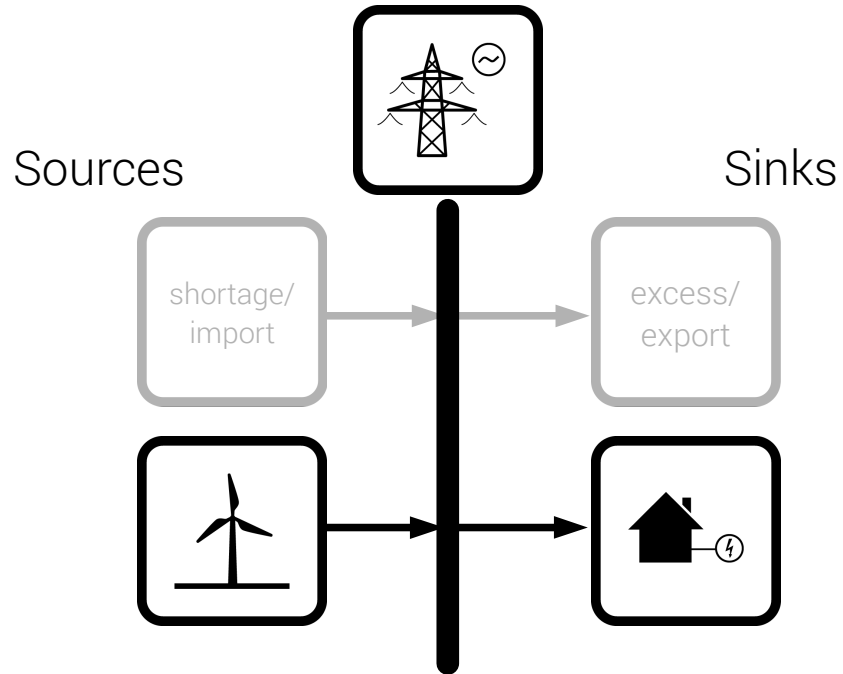


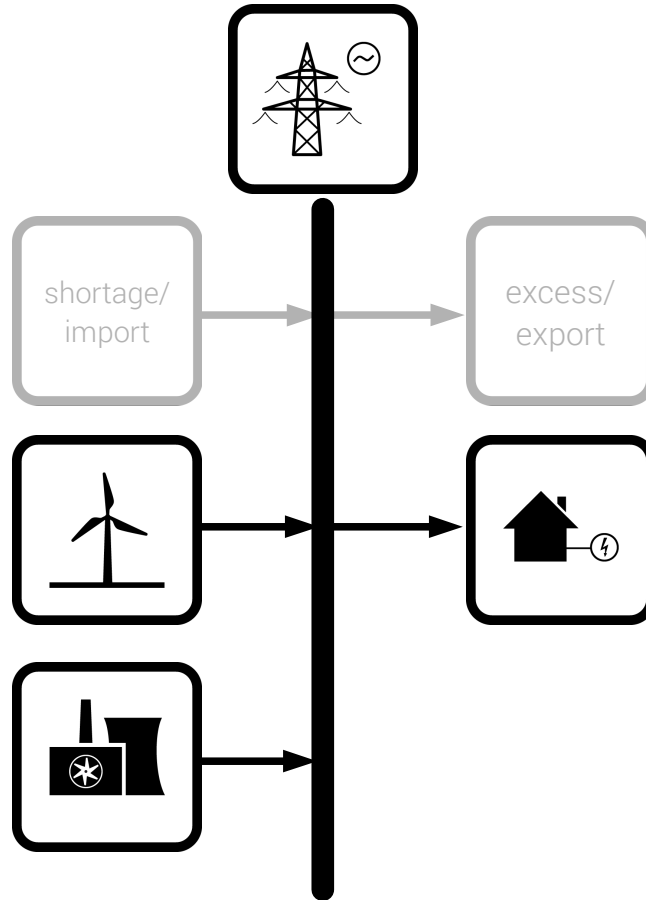


open energy modelling framework

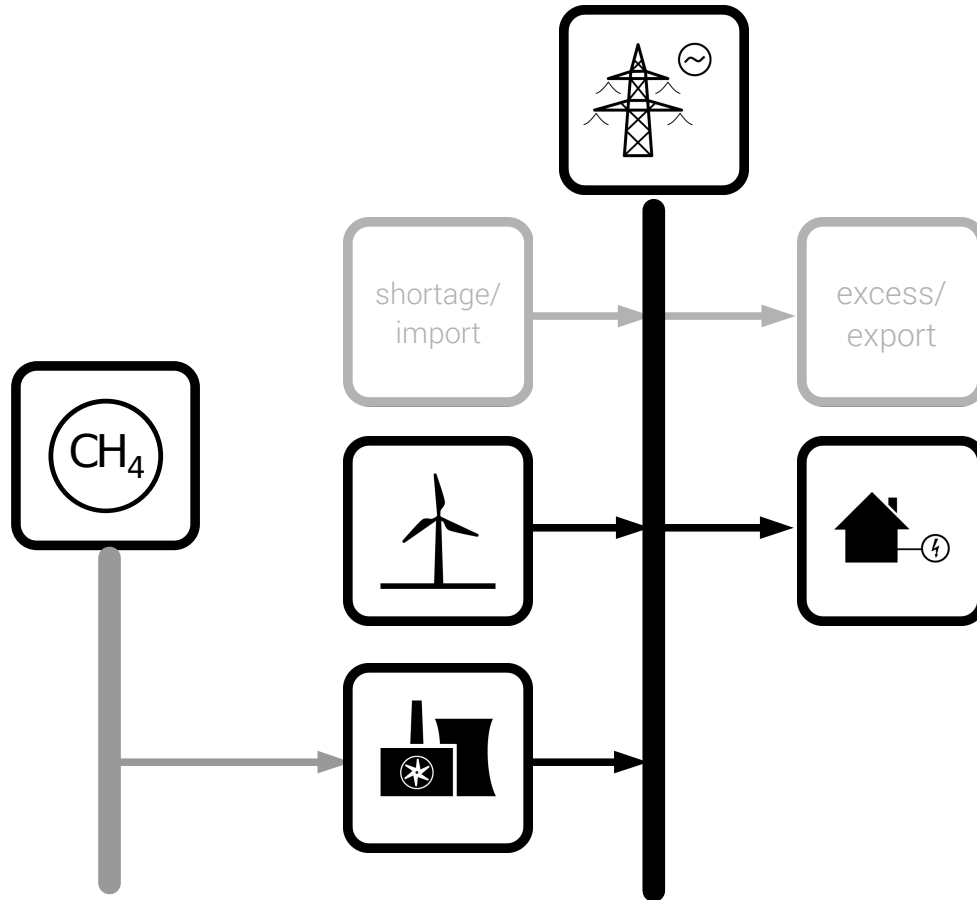
