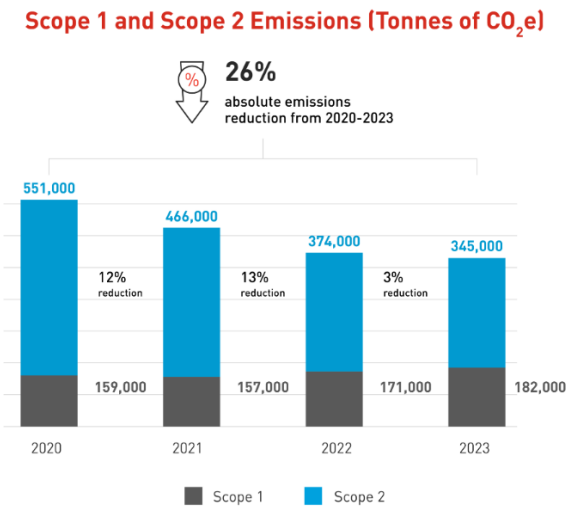
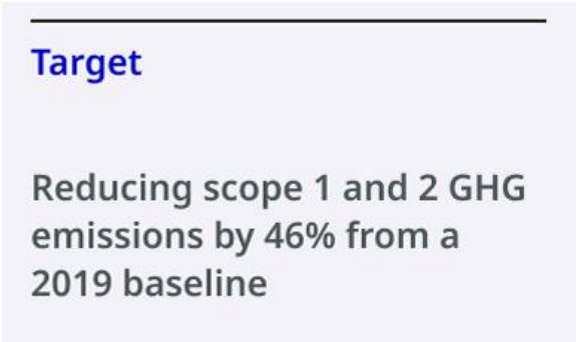
Microgrids for energy security & resilience

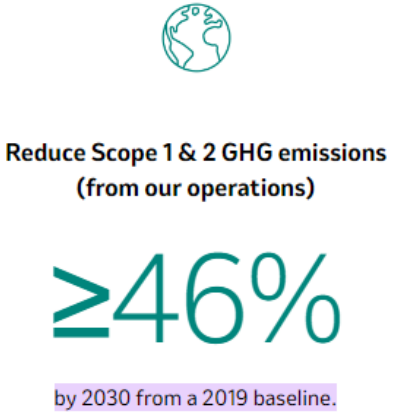
Ambitious Targets for Companies



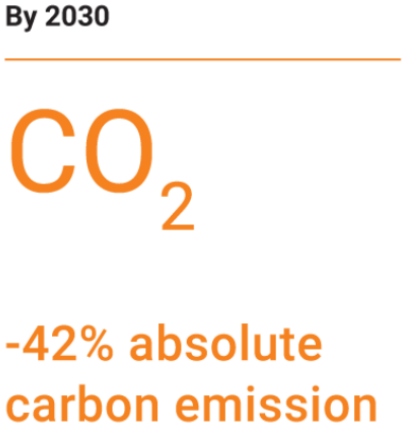
By 2030, Eli Lilly and Co. aims to be carbon neutral, with 100% renewable electricity and enhanced full value-chain emissions by 2050



Pfizer plans to be carbon neutral by 2030, with a 46% reduction in absolute emissions and 100% renewable energy procurement for indirect emissions.

