Development and Customer acceptance study

Anne-Sophie Fulda EIFER
Patrick Gagnol EDF DME
Magali Pierre EDF R&D
Developement of the infra.
16 CROME public stations in operation (32 charging spots) + 5 installed ones

8 „22 kW“ + 3 „3 kW“ (retrofitted from Kleber)
in Strasbourg
1 „22 kW“ in Sarreguemines (Hambach)
1 „22 kW“ in Thionville
3 „22 kW“ in Forbach (parking)
5 „22 kW“ installed by Colmar (operation pending in Q4 2013)
• **Ability to charge all EVs and PHEVs** (CROME, Kleber, meregioMobil)
  - « mode 3 » connection, 3/22 kW AC
  - « mode 3 » type 3 and type 2 socket-outlets
  - Household E/F (mode 2) socket-outlets

• **Compliancy with the technical requests of the CROME EV makers in order to upgrade mode 3 charging**
  - « mode 3 » over-layers from Renault, PSA, Daimler, Porsche
    e.g. RCD 30 mA, A Type, D curve

• **Access to the 43 kW fast charging stations from « Corridor Energétique Alsace » (Nissan/Cora/EDF)**
  - CHAdeMO DC (Ion/C0, Leaf, ...)
  - AC tiphase (ZOE)
• Unified and simplified access to all the CROME charging stations with contactless ID cards (RFID) in France and Germany
  – Standards: Mifare Desfire EVI/Ultralight/Classic, NFC...
  – Possible use of «transportation network» cards

• Communication between the charging stations and the operator’s IT system
  – Availability
  – State of order, remote maintenance, ...
  – Different standards: OCPP, ...

• Simplified customer-oriented billing/payment
  – Pre-paid card: Kiwhi Pass (France)
  – «Roaming» between cross-border operators
Customer-oriented « smartphone » and « Web » apps
  – Charging spot description
  – Localisation
  – Availability
  – Smart phone apps in Beta testing:
    URL:  http://m.sodetrel.fr/crome/

A Market Place between charging infrastructure operators and mobility service operators
  – No data is stored (broadcast approach)
  – Responsibility and property remains at the data owner
  – Routing and Brokering is controlled by defined agreements
PROGRAMME

2011

- Questionnaire 1 (Fr+All)
- Interventions phase 1 Firm (Fr+All)

2012

- New plugs +22 (Fr Moselle)
- 6 quick stations (Fr) +1 Billing (Fr)
- Charging private prise Legrand (Fr)
- 6 all box (Fr)

2013

- Questionnaire 2 (Fr+All)
- Questionnaire 3 (Fr+All)

2014

- Questionnaire privé? (Fr)
- Interventions phase 2 Private (Fr)

9 public stations (Fr. Kleber)

Application I-phone CROME (Fr)

Charging stations (Fr)
Interviewed are satisfied: no fear, no complain (Moselle+BW)

- A simplicity that is unanimously mentioned.
- A gesture that occurs easily in the companies and administrations...
- Away from the pomp is an advantage (smell and billing)

The infrastructure help the image of the companies (BW)

- One charging station for the client (marketing of the firm with logo - visibility at the entrance – reduced use – numerous reactions from client)
- One charging station for employed at the parking place

Information need (Moselle+BW)

- Most of the interviews doesn’t know where they may by a plug system (BW)
- Legrand’s “household” plugs have been distributed for free but the installation was not always properly done (Moselle)
Charging at home is comfortable

- The charging moments: mostly when a threshold is reached (30-40% of battery left).
- Even if they received no electricity bill for the time, people know that this cost is low.
- Particularity:
  - Smart ED’s users appreciate the charging on domestic sockets (but may charge occasionally on inappropriate plugs).
  - Zoé’s some users installed accelerated charging modes (22 KWh) and they use the application for switching the charging start (for instance during off-peak hours)

The price of the wall box installation was unexpected and seen as high

- Some people would like this cost to be integrated to the car
- Other prefer to select the supplier among a various offer (local suppliers are favored)

All user claimed for a second cable
– Regular users of these public charging points really appreciate it
  • They feel concerned by the rotation of the parking
  • The standards are still seen as a problem
  • Need more information: Is fast charging good for the battery? afraid of different standards and no use of localizations tool

– First „22 kW“ feedback in Strasbourg (April to end October)
  • More than 280 charges per month (> 1980 charges)
  • 182 different users
  • 55 users with over 5 charges, 15 ones over 20 charges and 2 users with more than 100 charges, one over 155
• Charging at home or at the company is easy and well accepted
  • Domestic plug can be unsaved (smart ED),
  • User wish a second cable
  • Some would be apply with a complete offer (wall box and car) other prefers they owner choice for the wall box

• Charging on Public infrastructure: it is the beginning, the demand may increase, users need more information
Thank you for your attention

Anne-Sophie Fulda
fulda@eifer.org
+49 (0)721 - 6105 1454