



Electric Vehicle Charging Services in CEE

NRSR // 2.12.2016

Peter Badik
Co-founder



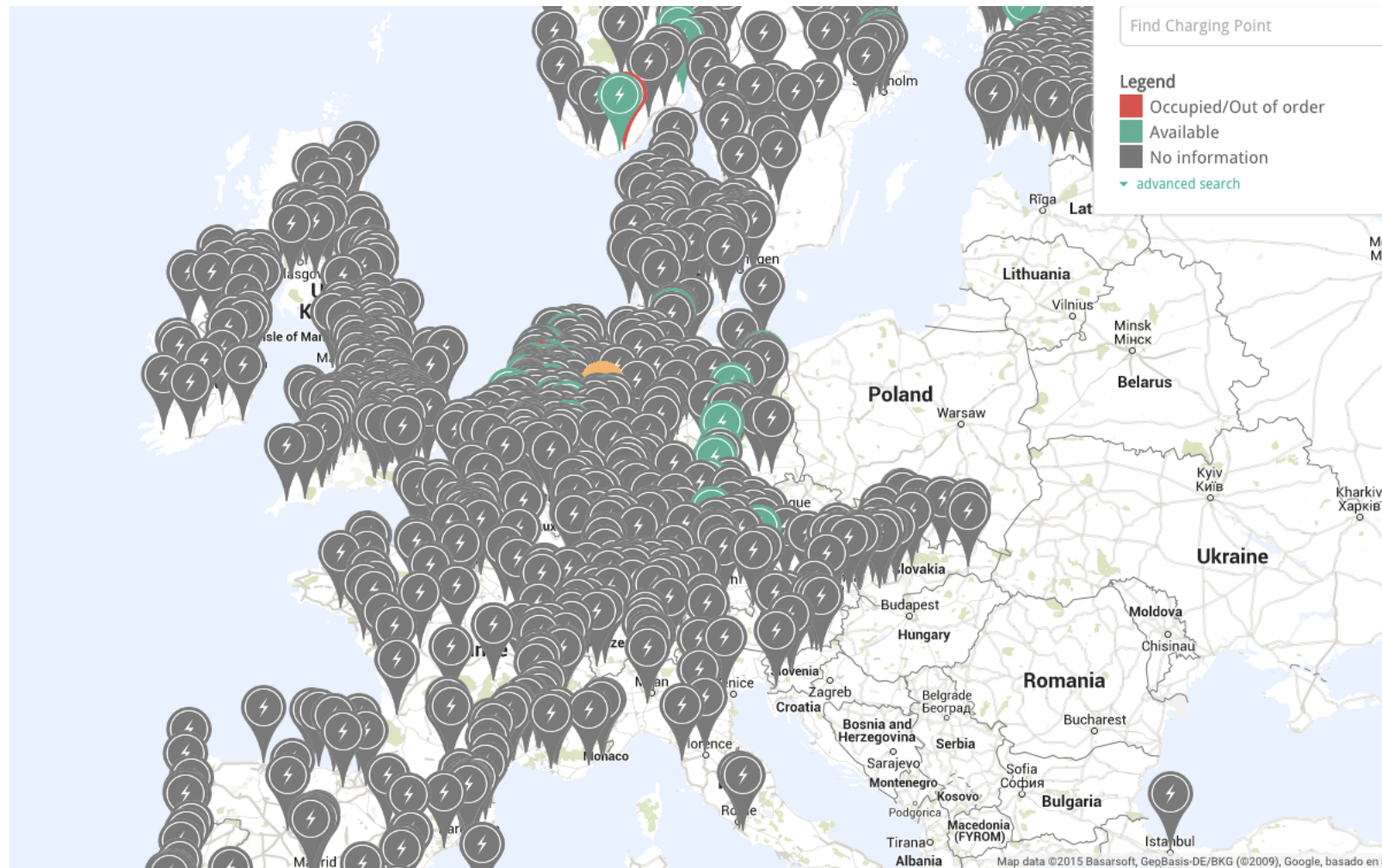
I truly believe 2016 and beyond will be pivotal in terms of how people around the world will get from Point A to Point B.

I believe we'll see more change in the automotive industry in the next five to 10 years than in the past 50.

