit

Bei Anwendung dieses Gesetzes sind die Ziele des Klimaschutzes und der Nachhaltigkeit zu berücksichtigen.

... Bei den städtischen Busunternehmen HOCHBAHN und VHH werden ab 2020 nur noch emissionsfreie Busse angeschafft. In den nächsten Jahren werden alle Busbetriebshöfe für die E-Mobilität aus- und umgebaut. Alle Beschaffungsstellen der Stadt setzen sich ambitionierte Ziele, um den Anteil der E-Autos kontinuierlich und deutlich zu erhöhen.

Mit einem Förderprogramm soll auch Umstellung der Hamburger Taxiflotte auf elektrischen Antrieb unterstützt werden...

Set up project „Zukunftstaxi (eTaxi) Hamburg“

Project Kick-Off: Outreach to
> 2.000 taxi companies

World Economic Zero Emission – City
Dialog with Hamburg

Exclusive E-Taxi Parking at Airport
Hamburg:

Bi-weekly meeting with taxi owners
and fleet operators

New licenses only for
emission free taxis

03.2021

09.2021

09.2021

08.2022

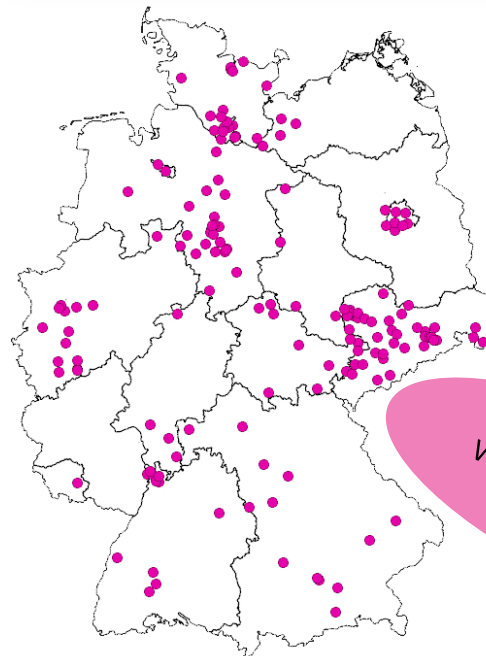
01.2024



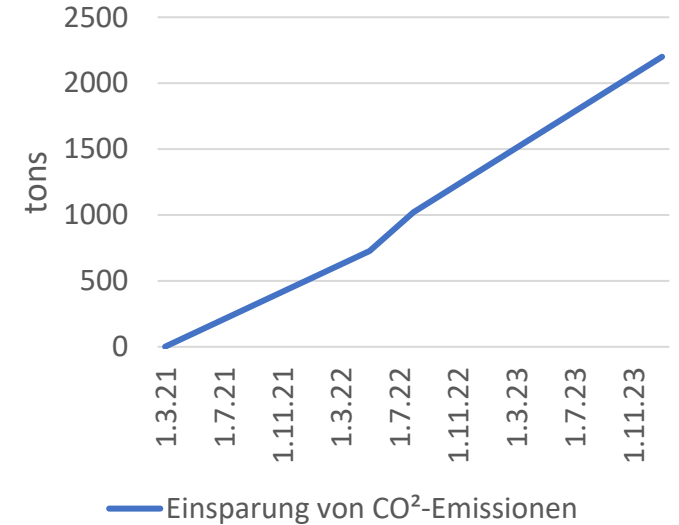
~ 2.800 Taxis in
Hamburg (2 e-taxis)



> 250 e-taxis (09/22)
(468 E-Taxis end of 2023)



ComfortCharge
with 160 charging
stations!

