

Development of the European Framework for Electromobility

**Green eMotion Regional Conference
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Siemens AG



24 Mio € funded by:



Paving the way to an interoperable electromobility system in Europe

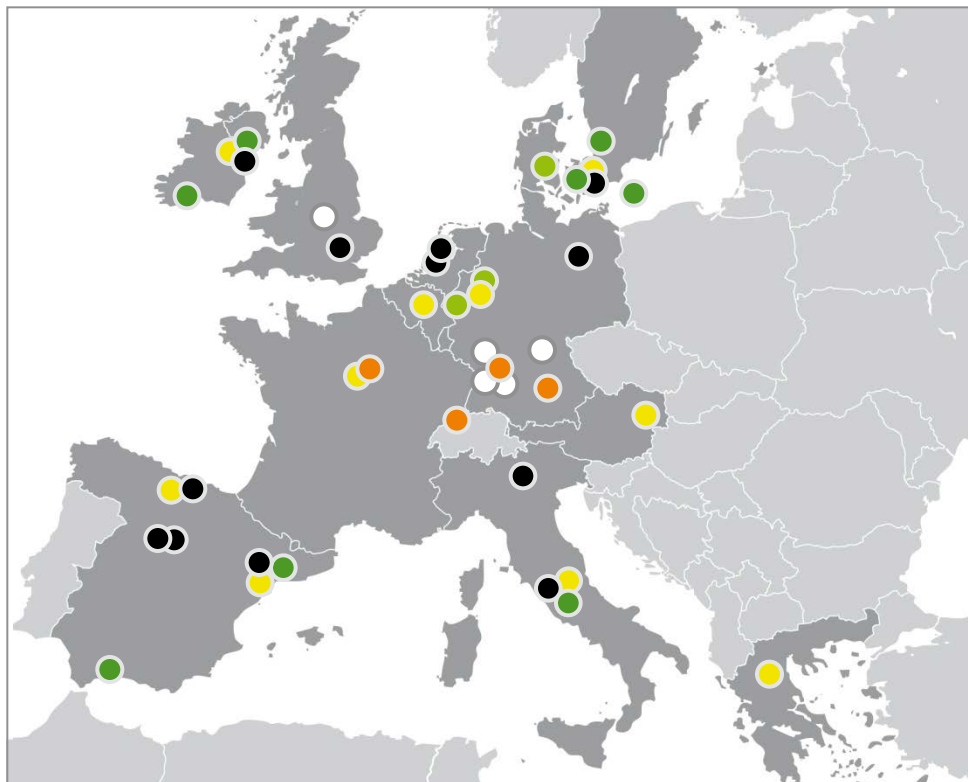


Will I be able to charge my eCar anywhere in Europe?



takes care that you will be e-mobile throughout Europe

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○ **Industries:**

Alstom(UK), Bosch(D), IBM(D), SAP(D),
Siemens (D, Project Coordinator)

● **Utilities:**

Danish Energy Association(DK), EDF(F),
Endesa(ES), Enel(I), ESB(IR), Eurelectric(B),
Iberdrola(ES), RWE(D), PPC(GR),
Verbund(AU)

● **Electric Vehicle Manufacturers:**

BMW(D), Daimler(D), Nissan(H), Renault(F)

● **Municipalities:**

Barcelona(ES), Bornholm(DK),
Copenhagen(DK), Cork(IR), Dublin(IR),
Malaga(ES), Malmö(S), Rome(I)

● **Research Institutions and Universities:**

Cartif(ES), Cidaut(ES), CTL(I), DLR(D),
DTU(DK), ECN(NL), Imperial(UK), IREC(ES),
RSE(I), TCD(IR), Tecnalia(ES), TNO(NL)

● **EV Technology Institutions:**

DTI (DK), FKA(D), TÜV Nord(D)

