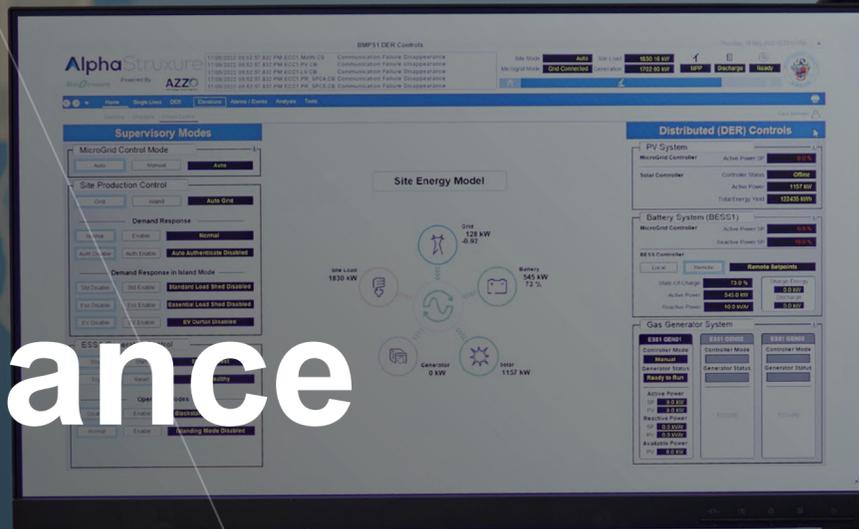


AlphaStruxure

Microgrids with proven performance

Integrate™ by AlphaStruxure: Delivering data-driven insights for optimized and reliable microgrid performance across on-site energy infrastructure



What is a microgrid?

A microgrid is a self-contained, local energy system with sources of generation, storage, and advanced automation and control, often connected to the utility grid but able to function independently in “island” mode.

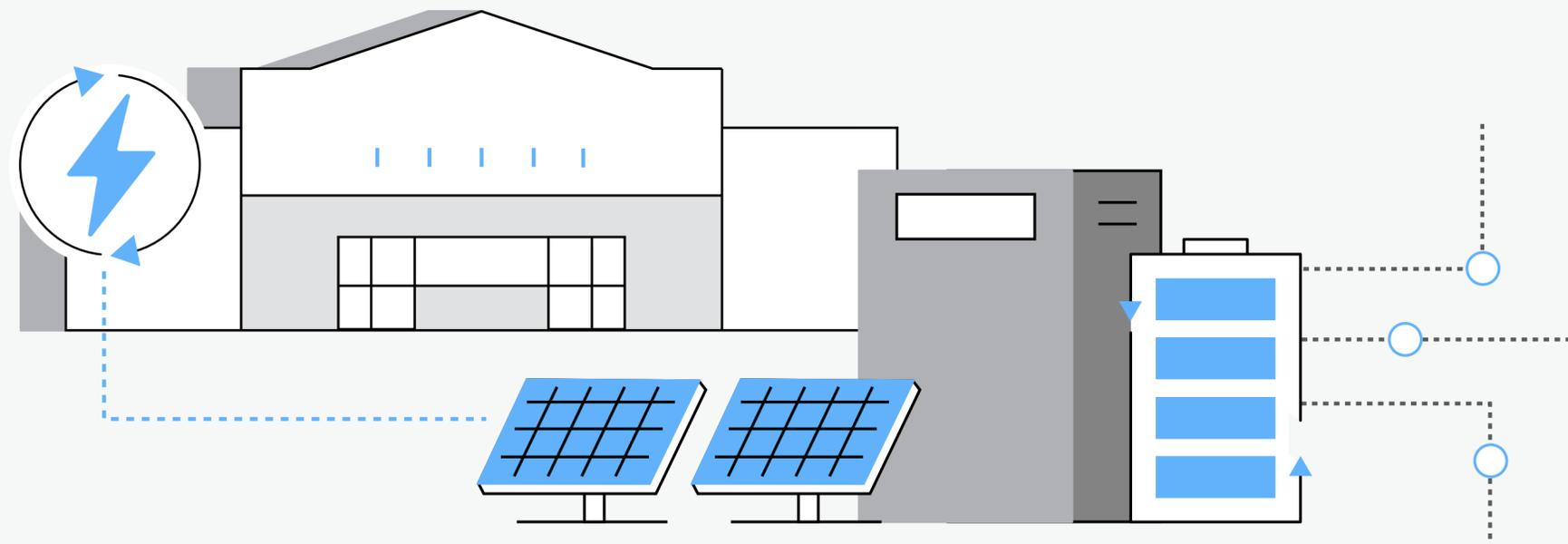
When the grid goes down or electricity prices peak, microgrids respond by allowing organizations to:

