Energy Access Expert for Villaya Flex Application

User Guide

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www.se.com

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Safety Information

Important 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 documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this 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 follow 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.

⚠ 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

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

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified personnel is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Guide

Document Scope

This document describes the use of Energy Access Expert for Villaya Flex Application.

Validity Note

This document is valid only for Energy Access Expert for Villaya Flex Application.

Online Information

The information contained in this guide is likely to be updated at any time. Schneider Electric strongly recommends that you have the most recent and up-to-date version available at www.se.com/ww/en/download/.

The technical characteristics of the devices described in the present document also appear online. To access the information online, go to the Schneider Electric Country Website.

Information on Non-Inclusive or Insensitive Terminology

As a responsible, inclusive company, Schneider Electric is constantly updating its communications and products that contain non-inclusive or insensitive terminology. However, despite these efforts, our content may still contain terms that are deemed inappropriate by some customers.

Cybersecurity Best Practices

Overview

The objective of cybersecurity is to provide increased levels of protection for information and physical assets from theft, corruption, misuse, or accidents while maintaining access for their intended users. There are many aspects to cybersecurity including designing secure systems, restricting access using physical and digital methods, identifying users, as well as implementing security procedures and best practice policies.

This section provides information on how to secure your system from a malicious cyber-attack.

Refer to Schneider Electric's product security brochure for Recommended Cybersecurity Best Practices.

To communicate a security topic affecting a Schneider Electric product or solution, go to Vulnerability Management Policy.

NOTICE
POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY Change default passwords or passcodes to help prevent unauthorized access to device settings and information. Disable unused ports or services and default accounts, where possible, to minimize pathways for malicious attacks. Place networked devices behind multiple layers of cyber defenses (such as firewalls, network segmentation, network intrusion, detection and protection). Use cybersecurity best practices (for example: least privilege, separation of duties) to help prevent unauthorized exposure, loss, modification of data and logs, interruption of services, or unintended operation. **Failure to follow these instructions can result in unintended data loss or loss of application function.**

Product Defense in Depth

Use a layered network approach with multiple security and defense controls in your IT and control system to minimize data protection gaps, reduce single-point of-failure and create a strong cybersecurity posture. The more layers of security in your network, the harder it is to breach defenses, take digital assets or cause disruption.

Secure Development Lifecycle

Schneider Electric uses a Secure Development Lifecycle (SDL) process, a key product development-based framework that helps ensure products follow secure design processes across all lifecycle stages. The Schneider Electric SDL process complies with IEC 62443–4.1.

Go to the International Electrotechnical Commission for information about the IEC 62443 international standard.

The SDL process includes the following:

- SDL practices applied to internal development actions.
- Final cybersecurity review required for the project release.
- Security training for personnel involved in the product development.

Application Security Capabilities

Secure Communication

This security capability helps to protect the confidentiality of information through secure protocols that employ cryptographic algorithms, key sizes, and mechanisms used to prevent unauthorized users from reading information in transit, i.e. HTTPS, secure Modbus.

Component Integrity Check

Guaranteeing integrity is paramount to security. Ensure an integrity verification mechanism is employed for all scripts, executables, and other important files included in a product (component or system).

Event Logging

Application and infrastructure level events are logged for further validation and debugging purposes.

Data Privacy

The Energy Access Expert web application is developed with data privacy by design best practices. Personal data is collected and processed in an open and transparent manner. Refer to Schneider Electric's Schneider Data Privacy and Cookie Policy for more details on how we process and protect your personal information, including how you can use the rights granted to you by applicable data protection law (such as the rights of access, rectification, and objection).

Cloud-based Software Cybersecurity Details

Cloud commissioning is a cloud-based service that supports front-end commissioning applications or clients to interact with the cloud using microservices or APIs and is hosted on the Microsoft Azure Cloud.

Secure Development Lifecycle

Schneider Electric is continuously monitoring the changing security landscape of cryptography and cybersecurity to ensure that we offer the best available protections to our customers and their sensitive data. Our development practices follow a secure development lifecycle, which ensures a high level of code quality and usage of up-to-date libraries to ensure an optimal level of cybersecurity. All Schneider Electric cloud systems are regularly audited by an internal process that includes penetration tests.

Data Security at Rest

Schneider Electric follows best practices to create a highly secure solution and limit the risk of data being compromised in any meaningful manner while protecting the privacy, control, and autonomy of each customer's data independently from others.

Our solution includes asset information and user information (such as country, city, state etc.,).

Data Security in Motion

Schneider Electric cloud-based application implements best practices such as:

- All communications to and from Energy Access Expert Villaya Flex with internal Schneider Electric systems or external third-party systems are encrypted using HTTPS (the minimum level required is TLS 1.2).
- The certificate involved in these encrypted sessions leverages the SHA-256 with RSA encryption secure hash algorithm.
- Schneider Electric is continuously monitoring the changing security landscape of cryptography and cybersecurity to ensure that we offer the best available protections to our customers and their sensitive data.

Data Privacy

Schneider Electric focuses on securing data flows coming from connected products and solutions (whether they connect to non-Schneider Electric hosts or platforms managed by Schneider Electric) and aligning to the latest data integrity and privacy regulatory requirements, such as the European General Data Protection Regulation (GDPR).

- Data policy is compliant with local regulations.
- The customer data use and protection policy is to be electronically signed by the responsible party of the site (for example, the building owner or tenant).
- No data will be exported without this agreement.
- Data remains customer ownership.

Defense in Depth Measures Expected in the Environment

Schneider Electric recommends a Defense-in-Depth approach to cyber security for its customers. Defense-in-Depth is a hybrid, multilayered security strategy that provides holistic security throughout an industrial enterprise.

Cybersecurity Policy

Security plan, policies, and procedures that cover risk assessment, risk mitigation, and methods to recover from disaster. Policy is available with up-to-date guidance on governing the use of information and technology assets in your company.

Perimeter Security

Firewalls, authentication, authorizations, VPN (IPsec) and antivirus software to prevent unauthorized access.

Monitoring and Update

Monitoring and update provides:

- Surveillance of operator activity and network communications.
- Regular updates of software and firmware.
- Monitor and restrict use of shared user account.

Security Hardening Guidelines

Device Hardening

Password management, user profile definition, and deactivation of unused services to strengthen security on devices. Controls against malware - detection, prevention, and recovery controls to help protect against malware are implemented and combined with appropriate user awareness.

Securing Network

NOTICE
POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY Use cybersecurity best practices to help prevent unauthorized access to the software. **Failure to follow these instructions can result in unintended data loss or loss of application function.**

Improve security of networked devices by using multiple layers of cyber defense (such as firewalls, network segmentation, and network intrusion detection and protection). Disable unused ports or services and default accounts to help minimize pathways for malicious attackers.

To reduce the security risks associated with networks, follow these guidelines:

- Use firewalls and other security devices or settings to limit access to the host network, based on your security risk assessment.
- When using a firewall:

  Restrict communication to the expected ports, as per your network configuration. Only open those ports that are necessary for network communication.
- When using network switches:

  Close or disable unused network ports to prevent unauthorized connection of network nodes or PLCs.

Securing PCs

Patching

NOTICE
POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY Apply the latest updates and hotfixes to your Operating System and software. **Failure to follow these instructions can result in unintended data loss or loss of application function.**

Ensure all windows updates and hotfixes, especially windows security updates are regularly applied to machines running EcoStruxure Power Commission application.

Allowlisting

Zero-day cybersecurity attacks take place before a software vendor is aware of a cybersecurity misuse. This means that neither software, nor anti-virus programs have been created or updated to protect against the zero-day threat or attack. Application allowlisting is recommended to protect against zero-day attacks. This specifies an index of approved software applications and processes (in our case, EcoStruxure Power Commission application) that are permitted to be present and active on PC.

Secure Disposal Guidelines

Secure disposal refers to systematically retiring outdated legacy software and hardware without compromising business needs or compliance requirements. It can be done in two ways:

- First, it uses a rigorous process to analyze the overall solution portfolio and identify the best (or all) candidates for disposal.
- Second, it employs innovative technology that can extract data from difficult legacy environments and store it in an accessible but fully compliant central repository.
- Secure disposal of media containing customer data with an option for reuse can be done by the customer, Schneider Electric or 3rd party service provider.

Disposal Strategy and Design

To define disposal strategy with the purpose of maximizing the Return of Investment (ROI) and minimizing disruption, analysis of solution architecture should be performed. Analysis outcomes should be documented.

Disposal Implementation

Disposal implementation should follow a comprehensive design effort. Implementation is not complete until proven and validated by rigorous testing with a complete documentation trail.

Secure Operation

NOTICE
POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY Use cybersecurity best practices and follow recommended operation guidelines while using the application. **Failure to follow these instructions can result in unintended data loss or loss of application function.**

Recommended Operation Guidelines

It is recommended to close EcoStruxure Power Commission application before switching the user account or logging out of user account.

Do not install untrusted extensions in web browser. Follow your organizations IT policy for the safe use of web browsers.

Periodically review application event logs.

Disable unused Universal Serial Bus (USB) ports.

Network Monitoring

When using a firewall:

- Periodically monitor the firewall to ensure the configuration has not been changed, and that the firewall status does not indicate communication has occurred on unexpected ports.
- Only open those ports that are necessary for network communication.
- When using network switches: Periodically monitor the switch to ensure the configuration has not been changed, and that the switch status does not indicate communication has occurred on unexpected ports.

Monitoring PC

Back up the project file regularly and store it in a secure, separate, non-shared location.

Install operating system patches and anti-virus software updates on the PC, as they are released.

Periodically monitor the Windows accounts available on the PC to ensure that only the necessary personnel can log on to the PC, with the appropriate level of access. Remove inactive or unnecessary user accounts.

Review the windows system events log to monitor logon and logoff activity on all the PCs, and to detect attempted unauthorized activity.

Periodically review user accounts and their roles and privileges to ensure compliance with your organization’s policy.

Account Management Guidelines

Securing User Access

NOTICE
POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY Use cybersecurity best practices when configuring user access. **Failure to follow these instructions can result in unintended data loss or loss of application function.**

Cybersecurity policies that govern user accounts and access, such as least privilege and separation of duties, vary from site to site. Work with the facility IT system administrator to ensure that user access adheres to the site-specific cybersecurity policies.

Recommendations to optimize cybersecurity in a protected environment:

- Make sure not to use a shared user account. Use a separate account for each user.
- Assign users only the essential permissions needed to perform their role.
- Revoke user permissions when no longer needed due to role change, transfer, or termination.

Awareness and Education

Knowledge is the first step to prevent cyber intrusions. Review the following resource to increase your cybersecurity awareness.

The Schneider Electric Cybersecurity Portal contains cybersecurity news, security notifications, and additional resources.

Schneider Electric Cybersecurity Support Overview

The Schneider Electric cybersecurity support portal outlines the Schneider Electric vulnerability management policy. The aim of the Schneider Electric vulnerability management policy is to address vulnerabilities in cybersecurity affecting Schneider Electric products and systems to protect installed solutions, customers, and the environment.

Schneider Electric works collaboratively with researchers, Cyber Emergency Response Teams (CERTs), and asset owners to ensure that accurate information is provided in a timely fashion to protect their installations.

Schneider Electric's Corporate Product CERT (CPCERT) is responsible for managing and issuing alerts on vulnerabilities and mitigations affecting products and solutions.

The CPCERT coordinates communications between relevant CERTs, independent researchers, product managers, and all affected customers.

Schneider Electric Cybersecurity Support Portal

The support portal provides the following information:

- Cybersecurity vulnerabilities of products.

- Cybersecurity incidents.
- Interface that enables users to declare cybersecurity incidents or vulnerabilities.

Security Notification

Product security notification posted can be viewed via Schneider Electric website:
https://www.se.com/ww/en/work/support/cybersecurity/security-notifications.jsp

Vulnerability Reporting and Management

Cybersecurity incidents and potential vulnerabilities can be reported via the Schneider Electric website:Report a Vulnerability.

For more information on cybersecurity for EcoStruxure, visit the website:

https://www.se.com/ww/en/work/solutions/cybersecurity/

Introduction

Description

Energy Access Expert web application enables energy management in real-time, provides reliable data reporting, and ensures the sustained profitability of your microgrid sites. The energy consumption, load usage, and credit details are uploaded to a secured data cloud at the specified time interval.

The energy dispenser operates on an open platform that enables the modification of business models and the loads to be connected and disconnected to ensure system performance as expected from the PC. The goal of EcoStruxure for energy access is to be an open and flexible model that can support a variety of business models, including dispersed and clustered communities, locations with limited or no access to data connectivity, automated or manual revenue collection, or even a differential tariff depending on the time of day.

The grid operator can modify the notifications on customer usage and balance energy credit alarms for business-specific events to enhance customer satisfaction and the customer experience. The load management information is simultaneously sent to the grid operator and to the consumer to ensure that there is no confusion on energy credit history or business model between the consumer and the grid operator.

Features

Energy Access Expert web application supports the connection of Schneider Electric devices in:

- Creation and management of new sites
- Performance analysis
- Reports creation
- Device configuration
- Events creation
- Diagnostic

Compatible Devices

Energy Access Expert web application is compatible with the following devices:

- SEM2000
- SEM2100 [LORA]

Specifications

PC Requirements

Component	Minimum Requirements
Processor	Intel® Core™ 2 Duo CPU at 3.00 GHz
RAM	4 GB
System type	64 bit or 32 bit

Software Requirements

The following operating systems and web browsers are compatible with the Energy Access Expert for Villaya Flex Application.

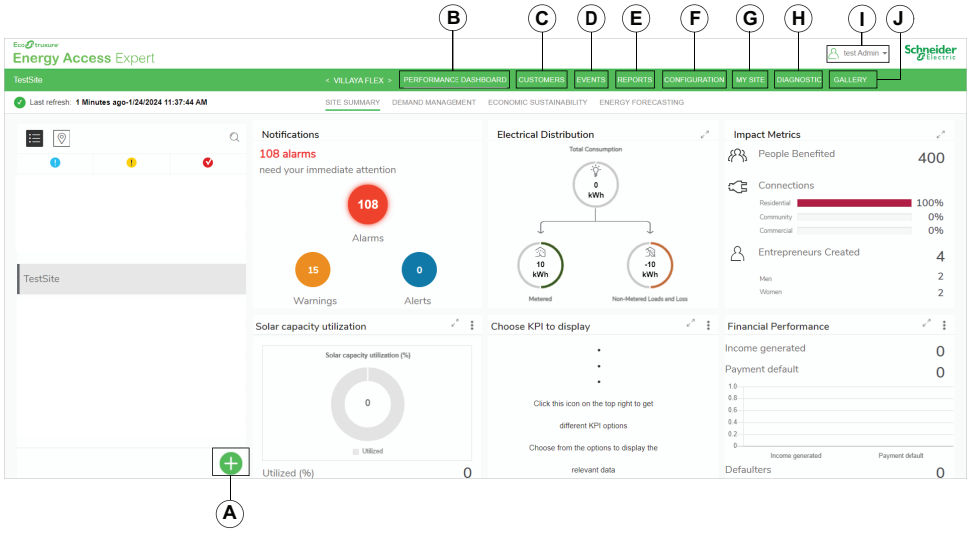
- Microsoft Windows® 7 operating system
- Microsoft Windows® 8.1 operating system(1)
- Microsoft Windows® 10 operating system
- Google Chrome™ web browser (version 54 or above)
- Microsoft Edge web browser (version 110 or above).

