CEGC

Central European Green Corridors

Fast Charging Cross Border Infrastructure for Electric Vehicles, Connecting Austria, Slovakia, Slovenia, Germany and Croatia

TEN-T 2013 Annual Call; *2013-EU-92069-S (26040482)*

Zagreb Energy Week 2015-05-14

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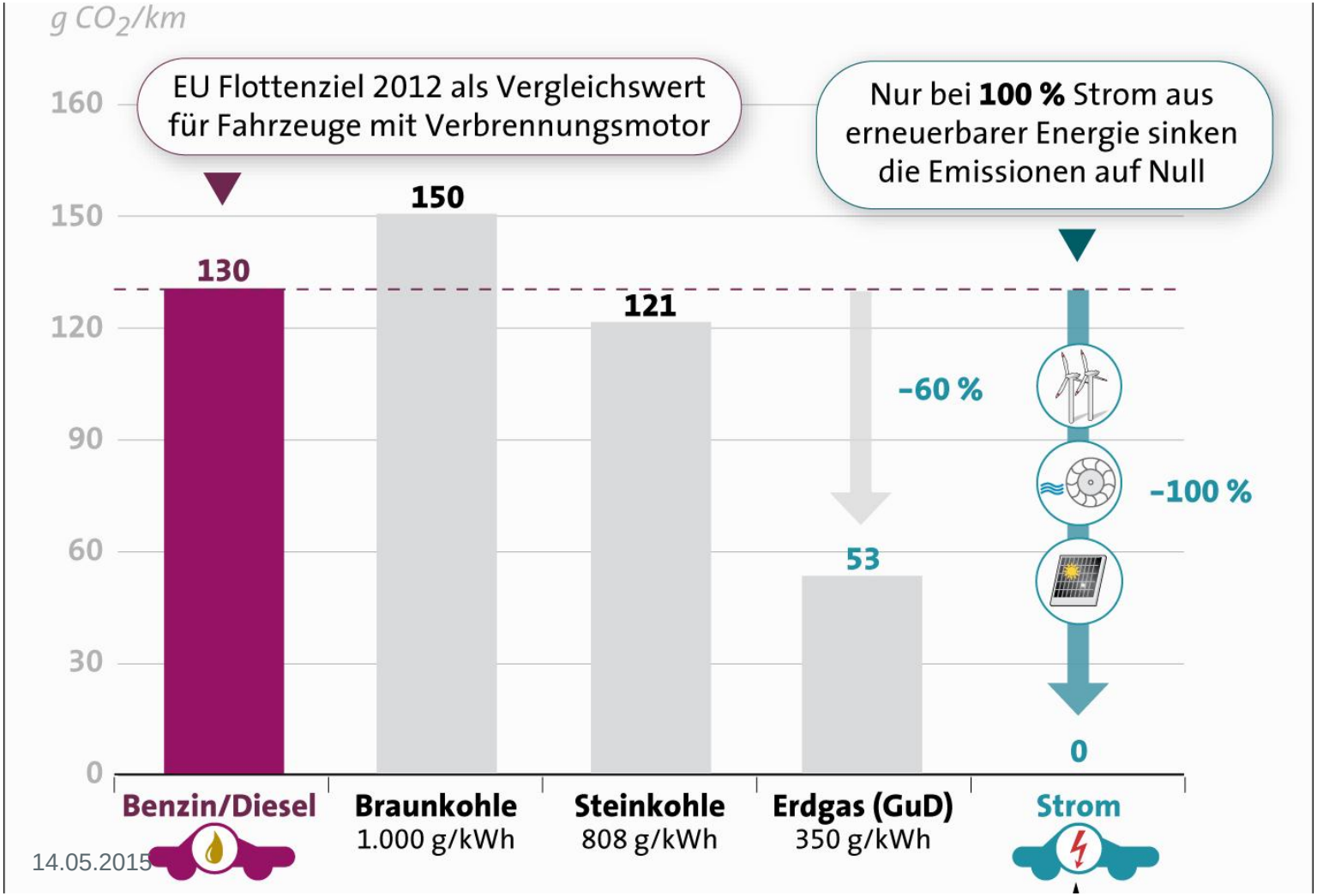
Zero Emission Mobility