Keep the facility's power on during grid outages

Integrate on-site renewable distributed energy resources

Manage energy storage to the benefit of the customer's load and power quality

Microgrids enable the intersection of energy that is **smartly acquired**, **locally produced**, and **efficiently consumed** to allow organizations to accelerate energy performance aligned to specific energy needs and company objectives.

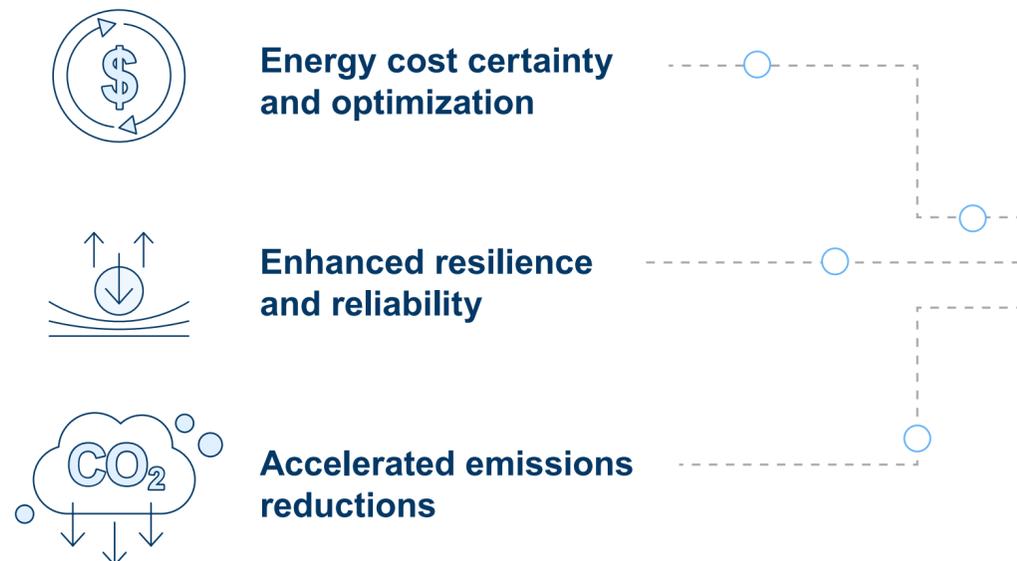


How do you optimize your microgrid system or multiple microgrid sites?

Optimizing your microgrid system or multiple microgrid sites is important to achieving your organization's energy and sustainability goals. By taking advantage of digitalization, microgrids perfect the use of distributed energy resources (DER) at every stage of its lifecycle — from design to operations — based on proven, tangible performance indicators such as:

- Microgrid electricity, hot water, and chilled water production
- Microgrid uptime / the load served by the microgrid over the total load of the site
- Site greenhouse gases reduced by the microgrid

In other words, it is essential to be able to finetune the microgrid system for the site's specific needs (e.g., lower operating costs, least emissions, maximum production) based on repeatable processes across the project's lifecycle, resulting in the following benefits:

