

Activities of TUT related to electric transportation and power systems

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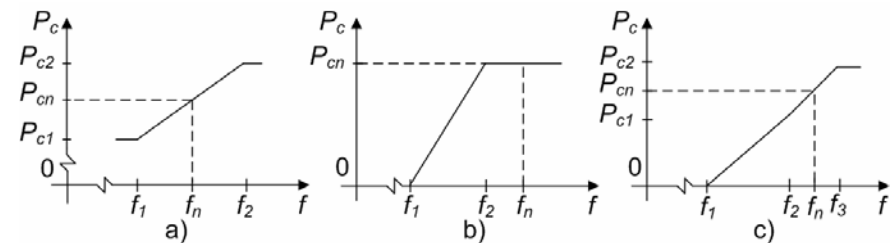
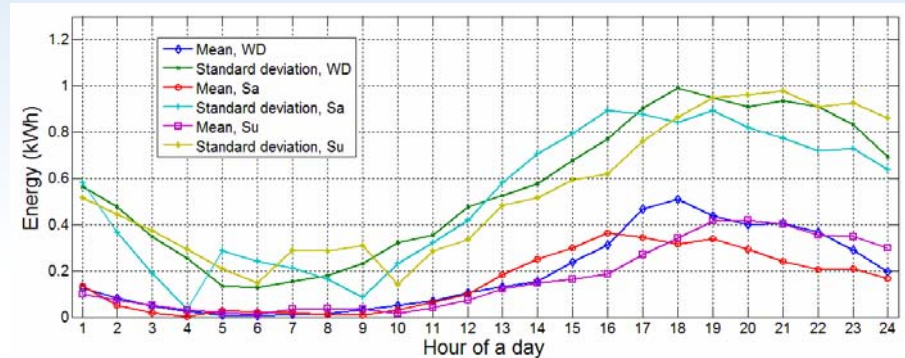
Areas of focus

1. Impacts of plug-in vehicles on electricity networks/power system
2. Interface between plug-in vehicles and power system
3. Impact on the functions of electricity markets



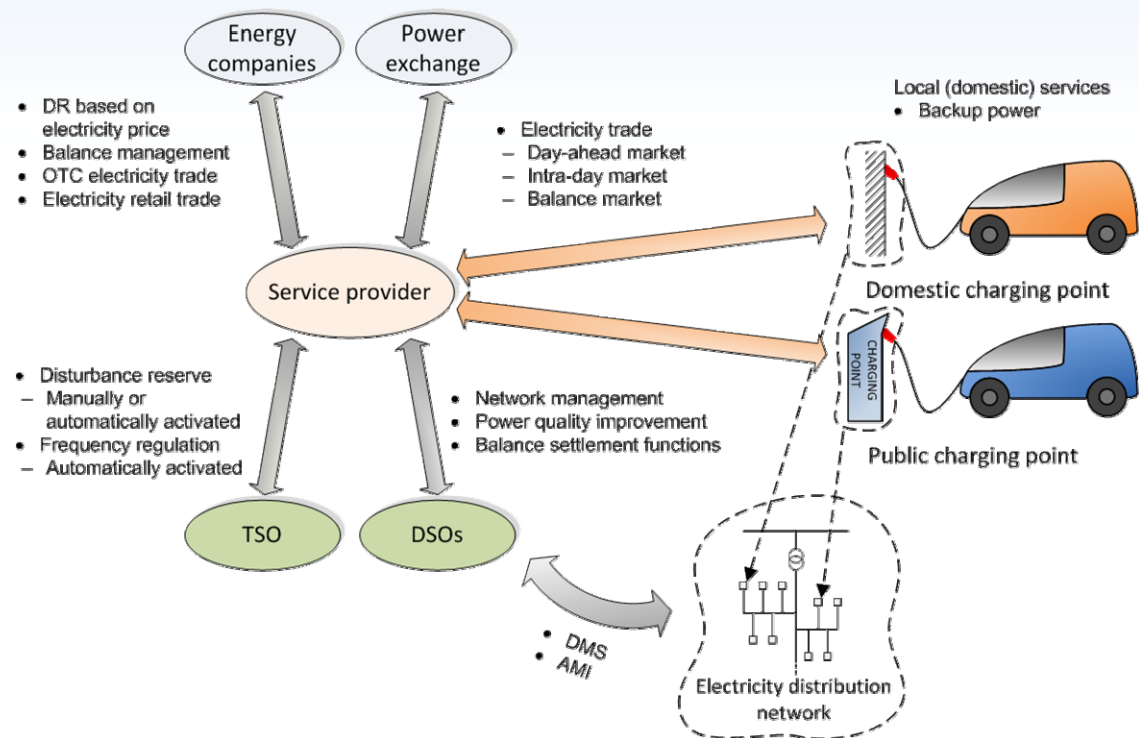
1. Impacts of plug-in vehicles on electricity networks/power system

- Statistical load modelling
- Network and system impacts
 - Passive network impacts like network overloading
- “Intelligent” or “smart” charging
 - An example: frequency dependent charging