(1) Local connection with UTA is not supported on Windows 8.1.

Welcome Screen

Overview

Energy Access Expert web application displays the following welcome screen, which provides options to create the required site architecture.



Legend	Name	Function
A	New Site Registration	Allows to create new site (refer New Site Registration, page 24).
B	Performance Dashboard	Allows to get the site details (refer Performance Dashboard, page 32).
C	Customers	Allows to modify and replace customer (refer Customers, page 30).
D	Events	Provides various notifications (refer Events, page 53).
E	Reports	Allows to get site and billing report (refer Reports, page 55).
F	Configuration	Allows to get configuration details (refer Configuration, page 47).
G	My Site	Allows to manage site, customer, and non-metered loads (refer My Site, page 26).
H	Diagnostic	Provides device performance status (refer Diagnostic, page 57).

Legend	Name	Function
I	User Management	Allows to manage users (refer User Management, page 18).
J	Gallery	Allows to add images (refer Gallery, page 58).

User Management

Types of User and Roles

Overview

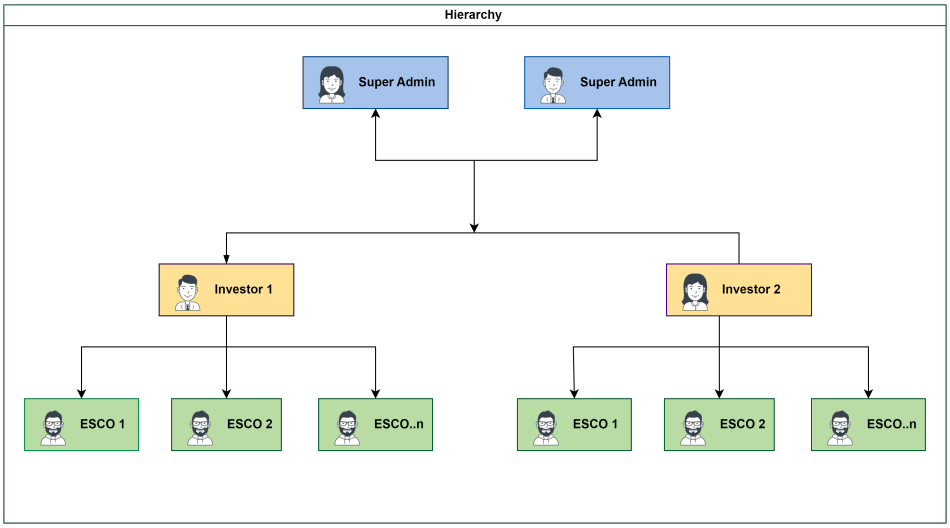
A system administrator will approve the users when they register, which applies to system wide predefined roles and permissions.

There are four types of roles:

- Admin
- Investor
- ESCO
- User

Hierarchy

The user account creation process is based on the following hierarchy:



Roles and Responsibilities

For more information about the user roles and responsibilities, refer to the following table:

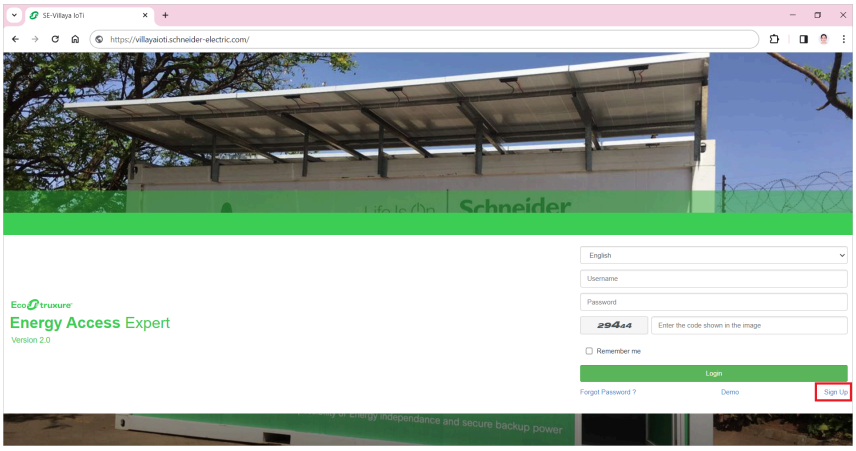
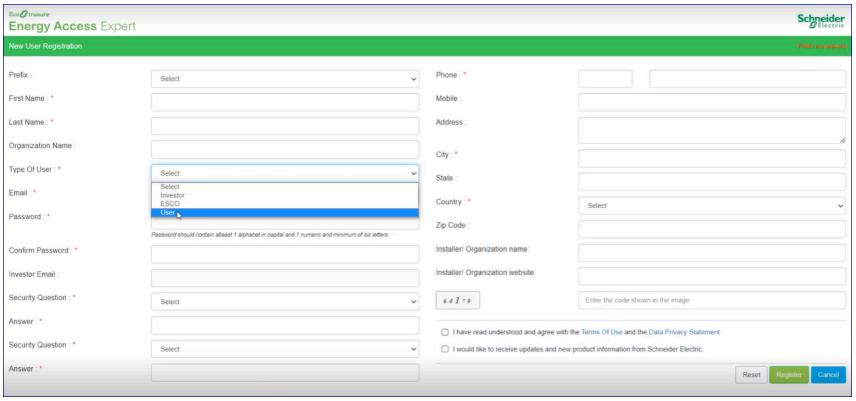
Section	Action	Users			
		Admin	Investor	ESCO	User
Users Account Creation	Create	✓	✓	-	-
	Edit	✓	✓	-	-
	Delete	✓	✓	-	-
Site Creation	Create	✓	✓	✓	✓
	Edit	✓	✓	✓	✓
	Delete	✓	✓	✓	✓
Add New Customer	Create	✓	✓	✓	✓
	Edit	✓	✓	✓	✓

Section	Action	Users			
		Admin	Investor	ESCO	User
	Delete	✓	✓	✓	✓
Site Access	Admin Site Access	✓	-	-	-
	Investor Site Access	✓	✓	-	-
	ESCO Site Access	✓	✓	✓	-
	User Site Access	✓	-	-	✓

User Account Creation

Add Users

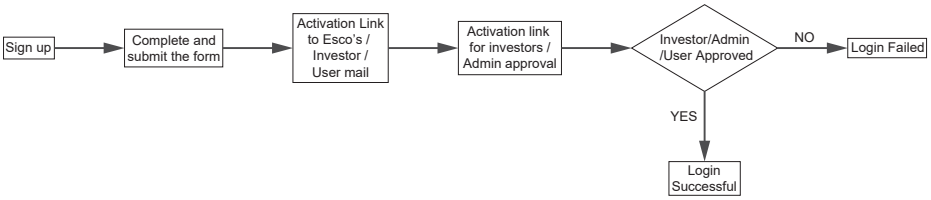
To add users:

Step	Action
1	Launch Energy Access Expert web application. 
2	Click **Sign Up**. 
3	Enter the details to be updated and click **Register**. **Result:** A validation request is sent to the registered email. **NOTE:** Sometimes spam filters block automated emails. If you do not find the email in your inbox, check your spam or junk folder.

Step	Action
4	Click the activation link attached in the email to verify and complete your registration.
5	From the Energy Access Expert login window, enter the registered username, password, and security code and click **Login** . **Result:** The user account is created.

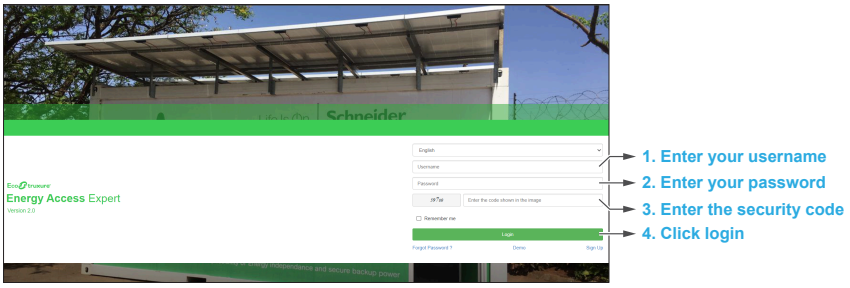
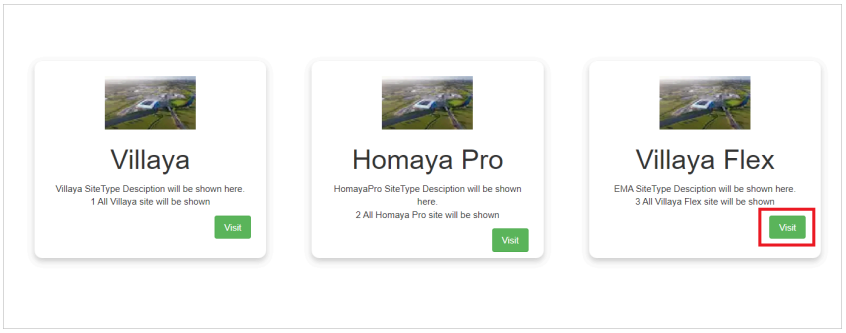
New User Approval Process

ESCO, Investor, or User Approval Process



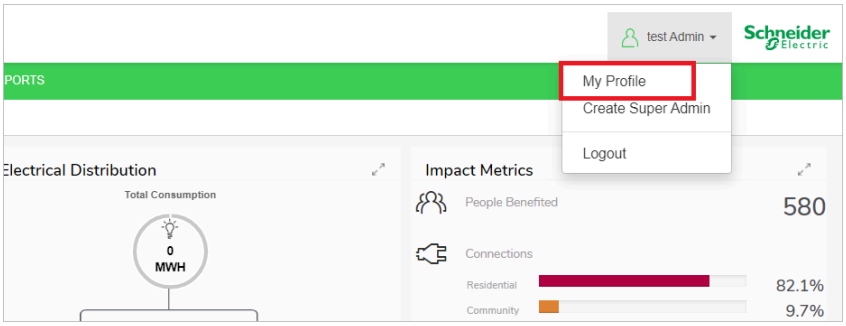
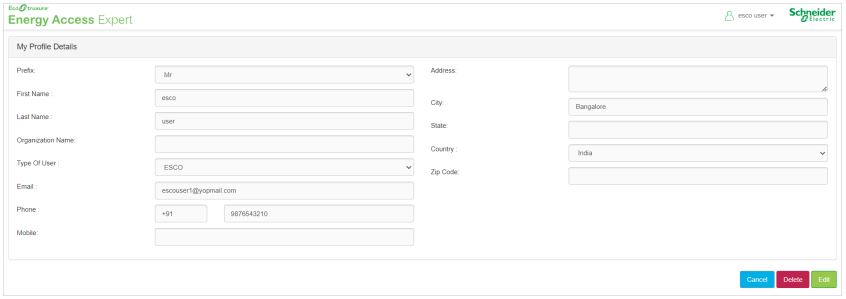
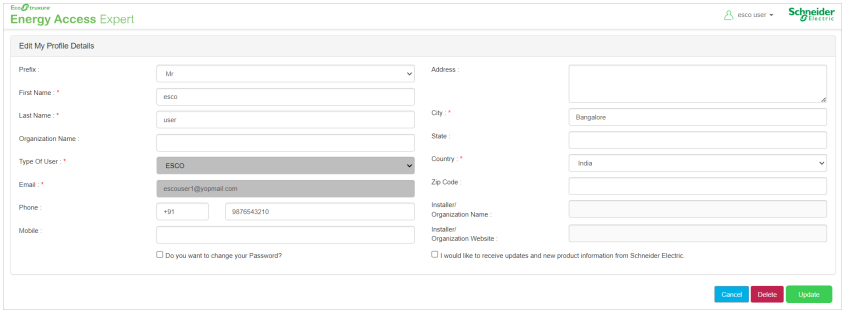
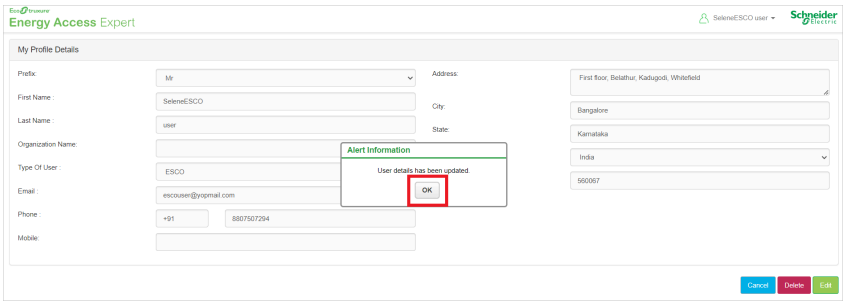
Account Login

To login to user account:

Step	Action
1	Launch Energy Access Expert web application.
2	Enter the details as shown in the image. 
3	Choose Villaya Flex and click **Visit**.  **Result:** The Energy Access Expert home page is displayed.

