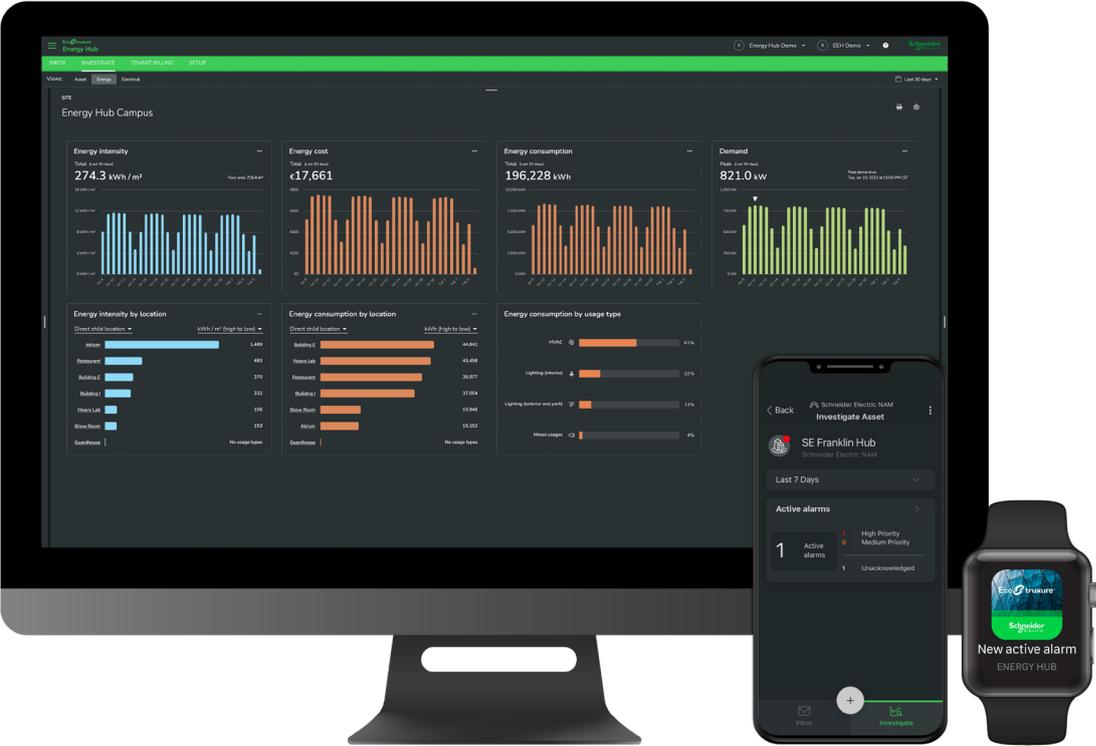




Energy Awareness Solution

Scope of Work & Commissioning Guide

03/23



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Safety information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that accompany this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

Failure to follow these instructions will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTE is used to address practices not related to physical injury.

Symbols



Additional information



The information provided must be complied with, otherwise program or data errors may occur.

