

Smart Microgrids for the Built Environment



enTrust
microgrid

Smart Microgrid Solutions...

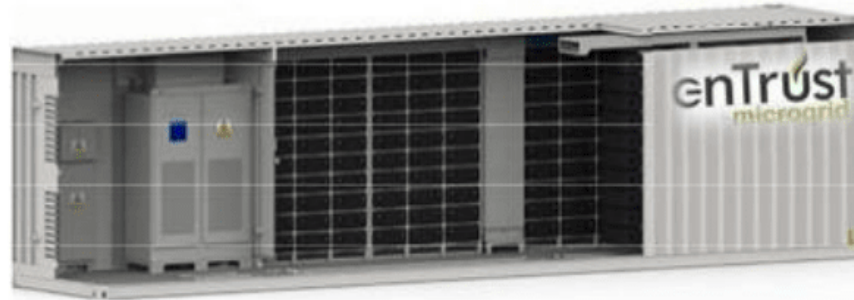
- Enable self generation & storage of electricity especially solar PV
- Off-grid or hybrid on/off grid solutions available
- Reduce energy costs over the medium to longer term, including peak charges
- Robust, reliable and scalable solutions to meet required demands
- Reduce reliance on the grid, particularly during peak-times
- Cut or significantly lower grid connection costs
- Smart energy solutions – anticipates and matches supply and demand automatically providing cheapest available form of electricity
- Support adoption of EV charging – whilst equally reducing impact on the grid
- Achieve climate change targets and sustainability goals

Entrust Microgrid

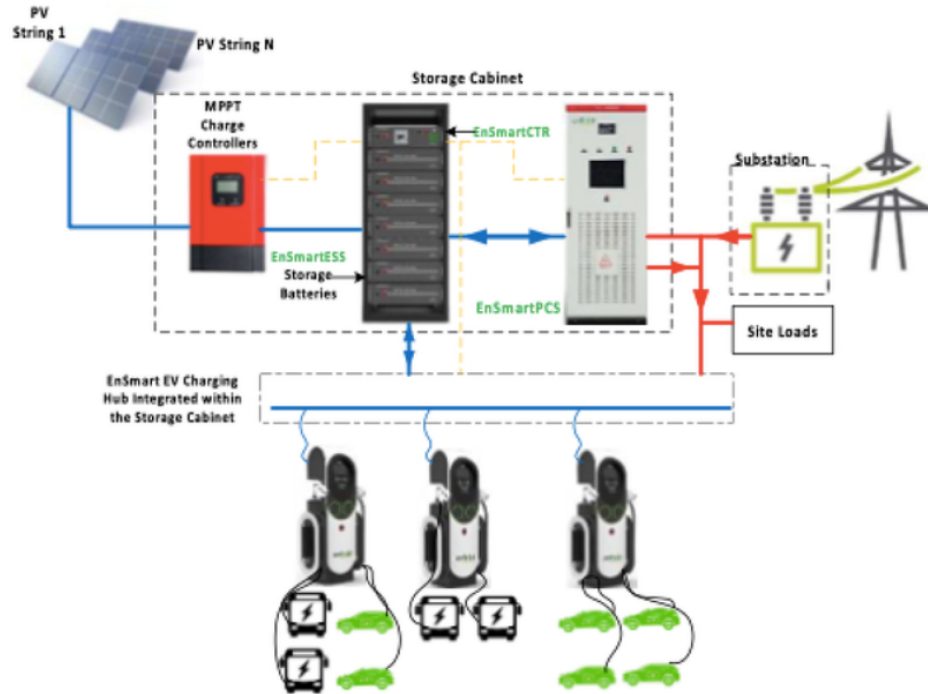
- Established in 2018
- Over £3m in Innovate UK funding secured to date
- Four patents awarded in respect of our own smart microgrid and EV charging technology
- Strong and experienced Management Team – led by Professor Xiongwei Liu - a global expert in smart power systems and smart microgrids
- Our own design and technical team that can assist in the design and development of smart microgrid solutions
- Established supply chain network both in the UK and China
- Established UK installation partners



Our Commercial Microgrid Systems...



Our Commercial Microgrids...



EnSmartBuild HVB System Schematic

Our Commercial Microgrids...

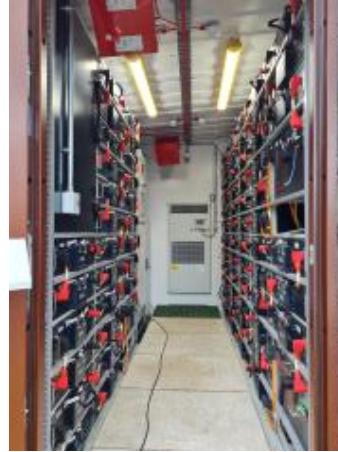
- Include EnSmartBuild and EnSmartEV (with EV charging) – bespoke designs
- Support solar PV with Li-Ion battery storage
- Available in 30 kWh to 2MWh options (cabinet to container)
- Containerised systems include - PCS, batteries & BMS, control system, fire suppression system, air conditioning system and EMS
- Offer smart controllers to automatically select cheapest form of available electricity e.g. solar PV, stored battery electricity or off-peak grid electricity
- Great for large commercial users of electricity in reducing high energy costs via reduced grid electricity consumption
- Significantly lower grid connection and grid upgrade costs
- Are scalable and flexible to meet particular demands of the business
- Easy to install and maintain
- Offer competitive pricing and product warranties
- Costs range from £360 per kwh (larger systems) to £450+ per kwh (smaller scale)



EnSmartEV for public or fleet EV charging

EnSmartEV – public EV charging hub

- Leiria Way, Runcorn: just about in operation
- Civic Way, Wirral: planned for operation by 31 October 2021
- UoH, Huddersfield: planned for operation by 24 December 2021



EnSmartEV...

- EV Charging via solar PV and/or stored grid electricity
- 622kwh containerised battery storage
- Charges from lower tariff overnight grid electricity to offer EV charging during the day. Also acts as a battery store to provide top up/cheaper rate electricity
- 7kW AC and 20kW DC Charging available (upgrading to 40kw in 2022)
- Type 2 and CCS2 sockets offer charging to most EV's
- Charge up to 6 EV's in parallel at any one time
- Seamlessly switches between AC and DC charging
- DC to DC charging (battery to EV batteries) most efficient form of charging
- Great for a range of destination and en-route charging: town and city centres, EV charging hubs, business parks, supermarkets, hospitals, business fleet charging – locations with grid constraints. Short video here showing the battery container in construction: <https://youtu.be/atVoNR19r4Q>
- Two sites in Liverpool UK – fully operational from September 2021

EnSmartHome domestic microgrid



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EnSmartHome...

- Batteries, solar panels, inverter and a smart controller (off the shelf product)
- Smart control – maximise use of solar PV and/or stored battery electricity
- Compatible smart home EV charger to enable EV charging direct from solar PV or battery
- Machine learning and algorithms to be able to understand and manage load patterns - maximising electricity use at lowest cost option
- Connected to cloud system to allow collection of data and smart elements such as active weather forecasting to reduce consumption of grid electricity
- Potential for grid aggregation – via multiple installs across potentially thousands of homes
- Easy to install and maintain
- Competitive pricing and product warranties

Thank You

Entrust Microgrid:

**Stephen Parkinson
Business Director
Entrust Microgrid**

T: 07801 973454

E: stephen.parkinson@entrustmicrogrid.com

W: www.entrustmicrogrid.com