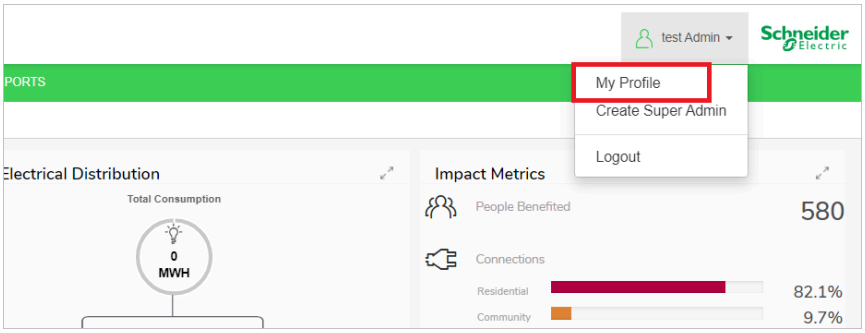
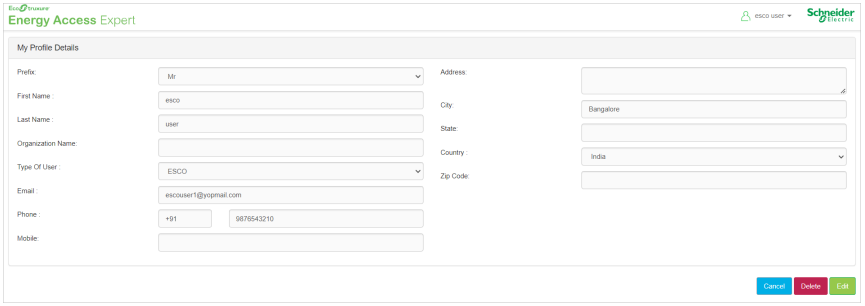
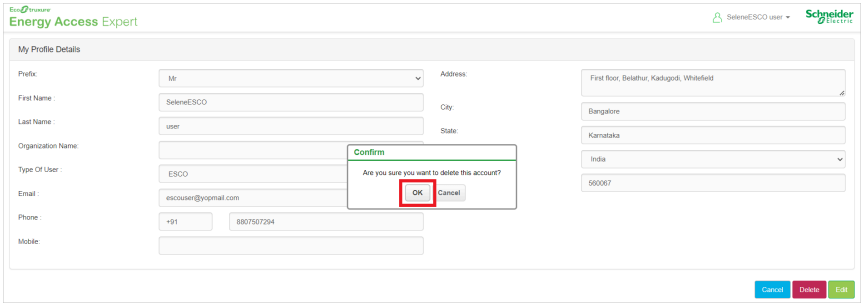
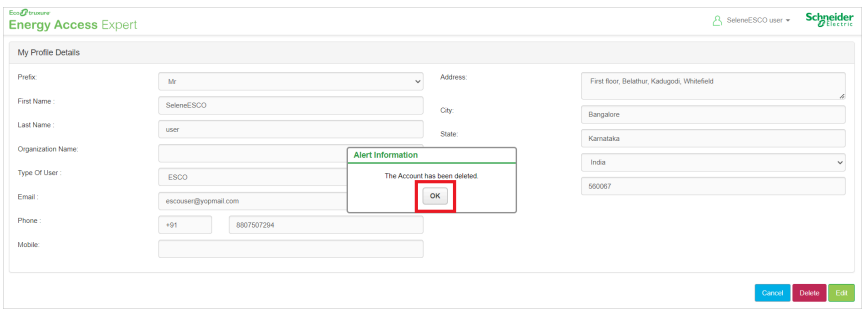
Edit Account

To edit users:

Step	Action
1	Login to Energy Access Expert web application. Refer Account Login, page 20.
2	Click icon available on the top-right corner and select **My Profile** from the drop down list. 
3	Click **Edit**. 
4	Enter the details to be updated and click **Update**. 
5	Click **OK** to confirm the updated user details.  **Result:** The user details are updated.

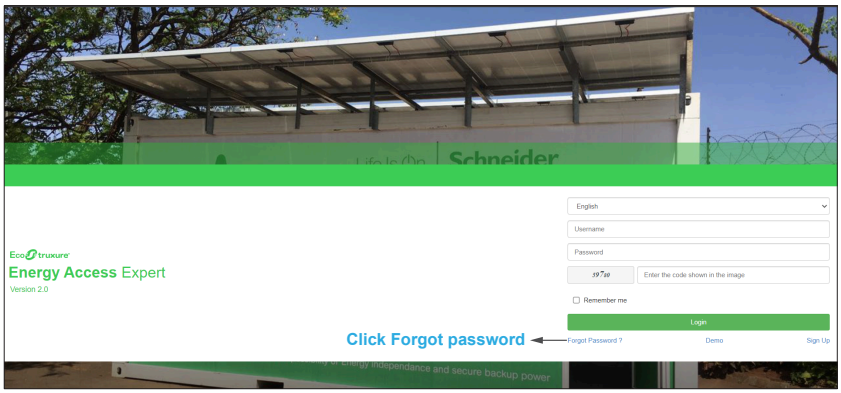
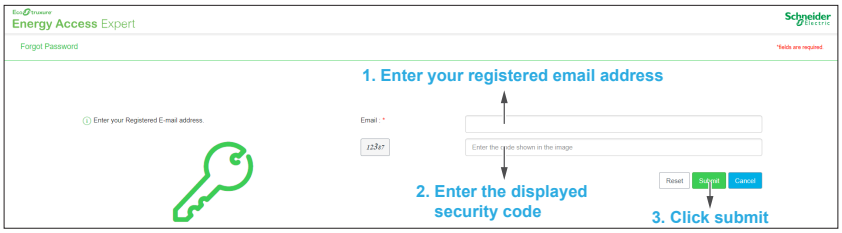
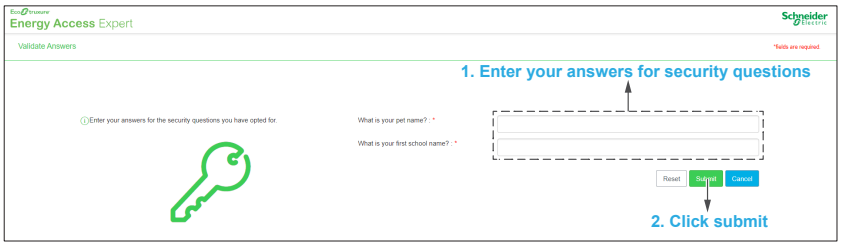
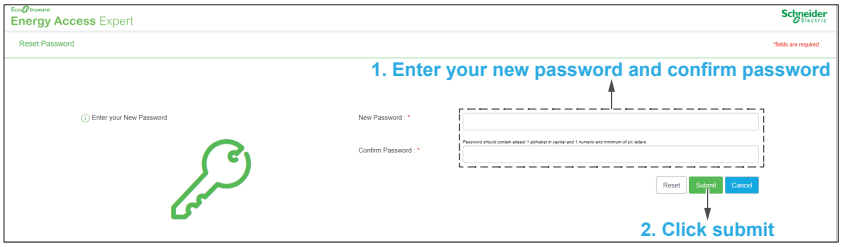
Delete Account

To delete users:

Step	Action
1	Login to Energy Access Expert web application. Refer Account Login, page 20.
2	Click icon available on the main window top-right corner and select **My Profile** from the drop-down list. 
3	Click **Delete**. 
4	Click **OK** to proceed with the account deletion. 
5	Click **OK** to confirm the account deletion.  **Result:** The user account is deleted.

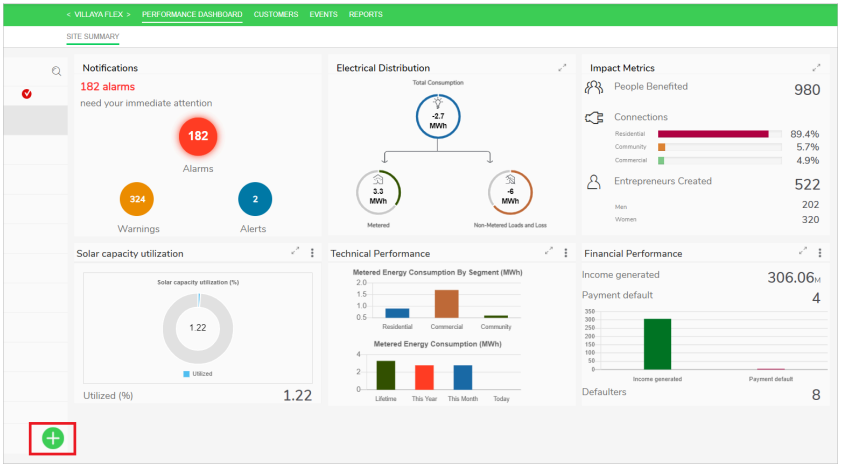
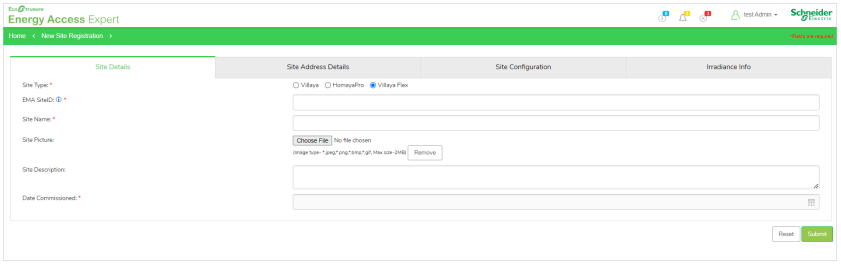
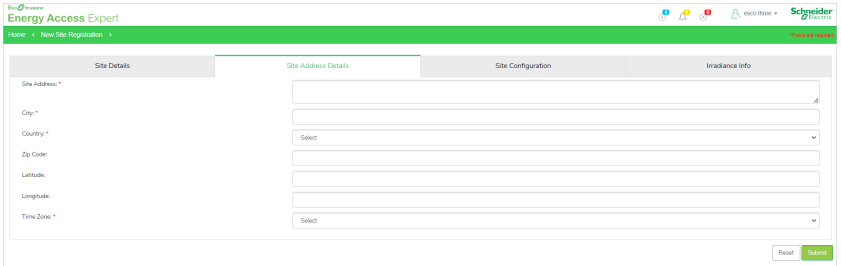
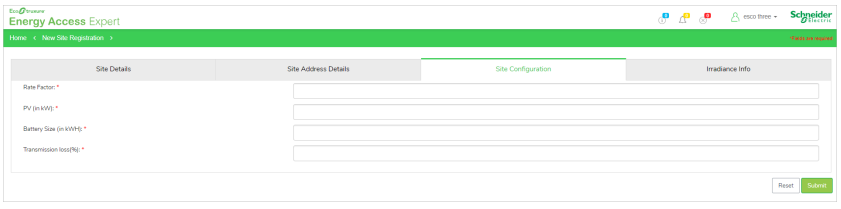
Change Password

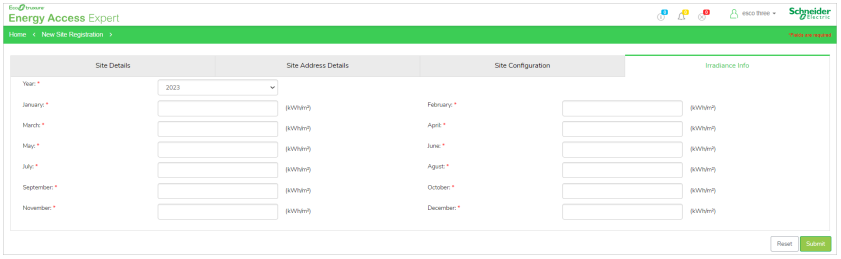
If you are in Energy Access Expert web application login window and you want to change password, then follow the steps in the table:

Step	Action
1	
2	Enter the details as shown in the image. 
3	
4	Enter the details as shown in the image.  **Result:** The user password is changed.

New Site Registration

If you are in Energy Access Expert web application home page and you want to add new site, follow the steps in the table:

Step	Action
1	Click icon in the home page.  **Result:** The **New Site Registration** window is displayed.
2	Select the site type as **Villaya Flex** and enter the following details in the **Site Details** tab: • EMA SiteID (SiteID captured during the creation process using the EMB tool). • Site name and site description. • Commissioned date (this date represents the creation date of the site). 
3	Enter the details to be updated in the **Site Address Details** tab. **NOTE:** Site address is used to locate the site on the map and to have relevant weather data. 
4	Enter the details to be updated in the **Site Configuration** tab. 

Step	Action
5	Select **Irradiance Info** tab and enter the irradiance data for every month. **NOTE:** Irradiance data will differ from month to month and area to area. 
6	Click **Submit**. **Result:** The new site is added.

My Site

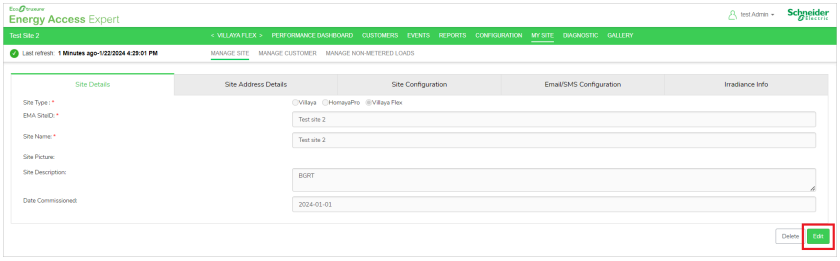
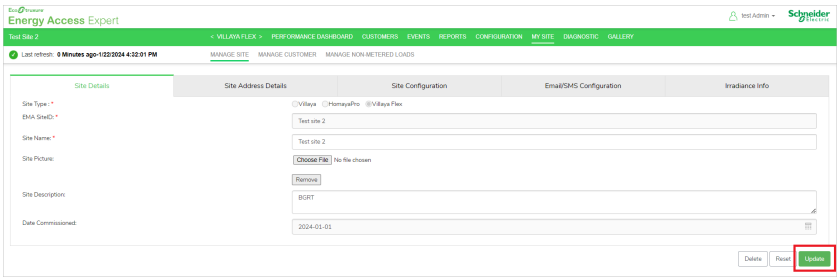
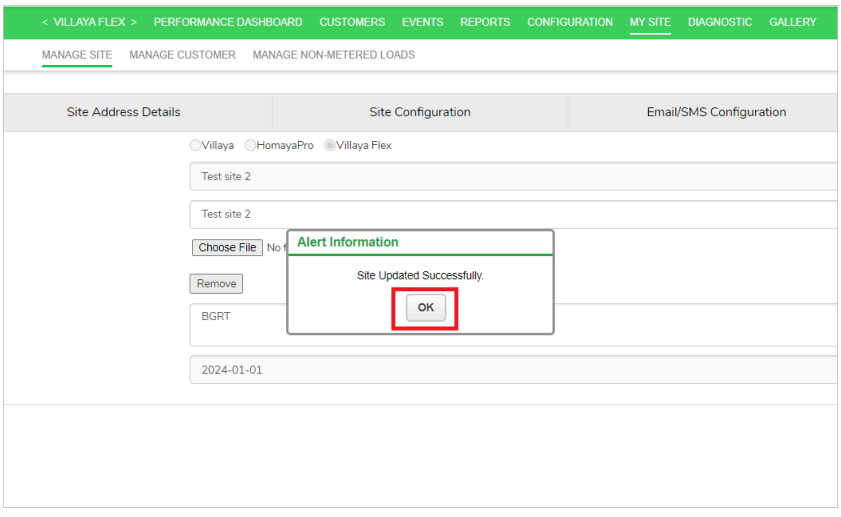
Overview

MY SITE feature in the Energy Access Expert web application allows you to add and manage the site details and customer details.