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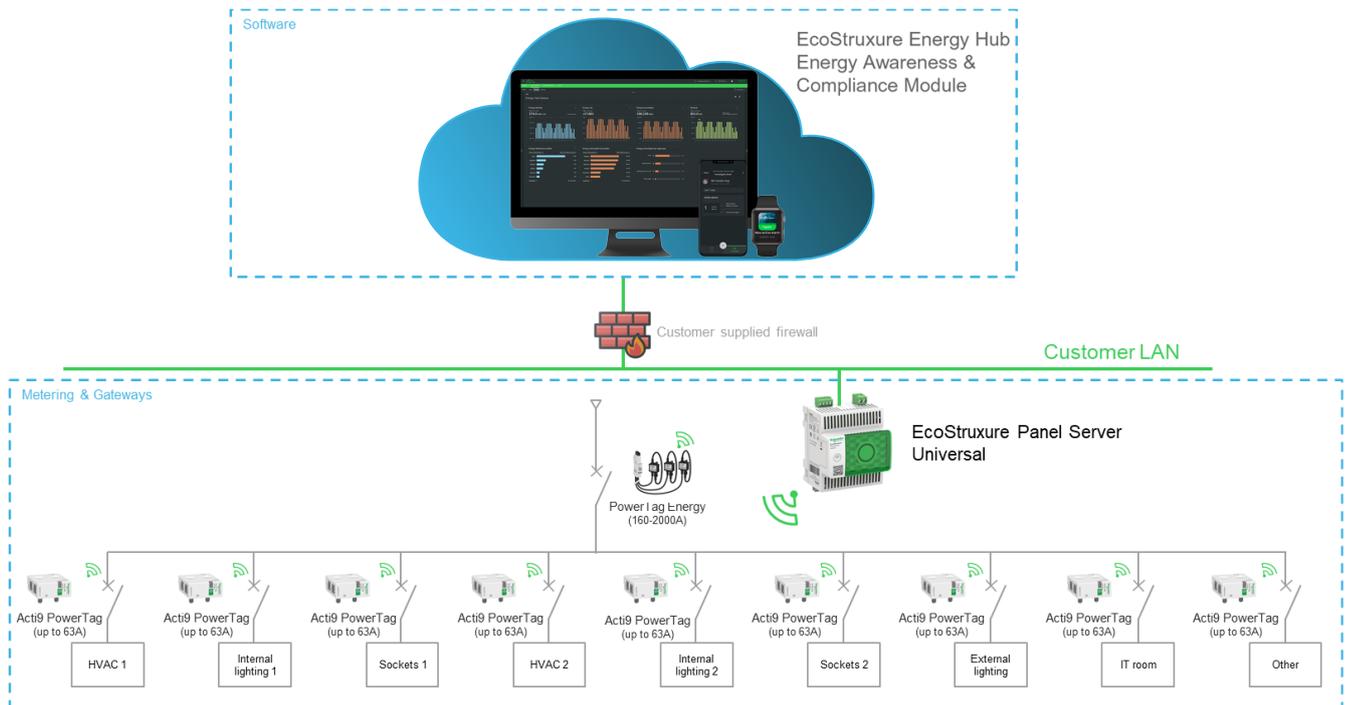
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Introduction and Architecture

The Energy Awareness Solution is a simple energy management solution designed to support commercial and industrial buildings in reducing energy consumption and costs.

Below is a reference architecture highlighting the main components of the solution:

- **PowerTag Energy Sensors** (see > [Installation and Startup of Metering Devices](#) for details on supported devices)
- **EcoStruxure Panel Server**, a cloud-connectable gateway with embedded web pages for commissioning
- **EcoStruxure Energy Hub**, a cloud-based software with the **Energy Awareness & Compliance Subscription Module**



Pic. 1 This architecture is an example of a variety of potential architectures that have been tested and validated with the components. The number of connected devices may vary depending on specific customer requirements. This example architecture can be scaled for buildings with up to 2000 A.



A maximum of 40* PowerTag Energy wireless sensors can be connected to an EcoStruxure Panel Server.

Connection to the cloud should be done via a wired LAN connection, a Wi-Fi connection is not recommended. It is also not recommended to use a 3G/4G router connection.

Document scope

This document is intended to guide installers, application engineers or end-user administrators in commissioning of the solution.

* limit with firmware v1.5.1

Commissioning Time Estimates

Estimated time to perform commissioning tasks

Time estimates are approximate and will depend on the size, complexity and unique characteristics of the customer site (e.g. availability of local IT).

For those new to Energy Hub system commissioning, it is recommended to include an additional buffer for troubleshooting and support.