FP7 call TRANSPORT – 2010 TREN -1

Project Start: March 2011

Duration: 4 years

Funding: 24 Mio €

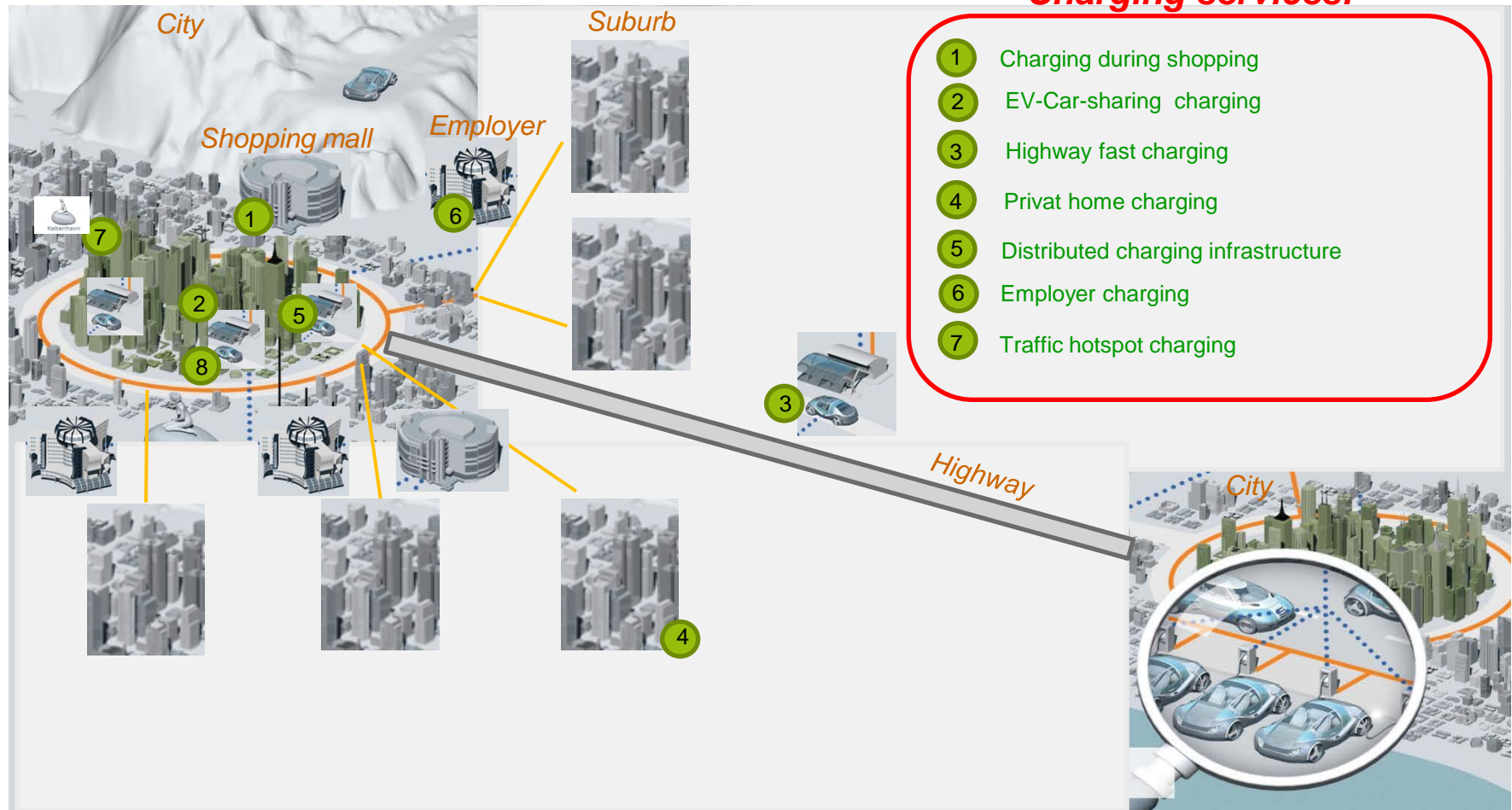
Social acceptance is the clue

- **User acceptance needs to be increased**
Main issues: costs and range →
Incentives and driving experience can help to overcome this obstacles
- **Infrastructure requirements depend on target group**
Availability of the right (target group oriented) charging infrastructure is key
- **Convenience is important**
With roaming capabilities and value added services (e.g. Search) acceptance of EVs will increase
- **Fleets already show good TCO**
TCO of EVs in fleets already competitive today
- **Environmental impact of EVs is mixed**
CO2 balance of an EV better than IEC car, but polluting battery production