Manage Site

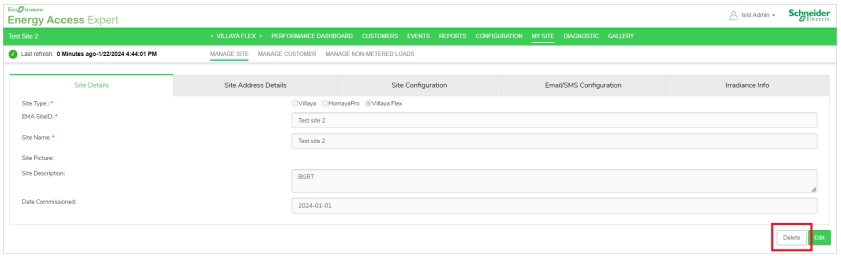
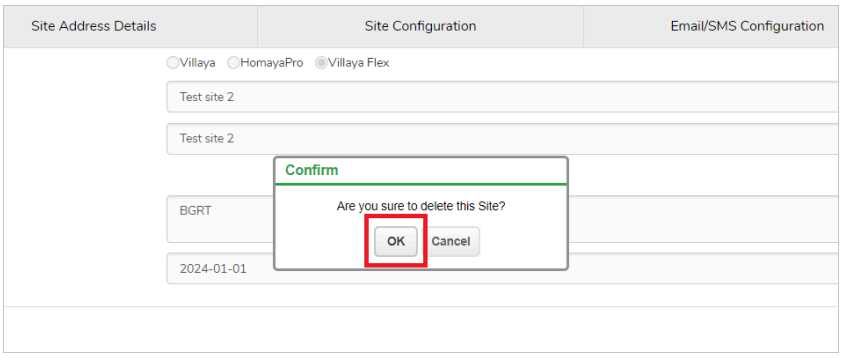
Edit Site

If you are in Energy Access Expert web application home page and you want to edit site, then follow the steps in the table:

Step	Action
1	Select **MY SITE > MANAGE SITE** in the home page and click **Edit**. 
2	Modify the required details and click **Update**. 
3	Click **OK**.  **Result:** The site details are modified.

Delete Site

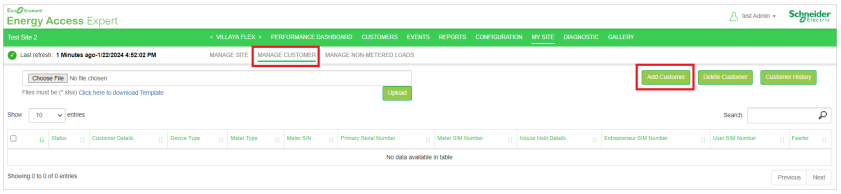
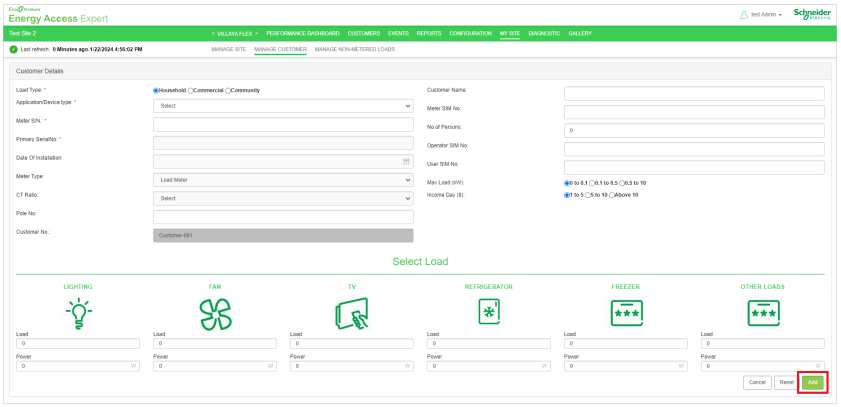
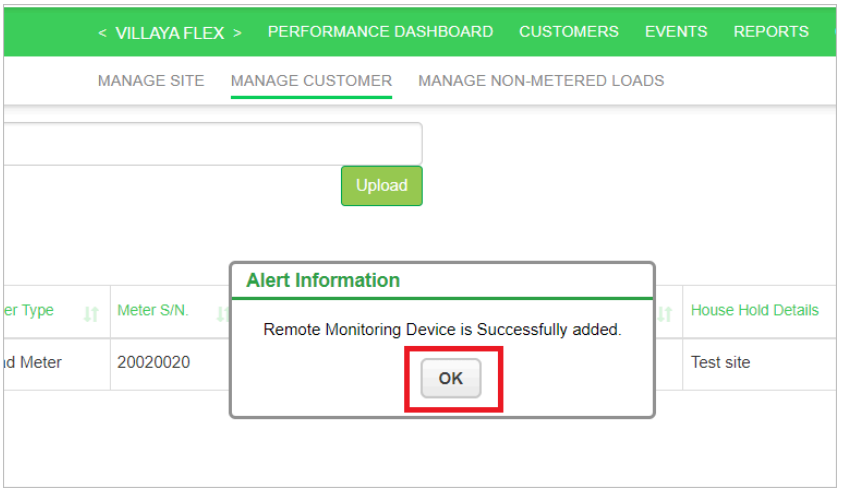
If you are in Energy Access Expert web application home page and you want to delete site, then follow the steps in the table:

Step	Action
1	Select **MY SITE** > **MANAGE SITE** in the home page and click **Delete**. 
2	Click **OK** to confirm the site deletion.  **Result:** The site is deleted.

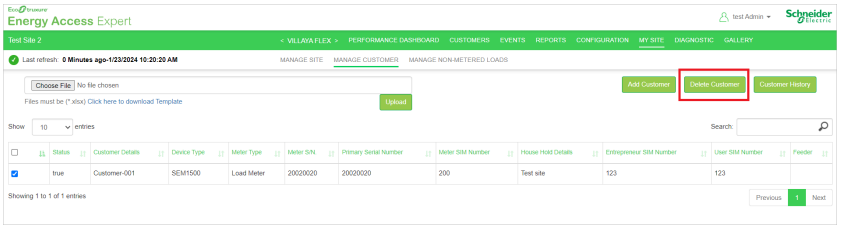
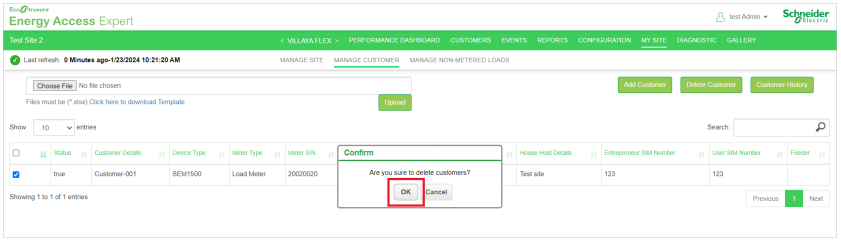
Manage Customer

Add Customer

If you are in Energy Access Expert web application home page and you want to add customer, then follow the steps in the table:

Step	Action
1	Select **MY SITE > MANAGE CUSTOMER** in the home page and click **Add Customer**. 
2	Enter the details to be updated and click **Add**. **NOTE:** Customer Number is auto generated. 
3	Click **OK** to confirm the new customer details.  **Result:** The new customer is added.

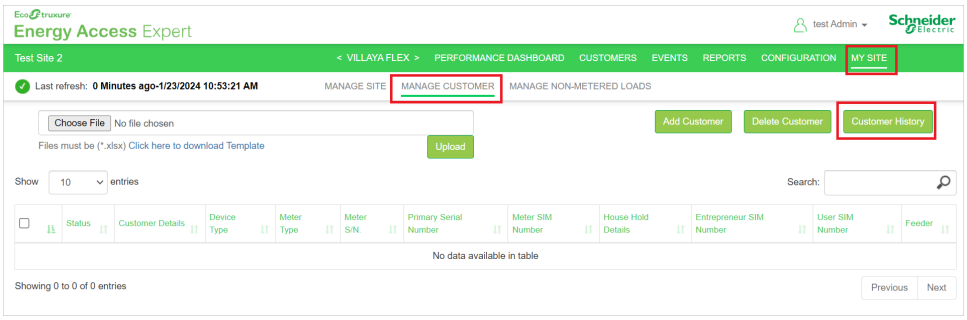
Delete Customer

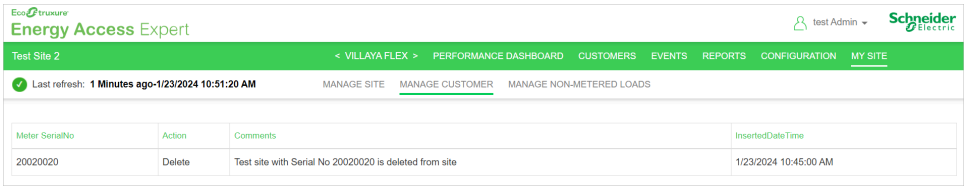
Step	Action
1	Click **MY SITE > MANAGE CUSTOMER** in the Energy Access Expert web application home page and click **Delete Customer**. 
2	Click **OK** to confirm the customer deletion.  **Result:** The customer is deleted.

Customer History

This feature shows the data related to the deleted and replaced customers.

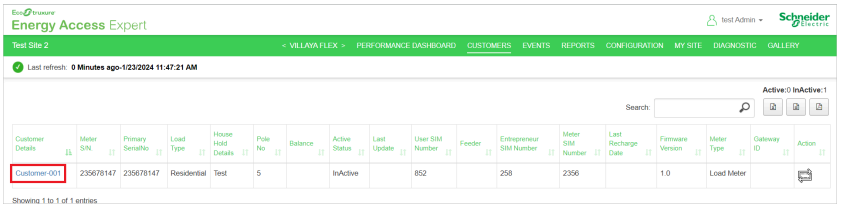
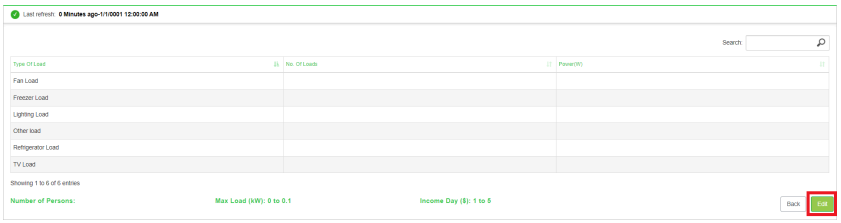
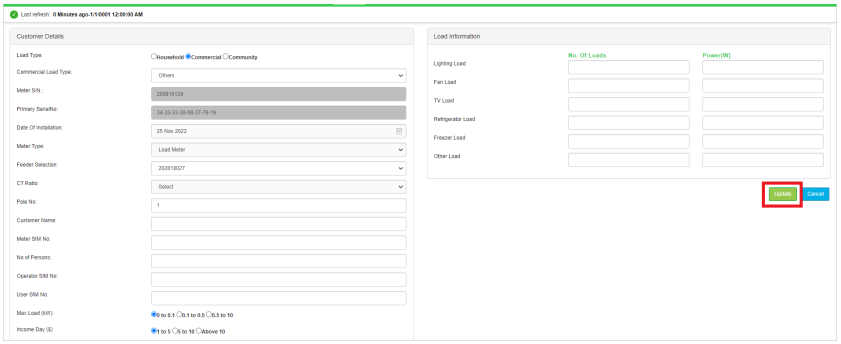
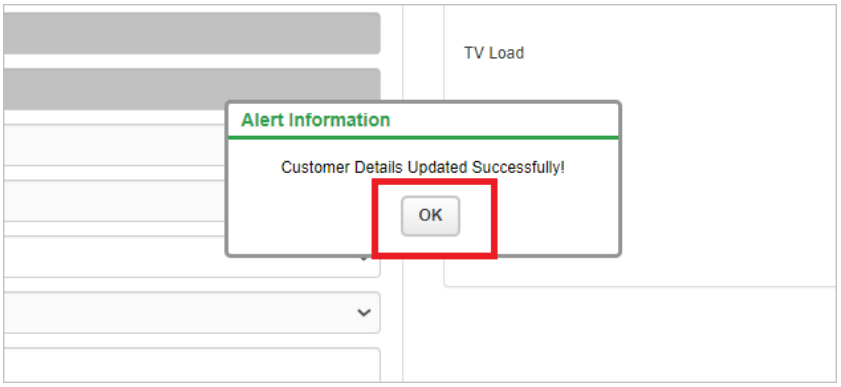
Navigate to **MY SITE > MANAGE CUSTOMER > Customer History**





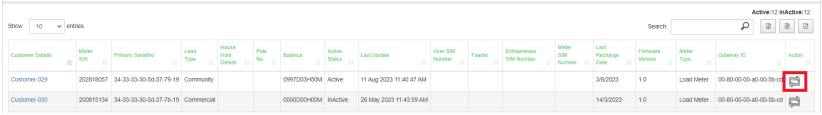
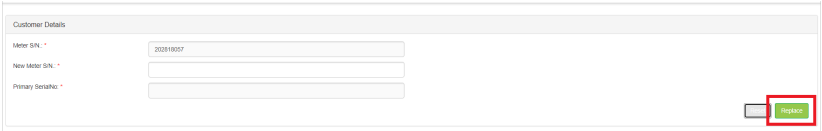
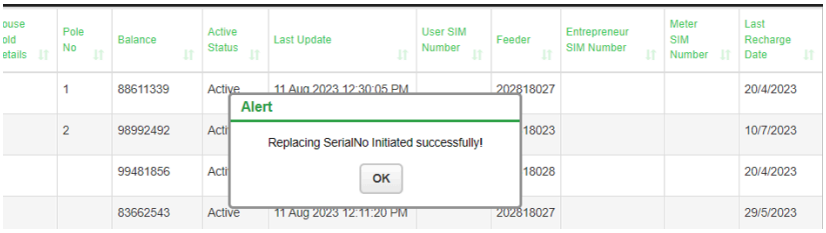
Customers

Modify Customer

Step	Action
1	Select **CUSTOMERS** in the Energy Access Expert web application home page and click **Customer** to be edited from the list. 
2	Click **Edit**. 
3	Modify the required details and click **Update**. 
4	Click **OK** to confirm the customer detail modifications.  **Result:** The customer details are updated.

Replace the Meter

This feature enables you to update the new meter with an existing customer.