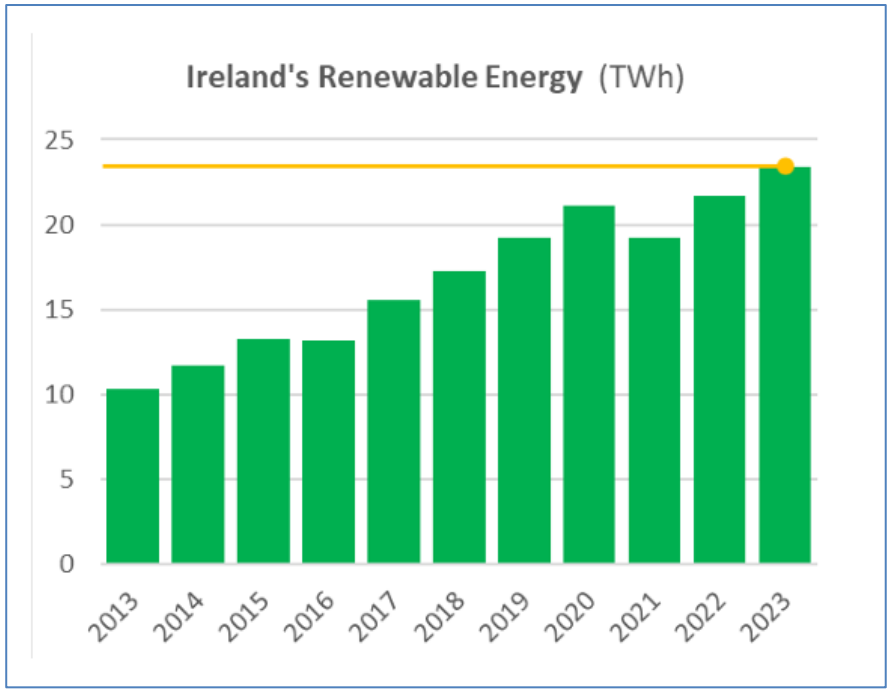


Merck will be carbon neutral across its operations by 2025, with a 30% reduction in value-chain emissions by 2030.



Johnson & Johnson aims to obtain 100% of its electricity from renewable sources by 2025, and to reach net-zero emissions by 2050

Ambitious Targets for the Grid



Source: SEAI, 'First Look: Renewable Energy in Ireland 2023'

Figure 1.3 – Ireland's installed wind capacity to the end of 2023 in GW and its CAP targets for 2025 and 2030.

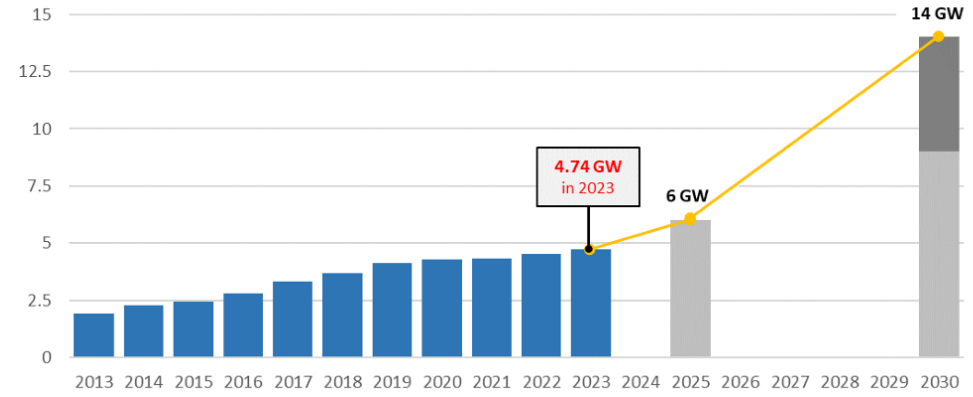
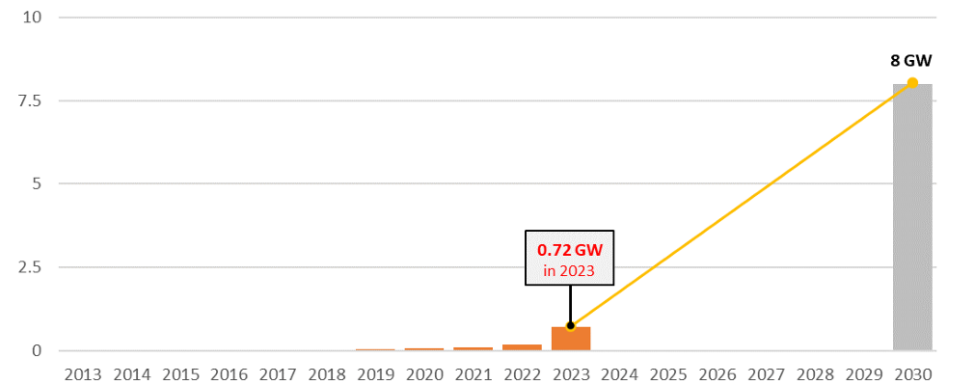
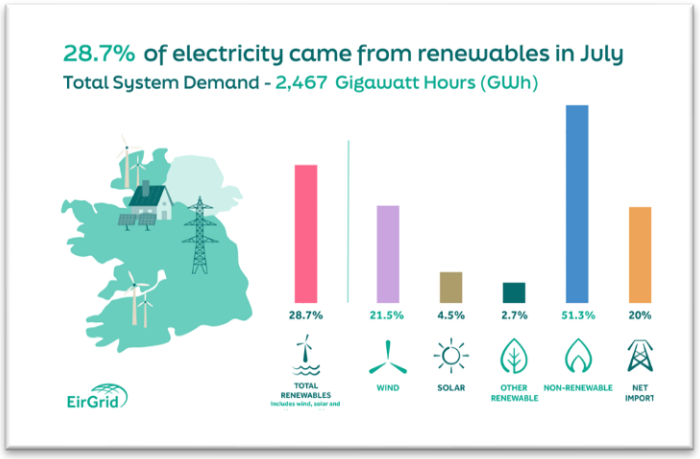