The following assumptions are considered in these estimates:

- Those performing commissioning have been properly trained on all system components (hardware and software).
- Switchboards, distribution panels, and integrated communicating devices such as meters, smart circuit breakers or energy sensors have been installed, powered and all device-specific configuration and troubleshooting has been completed.
- The estimated commissioning time is based on a single site being integrated into the Energy Hub (commissioning times should be multiplied by the number of sites).
- The model system assumes 20 connected devices.

Task No.	Task description	Estimated Commissioning Time
1	Panel Server commissioning (per gateway)	1 hour
2	Gateway registration in the cloud and topology publishing	<1 hour
3	Energy Hub general setup	<30 minutes
4	Energy Hub - Energy Awareness & Compliance Module setup	1 hour
Average estimated commissioning time		3–4 hours or ½ day

Installation and Startup of Metering Devices

Supported Devices

Supported devices of this tested and validated standard architecture for Energy Awareness include the following PowerTag and Panel Server references:

Product Type	Description	Part number
Gateway	EcoStruxure Panel Server cloud gateway	PAS600, PAS600L
Energy Sensors	PowerTag Energy Monoconnect 63 A Sensors	A9MEM1520, A9MEM1521, A9MEM1522, A9MEM1540, A9MEM1541, A9MEM1542, A9MEM1543
Energy Sensors	PowerTag Energy Phase Neutral 63 A Sensors	A9MEM1561, A9MEM1562, A9MEM1563, A9MEM1571, A9MEM1572
Energy Sensors	PowerTag Energy Flex 63 A Sensors	A9MEM1560, A9MEM1564, A9MEM1570, A9MEM1573, A9MEM1574
Energy Sensors	PowerTag Energy Flex 160 A Sensors	A9MEM1580
Energy Sensors	PowerTag Energy Monoconnect 250 A-630 A Sensors	LV434020, LV434021, LV434022, LV434023
Energy Sensors	PowerTag Energy Rope 200 A-2000 A Sensors	A9MEM1590, A9MEM1591, A9MEM1592, A9MEM1593

Hardware Installation

The installer must ensure that the metering devices (e.g. PowerTag Energy sensors) are installed, powered and properly configured according to the device installation documentation available on the [Schneider Electric](#) website.



Only properly connected devices ensure good data quality in the EcoStruxure Energy Hub software dashboards.

EcoStruxure Panel Server Commissioning

For the following commissioning steps, you will be taken directly to the EcoStruxure Panel Server [user guide](#) chapter.

Hardware Description and Connection

> [Hardware Description and Connection](#)

Firmware Version

> [Firmware Version](#)

Firmware Update

> [Firmware Update](#)

Recommended Web Browsers

> [Recommended Web Browsers](#)

Connecting to EcoStruxure Panel Server Webpages

> [Connecting to EcoStruxure Panel Server Webpages](#)

Pairing Procedure

> [Pairing Procedure](#)

Cloud Connection

> [EcoStruxure Panel Server - User Guide](#)

Before enabling cloud services and publishing the Panel Server topology to the cloud, you should ensure with the end customer's IT department that the correct ports and endpoints are enabled. For more information, please contact the Schneider Electric Application Engineer.

For more IT and security guidelines for EcoStruxure Panel Server and EcoStruxure Energy Hub consult the following resources:

> [Panel Server Cybersecurity guide](#)

> [Energy Hub IT and Security Guide](#)



Once the gateway is added to EcoStruxure Energy Hub, the initial upload of data to the cloud will take approximately 15 minutes.

Energy Hub General Setup

Software Description

The EcoStruxure Energy Hub is a simple, modular cloud-based building energy management software. It is designed for commercial and industrial buildings to gain energy awareness and drive energy performance and optimization throughout a building's operational lifecycle.



- To learn more about EcoStruxure Energy Hub, visit the [Schneider Electric's website](#).
- For detailed documentation on the general setup of EcoStruxure Energy Hub, please refer to the online help [EcoStruxure Energy Hub Online Help Documentation](#)
- If you have any further questions or would like to provide feedback, please visit our online [technical user forum on Schneider Electric Exchange](#).