Reaching for the moon

Wind Turbine of VERBUND in Austria

- A Wind 2 MW turbine in Austria generates **4.400 MWh** per year
- A modern EV consumes 15 kWh / 100 km, so one wind turbine generates **30 Mio km** (Zagreb-Madrid: 2.200 km; Vienna-Moon: 0,4 Mio. km).
- If one EV drives 10.000 km per year, 3.000 EVs can be fuelled

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One small PV system fuels 3 electric cars

5 kW PV System of VERBUND

- One small PV system with 5 kW in Austria generates **5.000 kWh**
- At a energy consumption of 15 kWh/100 km **3.300 km** can be driven
- At 10.000 km per vehicle per year **3 vehicles** can be fuelled by one PV system

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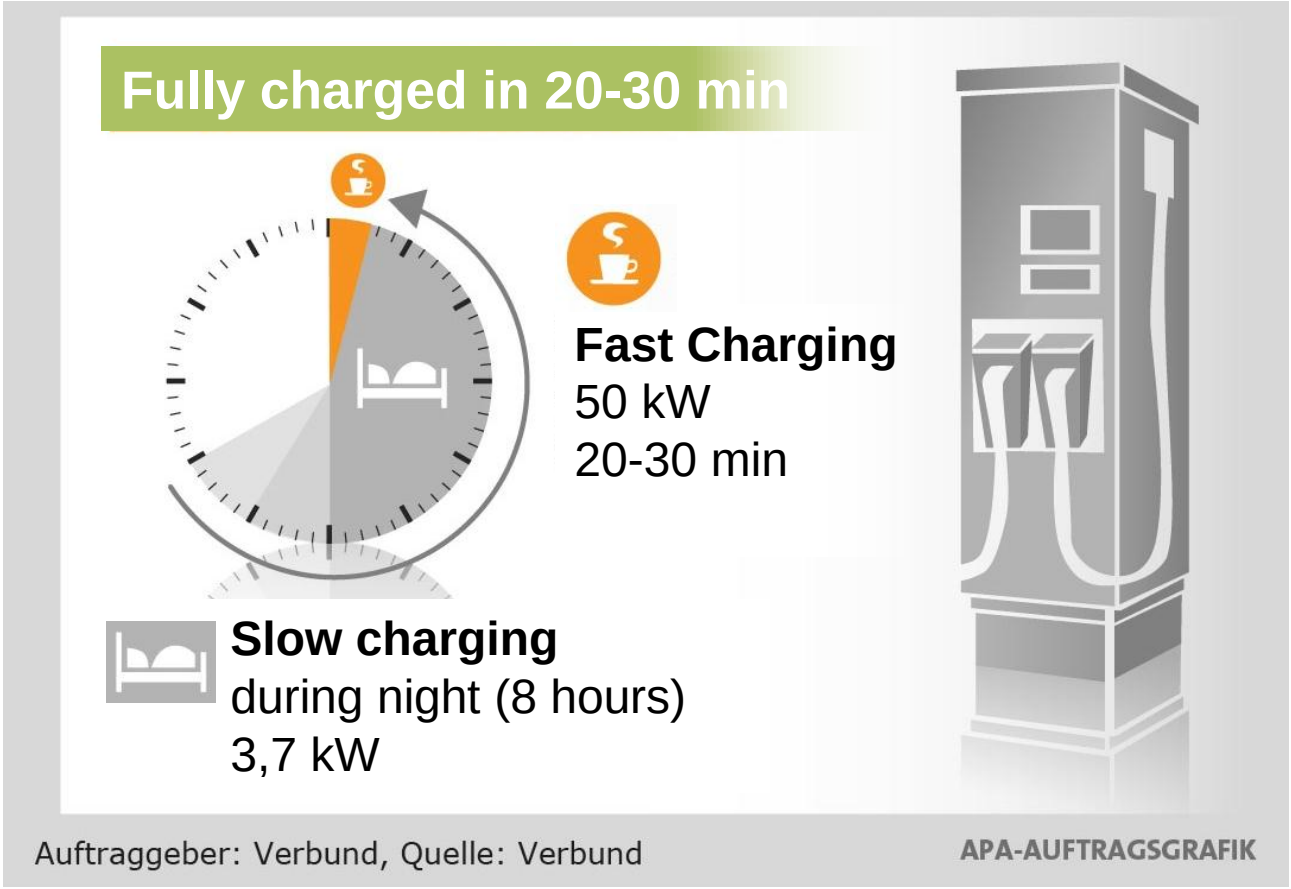
Electric Mobility for Urban Transport