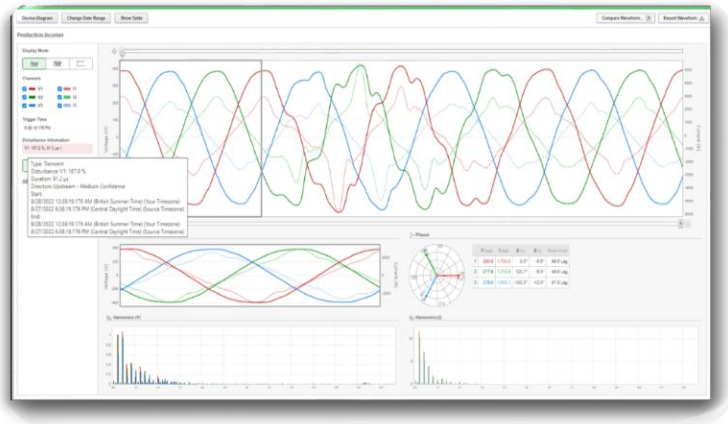
Figure 1.4 – Ireland's installed solar-PV capacity to the end of 2023 in GW and its CAP target for 2030.



Large Energy Users and Future Trends



- Decarbonisation
- Renewables
- Electrification
- Reliability



What do we need? Flexibility, Robustness

Microgrid*

A group of **interconnected loads** …

… and distributed **energy resources** within clearly defined electrical boundaries

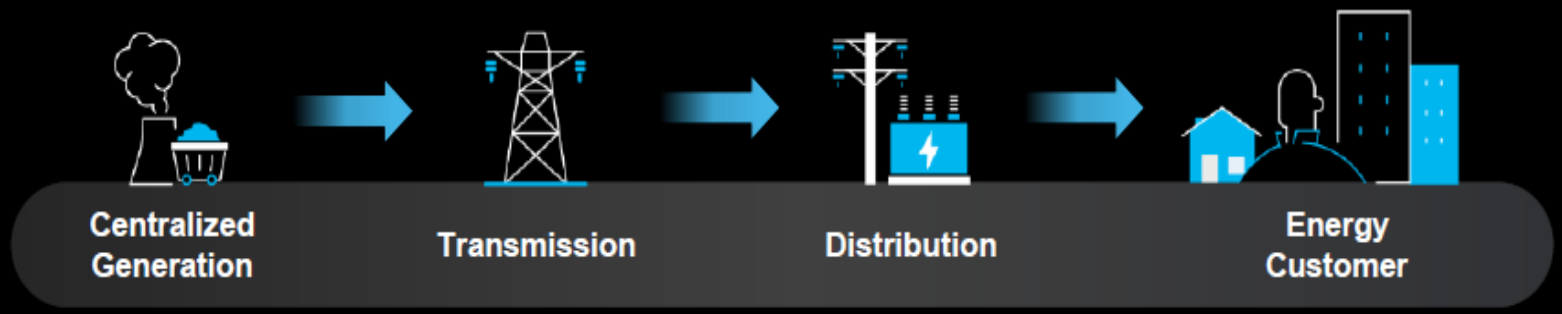
acting as a **single controllable entity** with respect to the grid.