Game changers like shared mobility, autonomous driving and alternative propulsion are evolving rapidly

Mary Barra
CEO, General Motors Company

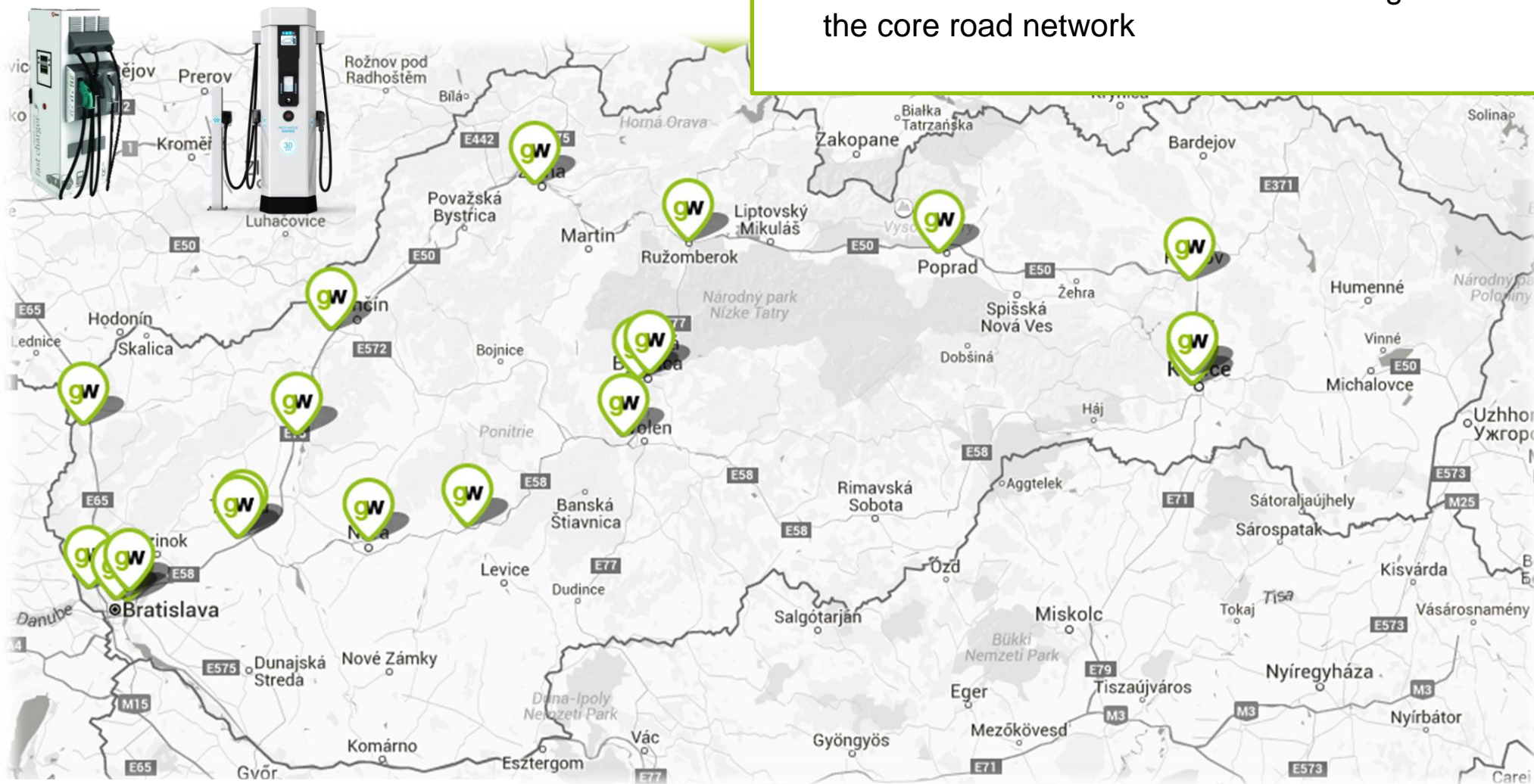
EUROPEAN COVERAGE of ChadeMo & CCS Combo fast-chargers



Source: www.plugsurfing.com; retrieved May 2015

Nationwide fast-chargers network in Slovakia – current status

- ⚡ **20 FAST CHARGERS** operated by GreenWay
- ⚡ Max. distance **85 km** between two chargers on the core road network



