MODULAR SIM ENVIRONMENT JIGSAW

JIGSAW is a modular simulation environment which was developed in order to explore the synergy between different energy technologies in a single energy network. It consists of various electricity demand and generation technologies which can be put together to simulate an energy network and potential scenarios to evaluate energy usage costs and emissions.

The modules include home or site demand, photovoltaic panels, EV charger with V2G or smart charging, storage battery, electric heat pumps and transformer and line losses. Bespoke modules per project can be created. When connected as a network, the outputs can be seen in time on a dashboard and parameters can be changed before the next run. This can help design the system.

The model outputs total energy demand, import and export savings, line utilisation and CO_2 generated for any length of time for the energy network. It can calculate overall energy prices, import earnings and savings per module or collection of modules. The outputs from JIGSAW can be tailored per customer preferences.

Being modular, JIGSAW can explore bespoke algorithms or controllers in order to optimise the whole energy system. This could be a central control system applied by an aggregator in a region or single energy entity on an island which can manipulate the technologies connected to the network to achieve maximum efficiency.