* *US Department of Energy definition*

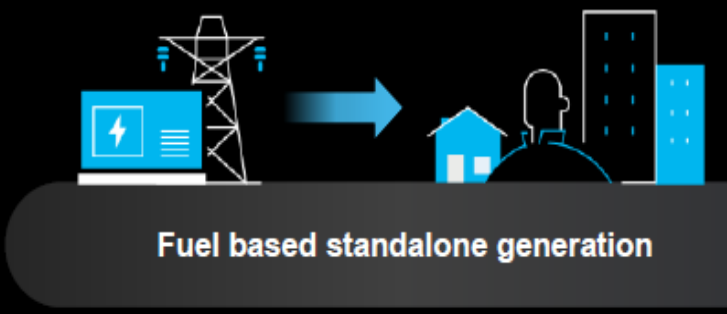
- A microgrid provides a decentralized, digitized & decarbonized alternative…
- … delivering integrated outcomes

The New Energy Landscape

Historical Energy Value Chain

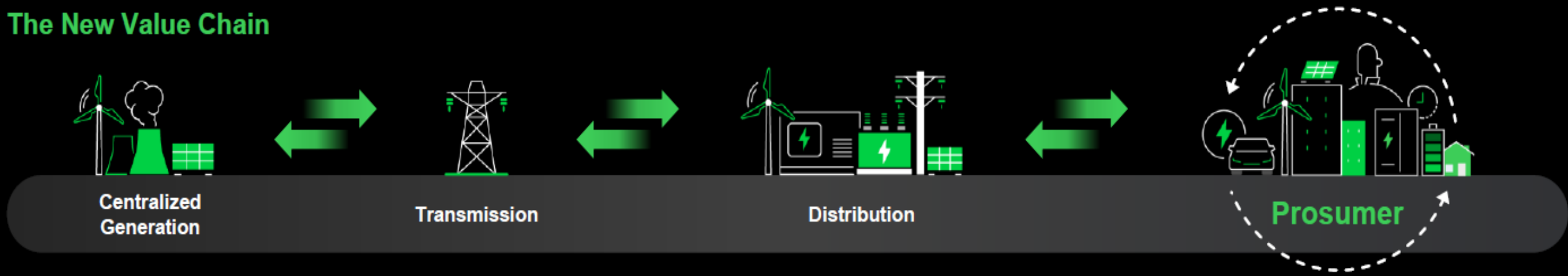


OR



VS

The New Value Chain



Microgrid Use Cases

Economic Performance & Capacity Management

Savings & Capacity

- Monitoring and forecasting
- Peak Shaving
- Tariff Management
- Self Consumption & "no wire"

Earnings

- Fast Frequency Regulation
- Demand Response

Sustainability

Renewable Integration

- Export Management
- Sharing Strategy & Fuel Saving

Resilience

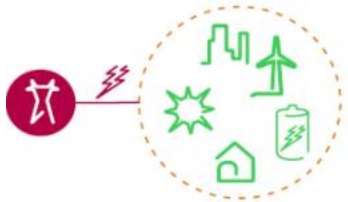
Backup Power & Safety

- Off-grid Preparedness
- Grid Connection Management
- Load Shedding
- Protection Setting Management

Microgrid Types

Grid-tied

Optimize electrical bill & sustainability footprint.