14.05.2015

Fast Charging for Electric Vehicles



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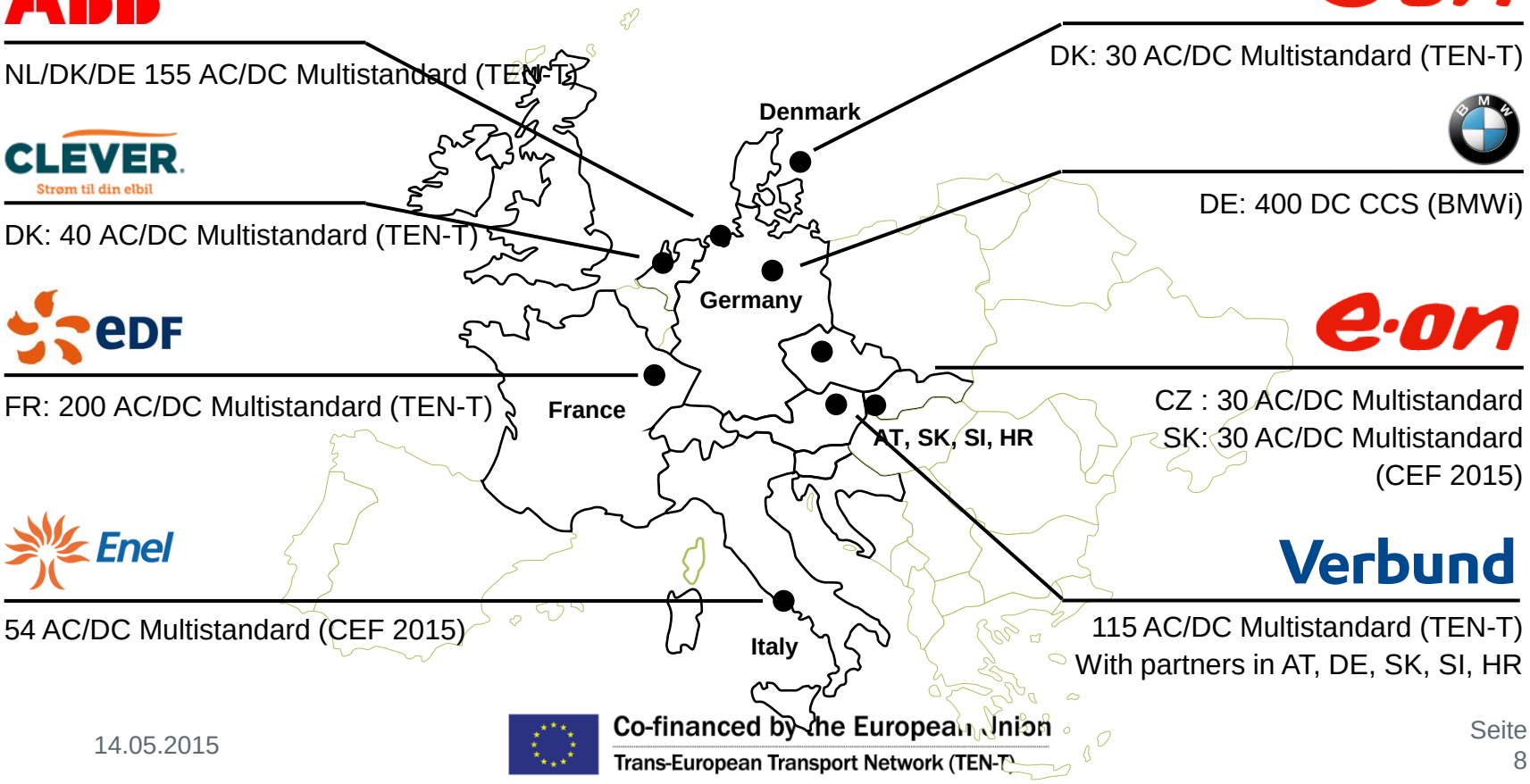
A fast charging network grows in Europe with EU funding



Central European Green Corridors

- **Project aim:** demonstrate a cross-border network of fast charging in CE
  - Installation of 115 high power recharging points (CCS, CHADEMO, AC) 60 in Austria, 26 in Slovenia, 21 in the Slovak Republic, 5 in Germany, 3 in Croatia
  - Integration of IT systems to provide services for customers
  - Studies on Integration into the Energy System, Integration of Customers, Network and Services Planning
- **Project Coordinator:** VERBUND AG
- **EU Member States:** AT, DE, SI, SK, HR, FR
- **Partner (Beneficiaries & Affiliated Entities):** Bayern Innovativ, BMW, Government of Slovenia, GreenWay, Nissan, OMV, Renault, Schrack, Smatrics, VERBUND, Volkswagen, City of Zagreb, ZSE;
- **Budget:** €7.124.000, thereof €3.562.000 funding by TEN-T
- **Project Duration:** 15th March 2014 – 31st December 2015