Co-financed by the European Union

Trans-European Transport Network (TEN-T)

Nationwide fast-chargers network in Poland



- 🔌 **75 FAST CHARGERS** operated by GreenWay
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GREENWAY PHOTO GALLERY

LOCATIONS SAMPLE

1. Bratislava – AVION Shopping Park



3. Trenčín – Dalitrans Oil Station



2. Bratislava – POLUS City Center



4. Žilina – AUPARK Shopping Center



New Customer Experience – Web control and Mobile access

O2 - SK LTE10:0397 %

Stations

+

-

Map

Refresh

Location

Myjava

Nové Mesto nad Váhom

Bánovce

Brezová pod Bradlom

Piešťany

Topoľčany

Hlohovec

Trnava

Sereď

Senec

Galanta

Šaľa

Dunajská Streda

Nové Zámky

Kolárovo

Hurbanovo

Veľký Meder

Magyaróvár

Komárno

2

NR OC Max
Nitra, OC Max

Leaflet | Data, imagery and map information provided by MapQuest, OpenStreetMap and contributors.

A1 LTE12:5780 %

Stations

+

-

Map

Refresh

Location

Wien, Mariahilferstraße 123

2

0,3 km

Wien, Gaudenzdorfer Gürtel 77

3

1,1 km

Wien, Schönbrunner Straße 222-228

2

1,8 km

Wien, Huttengasse 41 / Spetterbrücke

2

2,4 km

Wien, Türkenstraße 22

2

3,0 km

Wien, Wienerbergstraße 27A

3

3,0 km


Wien, Währinger Gürtel 97

2

3,3 km

Station

Star



Information

Name

Zeleneč (TT) – diaľničné odpočívadlo smer

Address

Zeleneč Diaľnica D1 smer BA

Town

Zeleneč


Phone

+421 911 668 770

Floor

Zeleneč Diaľnica D1 smer BA

Reserve a socket



Socket 1

DC (50,0kW)

0,00 € + 18,00 €/h + 0,00 €/kWh

Reserve

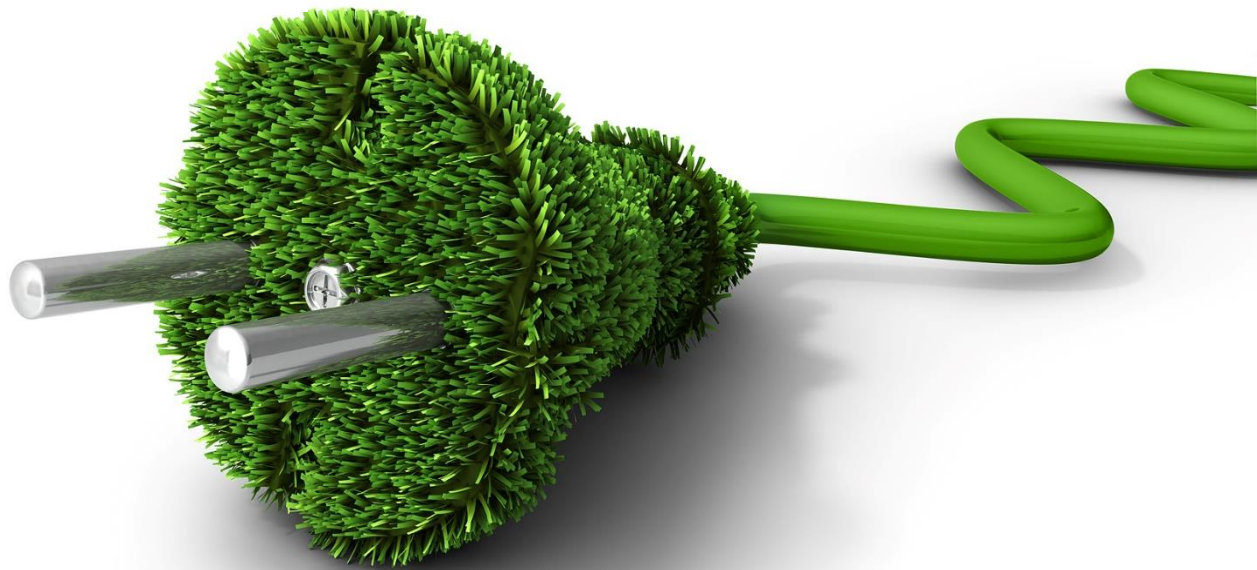
StationsChargingFavoritesAbout

StationsChargingFavoritesAbout

StationsChargingFavoritesAbout

voltia

Deliver Smart . Go Green



CLEAN TRANSPORTATION

“Air pollution poses the single largest environmental health risk in Europe today.”