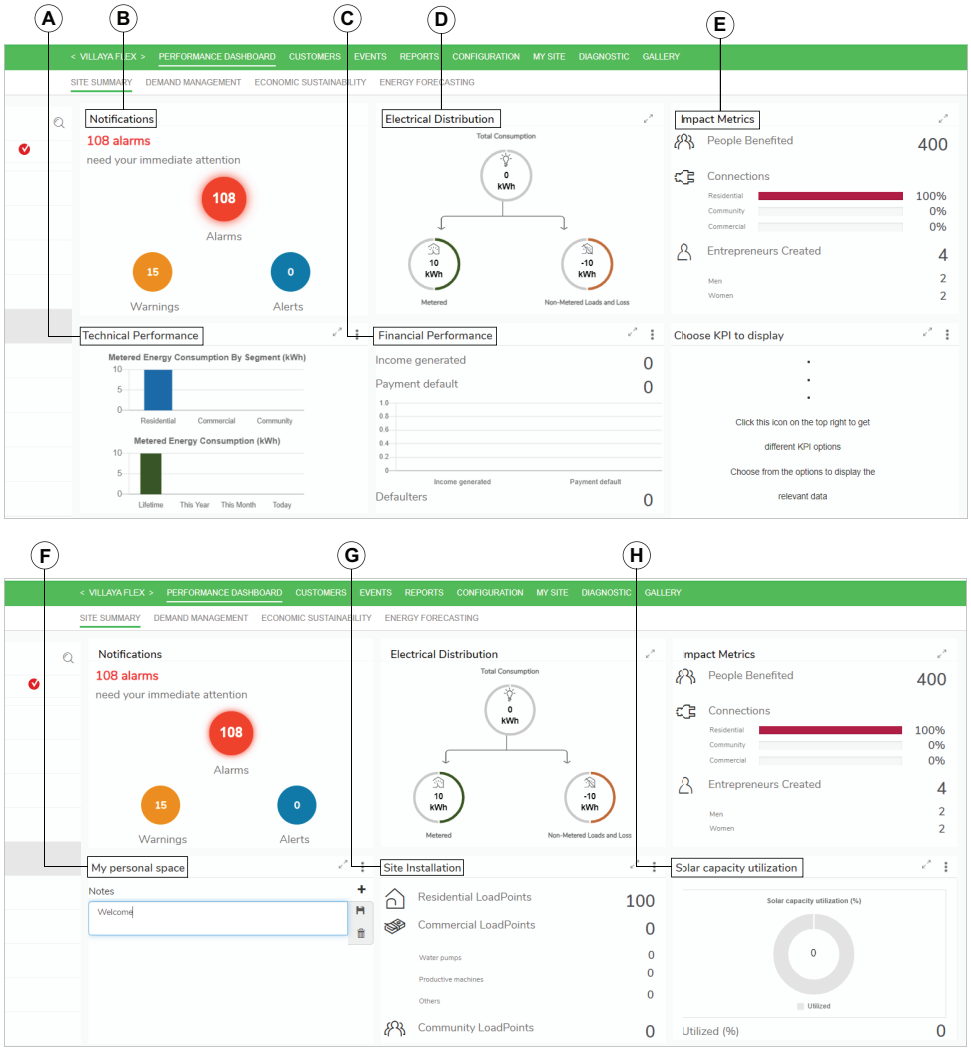
Step	Action
1	Select **CUSTOMERS** in the home page and click against the customer.  **NOTE:** Customer details can be exported in the format of excel , csv file , and pdf files .
2	Enter the new meter serial number and click **Replace**. 
3	Click **OK**.  **Result:** The serial number is replaced.

Performance Dashboard

Site Summary

Overview

Site summary provides the overview of the product and life time data of the product from the site.



Legend	Name	Function
A	Technical Performance	Allows to capture the daily and monthly energy generated from all the devices (refer Technical Performance, page 41).
B	Notifications	Shows the list of alarms, alerts, or warnings generated from the meters in the live site (refer Notifications, page 33).
C	Financial Performance	Displays the data such as income generated, payment default, and defaulters (refer Financial Performance, page 38).
D	Electrical Distribution	Displays data such as total load consumption, metered load, and non-metered load (refer Electrical Distribution, page 37).
E	Impact Metrics	Shows the overall beneficiaries impacted from the site (refer Impact Metrics, page 33).
F	My Personal Space	Allows you to write your own description or message (refer My Personal Space, page 42).

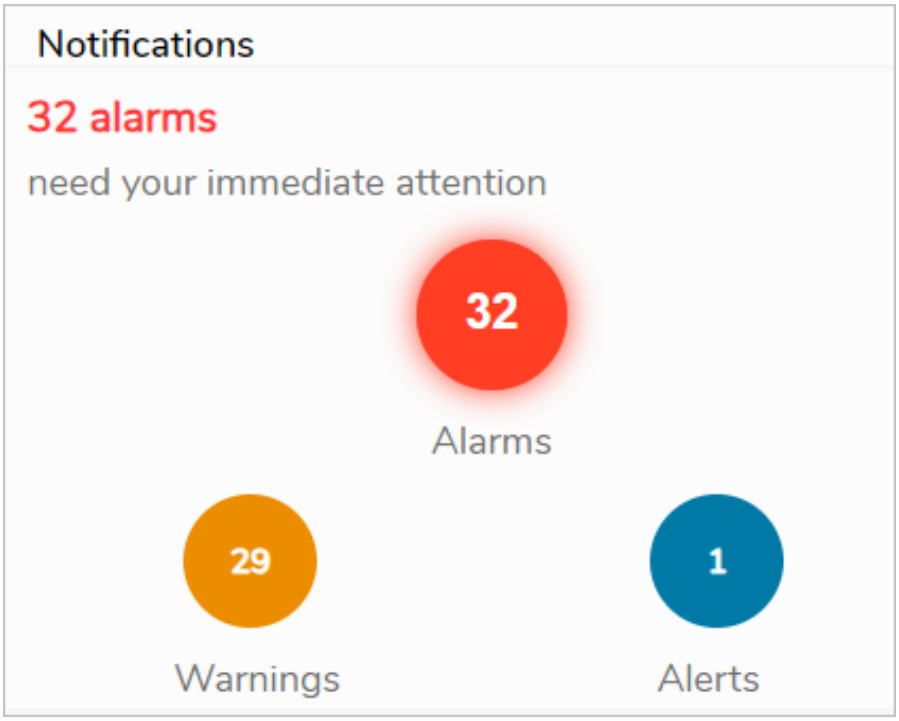
Legend	Name	Function
G	Site Installation	Displays a site total number of residential, commercial, and communal load points (refer Site Installation, page 39).
H	Solar Capacity Utilization	Displays the total solar utilization of the site (refer Solar Capacity Utilization, page 40).

Notifications

Overview

This feature shows the list of alarms, alerts, and warnings generated from the meters in the live site.

By clicking the bubble under the **Notifications**, you can access to the events tab with the selected notification bubble (refer Events, page 53).



Impact Metrics

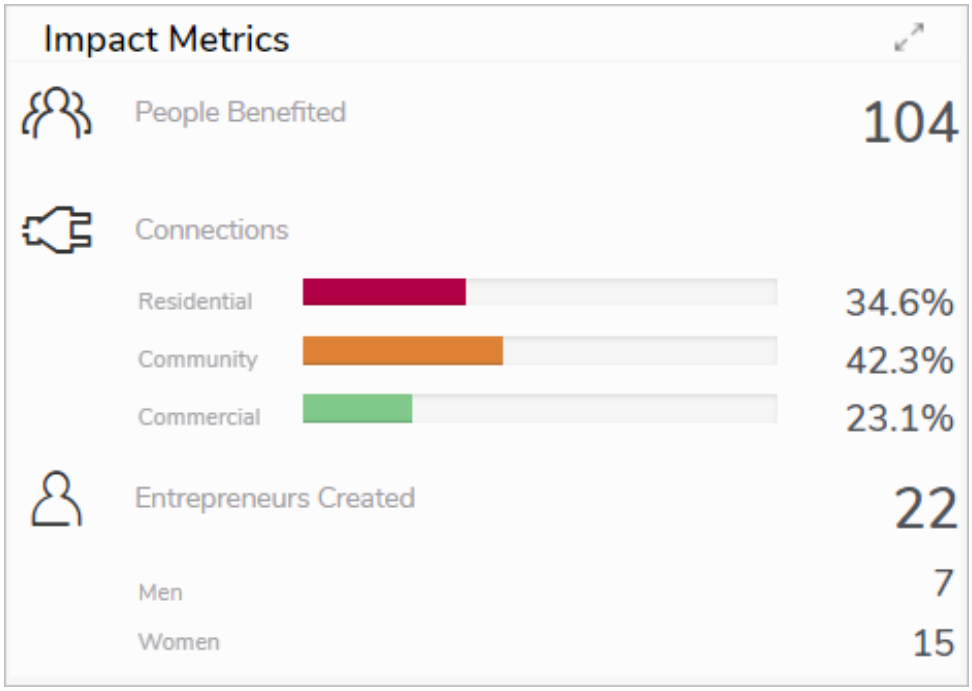
Overview

Impact Metrics shows the overall beneficiaries impacted from the site as follows:

- **People Benefited:** Displays the total people benefitted from all sites for the selected site type.

  NOTE: For each added customer, four dependent people benefit.
- **Connections**: Displays the available connections under the site. There are three types of connections as follows:
  - Residential
  - Community
  - Commercial

- **Entrepreneurs Created**: Displays the total entrepreneurs from all sites or selected site. Entrepreneurs are distributors with the privilege to control their customers. Entrepreneur data is defined by the user during the customer creation process. There are two types of entrepreneurs in the system:
  - Men
  - Women



Impact Metrics Details

To view impact metrics details, click on the top right corner of the **Impact Metrics**.

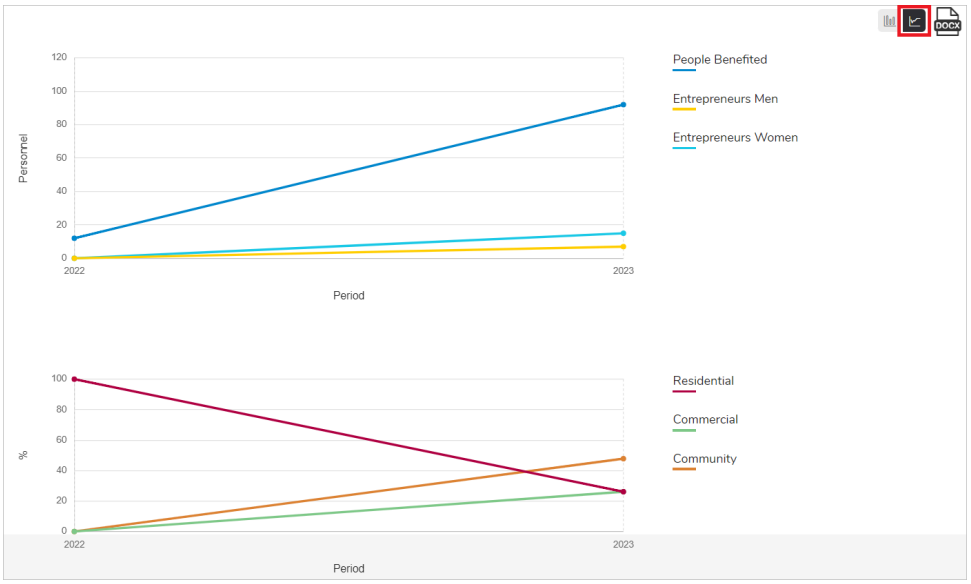
You can view the impact metric details using the following filters:

- Choose Period
- Impact Metrics Types

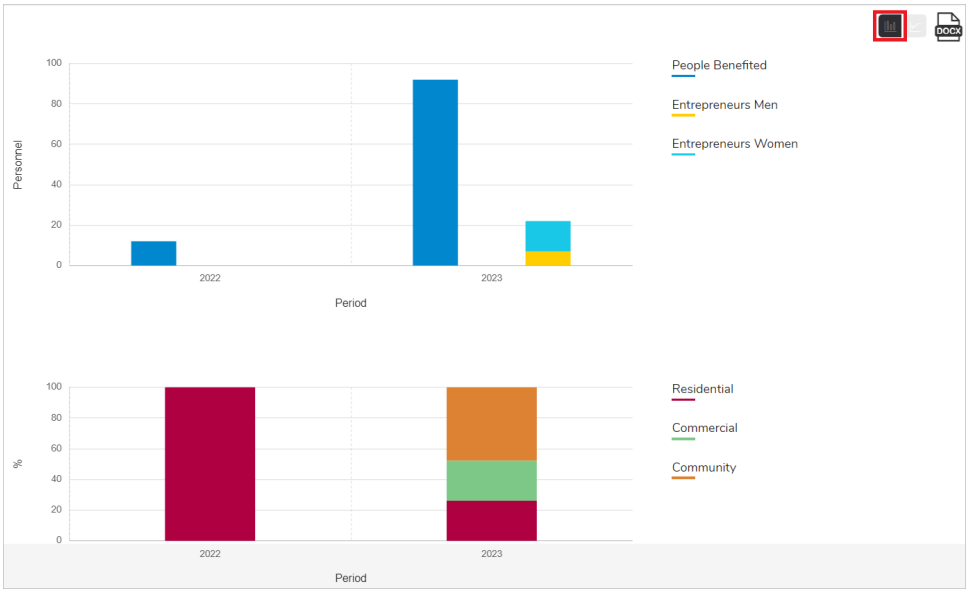
Graph

Click for the line graph and for the bar graph of the selected data based on filters.

Line Graph



Bar Graph



Result: The impact metrics details report is downloaded.

Report

Click on the top right corner of the window to download the impact metrics details report.

EcoStruxure

Energy Access Expert

Lifetime Report

TestSite

Created on

11 January 2024

www.se.com

TestSite

Life Is On Schneider Electric

Energy Access Expert

Impact Metrics

TestSite

Period	People Benefited	Entrepreneurs Men	Entrepreneurs Women
2023	400	2	2

TestSite

TestSite

Energy Access Expert

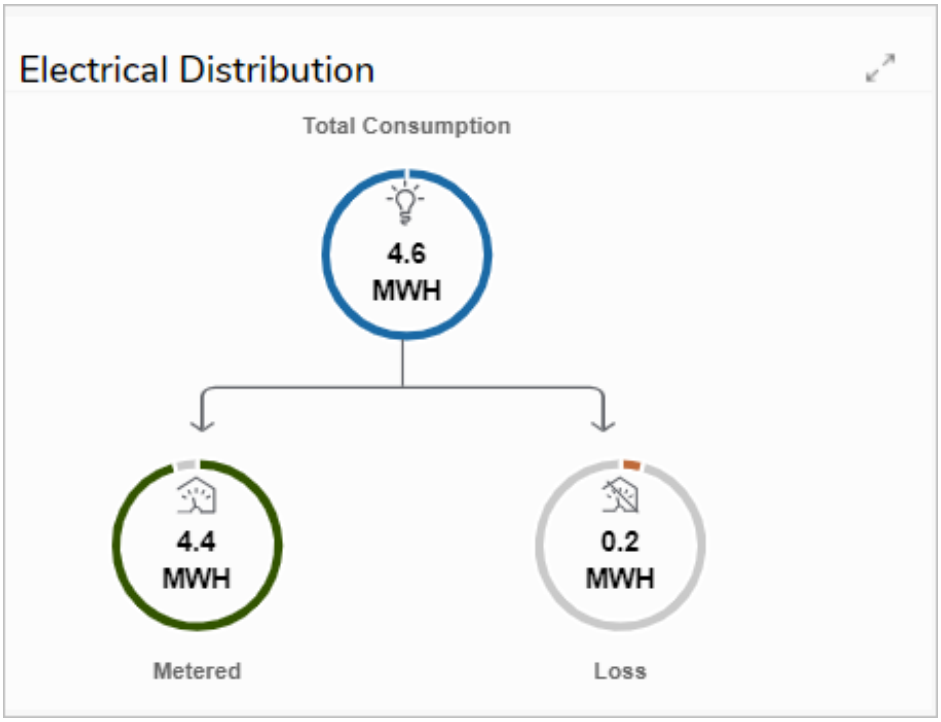
Period	Residential	Commercial	Community
2023	100	0	0

Electrical Distribution

Overview

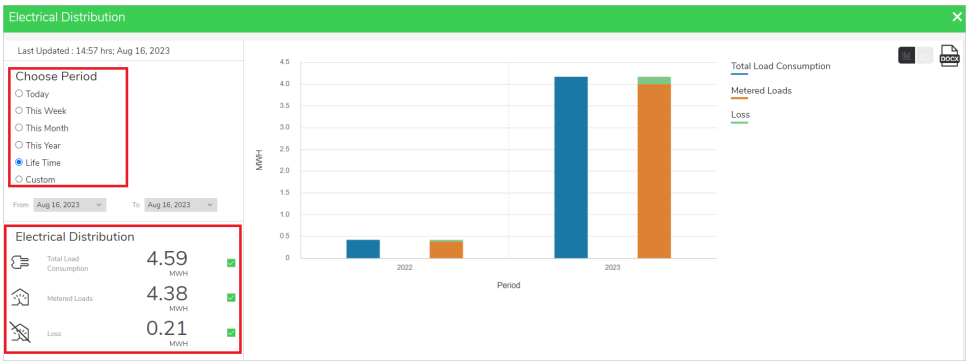
The **Electrical Distribution** displays data such as total load consumption, metered load, and non-metered load:

- **Total Load Consumption:** Total energy consumption by feeder or inverter meters configured from all sites for the user for the selected site type.
- **Metered:** Energy consumed by load meters at all sites for the user based on the site type specified.
- **Non-metered:** Difference between total load consumption and loss.