Sector coupling



Sector coupling



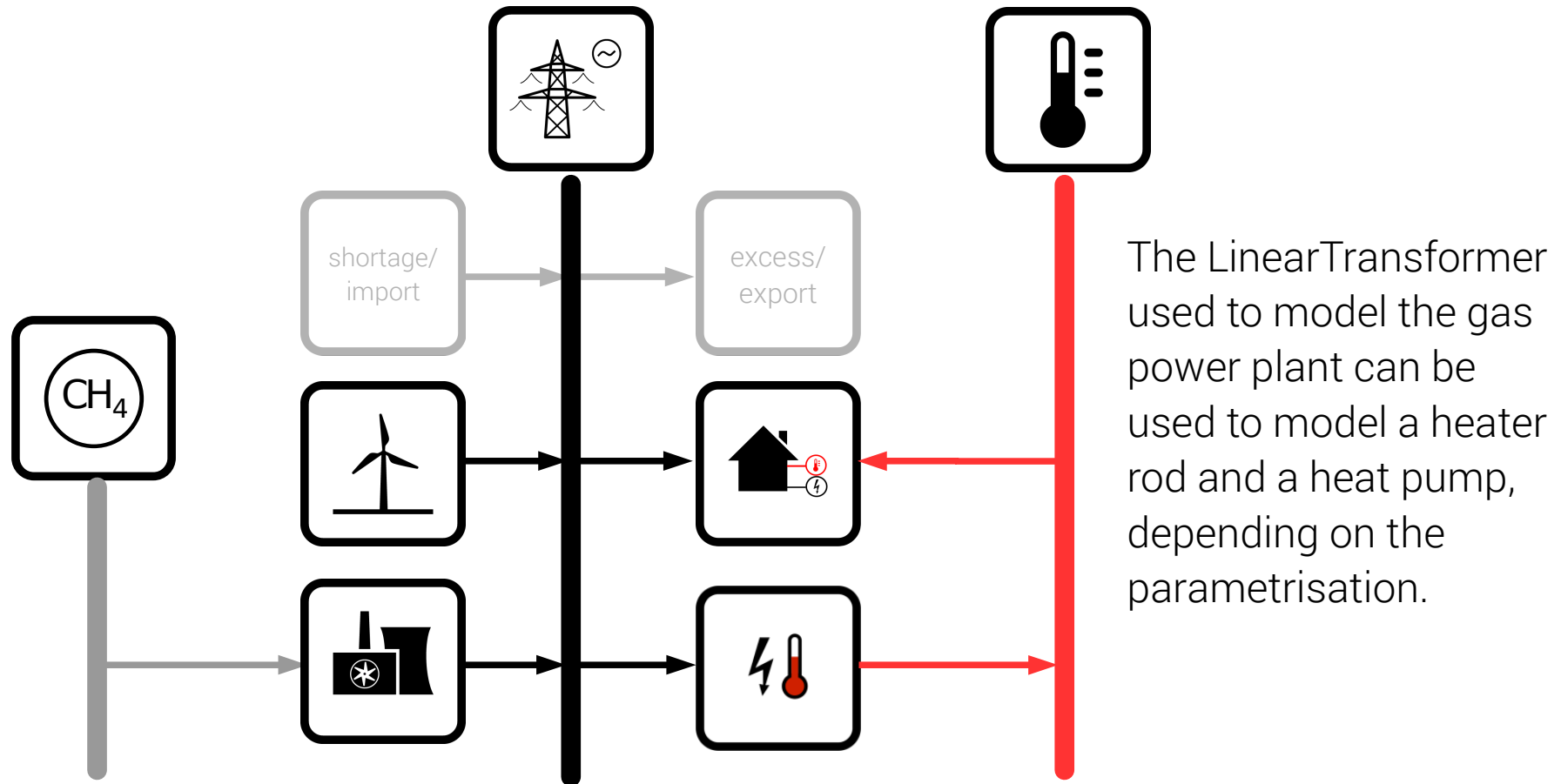
Sector coupling



A gas power plant couples the electricity and gas sector.