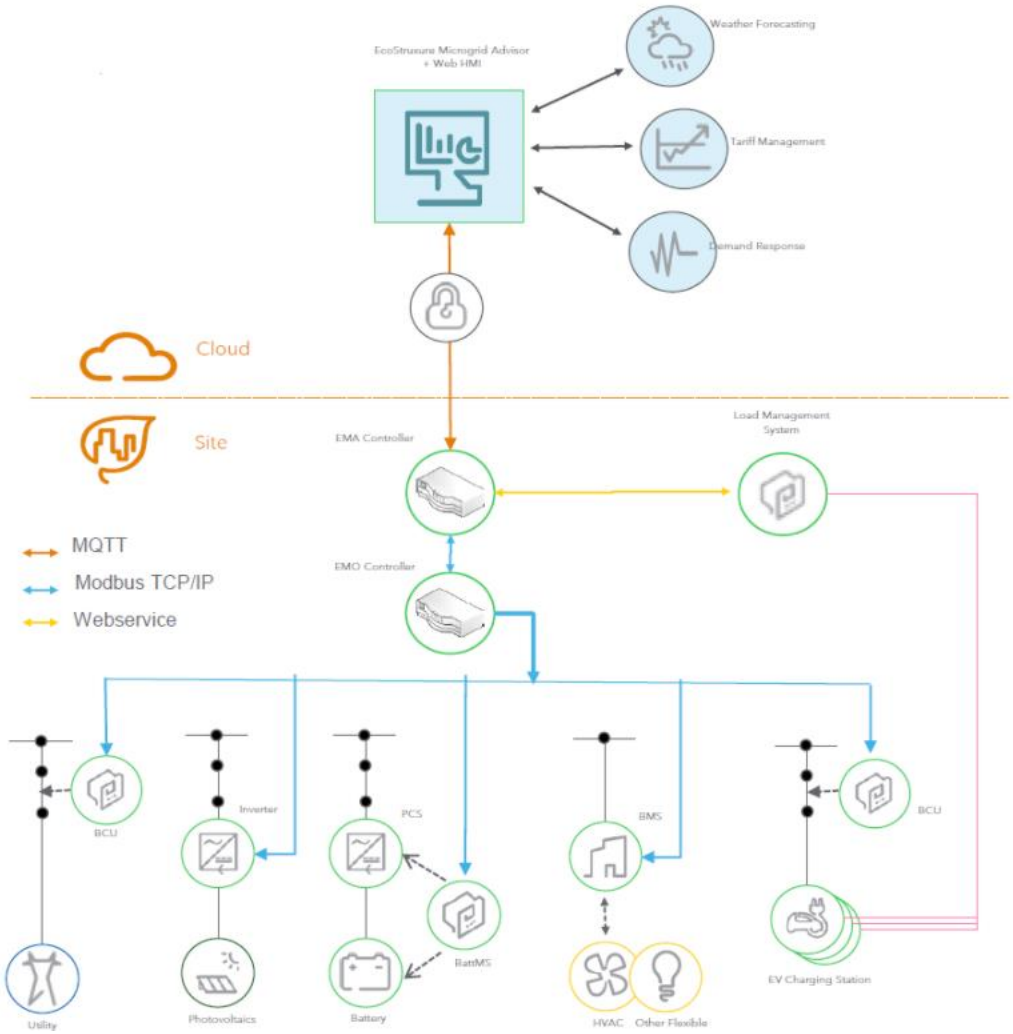


Island-able

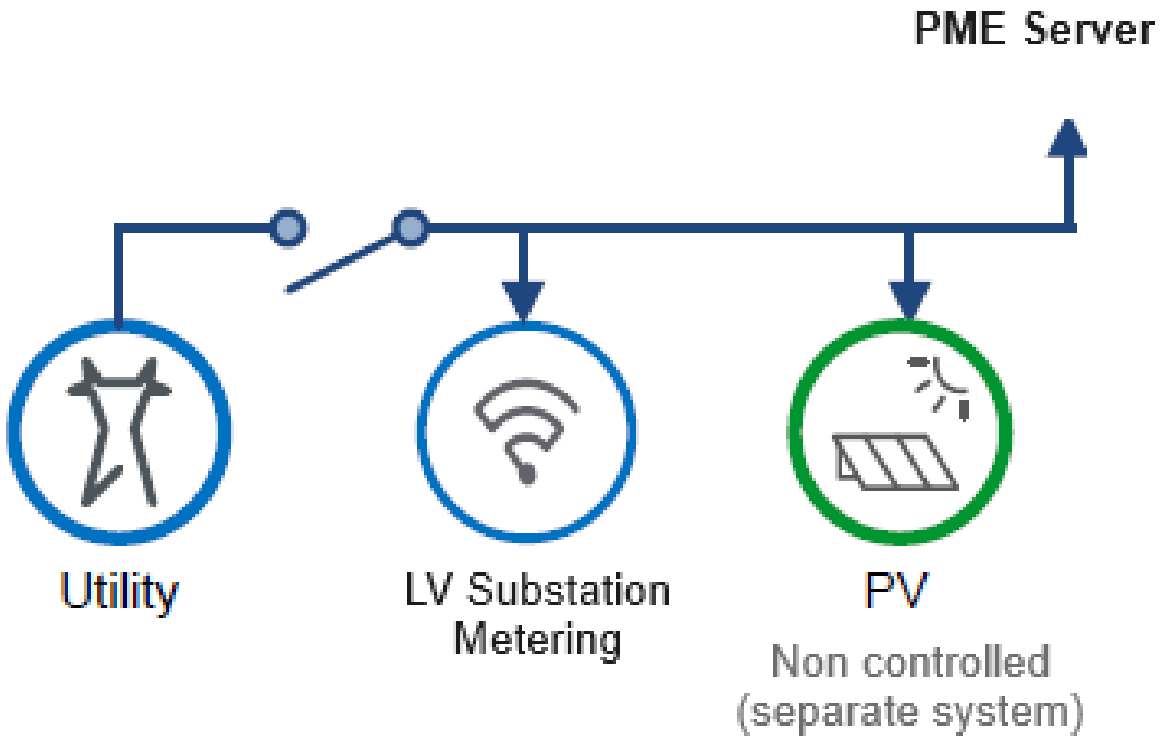
Manage blackouts while optimizing your electrical bill. Designed and engineered to transition to and from on- and off-grid.