How to implement future mobility services

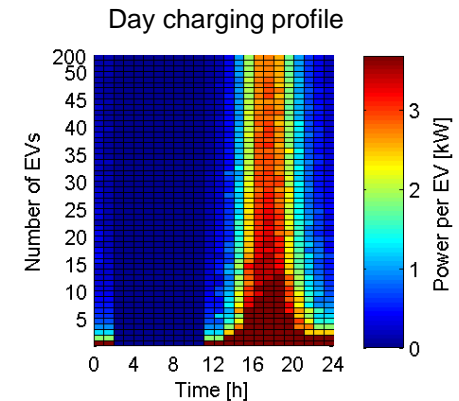




Open issues analysed in Green eMotion

Reduce grid and energy costs

- Recommendation on how to integrate EV charging infrastructure with
 - minimum costs and
 - optimized integration of renewables

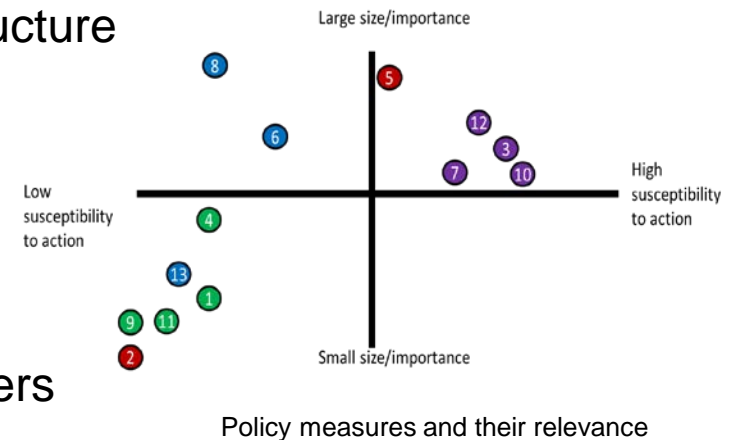


Find viable business cases

- Cost benefit analysis of different business models to identify viable business cases for public infrastructure