Air Quality in Europe – 2015 Report
European Environment Agency

“Transport is responsible for a quarter of Europe’s greenhouse gas emissions, and causes of air pollution, noise pollution, and habitat fragmentation. More concretely, it is the only major economic sector in Europe where GHGs have increased since 1990 and also the largest contributor to Nitrogen Oxides emissions....by 2050 passenger transport is projected to grow by more than 50% and freight transportation by 80% compared to 2013 levels.”

Towards Clean and Smart Mobility
European Environment Agency
June 29, 2016



HOW YOU DELIVER MATTERS

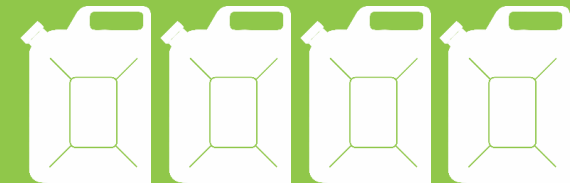


PASSENGER

1600 km monthly &
6l /100 km fuel consumption:



7x



COMMERCIAL

6400 km monthly
10l / 100km fuel consumption:

OUR SOLUTION

EV
DEPLOYMENT



EXPERT DEPLOYMENT
PLANNING

VEHICLE AS A
SERVICE



COMPLETE MOBILITY SERVICE



- Electric vehicle leasing



- Charging solution



- Real time monitoring



- Mobility guarantee



- User support



- and more..

MONTHLY
PLAN
by
voltia

OUR VANS

eNV200

- 2,2 ton city delivery van
- Nissan eNV200
- 80kW / payload 700kg / 4m³
- Fits 2 cargo pallets
- Orientation autonomy 120 km

MAXI

- 2,2 ton city delivery van
- Custom extended Nissan eNV200
- 80kW / payload 600kg / 8m³
- Fits 3 cargo pallets
- Orientation autonomy 100 km

eVAN

- 3,5 ton professional delivery van
- EVC group electric Citroen Jumper
- 150kW / payload 1.600 kg (excl. battery) / up to 17m³
- Multiple battery options
- Orientation autonomy up to 260 km



Role of Politics:

End of denial

Role of Politics: End of denial



Role of Automotive (OEMs):