Log in and Create Organization

- 1 To log in, go to the Energy Hub web URL. If you are accessing the application for the first time, you must first register and create an account.
⇒ <https://ecostruxure-energy-one.se.app>
- 2 Once you are logged in, you will be prompted to create an organization and accept the terms of use. Then click on *[Next]*.

1 Create organization — 2 Add site — 3 Get started

Create a new organization

To get started, name this organization.

Organization name (used as display name) *

Organization country *

NOTE: The country setting influences the currency and units of measurement used for your organization. You can change these later.

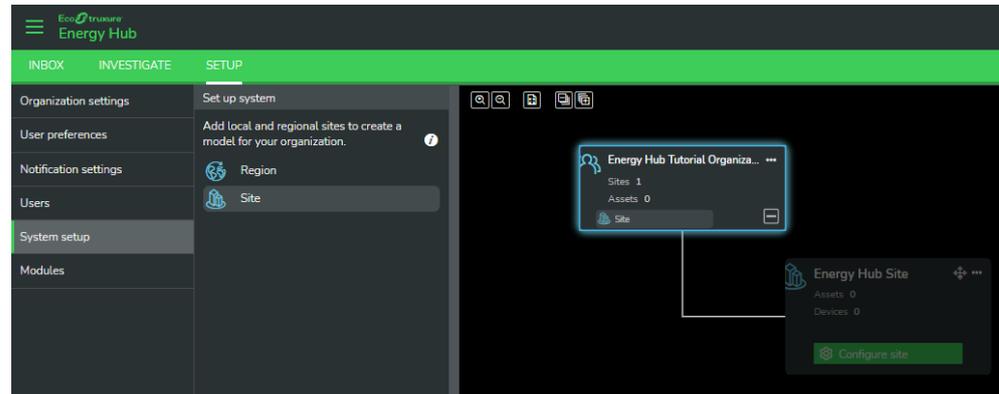
I agree to the [Terms of Use](#)

Next

Create and Configure your Site

A *[Site]* in Energy Hub refers to a physical building or campus in your organization. An Organization in Energy Hub may include several *Regions* or *Sites*. After creating your Organization, you will be prompted to *[Add a Site]*.

- 1 Under Setup, create a *[Site]*. For multi-site applications, one or multiple *[Regions]* can be created under the Organization to organize sites.
- 2 To create a Site, drag the *[Site]* icon onto the organization box in the configuration canvas.

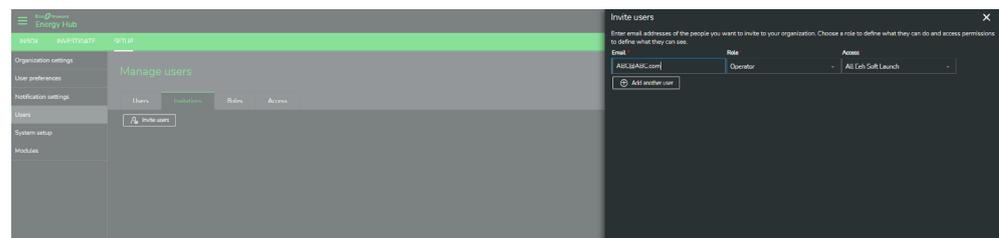


An information panel will appear on the right side of the screen.

- 3 Provide the following information:
 - Site Name
 - Building Type
 - Cost per kilowatt hour for the site
 - Description (optional)
 - Floor area (total floor area for the site)
 - Address

Add Users

- 1 On the Setup tab, navigate to *[Users]* in the tree structure on the left pane.
- 2 To invite users, click the *[Invitations]* tab and *[Invite Users]*.
- 3 Enter the user's email address and role, and then click *[Send Invitations]*.