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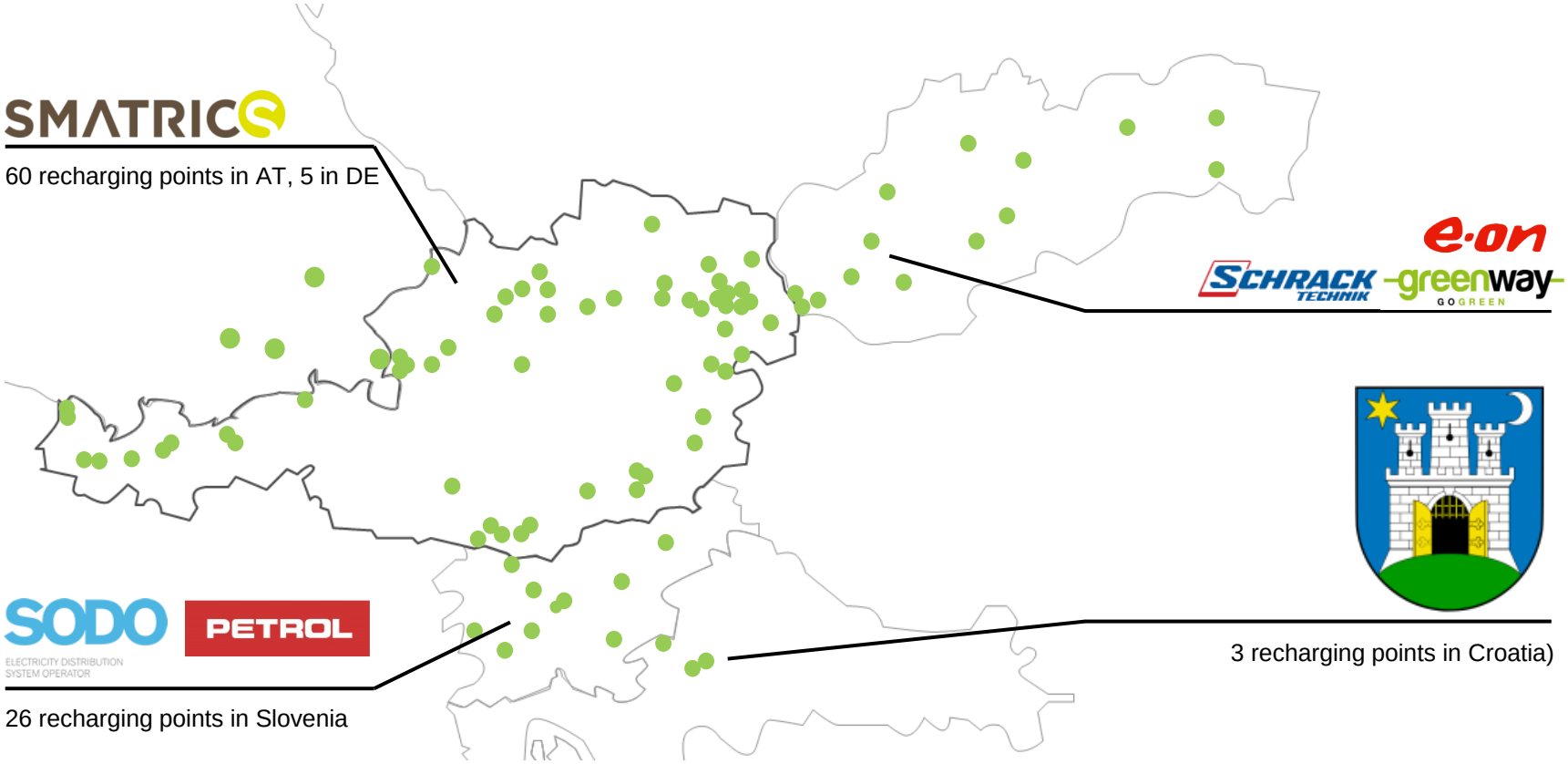
Fast Charging in 5 Member States