Create Emotion

Role of Car manufacturers: Create Emotion





Role of Charging Service Providers

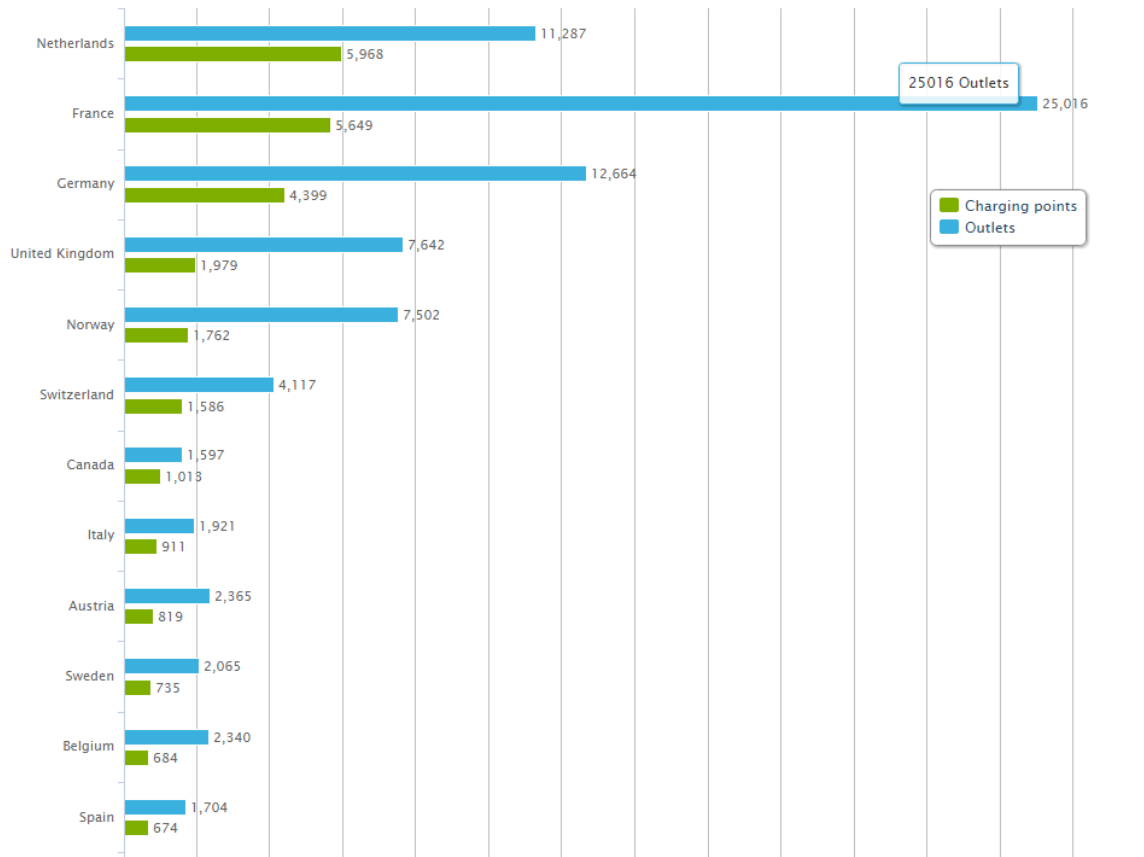
Create C – M – I Network

Connected
Managed
Intelligent

Role of Charging Service Providers: C-M-I Network



Charge points distribution per country



greenway
G O GREEN



-

Year 2020

7 million EVs
on EU roads

----> at 35kWh
avg battery size
and 10kW connection ---->

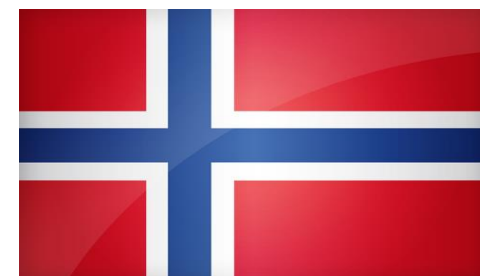
245 GWh storage capacity
70 GW regulation capacity

Source: GreenWay



Compared to assumed hydro storage that could be provided
to Europe **by Norway in 2022:**

20 GW



Source: EWEA

Year 2040

125 million EVs (apx.50%) ----> 60kWh battery size
10kW connection ----> 7.5 TWh storage capacity
1.250 GW regulation capacity



Source: GreenWay

Compared to expected **Total electricity power production:**

5.000 TWh generation
1.500 GW installed power



Source: EWEA

GreenWay Infrastructure s.r.o.