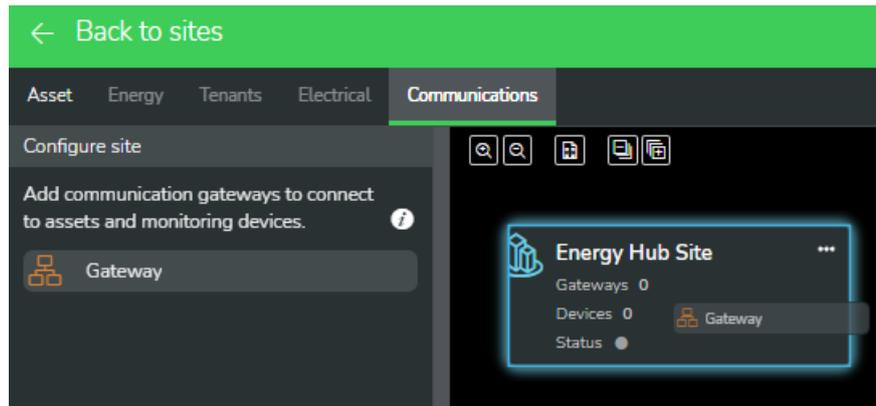
Add your Panel Server gateway

Before connecting the gateway, confirm that the EcoStruxure Panel Server has enabled cloud services and the gateway topology has been published. > [EcoStruxure Panel Server Commissioning](#).

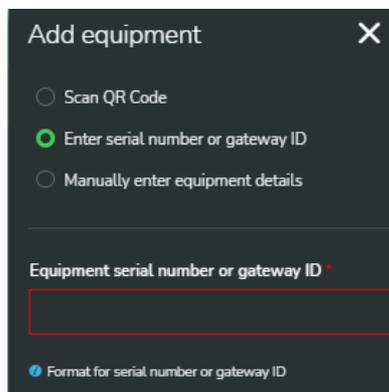
- 1 In the EcoStruxure Energy Hub application, navigate to *[Setup] >> [System Setup]* and *[Configure Site]* for the selected site. Select the *[Communications]* tab.
- 2 Click and drag a *[Gateway]* from the left pane to the Energy Hub Site and release it. A configuration panel will appear on the right side.



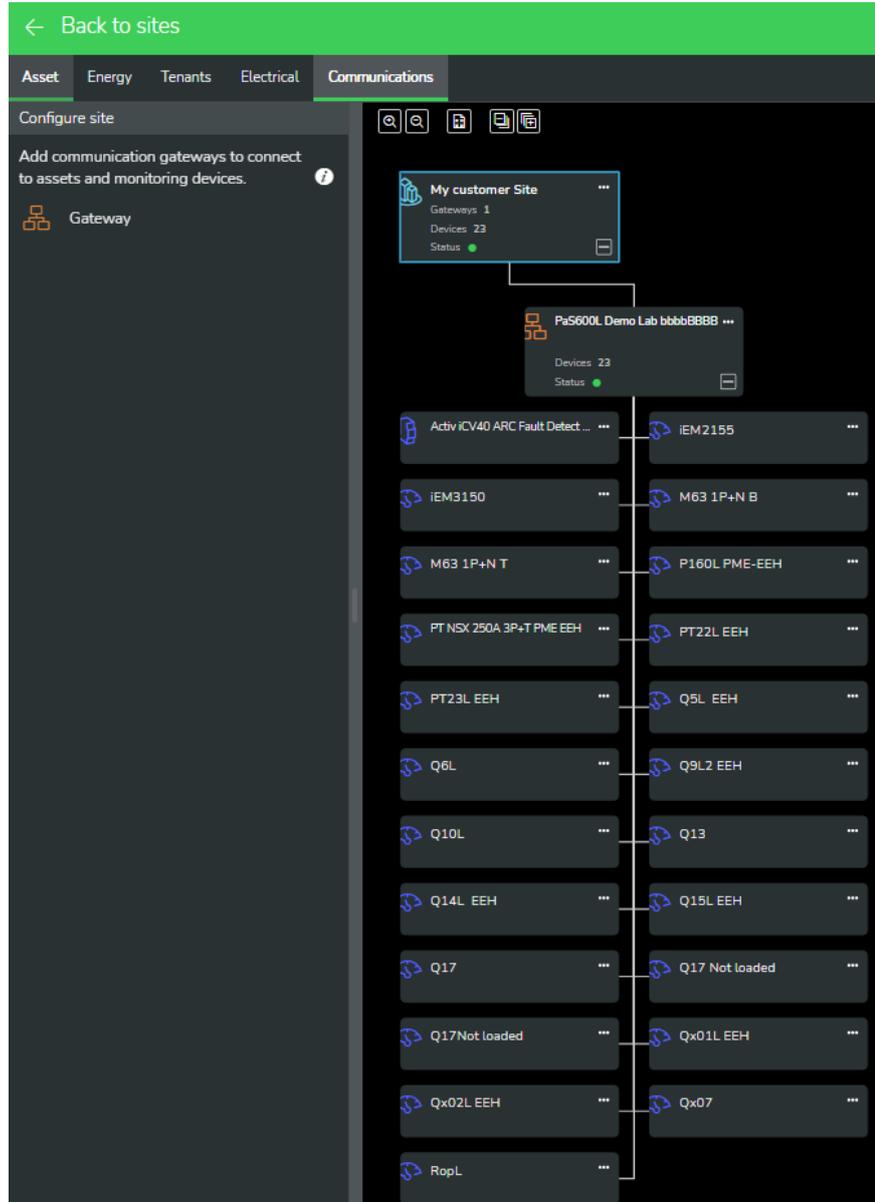
Once the gateway is added to EcoStruxure Energy Hub and data is available from downstream devices, data will be published to the cloud application. The initial upload will take approximately 15 minutes.