Electrical Distribution Details

To view electrical distribution details, click on the top right corner of the **Electrical Distribution**.



You can view the electrical distribution details using the following filters:

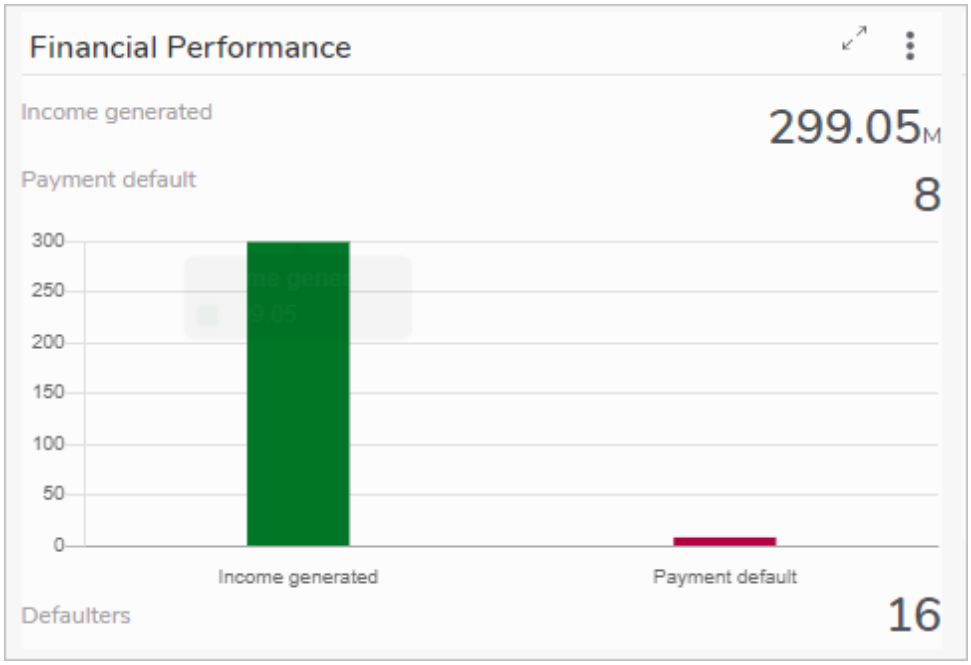
- Choose Period
- Electrical Distribution

NOTE: Follow the same steps in Graph, page 34 and Report, page 35 to get the details of the selected data.

Financial Performance

This feature displays the data such as income generated, payment default, and defaulters:

- **Income generated:** Total earnings of the site.
- **Defaulters:** Total customers who have not recharged over a period of time.
- **Payment default:** Number of customers who have recharged before the due date.



Default Payment

If customer A recharges within D0 + 1 day, there is no default payment.

If the recharge is not completed within D0 + 1 day, the default payment is Rs. 100 (last recharge value) and defaulter count = 1.

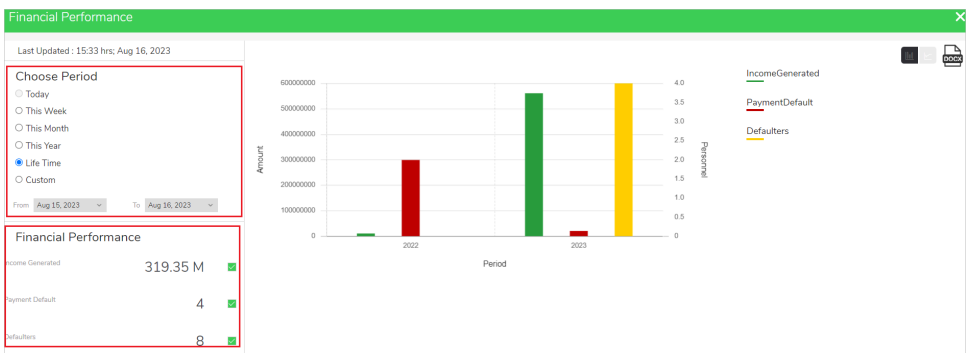
If the next recharge is not completed within 7 days, the system should raise the event as a default list.

If the recharge is completed after D0 + 1 day, the default payment and defaulter count for this customer should be zero.

NOTE: D0 denotes the day zero.

Financial Performance Details

To view financial performance details, click on the top right corner of the **Financial Performance**.



You can view the financial performance details using the following filters:

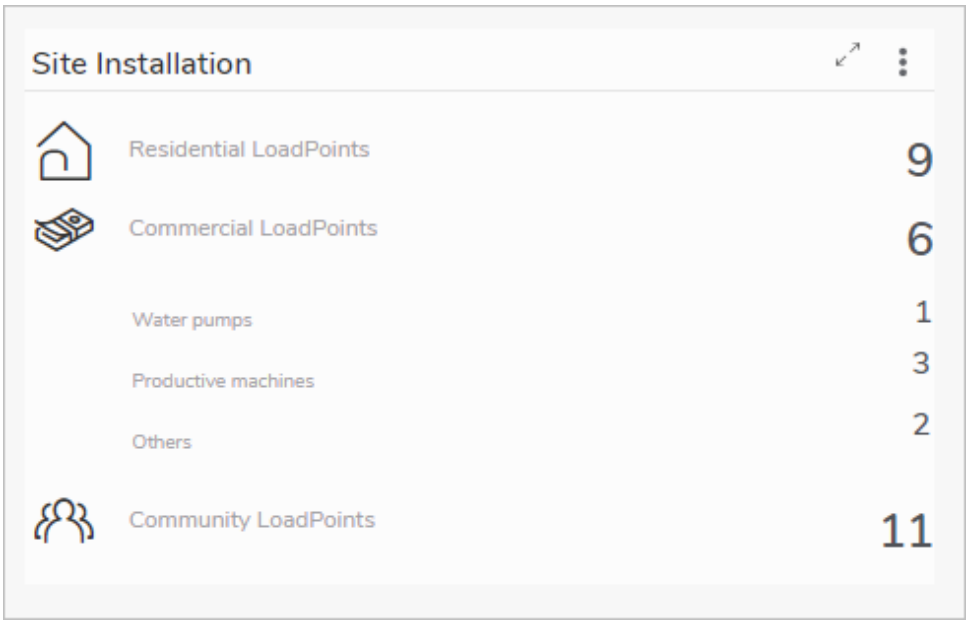
- Choose Period
- Financial Performance

NOTE: Follow the same steps in Graph, page 34 and Report, page 35 to get the details of the selected data.

Site Installation

This feature displays a site total number of residential, commercial, and communal load points:

- **Residential LoadPoints:** The number of residential customers on the site is displayed.
- **Commercial LoadPoints:** The number of commercial customers on the site is displayed.
  - Water pumps
  - Productive machines
  - Others
- **Community LoadPoints:** The number of community customers on the site is displayed.



Site Installation Details

To view site installation details, click on the top right corner of the **Site Installation**.

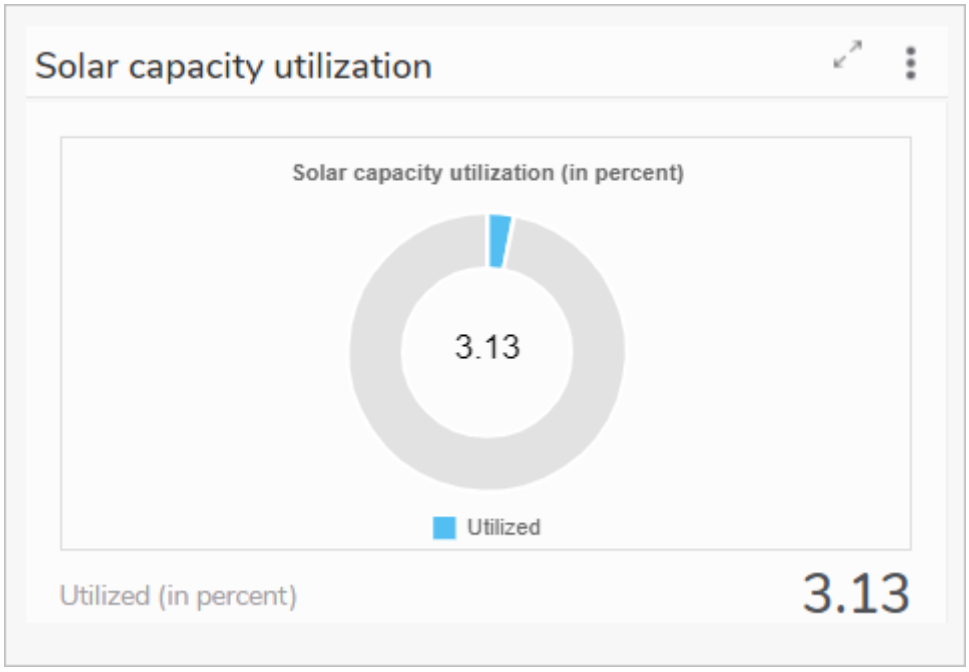
You can view the site installation details using the following filters:

- Choose Period
- Installation Types

NOTE: Follow the same steps in Graph, page 34 and Report, page 35 to get the details of the selected data.

Solar Capacity Utilization

This feature displays the total solar utilization of the site.



The capacity utilization factor is the ratio of the actual annual output (in kWh) from a solar plant to the maximum potential output (in kWh) generated under ideal conditions for a year.

The **Solar Capacity Utilization** is calculated using the following formula:

(PV Consumption / PV Generated) * 100

Generated: Direct PV energy from EMA (KWH)

Could have been generated = Irradiance * PV installed * no. of days

Irradiance: Captured under site configuration

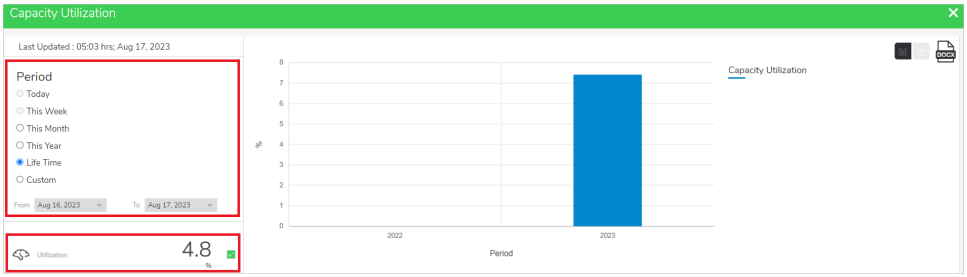
PV installed: Captured under site configuration

No. of days: Number of days since installation (life time value)

NOTE: Number of days varies based on the granular selection.

Solar Capacity Utilization Details

To view solar capacity utilization details, click on the top right corner of the **Solar Capacity Utilization**.



You can view the solar capacity utilization details using the following filters:

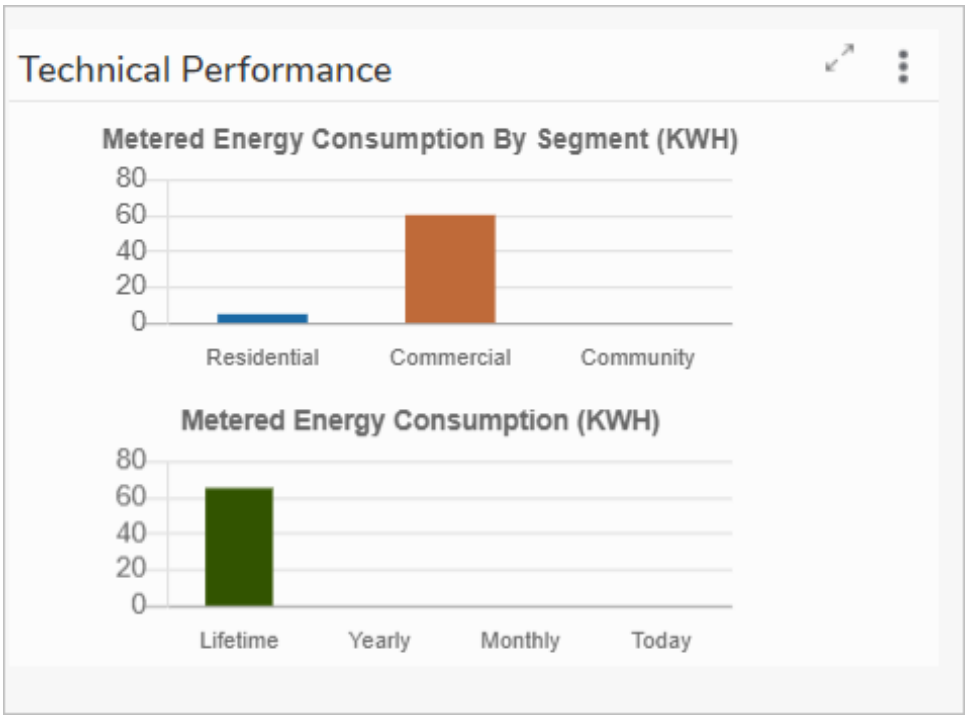
- Choose Period
- Utilization

NOTE: Follow the same steps in Graph, page 34 and Report, page 35 to get the details of the selected data.