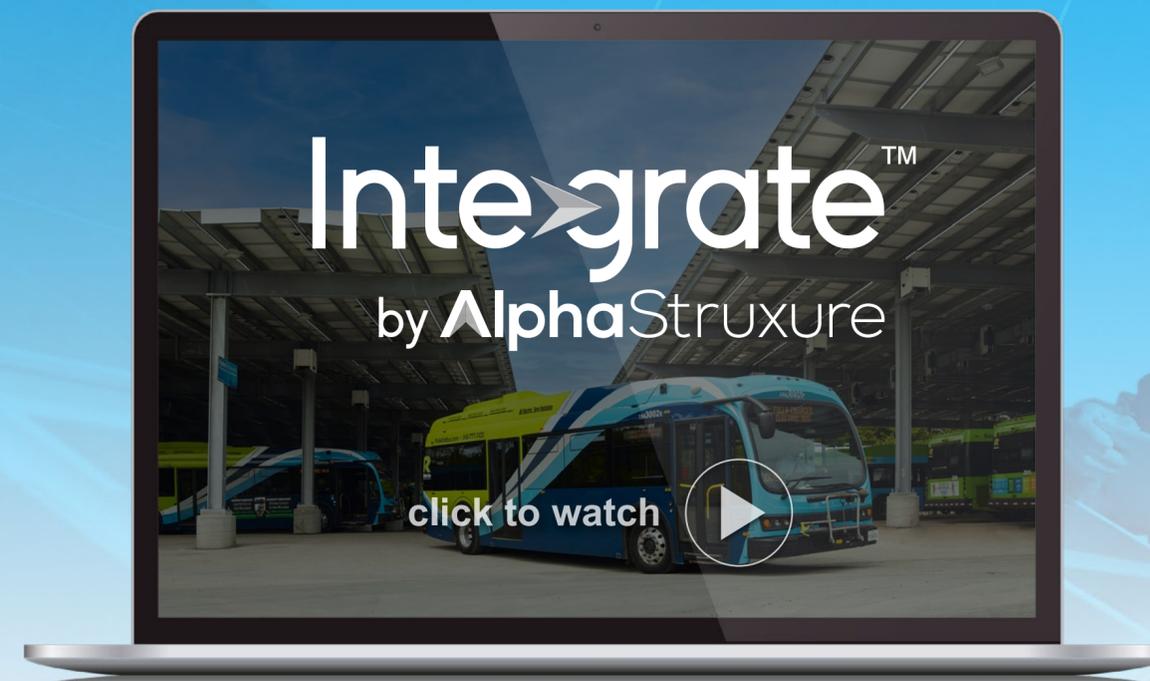


Digitalization is the key to achieving these benefits by:

- Unlocking valuable data
- Using that data for trending and analytics
- Conducting remote and automated operations
- Efficiently integrate workflows across disparate systems
- Easily creating information-sharing flows among stakeholders

The AlphaStruxure Integrate Digital Platform:

Delivering data-driven insights for optimized and reliable microgrid performance across on-site energy infrastructure



Optimizing microgrid operations

The **Integrate Digital Platform** provides real-time visibility of a microgrid's performance to all energy stakeholders at any time, allowing for optimal performance throughout the microgrid's lifecycle.

By compiling and analyzing data across the on-site energy infrastructure, the platform delivers continuous performance insights that can ensure consistent operational processes and maintenance across multiple microgrid sites.

Accordingly, it enables AlphaStruxure's Energy as a Service business model to deliver long-term outcomes on cost predictability, energy resilience and reliability, and greenhouse gas reduction based on key metrics.



Managed by

Integrate[™]
by AlphaStruxure

End-to-end,
multi-microgrid
platform and network
operations center



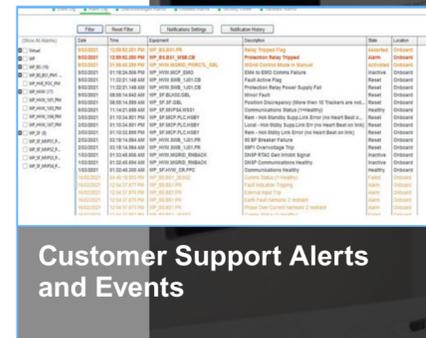
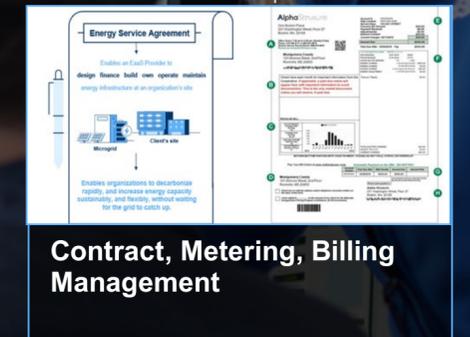
Real-time oversight and data insights for optimal performance