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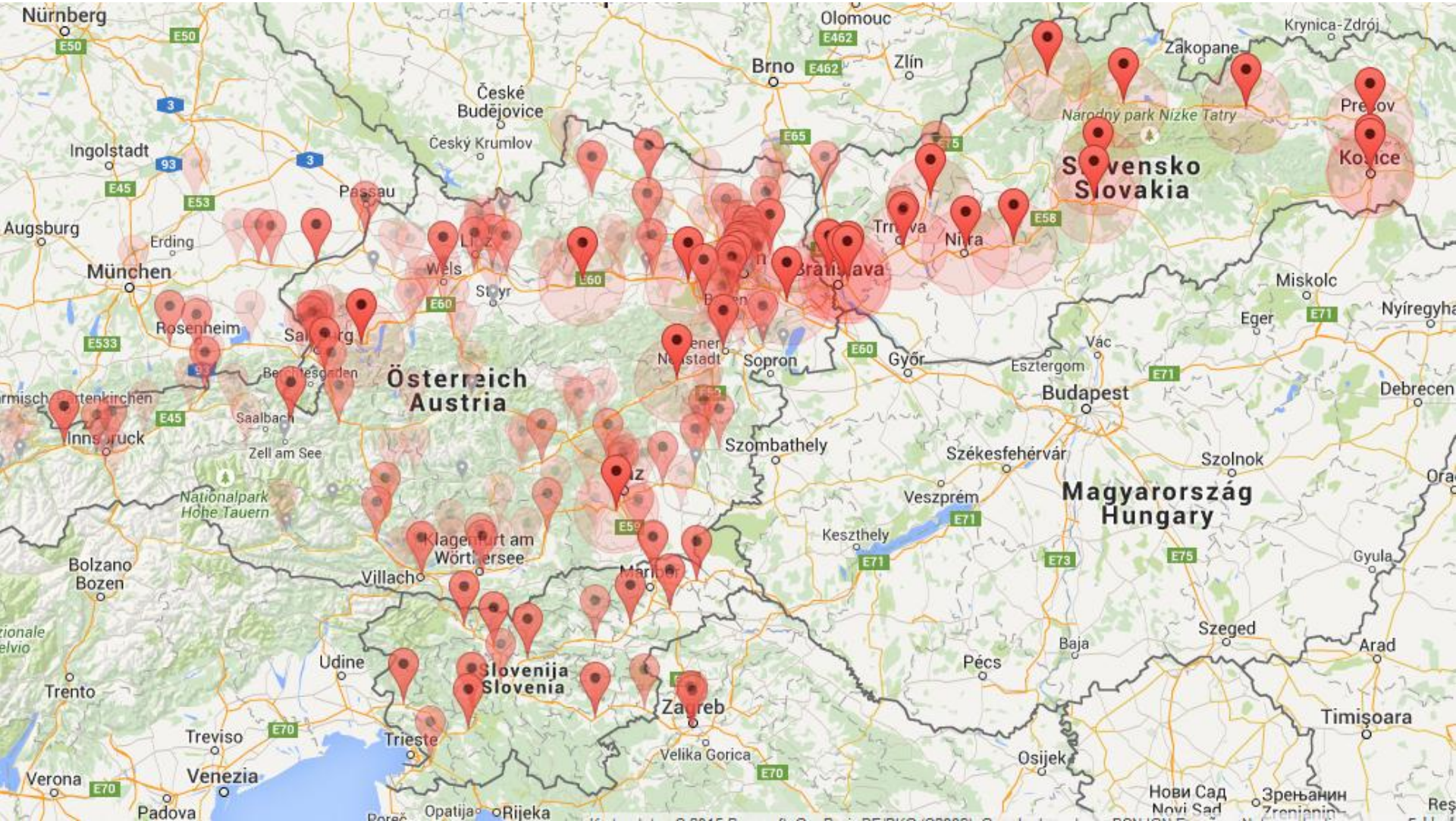