- 3 Select *[Enter serial number or gateway ID]*, enter the EcoStruxure Panel Server serial number or the gateway ID, and click *[Next]*.



The connected metering devices will now be displayed under the gateway in the configuration overview.

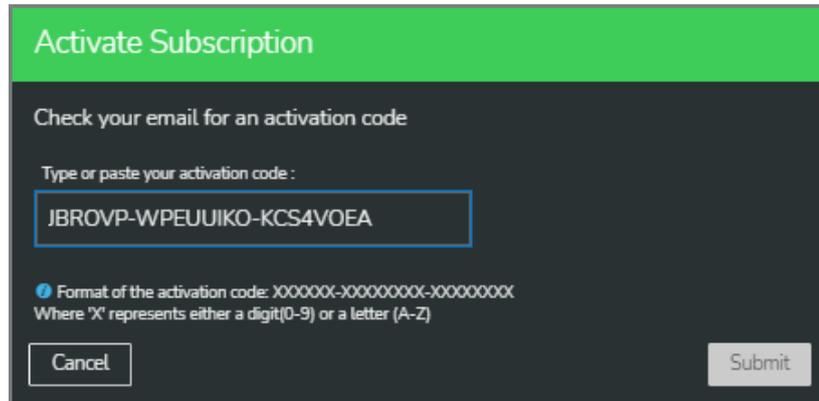


Activation and Setup of the Energy Hub Subscription

Activate your Energy Awareness & Compliance Module

After receiving order confirmation for the subscription to the EcoStruxure Energy Hub, Energy Awareness & Compliance module, an email with an activation code is sent.