IntegrateTM
by AlphaStruxure

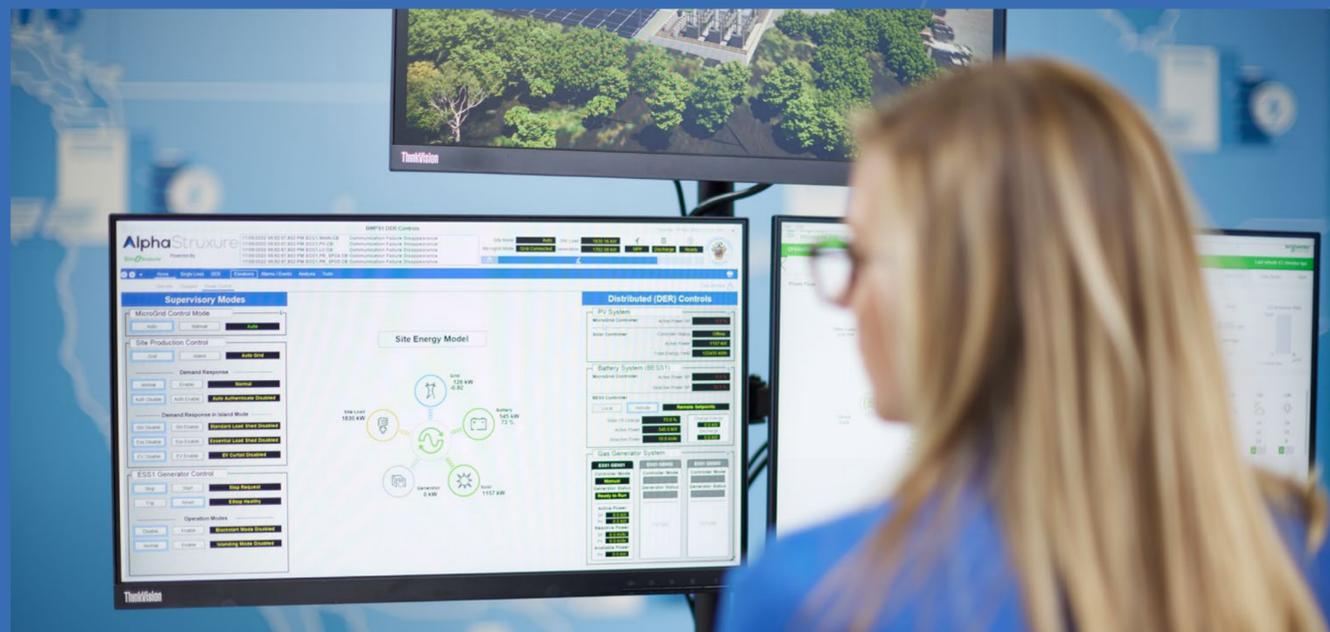
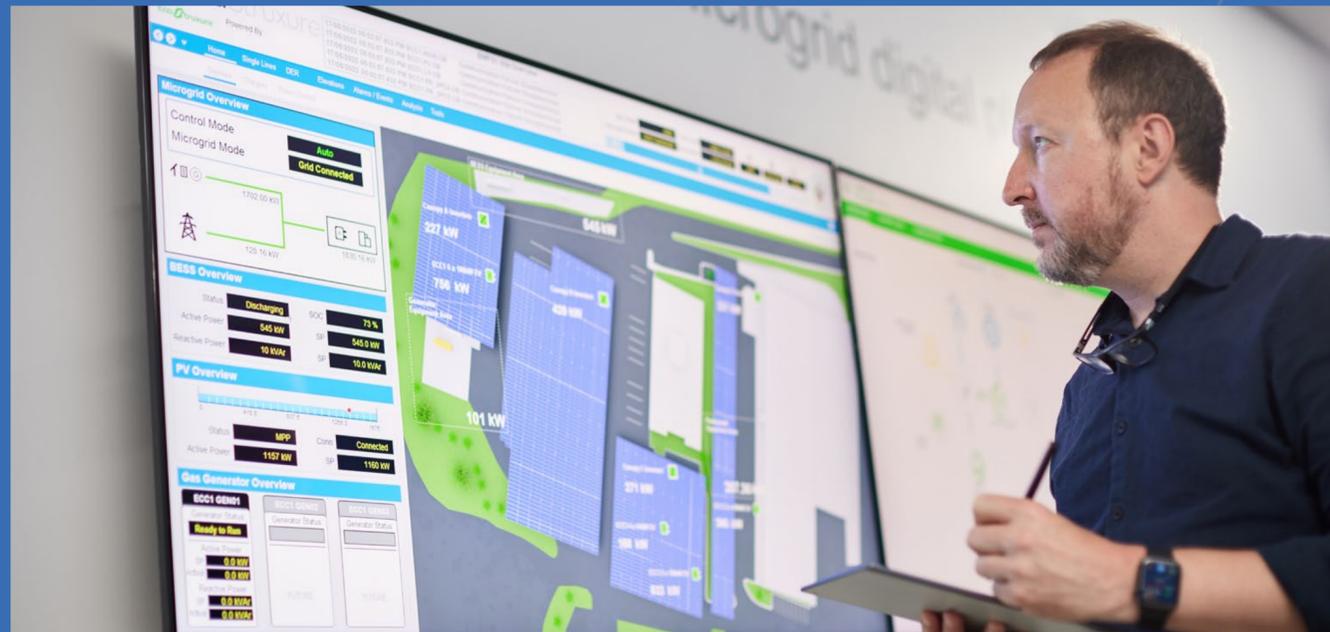
Real-time visibility into key performance metrics for onsite energy infrastructure