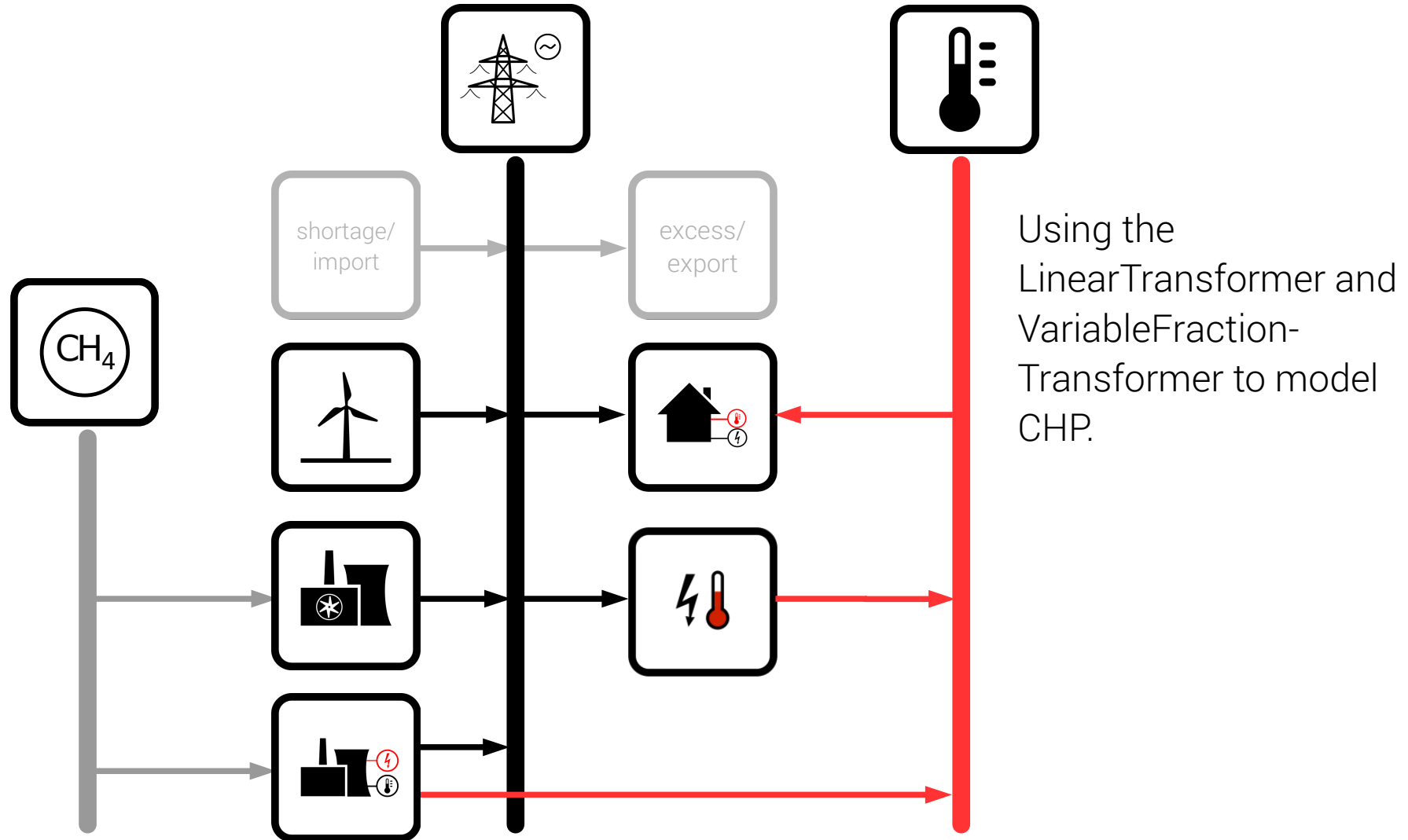
Coupling the heat and electricity sector works similarly.