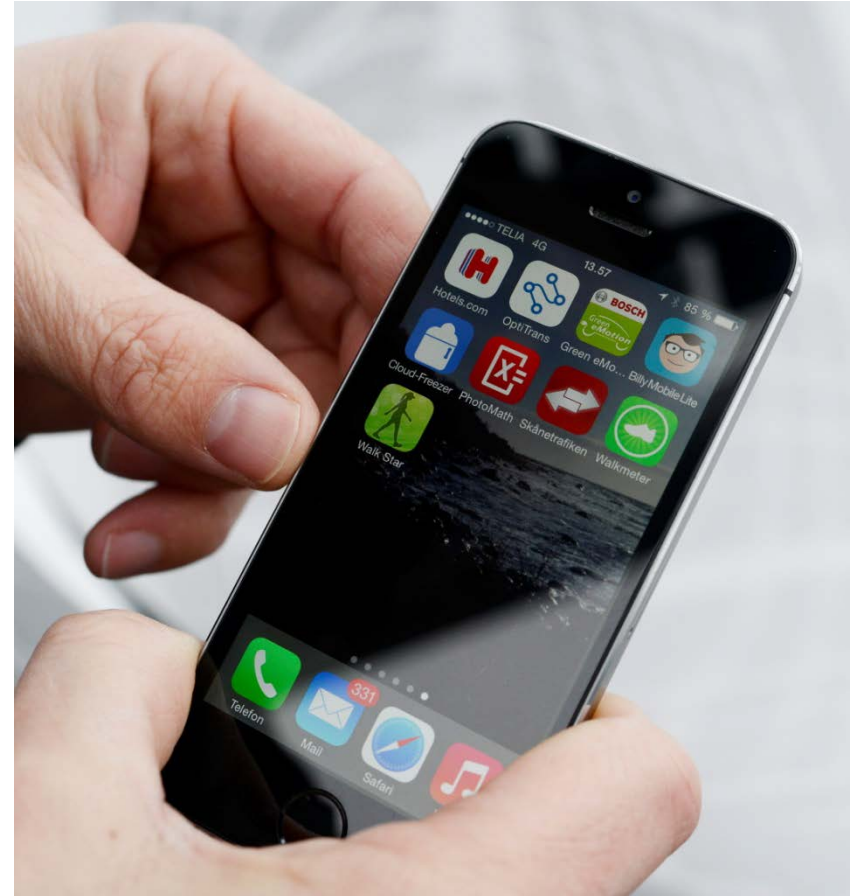
Policies & Regulation

- Recommendations for policy makers and other stakeholders for effective mass market roll-out of EVs in EU
- Guidance document with toolbox for policy makers



Reduce grid and energy costs

- Congestion in low voltage lines from charging EVs can be reduced by smart charging
- Time dependent power tariffs motivate user to accept smart charging
- Optimised location, load management and buffer batteries can help to avoid costs for grid extensions
- Smart charging supports integration of renewable energy sources
- Framework for the energy sector needs to incorporate EVs



Most of the EV drivers prefer to charge their EV at home if and whenever possible. However, if EV drivers can charge at home,

why would they charge in public and pay for it?

- Public charging can only be profitable within such a mid-term business scenario in case of highly frequented EVSEs which are located at points of interest:
 - people are willing to pay for the usage there, and
 - usage time is short enough to allow for several charging events per day.
- For the rest, a viable financial approach has to be found:
 - We need companies installing charging points as “customer incentive”.
 - Car sharing companies might be obliged to open parts of their installation.
 - Public funding necessary.
 - ...

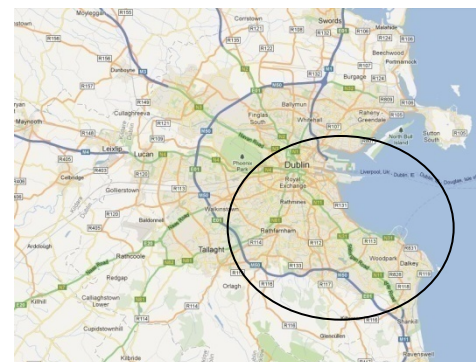


EV's in fleets as example for positive BC

Significant findings from trials in Ireland and Spain

- Ranges suitable for wide variety of urban delivery & fixed route buses.
- High suitability for Taxi's – however would benefit greatly from fast replenish
- Significant savings on running costs – predicted to increase
- Substantial savings in car pool
- EV's a cleaner option in fleets even considering electricity generation profiles
- Wide variety of charge technologies / connector types is still an issue

EV's are a sustainable option for many fleet uses already today



Policies & regulations on national level

- Develop a national vision with EV as part of a sustainable transport solution
- Measures have to be aligned over all administrative and political levels (from the city to the EU).
- Develop incentive programs, like tax reductions or subsidies
 - e.g. for fleet owners, employee charging
- Set up legal framework that enables municipalities to support EVs
 - e.g. exclusive parking, opening fast lanes or zero emission zones
- Set up regulations that facilitate installation of home chargers
 - e.g. EV ready buildings, rules for installation of charging infrastructure in multifamily houses
- Organise national monitoring structures to create insights in the progress of reaching national goals and targets
- Intervene or stimulate with the gained knowledge



Policies & regulations on municipality level

- Make EVs a part of your Sustainable Urban Mobility Plan
- Standardize and optimize work processes
 - like permits and licenses for building activities, parking and charging spots and other electromobility services
- Organize local exchange platforms for stakeholders to
 - develop a joint vision and plan
 - identify barriers, create awareness and engagement
- Increase the demand of chargers by stimulating private initiative
 - by granting subsidies
 - by well-defined market regulation
- Claim public engagement in exchange for granted benefits
 - oblige EV sharing companies to open parts of their installation for private users in return for licenses
- Gain knowledge by monitoring the progress of number of charging poles and EVs



Some impressions from the Rally to Brussels