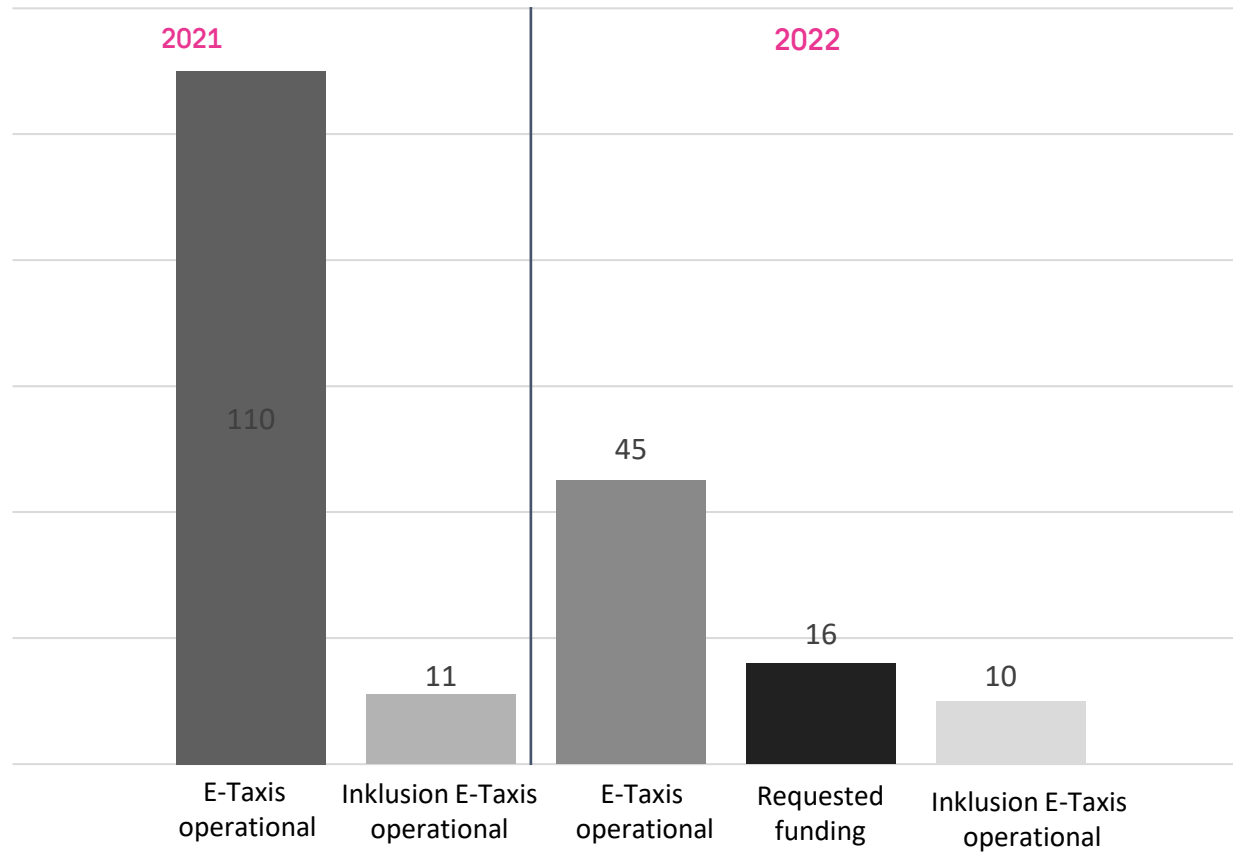


Website
Zukunftstaxi Hamburg:



Funding:

> 3 Mio. € funding from public administration



Status 01.06.2022

Project status (Funding for 408 E-Taxis and 60 E-inklusion taxis granted)

- Funding 2021 for e-Taxis: 10.000 € per taxi, e-inclusion taxi 20.000 € each
- Funding 2022 for e-Taxis: 5000 € per taxi, e-inclusion taxi 20.000 € each
- Funding for exclusive fast charging stations for e-taxis
- 1. Standort Alsterdorfer Markt im Betrieb,
- 2. Standort S-Bhf. Eidelstedt Ende Mai 2022 in Betrieb.

Special tariff for e-taxis and e-fleets in Hamburg:

The charging infrastructure provider Comfort Charge, in cooperation with autoSTROM by EMS, offers an exclusive e-taxi tariff for the taxi trade. All steps for setting up the Comfort Charge charging app are explained with the help of a specially developed charging guide.