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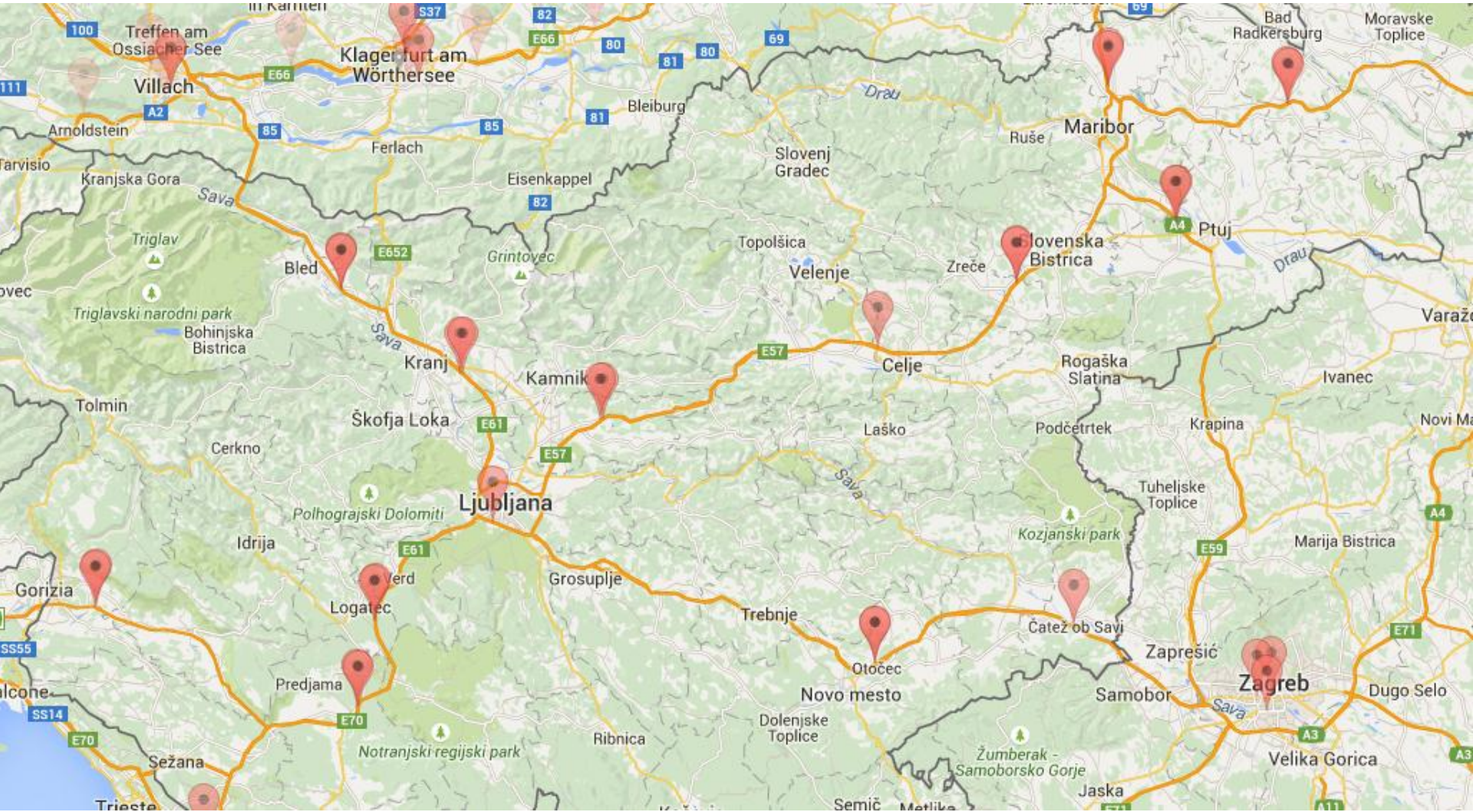
CEGC: Croatia and Slovenia