Off-Grid

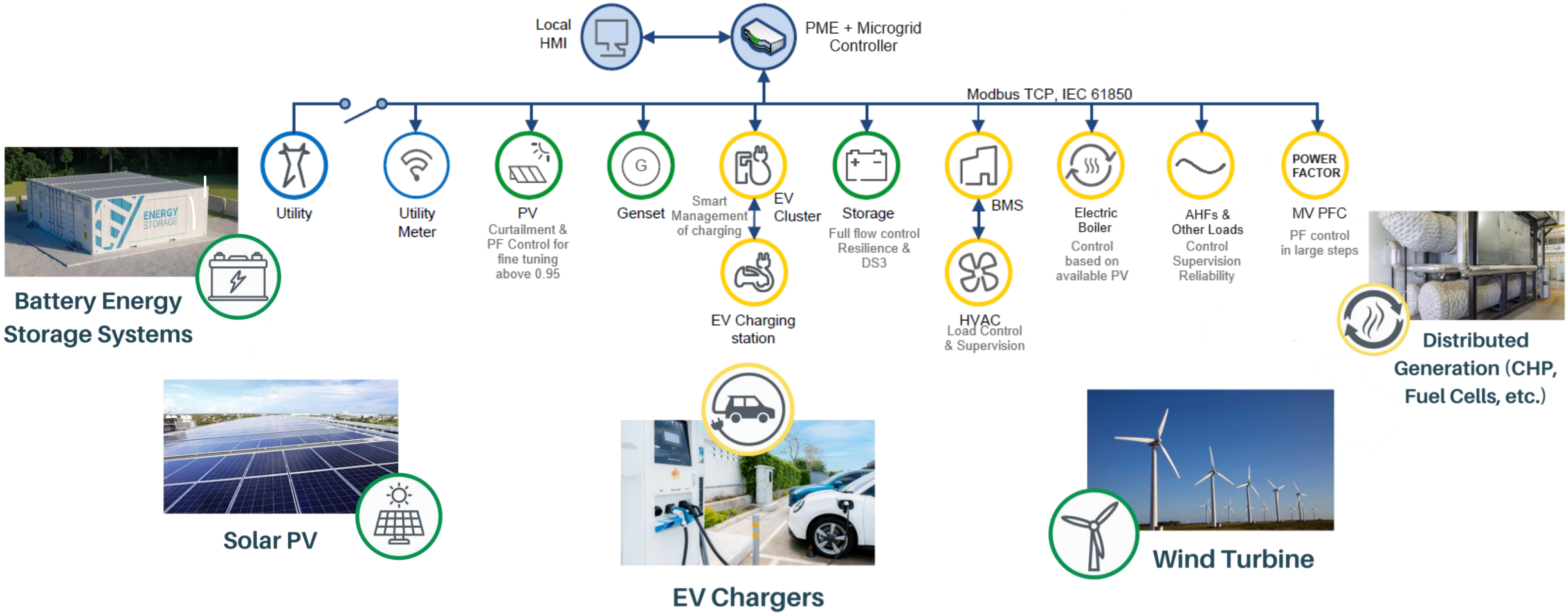
Designed and engineered reduce carbon footprint, deliver resilient energy and reduce operational cost.



Example Existing System



Fully Utilised Microgrid



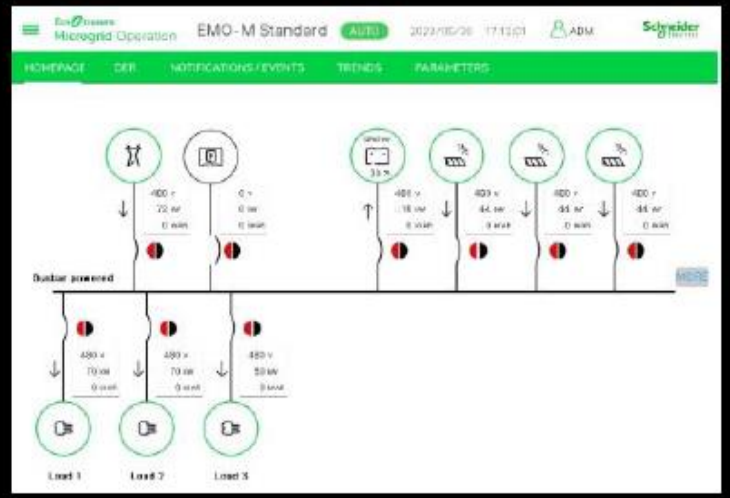
Microgrid Operation

EcoStruxure™
Microgrid Operation - M.

Ensures stability, reliability and real-time control.

EMO-M Control System is dedicated to commercial and light industrial applications and is responsible for:

- Real-time power management
- Ensuring grid code compliance (Energy Export Management)
- Local monitoring and control capability
- Managing BESS Control modes



Standardized and packaged solution, easy to configure thanks to the web-configuration tool EcoStruxure™ Microgrid Build

Unit 2A Fingal Bay Business Park
Harry Reynolds Road
Balbriggan
Co. Dublin
Ireland

www.premium-power.com
info@premium-power.com
+353 1 8105032