Technical Performance

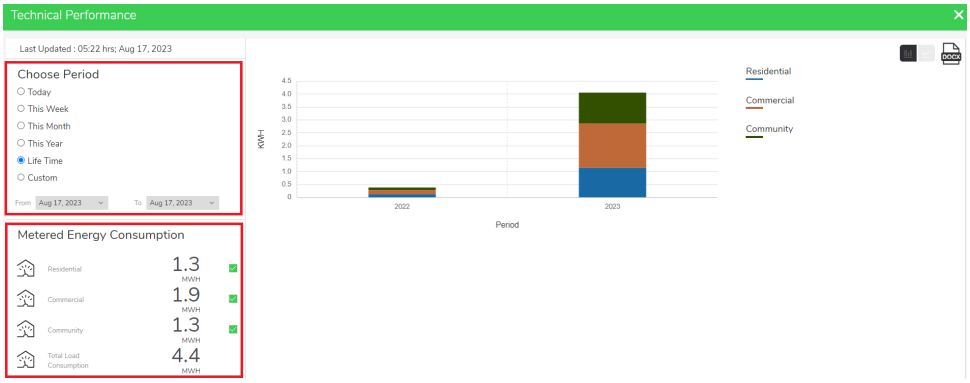
This feature captures the daily and monthly energy generated from all the smart meters on the site.

- **Metered Energy Consumption By Segment (KWH):** This graph represents the lifetime energy consumed by each installation type of customer (residential, community, and commercial).
- **Metered Energy Consumption (KWH):** This graph represents the lifetime, yearly, monthly, and daily energy consumption of all the customers on the site.



Technical Performance Details

To view technical performance details, click on the top right corner of the **Technical Performance**.



You can view the technical performance details using the following filters:

- Choose Period
- Metered Energy Consumption

NOTE: Follow the same steps in Graph, page 34 and Report, page 35 to get the details of the selected data.

My Personal Space

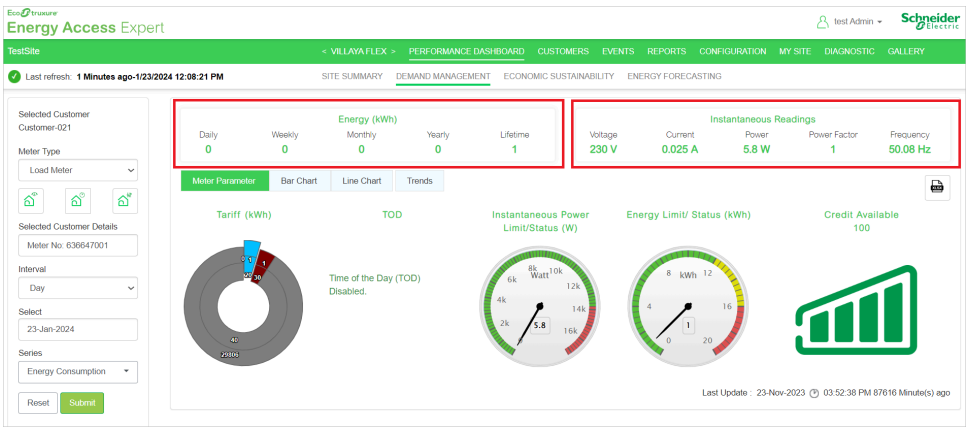
My personal space allows you to write your own description or message.

Demand Management

Overview

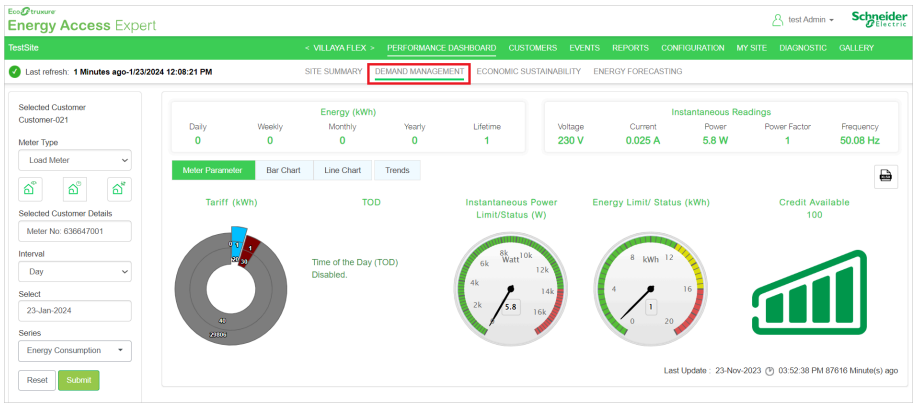
Demand Management: Provides the data on energy consumption and instantaneous readings from the meters (Load, Feeder, or Inverter).

Instantaneous Readings: Provides the latest data received from the smart meter.



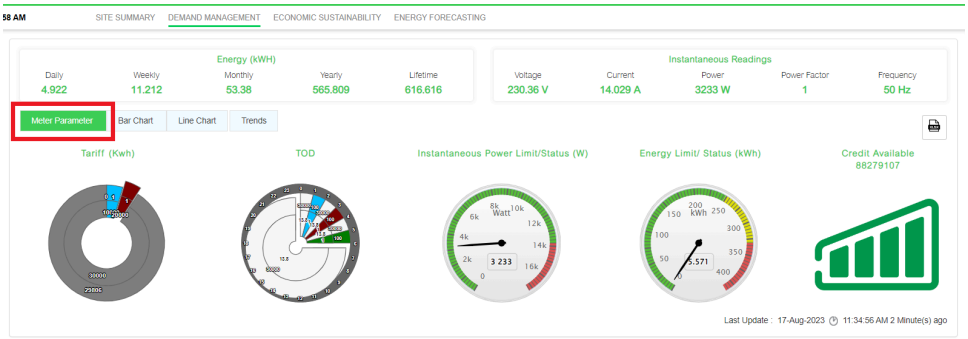
Follow the below steps to get energy consumption details and instantaneous reading data:

1. Open the home page and navigate to **PERFORMANCE DASHBOARD > DEMAND MANAGEMENT**.



2. Enter the details to be updated in the **DEMAND MANAGEMENT** window and click **Submit**.

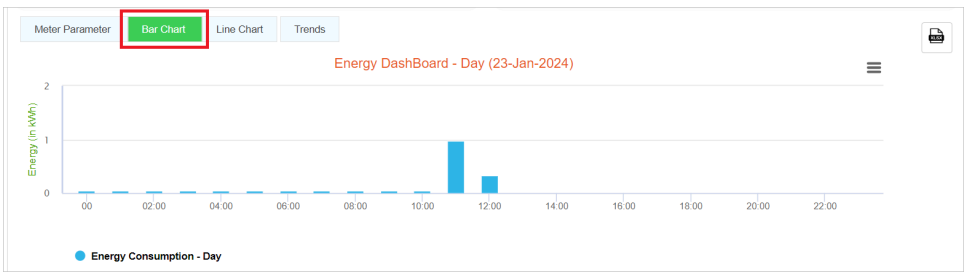
Meter Parameter



Parameter	Description
Tariff (KWh)	Provides statistics of energy slabs and slab rates.
TOD	Provides TOD slabs and slab rates for managing power demand during peak load.
Instantaneous Power Limit/ Status (W)	Provides the instantaneous power limit and status value from the smart meter.
Energy Limit/ Status (kWh)	Provides the energy consumption limit and status.
Credit Available	Displays the credit available after consumption.

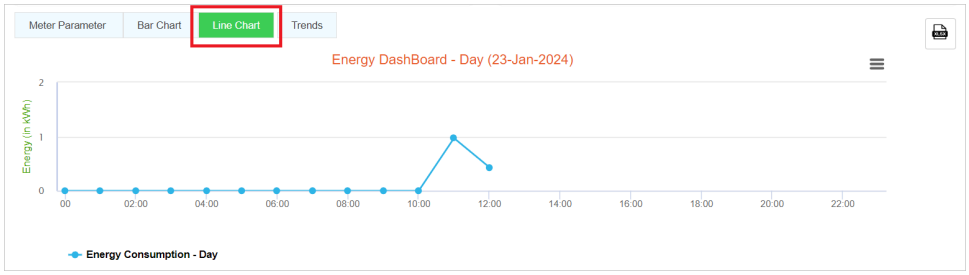
Bar Chart

Energy dashboard shows energy vs. time interval (day, month, year, lifetime, or custom dates) as a bar chart.



Line Chart

Energy data shows energy vs. energy consumption (day, month, year, lifetime, or custom dates) as a line chart.

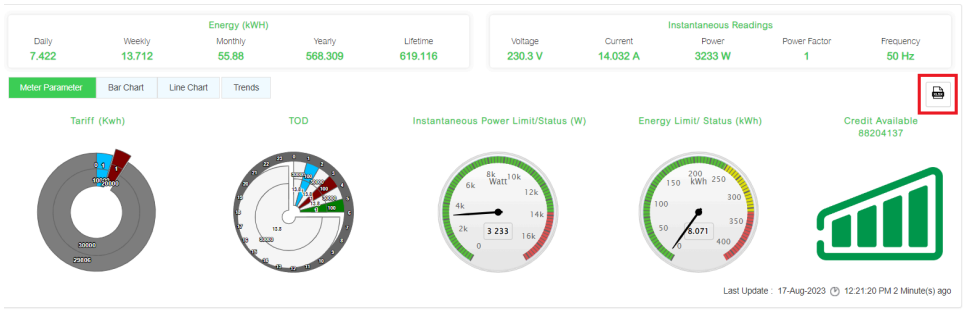


Trends

Trends provides the data related to instantaneous readings (voltage, current, power, power factor, or frequency).

Report

Click on the top right corner of the window to download the report.



Economic Sustainability

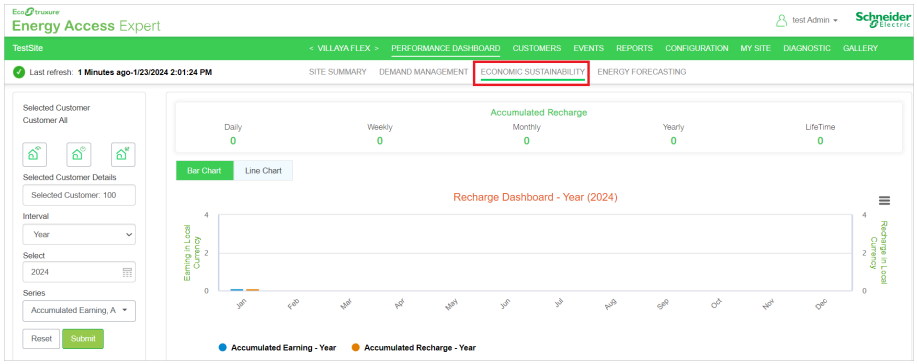
Overview

Economic Sustainability provides the data for accumulated earning and accumulated recharge from the meters at different intervals.

- **Accumulated Recharge:** Shows the recharges accumulated for the selected meter in the selected interval.
- **Accumulated Earning:** Shows the credit utilized for the selected meter in the selected interval.

Follow the below steps to get accumulated earning and accumulated recharge data:

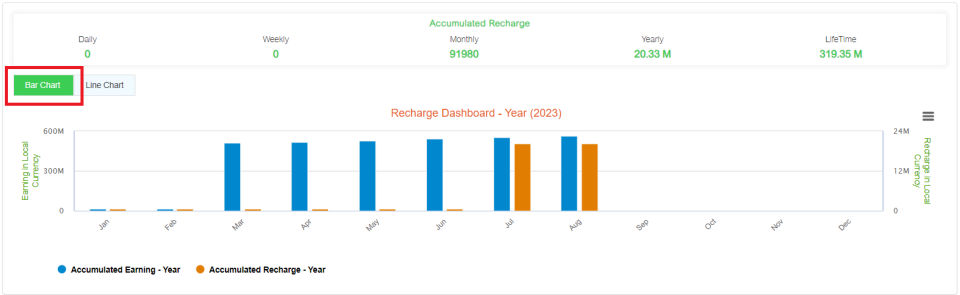
1. Open the home page and navigate to **PERFORMANCE DASHBOARD > ECONOMIC SUSTAINABILITY**.



2. Enter the details to be updated in the **Economic Sustainability** window and click **Submit**.

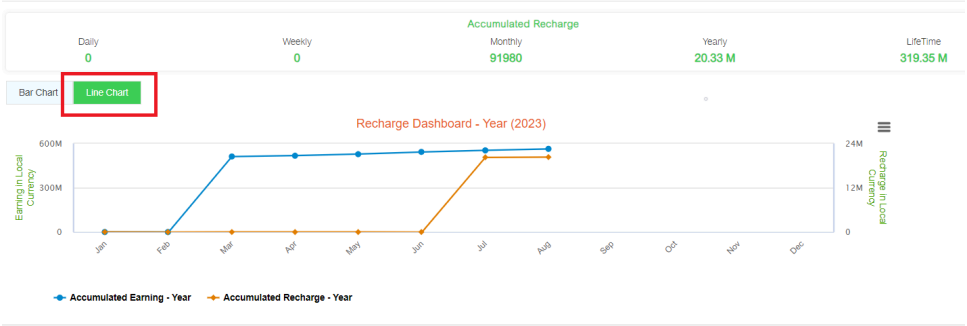
Bar Chart

Energy data shows accumulated recharge and accumulated earning vs. time interval as a bar chart.



Line Chart

Energy data shows accumulated recharge and accumulated earning vs. time interval as a line chart.



Configuration

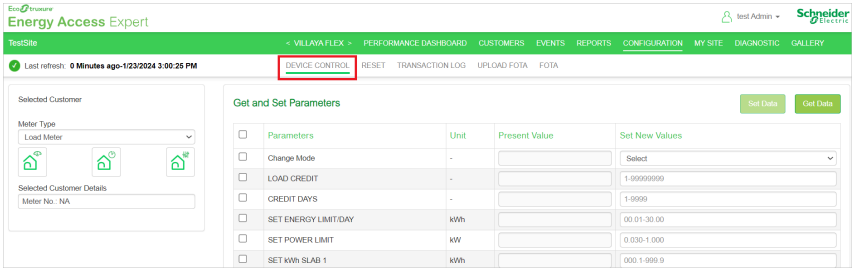
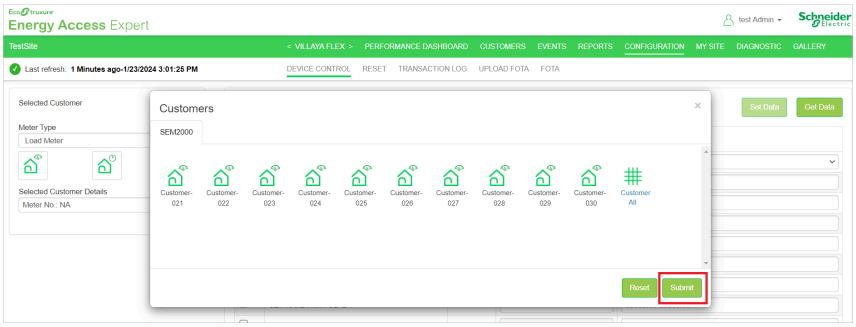
Device Control

Overview

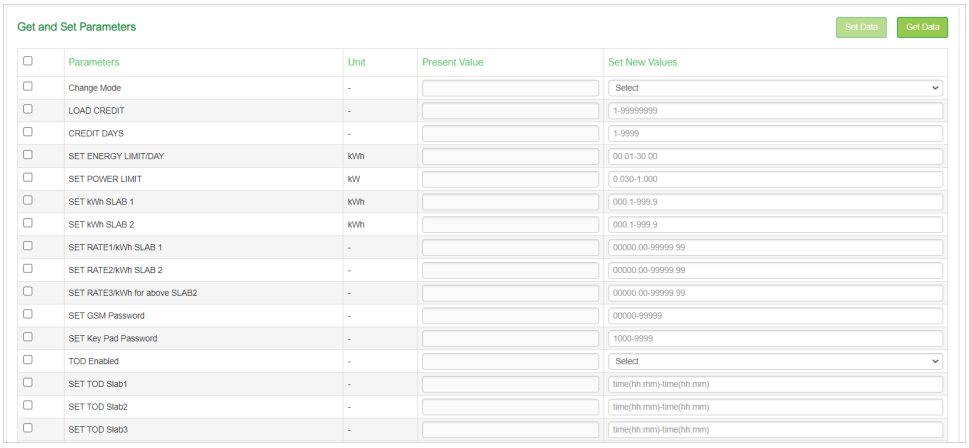
This feature is used to get and set the device parameters.