	Preis je kWh (netto)	Standzeitzuschlag (netto)
COMFORT CHARGE LADENETZ		
AC	0,36 €/kWh	+ 0,017 €/min ab der 181. Minute
DC	0,45 €/kWh	+ 0,084 €/min ab der 61. Minute
BEVORZUGTE PARTNER		
AC	0,496 €/kWh	+ 0,084 €/min ab der 241. Minuten
DC	0,580 €/kWh	+ 0,084 €/min ab der 61. Minute
SONSTIGE PARTNER		
AC	0,496 €/kWh	+ 0,084 €/min ab Start Ladevorgang
DC	0,664 €/kWh	+ 0,084 €/min ab Start Ladevorgang
<small>Sonstige Partner</small>	<small>has.to.be IONITY GmbH Liikenveirta Oy - Virta Ltd be.storaged GmbH / EWE Go GmbH</small>	

Stand: Juli 2022

Preise sind gültig ab 01.08.2022

Fast-Charging Station (DC)

- 150 kW /DC
- Conectors: AC, CCS, CHAdeMO



Success factors: Priority Parking for e-Taxis

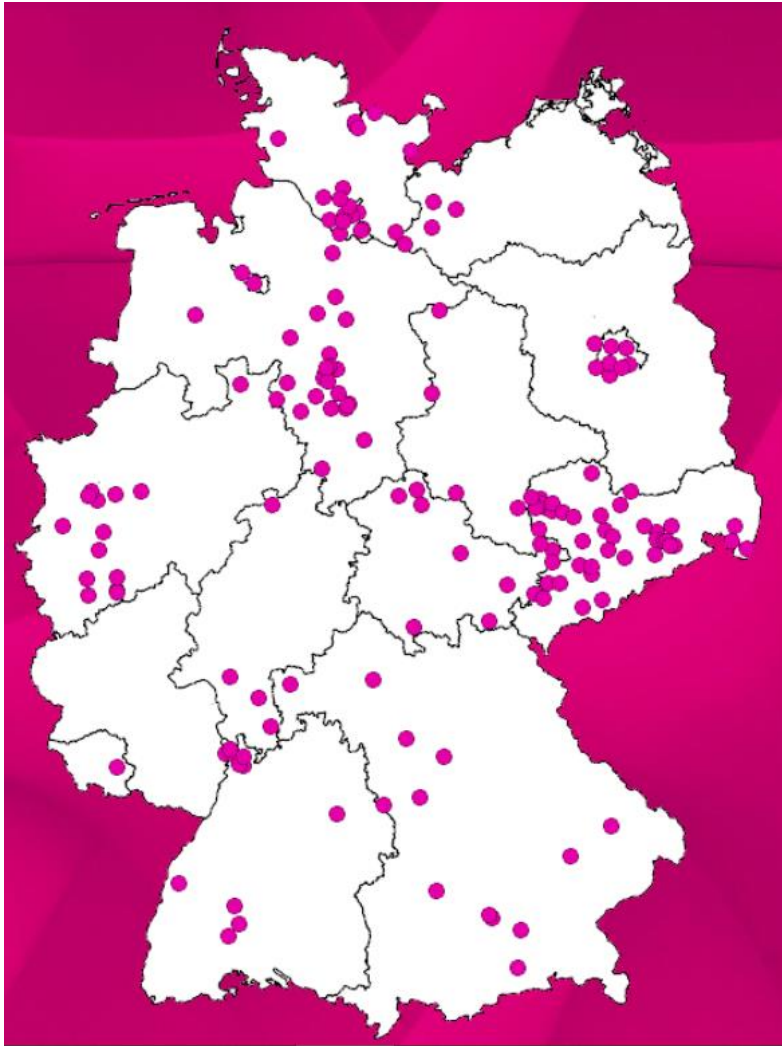


eCharging for other e-fleets: MOIA Ride Sharing Hamburg



MOIA drivers can use the cafeteria of Deutsche Telekom sites while charging.

Telcos assets



(Comfort Charge 2022)



Well known national/international brand Telcos technical service can install, operate and maintain charging stations
 Make use of telcos street cabinets, premises and parking areas in major cities
 Charging of telco fleet cars at premises and on the road.
 Turn-key charging solutions for third party e-fleets
 Public-private partnership to install nationwide charging infrastructure.

A close-up photograph of a person's hands plugging a black charging cable into the charging port of a red car. The background shows a charging station with a red and white color scheme. The station has three charging ports and a digital display. The text 'COMFORT CHARGE' is visible on the station's panel. The overall scene is brightly lit, suggesting an outdoor or well-lit indoor parking area.

THANK YOU



LIFE IS FOR SHARING.