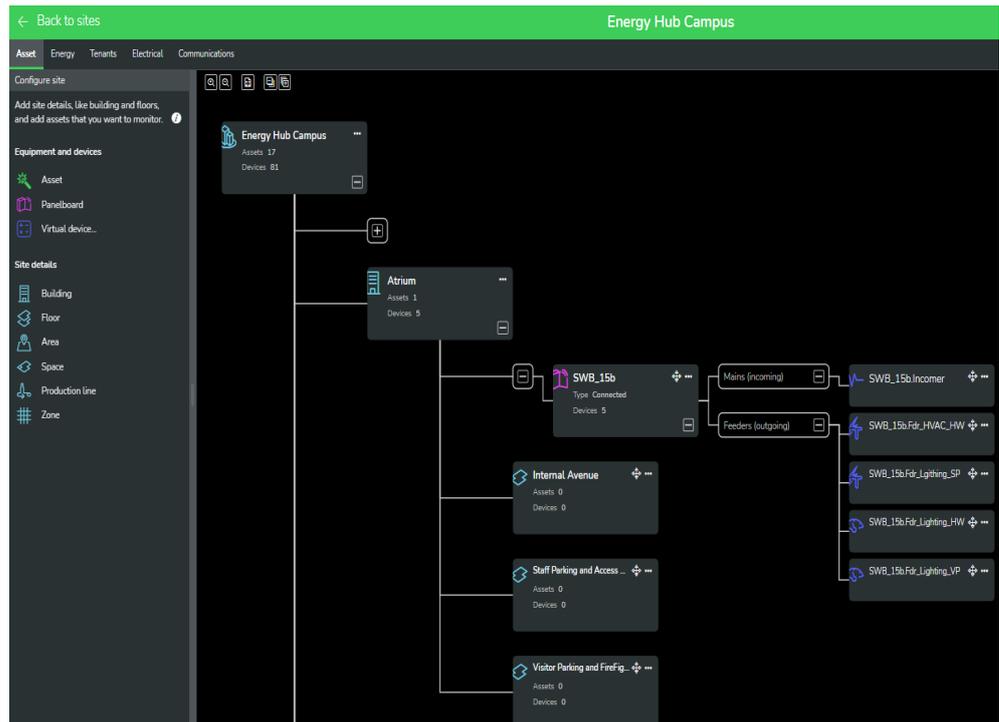
- 1 In the EcoStruxure Energy Hub application, navigate to *[Setup]* >> *[Modules]* and select *[Activate Subscription]*.
- 2 Copy and paste the activation code from your activation email into the activation code field. Click *[Submit]*.



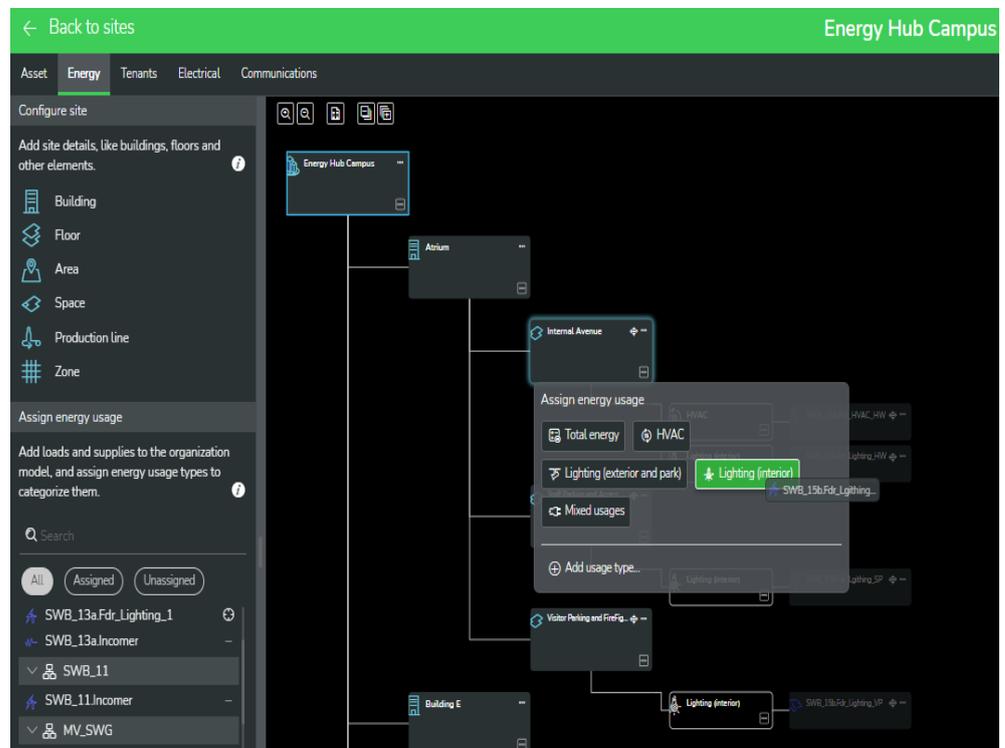
Configure your Asset and Energy Hierarchy