Dohňany 464, 020 51 Dohňany



+421 (0)2 321 17 333



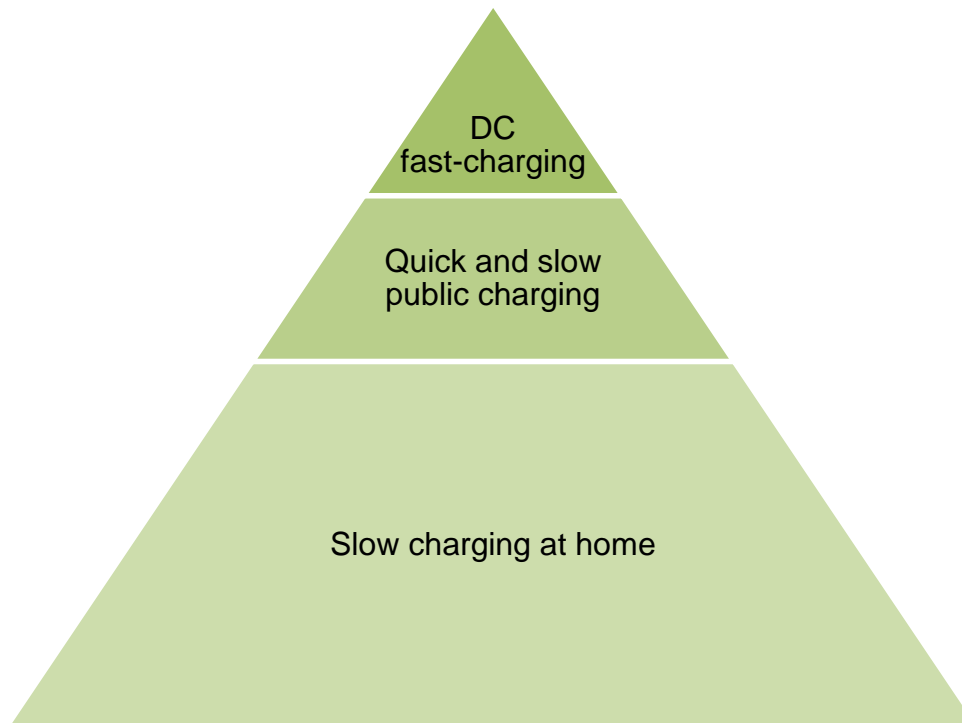
info@greenway.sk



www.greenway.sk

Back-up slides

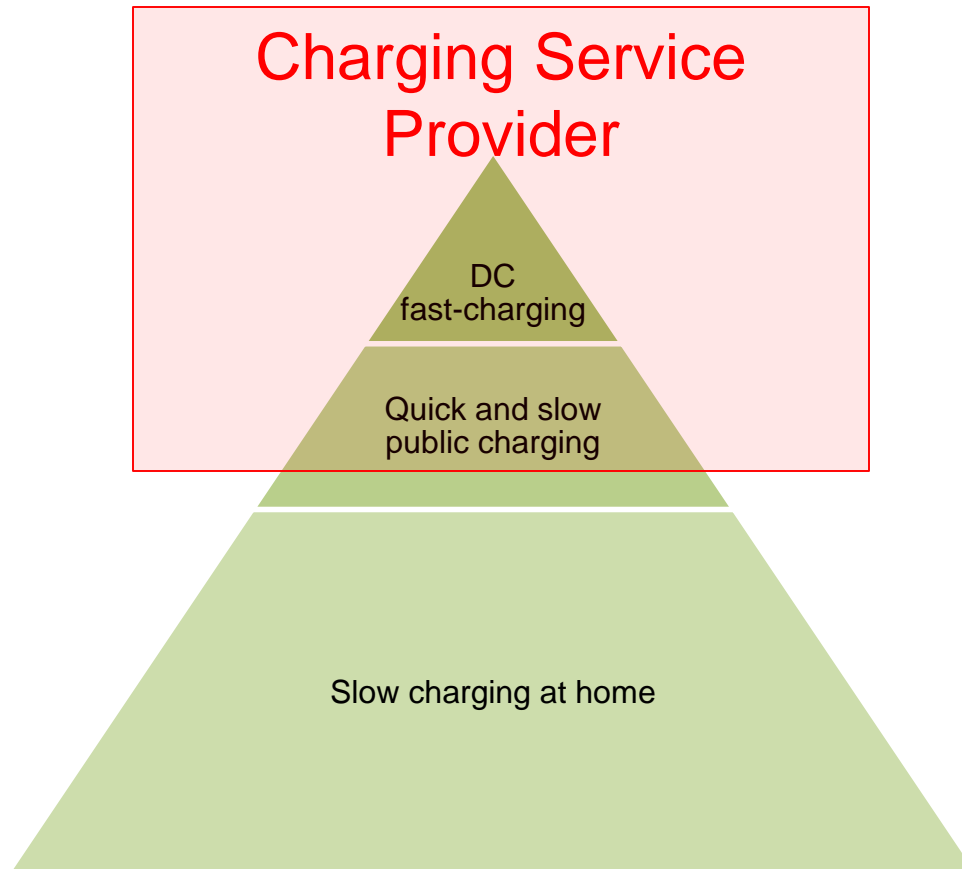
TYPICAL LOCATIONS OF CHARGING INFRASTRUCTURE



Highways, transportation hubs.
~30 min charging time
280 – 300 km/hour of charging

Hotels, restaurants, shopping malls,
business centers, etc.
~ 2 hours or more charging time
40 – 50 km/hour of charging

Single family houses, parking
garages of apartment buildings, etc.
~ 6 hours or more charging time
15 – 20 km/hour of charging



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