Sector coupling

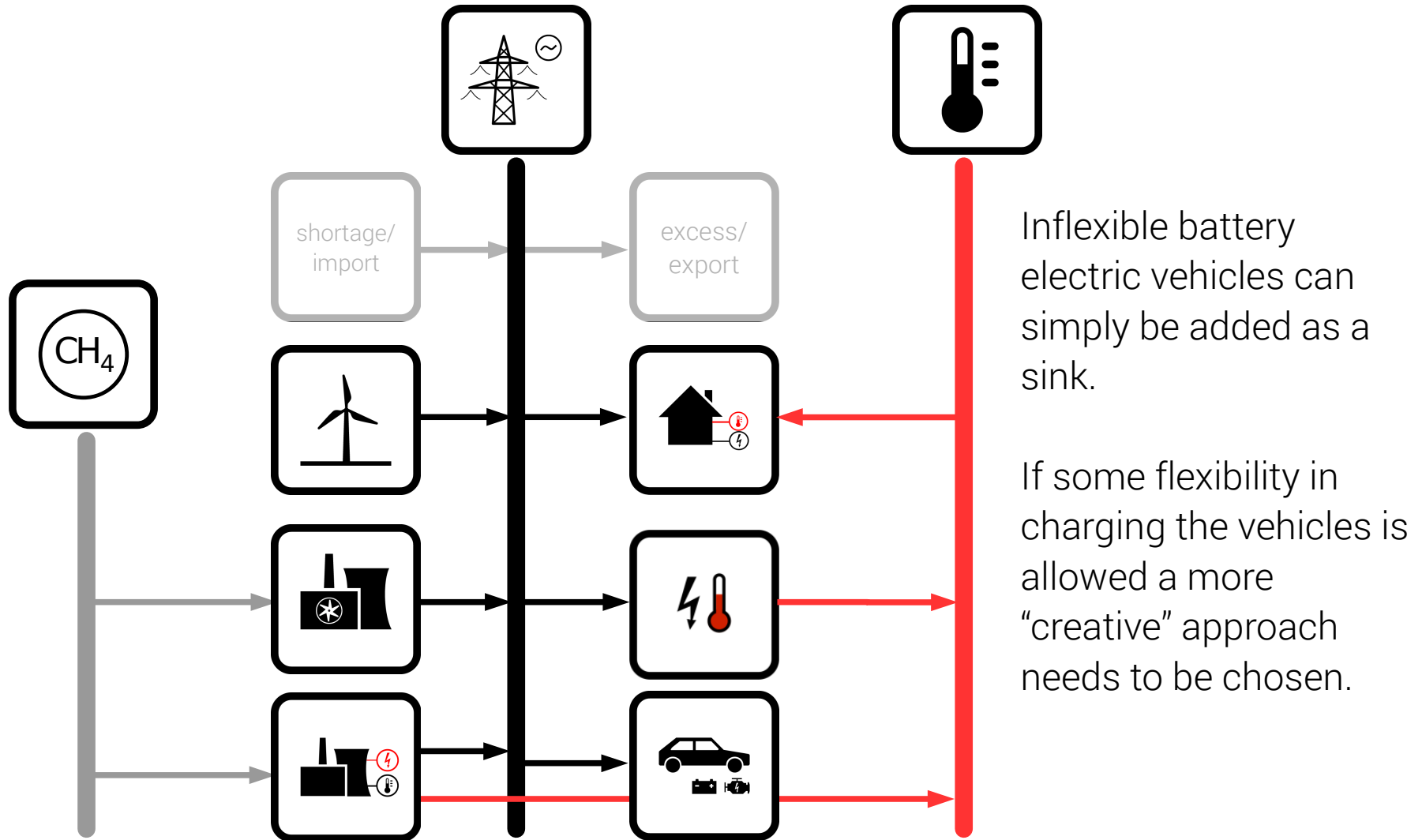


The LinearTransformer used to model the gas power plant can be used to model a heater rod and a heat pump, depending on the parametrisation.