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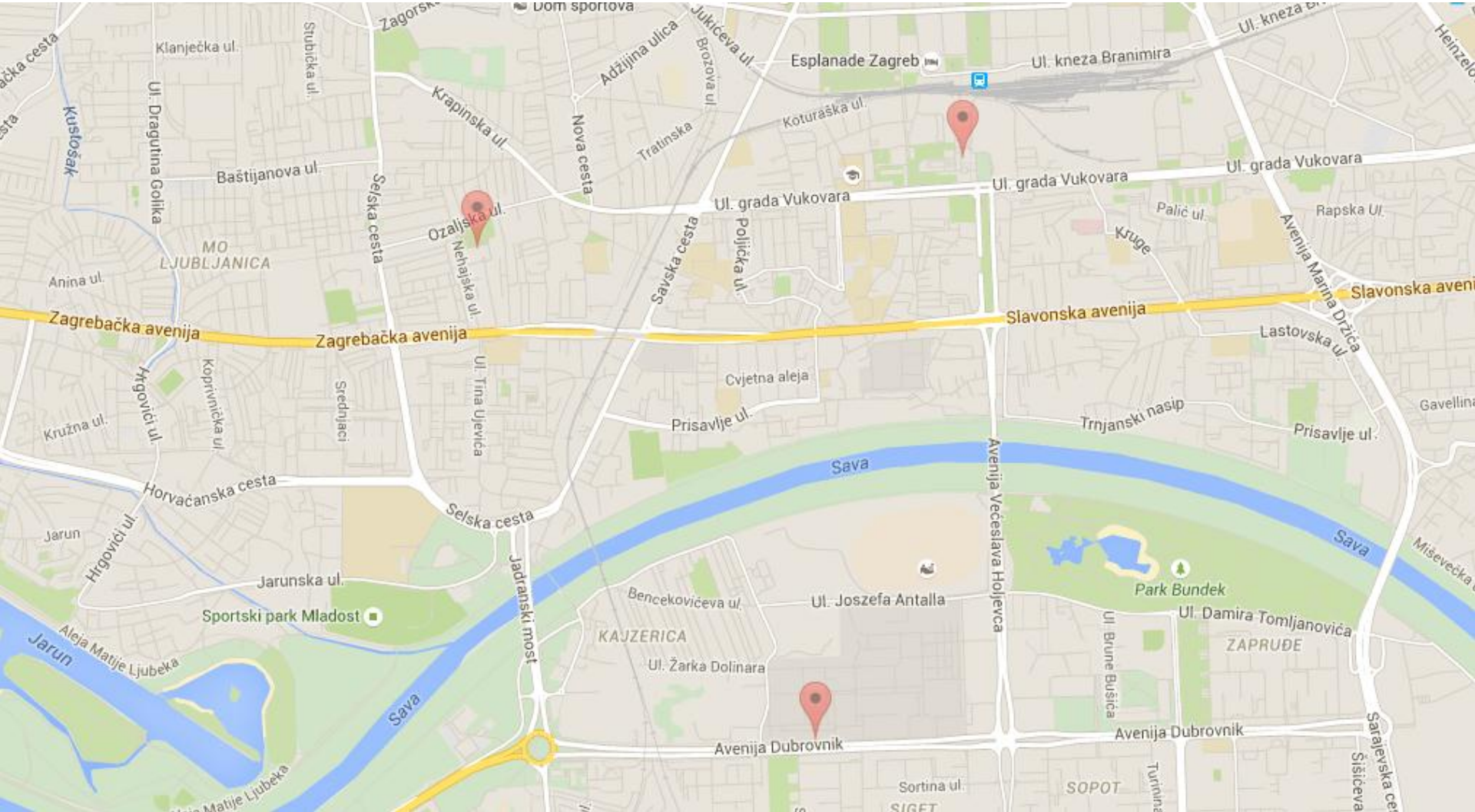
CEGC: Chargers in Zagreb



Multi-Standard Fast Chargers

43 kW AC („Typ 2“)

50 kW DC („CHAdeMO“)

50 kW DC („CCS“)

Multi-Standard Fast Charger
Grid Connection: 50-70 kW

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Integration and Roaming

- All drivers should be able to use the network in all member states
- High quality service should increase confidence and acceptance

- Partners will adopt the Charge Point Operator / E-Mobility Service Provider model
- E-Clearing.net platform will be used as data hub
- All charge point operators will provide static and dynamic information
- All customers of Service Providers will be able to use all charge points

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Challenges

- Different approaches of Regulators and Authorities
  - Different types of regulatory regimes (energy market)
  - Different rules regarding parking, marking, signage …
- Costs are different in the member states
  - Average of 40k per high power recharging point is feasible
  - But: Average does not exist in cross-border multi-partner projects
  - Austria: Grid connection fees ~ 250 € / kW (plus costs for actual grid connection), 20.000 - 25.000 per fast charger
- Different level of development in member states
  - No dedicated authorities for CPO-IDs

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Lessons Learned

- **We are living in Europe!**
  - Multi-Standard
  - Multi-Language
  - Multi-Speed

- **We need …**
  - Standardization on connectors with outlook to higher powers
  - Standardization on signage, marking, parking laws
  - European authority for administration of CPO-ID and EMP-ID
  - Data structures and services for multiple languages
  - Flexibility in co-financed projects

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