



REVOLVE

The REVOLVE model has been developed with the aim of providing a realistic revenue calculation for assets within an energy system with multiple electric vehicles, solar generation, wind generation and battery storage or a subset of these. This includes charging schedules for smart-charging and V2G.

The problem of calculating the possible revenue from storage and EV charging assets is not a simple one to solve. This is due to the through time consequences of each decision to either charge or discharge the asset. Additionally, there is a challenge of modelling many assets together in order to provide sufficient flexibility (both in power capacity and through time coverage) to enter into central flexibility markets.

The REVOLVE model tackles this by modelling up to one thousand assets (either EVs with V2G or static storage assets) at a half hourly granularity over an entire year, using real world data wherever possible. The problem is solved using a perfect foresight optimiser to provide an upper bound on the possible revenue earned by the assets.

The scope of the model includes the following components: Uni or Bi-directional EV chargers, EV, PV, Storage battery, single grid constraint, dispatchable on-site generation (e.g. a diesel generator).