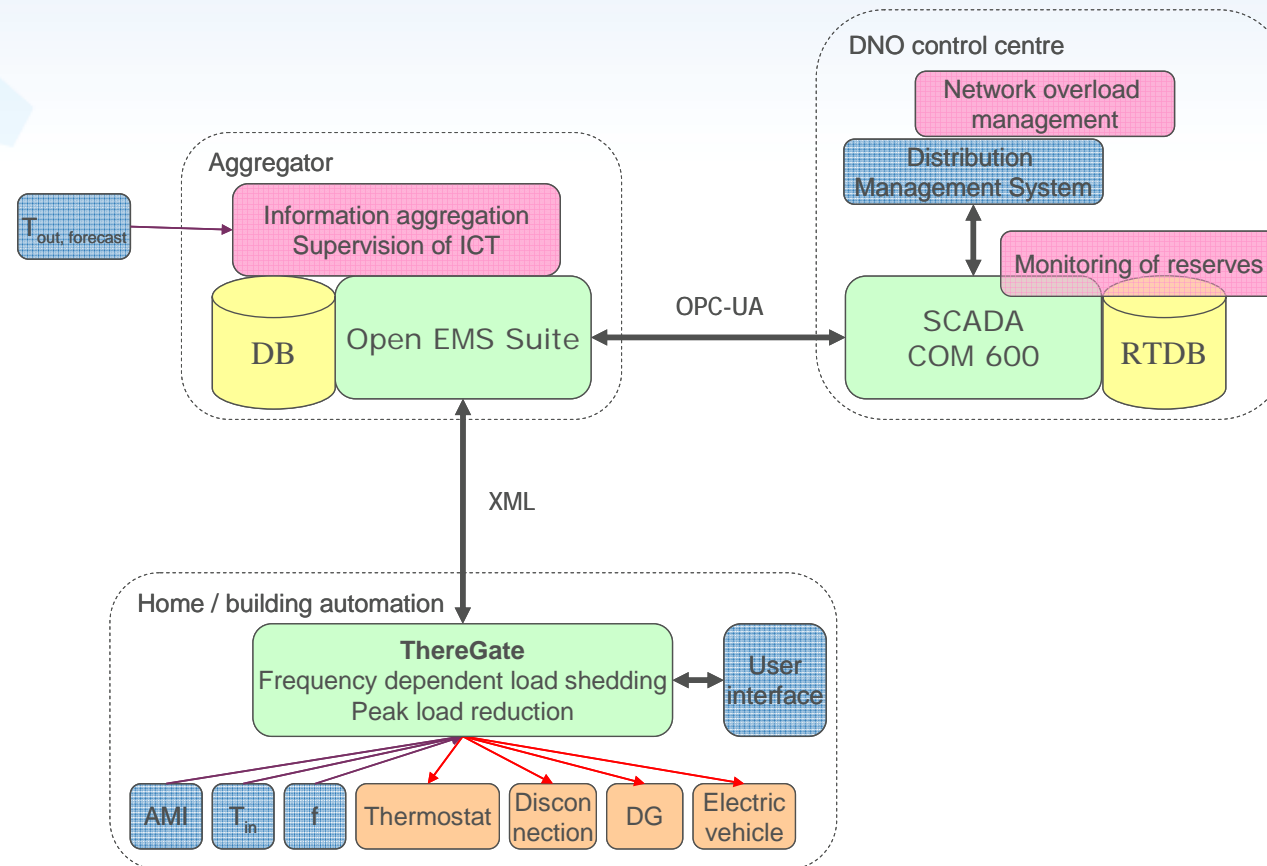
2. Interface between plug-in vehicles and power system

- Interface requirements to realize different services
 - Electrical interface
 - ICT interface for smart grids
 - Related standardization
- Smart grid solution demonstration including possibility to control plug-in vehicle
 - Open EMS and ThereGate platforms



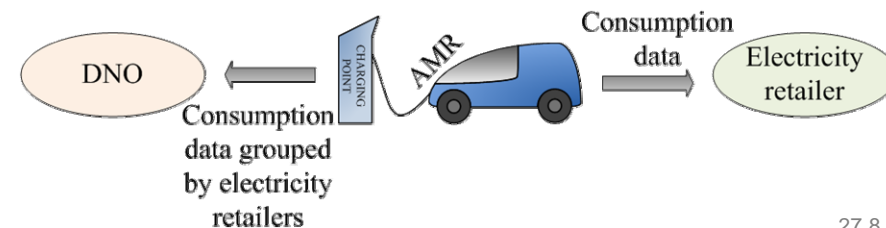
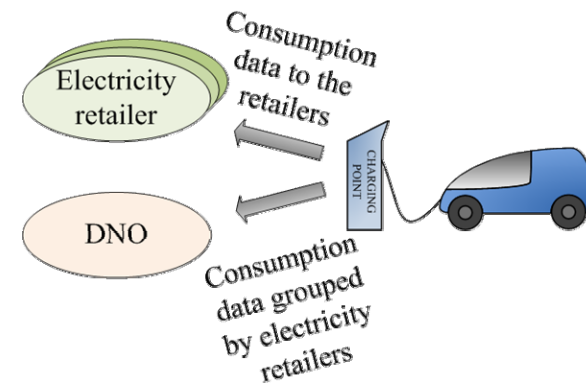
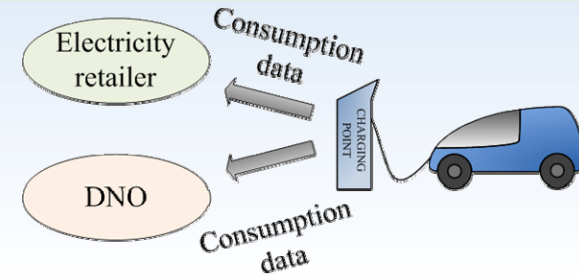
2. Interface between plug-in vehicles and power system

Smart grid solution demonstration



3. Impact on the functions of electricity markets

- **Market mechanisms** to realize flexible charging
- **User incentives** for customers to apply different “smart” charging methods



Thank you!

