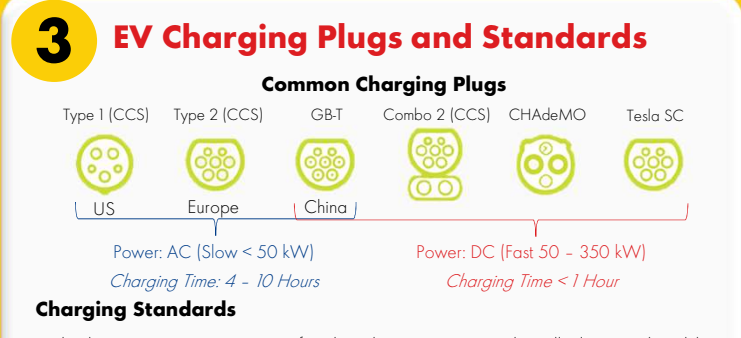
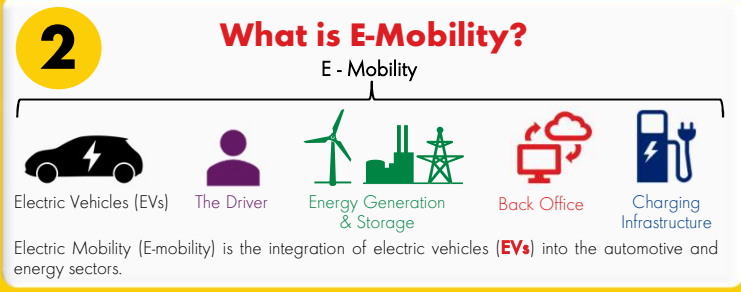


My role in Shell sits under **Projects & Technology** in research and development. More specifically, I work in the **Fuels Technology** department where I support the **electric mobility team** within Future Portfolio and Tech Maturation.

I have been involved in several projects surrounding the ISO 15118 charging communication standard.

- Conducting market research into the AC chargers offer ISO 15118 Plug & Charge.
- Establishing ISO 15118 communication between two Raspberry Pi computers, using the RISE V2G software, in order to perform a virtual Plug & Charge session.
- Acting as a technical consultant in the area of the Plug and Charge feature and the related ecosystem, to advise on how to implement this technology into Shell's existing systems.



Each plug type must meet a set of technical requirements so that all plugs produced by different manufacturers are standardised. A charging standard defines these technical requirements. An example of a charging standard is the **Combined Charging System (CCS)**.

Charging Communication Standards

Every charging standard has an associated communication standard, which outlines the messaging sequence between the EV and the charger.

CCS has two associated communication standards:

- Base signalling** - Performed via pulse width modulation (PWM) over the control pilot (CP) wire according to the IEC 61851-1 standard.
- High level communication** - Performed via powerline communication (PLC) over the CP to transfer more complex information. High-level communication is based on the standard DIN SPEC 70121 or **ISO 15118**.