For information on Energy Hub's Asset and Energy Hierarchy, please consult the online documentation: [> Energy Hub Help](#)

- 1 Once the subscription is activated, navigate to *[Setup]* >> *[System Setup]* and select *[Configure site]* for the Energy Hub Site you would like to configure.
- 2 Select the *[Asset View]* and define your building topology by dragging buildings, floors, areas, etc. that are representative of the site layout.
- 3 To assign panelboards where connected devices are installed, drag a panel-board onto the appropriate building topology node defined as above.



- 1 Navigate to the *[Energy View]* and assign the metering devices to the topology node for which the energy is measured.
- 2 Drag a connected metering device from the left pane to a building topology node to assign the energy usage type. Select the appropriate energy usage type according to the building plans or consult the end user or contractor.

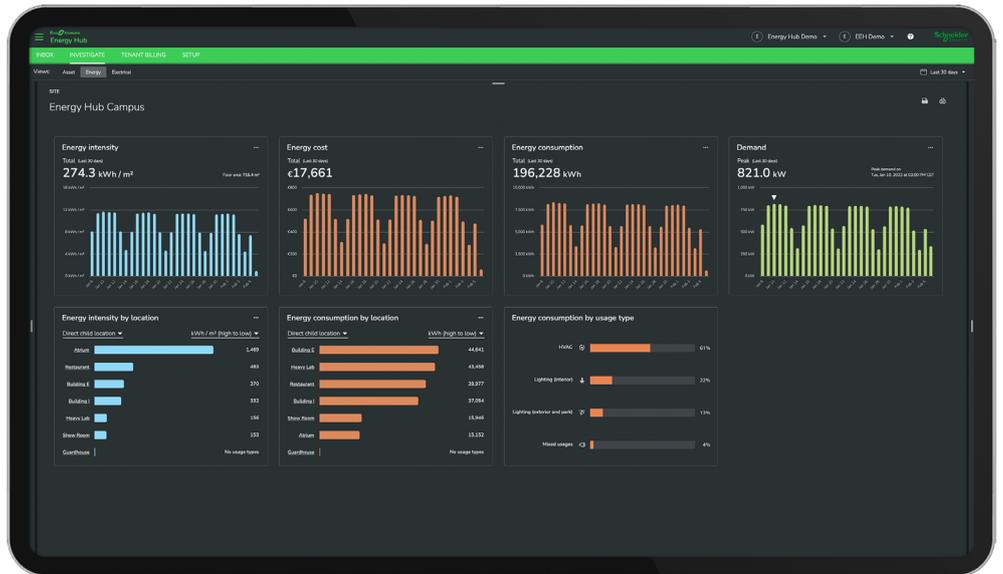


Verify Data in the Investigate Tab

Once the asset and energy hierarchies are configured navigate to both of the following to verify data is displaying as expected. Note that the dashboards will be automatically configured, and data may take up to an hour after the gateway is added to be visible.

To verify the asset hierarchy is properly configured, navigate to *[Investigate] >> [Asset]*

To verify the energy hierarchy and usage types are properly configured, navigate to *[Investigate] >> [Energy]*



Schneider Electric SA

35 rue Joseph Monier
92500 Rueil Malmaison - France
Phone: +33 (0) 1 41 29 70 00
Fax: +33 (0) 1 41 29 71 00

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