Sector coupling



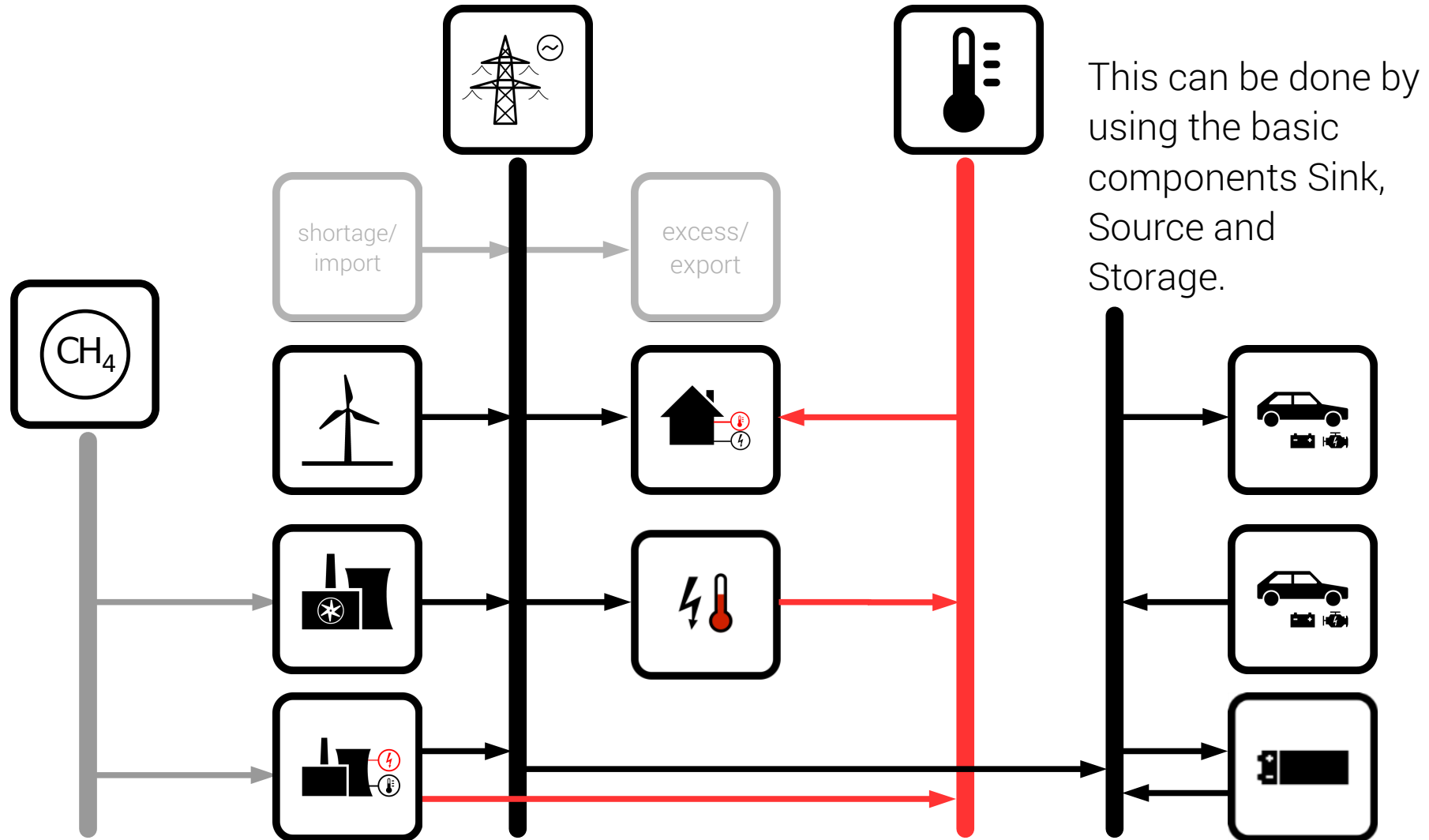
Sector coupling



Inflexible battery electric vehicles can simply be added as a sink.

If some flexibility in charging the vehicles is allowed a more “creative” approach needs to be chosen.

Sector coupling



This can be done by using the basic components Sink, Source and Storage.

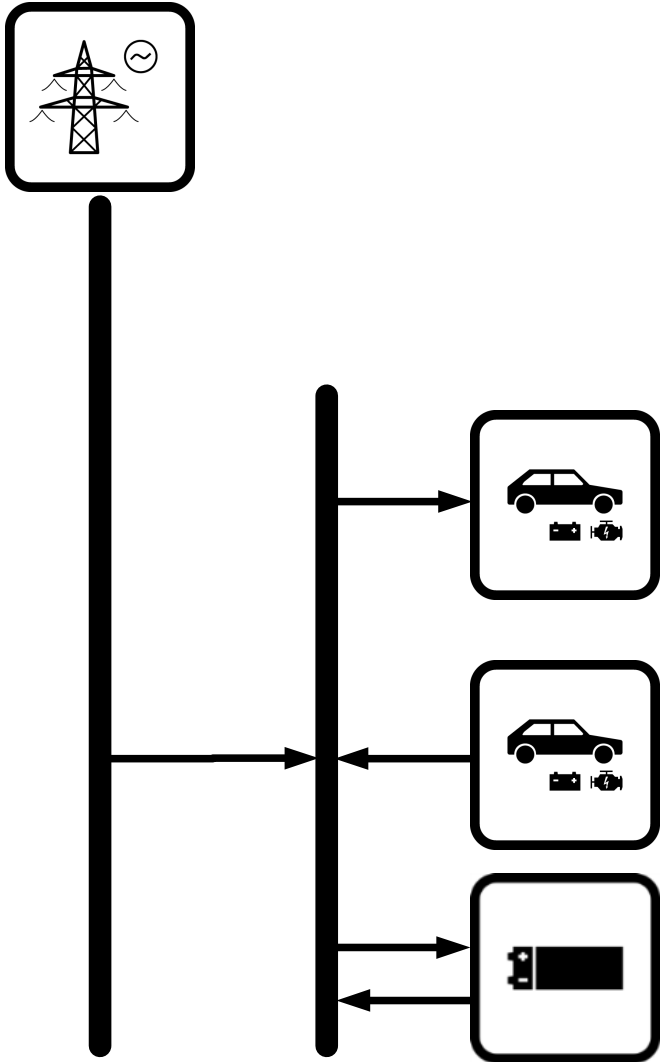
Sector coupling

We need to make assumptions about the driving behaviour, charging options and technical specifications

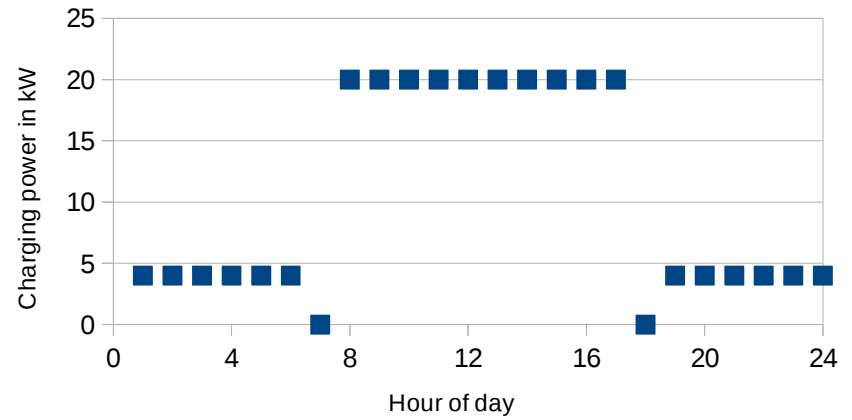
Simple example:

- Car leaves at 7 a.m. and arrives at work at 8 a.m.
- Car returns home at 6 p.m. and arrives at home at 7 p.m.
- During the time the car is parking it is connected to a charging station
- Battery capacity = 50 kWh, way to work uses up 10 kWh
- Charging power at home = 4 kW, charging power at work = 20 kW
- The charging is flexible but the car needs to be fully charged before it leaves