As a cloud-based platform, **Integrate by AlphaStruxure** provides energy stakeholders with easily accessible, ongoing, and shared data insights to allow for optimized operations, maintenance, and asset management across the microgrid's lifecycle.

Tailored dashboards highlight sustainability metrics; system performance, trends, and alerts; energy costs and bills; and predictive maintenance schedules to ensure optimal performance, cost, and reliability.



24/7 management capabilities for consistent performance

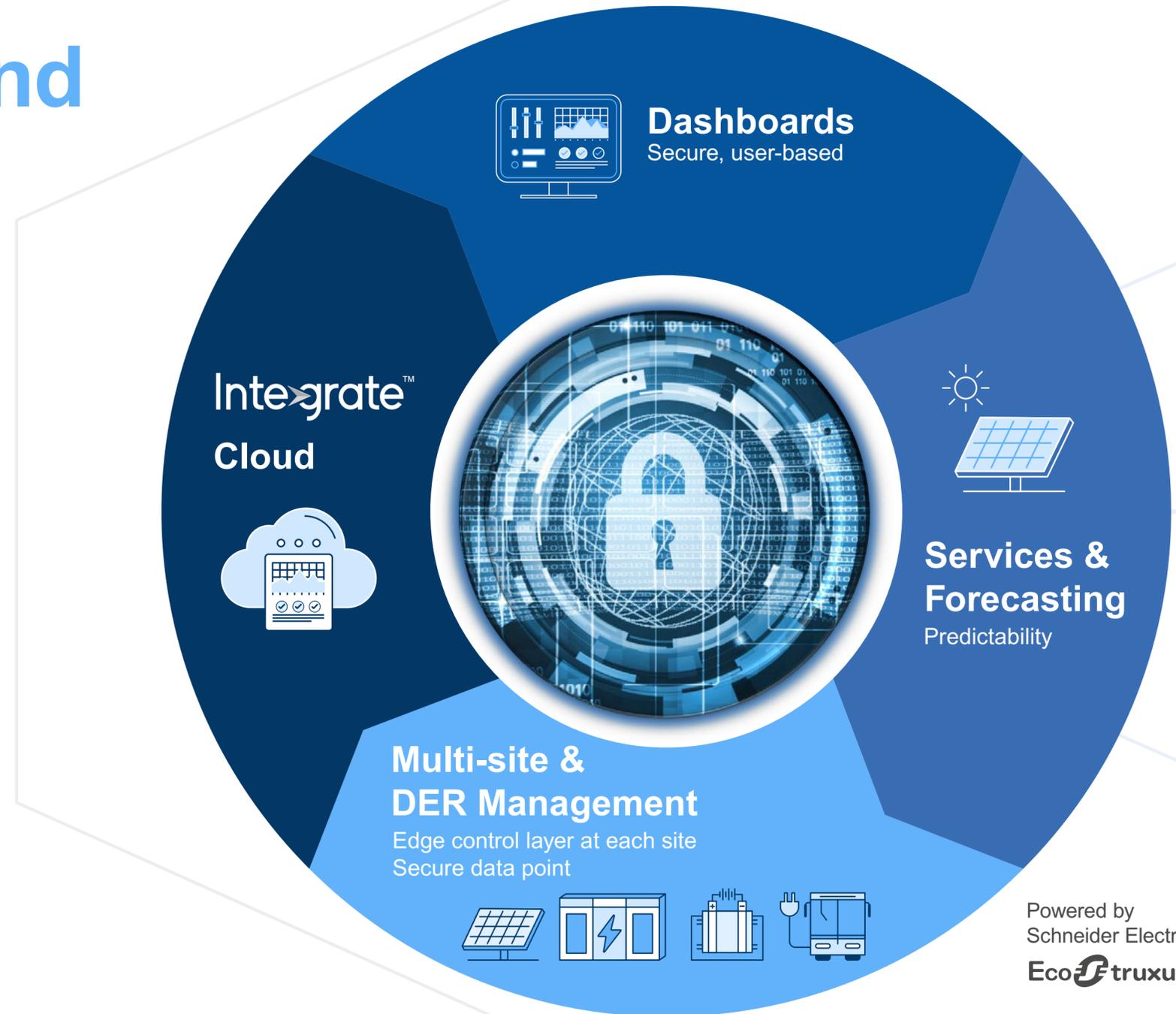


By converging information technology (IT) and operational technology (OT), the **Integrate Digital Platform** allows for hands-on operational management in real time. The platform automates each microgrid site so it can be managed with oversight from the 24/7 Network Operations Center (NOC). The on-site microgrid controls provide automated control to assure performance and visibility of real-time alerts, alarms, and trends, allowing the NOC Operator to correct performance or proactively make adjustments prior to an event.

Powered by Schneider Electric's **EcoStruxure™**

Cyber and operational security for peace of mind

Cyber-by-design, the **Integrate Digital Platform** is built on industry cyber standards (primarily NIST 800-53 and IEC 62443). It safeguards operational security and cyber security via multifactor authentication, strict role-based access control, and other design features, allowing stakeholders to see operational data but not control the system. In addition, AlphaStruxure continuously monitors for anomalies and routinely tests for system vulnerabilities.



