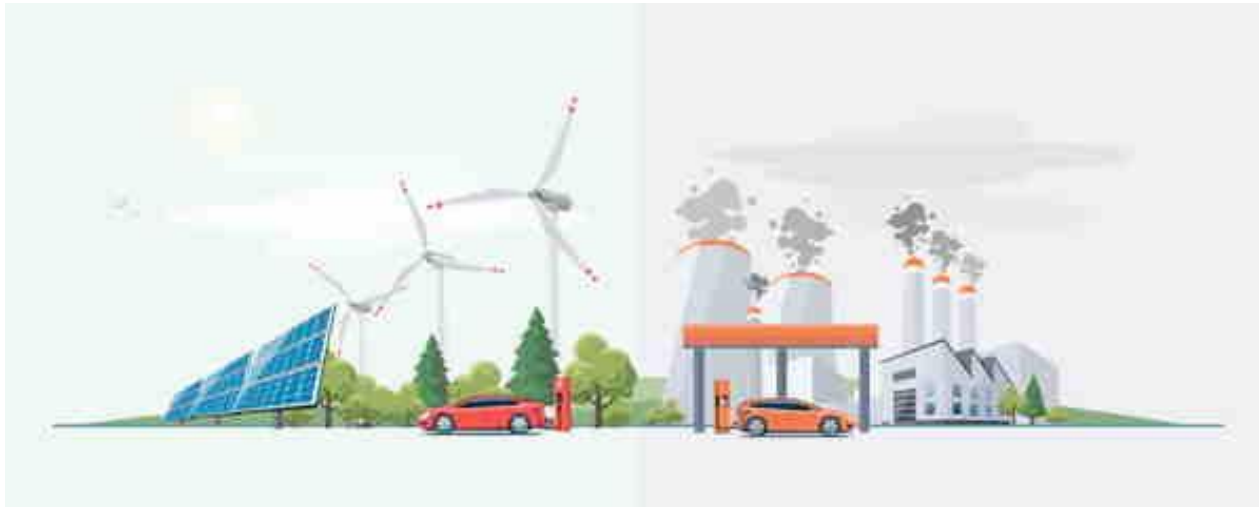


AVERE

The European Association
for Electromobility

Public charging: today's jungle



NEW EV-owners



Jane

- Married with kids
- IT Career with travel obligations
- Loves holidays
- Engaged with hobbies
and lives in country X

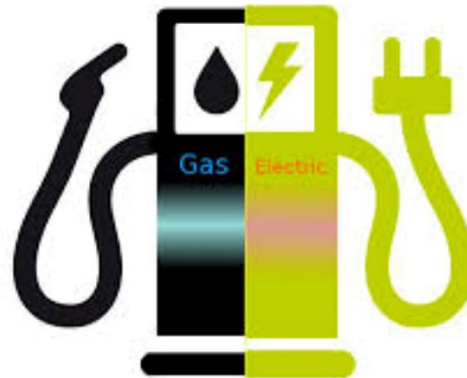


Paul

- Married with grandchildren
- Pension
- Meet mostly friends in town
and lives in country Z



Public charging points



Jane is confused

- Home it takes 6h
- At work 3h
- On the highway only 20min
- ...

Paul wonders the connectors:

- Type1, Type2
- Others?
- ...

Ready to charge



Jane

- Has a charger at work
- Browse around for the best apps and cards
- Jane has now 5 cards:
blue, green, red, yellow and orange



Paul

- Installs a home charger
- Receives a charge card **Red** with the delivery of his new EV



EV-charging



Jane charges her EV

- At home
- At work
- Uses opportunity charging
- Fast charging when necessary
- ...



Paul charges his EV

- At home
- At the supermarket
- ...

EV-charging discovery Paul



Paul is stuck

- Doesn't have a smartphone
- Only has a debit card
- And the GPS of his car
- Paul has no possibility to charge, but has a granny charger?
- With help from the dealer, he finds out and talks for hours with his friend during charging

Paul visits an old friend

- Drives further then usual
- Can't make round trips without recharging

EV-charging discovery Jane



Jane receives her invoices

- Prices per kWh (and session fee)
- Prices per time (and session fee)
- Prices per kWh and time
- Prices per kWh, time (and session fee)
- Fixed prices per session
- ...

Her accountant has questions:

- What is the price
- What is cheap or expensive?
- What is the difference between blue, green, red, yellow and orange ?

EV-charging prices



Jane pays for charging

- At home she has no idea
- At work, there is a system
- Public charging price are unknown
- There is no system



Paul pays for charging

- At home he has no idea
- At the supermarket, it's free
- The received card is activated but has no further info.

EV-charging prices country



Jane's country X has

- Charging operator **x-blue**: 0,45€/min
- Charging operator **x-green**: variable
0.396€/kWh (22kW)
0.11€/min (22kW)
0.264€/kWh (22kW)
- Charging operator **x-red**: variable
0.48€/kWh after 8h adding 0.011€/min
after 20h 0.48€/kWh (3.7kW, 11kW)
- Etc until Charging operator **x-orange**



Paul's country Z has

- Charging operator **z-blue**: 0,55€/min
- Charging operator **z-green**: variable
2€/session + 0.80€/kWh
- Charging operator **z-red**: variable
0.28€/session + 0.10€/min + 0.28€/kWh
- Etc until Charging operator **z-range**

* Operators are not necessary the same in the countries

Travelling abroad



Jane is planning to travel to the country of Paul

- Card **blue** doesn't work abroad
- Card **red** has the same tariffs as always
- Card **green** charges extra's for the use abroad
- Card **yellow** charges the same as Paul would pay
- Card **orange** doesn't work without any explanation

Jane's does research about the prices:

- Operator **blue** has a display and offers also ad-hoc payment with wireless bank cards.
- Operator **red** has a sticker with the tariffs.
- Operator **green** gives the information by the app
- Operator **yellow** indicate a QR-code
- Operator **orange** has a helpdesk available between 8h and 20h without any explanation

Travelling abroad



Paul does a road trip in several countries but has anxiety

- Doesn't find the price he will pay
- Relies on his car's GPS navigation
- Has only a debit card and doesn't have a smart phone
- Is interested in more operators but :
operator **blue** and **green** only work with apps
operator **orange** and **red** only accept credit card

Transparency



Customers point of view

Tarification:

- Prices displayed?
- Or prices available with one access point?
- Transparency: price per kWh?
(optional extra cost when not charging)
- Significant choice of payment options?
(ad hoc payment)

Roaming:

- Seamless travelling in Europe?
- Parallel roaming options as with mobile phones?



Paul & Jane are only two profiles of so many...

Improvement areas

Put the consumer at the heart of the charging system:

- **Transparent and non-discriminatory pricing**
- **Consumer Assistant**
- **Quality information**
- **Ease of payment**