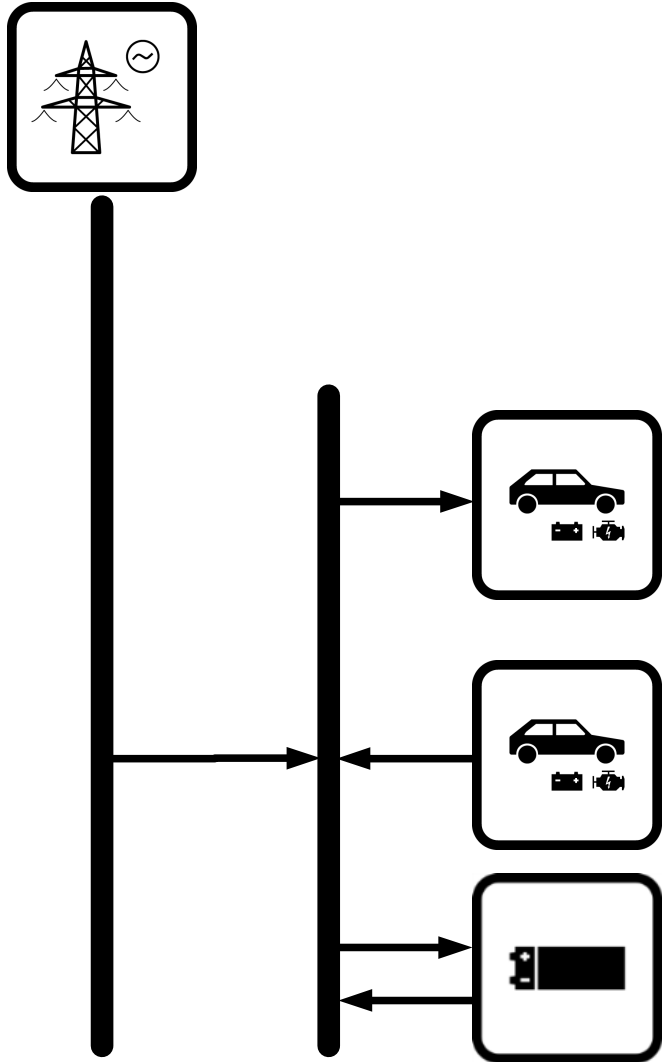
Sector coupling



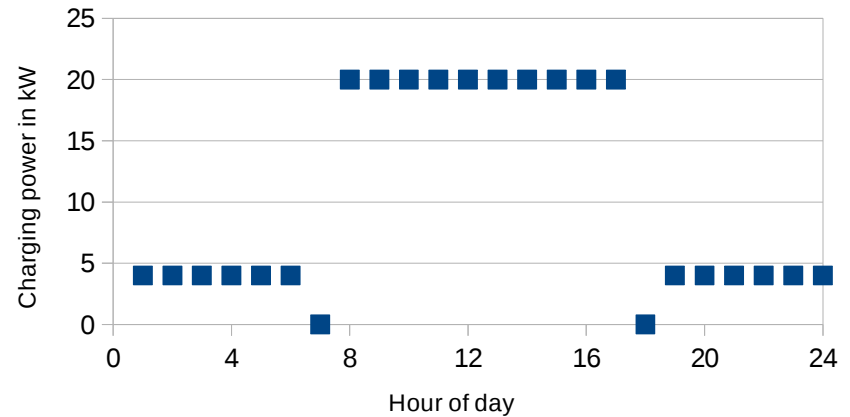
Charging power



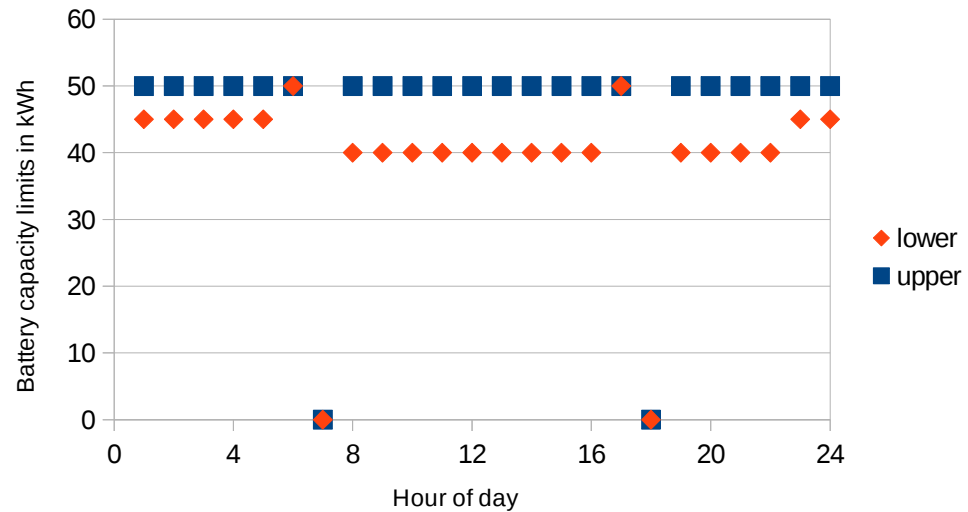
Sector coupling



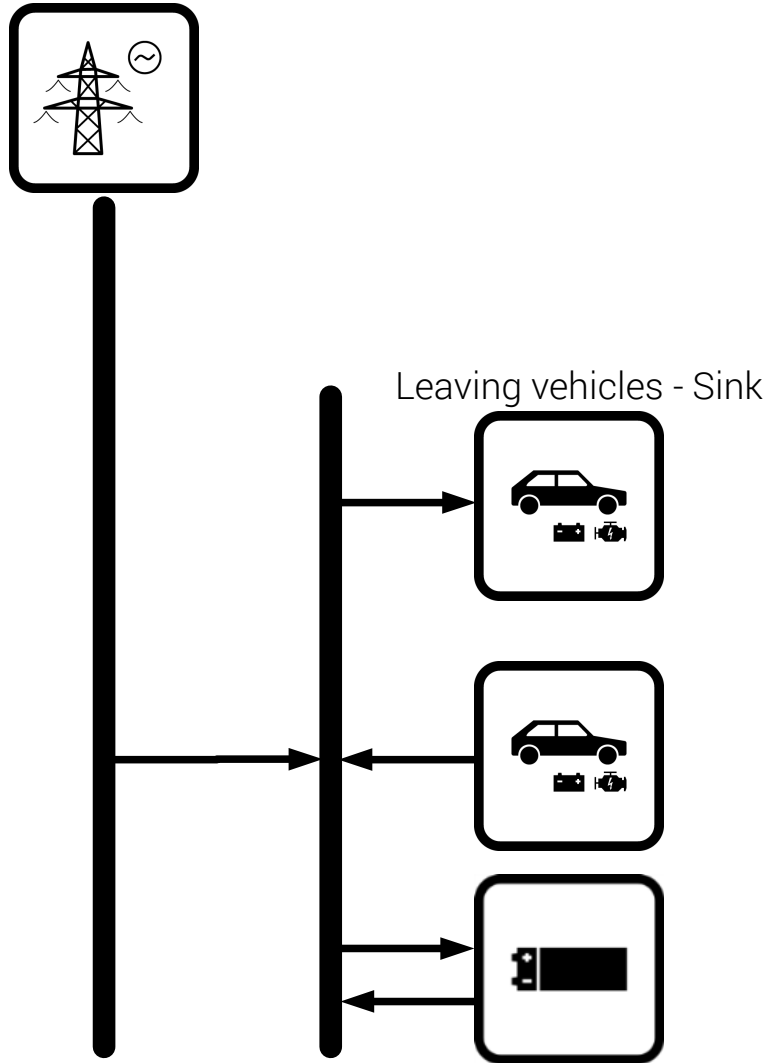
Charging power