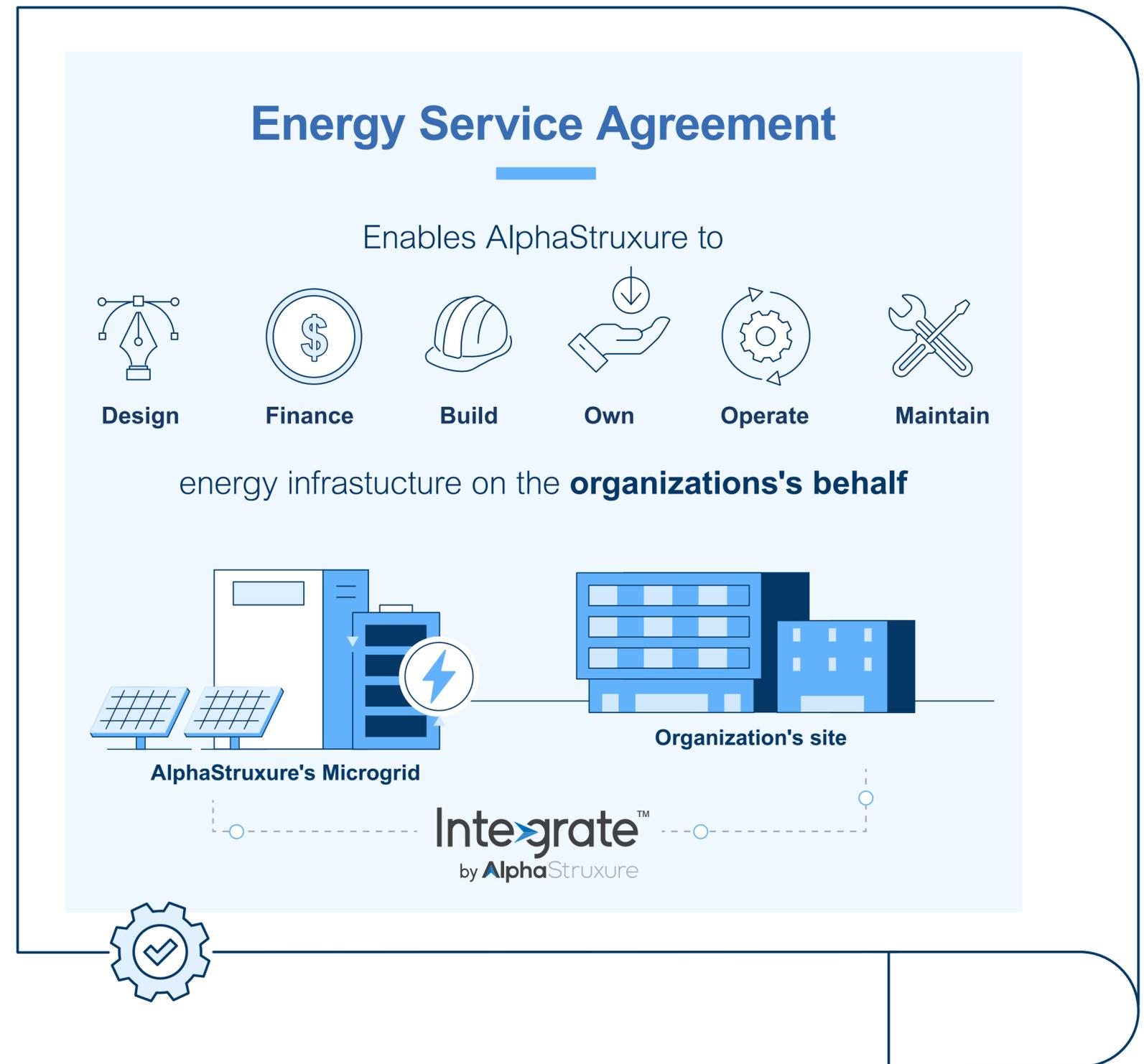
-  **Cyber threat prevention**
-  **Threat defense**
-  **Threat response management**

The digital backbone of the Energy as a Service business model

The **Integrate digital platform** enables the AlphaStruxure Energy as a Service (EaaS) business model to deliver client long-term outcomes, business reporting, compliance reporting, and informational dashboards.

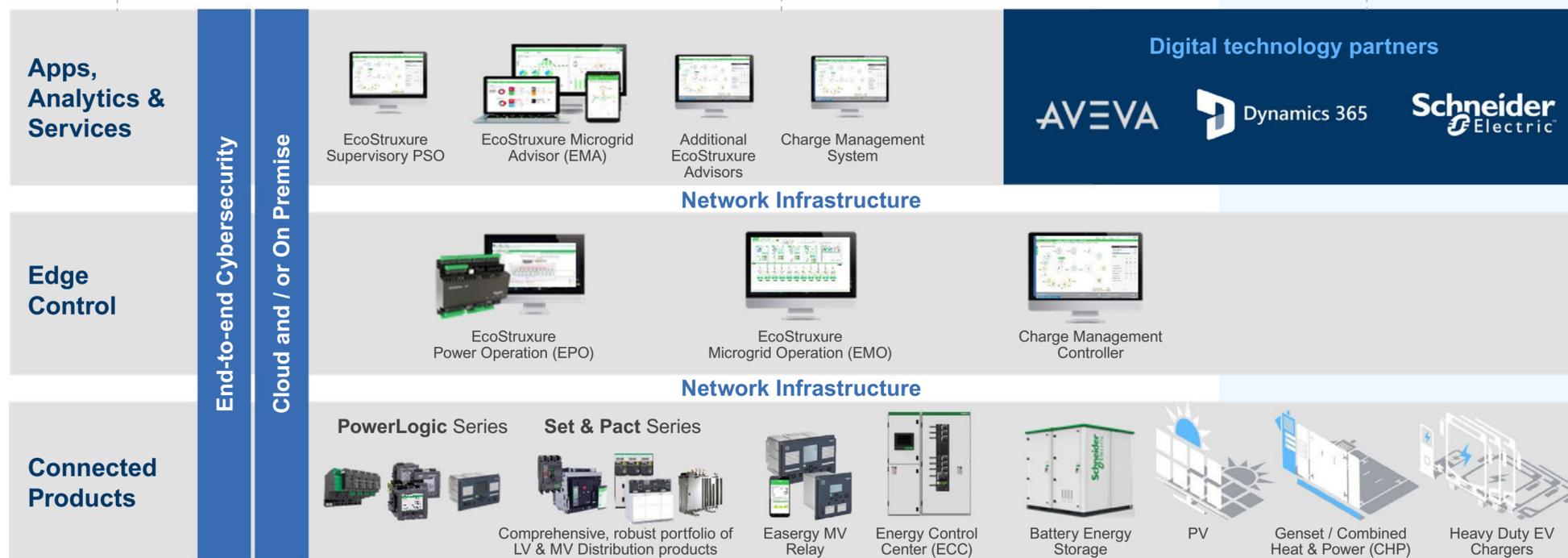
This EaaS model ...

- Is an innovative risk-transfer solution for deploying on-site energy infrastructure such as a microgrid without any upfront capital investment
- Allows organizations to avoid the burden of designing, financing, owning, installing, and managing energy infrastructure
- Enables organizations to achieve long-term outcomes on resilience, reliability, greenhouse gas reduction, and cost stability — without the complexity



Bringing the value of the IoT to microgrids

By integrating with the Schneider Electric EcoStruxure™ architecture and AVEVA's Unified Operations platform, the **Integrate by AlphaStruxure Digital Platform** connects best-in-class OT solutions with the latest in IT to unleash the value of operational data and the **Internet of Things (IoT)**.



Apps, Analytics & Services: Integrate enables a broad use of agnostic applications, predictive analytics, and information services across the entire stack of edge controls and connected devices for microgrid sites, turning mounds of data into useful information.

Edge Control: Integrate enables systems with real-time solutions for control at the Edge of the IoT network. Why? Because for mission-critical scenarios, not all control decisions can be made remotely; therefore, automated yet overridable control of devices at the Edge of the network of things is a must.

Connected Products: Because the Internet of Things starts with things, it is intelligent connected products like low voltage and medium voltage distribution, battery energy storage systems, smart Energy Control Centers, smart inverter-based solar PV, high-efficiency combined heat and power, and more that serve as the foundation of smarter operations.

Powered by Schneider Electric's **EcoStruxure™**

AlphaStruxure

The trusted partner in energy transformation

To discover Integrate by AlphaStruxure, visit:

alphastruxure.com/integrate