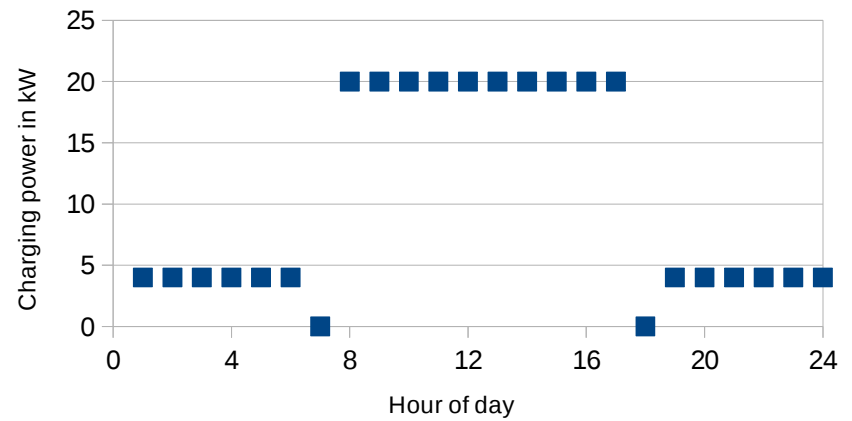
Battery capacity



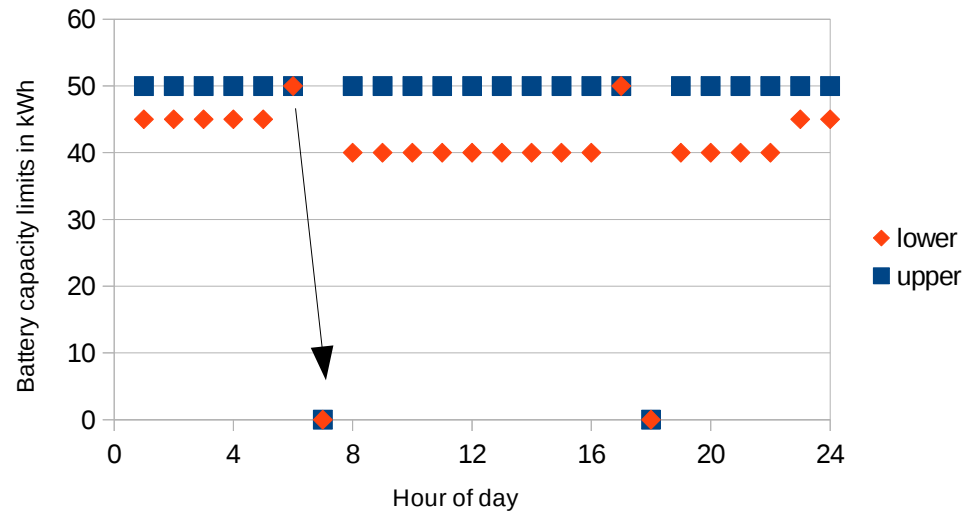
Sector coupling



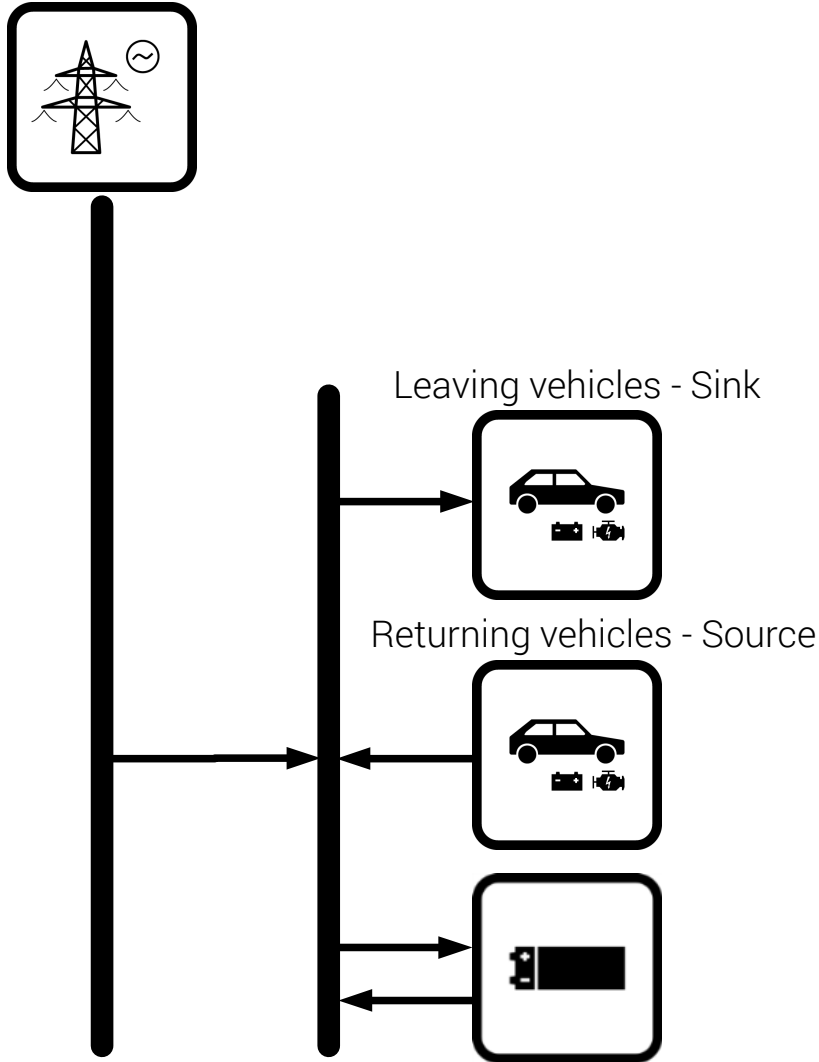
Charging power



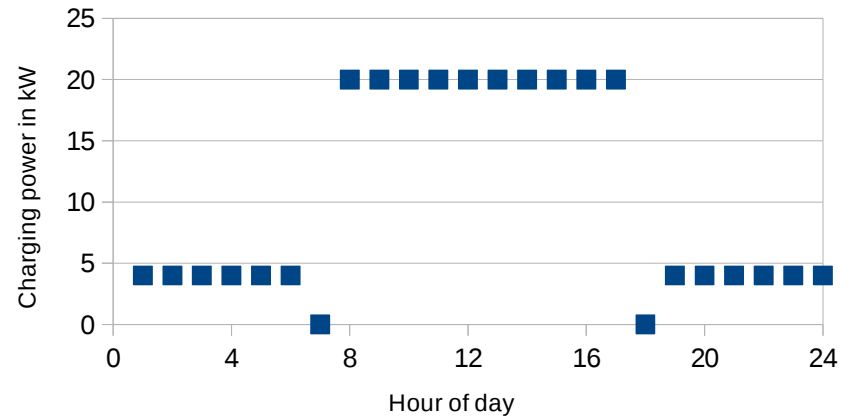
Battery capacity



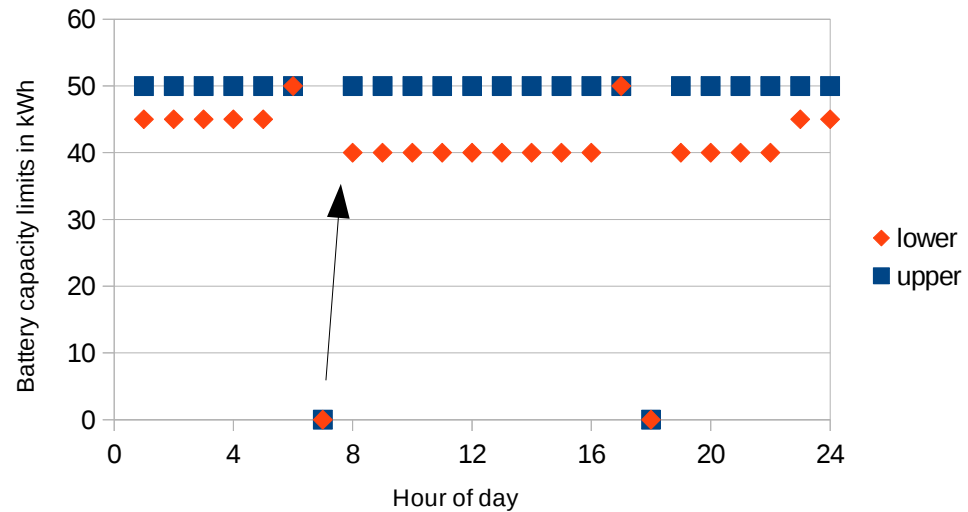
Sector coupling



Charging power



Battery capacity



Thanks for listening – Any questions?

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Other developers via website:

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