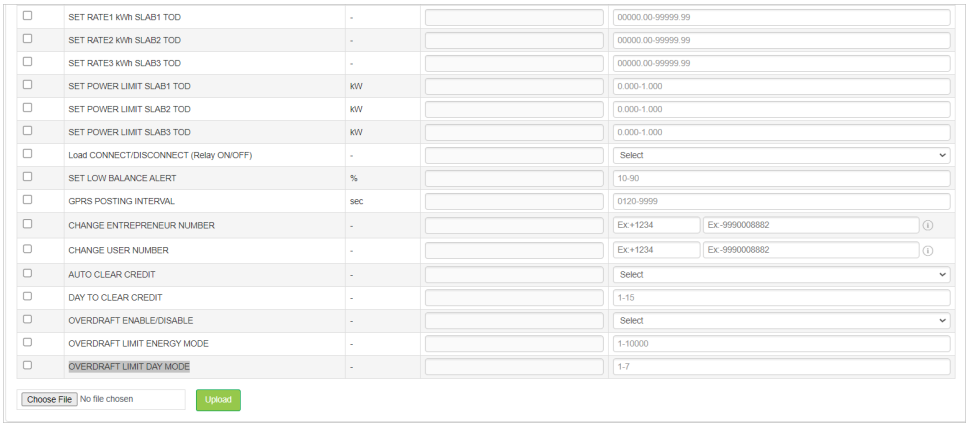
Get Data: Allows you to fetch the latest data of any selected device.

Set Data: Allows you to enter the required parameters and configure the device.

Step	Action
1	Navigate to Energy Access Management **Home page > CONFIGURATION > DEVICE CONTROL**. 
2	Select the meter type (load/feeder/inverter) from the drop down list.
3	Select the device to be configured and click **Submit**. 

Get and Set Device Parameters





Use **Choose File** to upload the device configuration parameters.

Parameters	Function
Change Mode	Allows you to change the modes from day mode to energy mode and vice versa.
Load Credit	Allows you to recharge the meter (0-9999999).
Credit Days	Allows you to recharge the meter in days (0-9999).
Set Energy Limit/Day	Allows you to set the energy limit for a day.
Set Power Limit	Allows you to set the input power limit for the meter.
Set kWh Slab 1	Allows the user to set the first energy slab for Energy Mode. The deduction shall happen from 0 kWh to set Slab 1 kWh at particular set rate.
Set kWh Slab 2	Allows the user to set the second energy slab for Energy Mode. The deduction shall happen from set Slab 1 kWh to set Slab 2 kWh at particular set rate.
Set Rate1/kWh Slab 1	Allows the user to set the rate at which the credit is deducted for each kWh of energy consumption in Slab 1 (0 kWh to Slab1 kWh).
Set Rate2/kWh Slab 2	Allows the user to set the rate at which the credit is deducted for each kWh of energy consumption in Slab 2 (Slab 1 kWh to Slab 2 kWh).
Set Rate3/kWh for above Slab2	Allows the user to set the rate at which the credit is deducted for each kWh of energy consumption above Slab 2.
Set GSM Password	Allow the user to set the Password for SMS commands used for configuring and controlling the dispenser.
SET Key Pad Password	Applicable only for SEM1500 dispenser model.
TOD* Enabled	Parameter to enable the TOD feature. **NOTE:** When TOD is enabled, the tariffs and Power Limits are applicable during the set time zone
Set TOD Slab1	Parameter to set the 1st TOD time zone (Ex. 08:00 to 09:00)
Set TOD Slab2	Parameter to set the 2nd TOD time zone (Ex. 10:00 to 12:00)
Set TOD Slab3	Parameter to set the 3rd TOD time zone (Ex. 17:00 to 18:00)
Set Rate1 kWh Slab1 TOD	Parameter to set the tariff for 1st TOD Time Zone
Set Rate2 kWh Slab2 TOD	Parameter to set the tariff for 2nd TOD Time Zone
Set Rate3 kWh Slab3 TOD	Parameter to set the tariff for 3rd TOD Time Zone
SET POWER LIMIT SLAB1 TOD	Parameter to set the Power Limit for 1st TOD Time Zone
SET POWER LIMIT SLAB2 TOD	Parameter to set the Power Limit for 2nd TOD Time Zone
Set Power Limit Slab3 TOD	Parameter to set the Power Limit for 3rd TOD Time Zone
Load Connect or Disconnect (Relay ON/ OFF)	Allows the meter to connect or disconnect the load.
Set Low Balance Alert	Allows you to set the low balance alert.

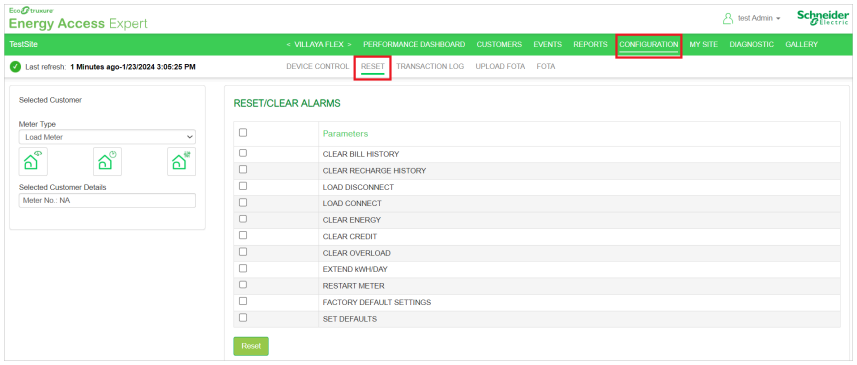
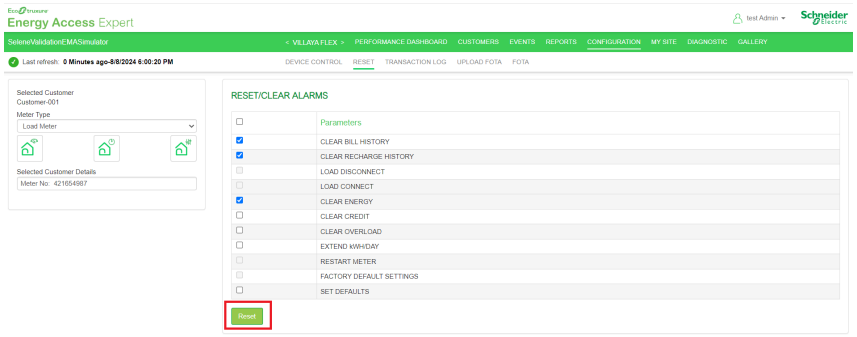
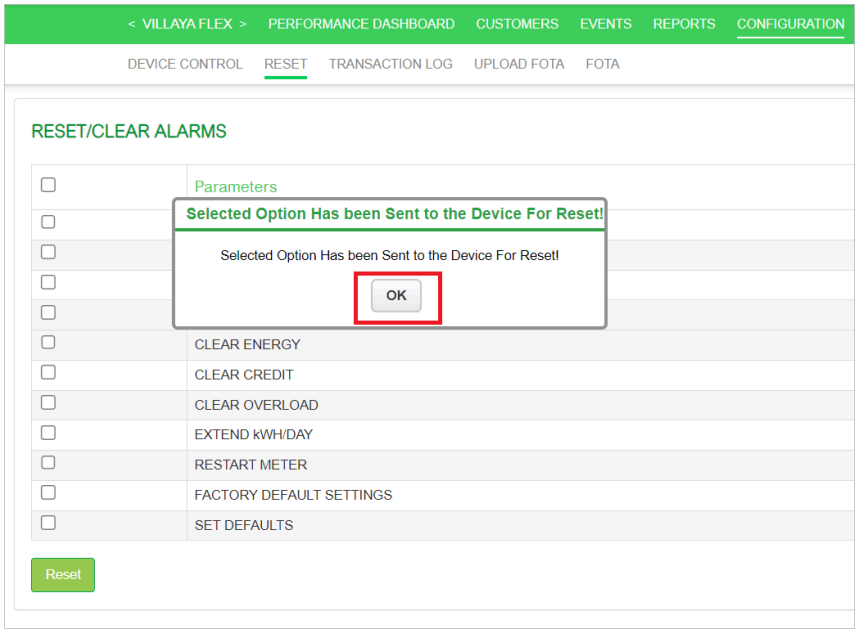
Parameters	Function
GPRS Posting Interval	Allows the meter to post the data to the cloud for the specified interval values.
Change Entrepreneur Number	Allows you to change the entrepreneur number.
Change User Number	Allows you to change the user number.
Auto Clear Credit	Allows you to clear the credit.
Day to Clear Credit	Allows the user to clear the credit on particular day of the month.
Overdraft Enable/Disable	Allows the user to enable or disable the overdraft feature. Overdraft allows the load to run after the credit is expired for a set credit limit or credit day limit. Beyond this limit load is disconnected and the overdraft credit day is deducted from the next recharge.
Overdraft Limit Energy Mode	Allows the user to set the credit limit for overdraft in Energy Mode.
Overdraft Limit Day Mode	Allows the user to set the credit day limit for overdraft in Day Mode.

*Time of Day (TOD) feature is used to manage tariff and power demand during peak load. During peak load duration, a particular tariff and power limit can be set. During a non-peak demand a different tariff and power limit can be set.

Reset

Overview

This feature is used to reset device configuration or clear the device data.

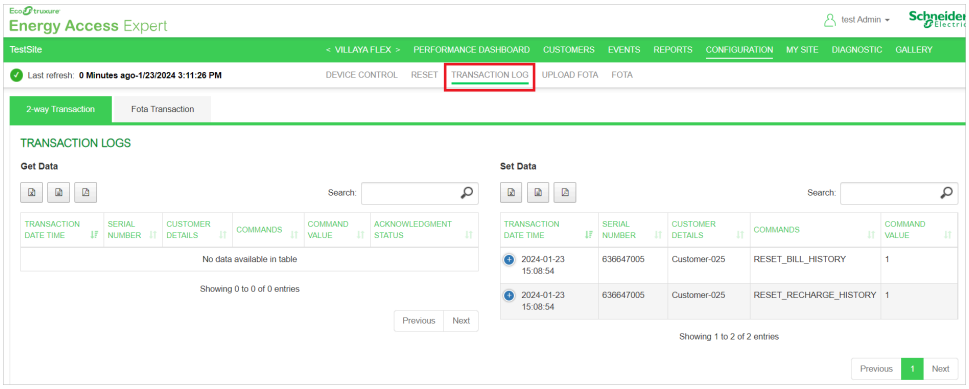
Step	Action
1	Open the home page and navigate to **CONFIGURATION > RESET**. 
2	Enter the following details and click **RESET**: • Meter type (load/feeder/inverter) • Device mode (energy mode/day mode/all mode) • Select the customer and required parameters. 
3	Click **OK**.  **Result:** The device data is reset.

Transaction Log

Overview

This feature is used to monitor the transaction history of the devices.

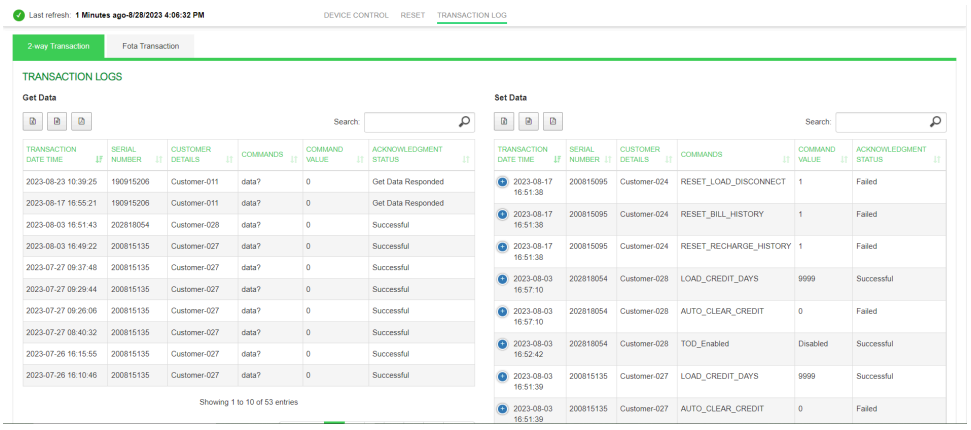
Open the home page and navigate to **CONFIGURATION > TRANSACTION LOG**.



2-way Transaction

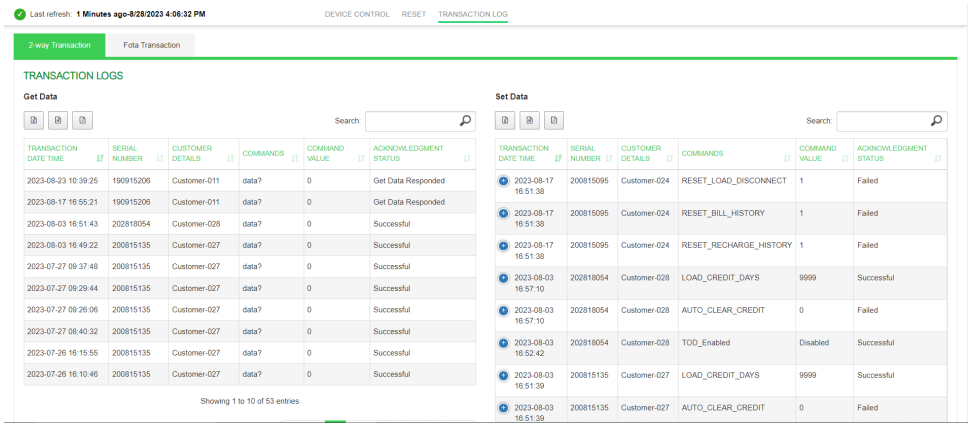
Get Data

Get data logs gives you the present values from the devices, and the user can verify the acknowledgment status. Acknowledgement statuses are successful, in progress, or failed.



Set Data

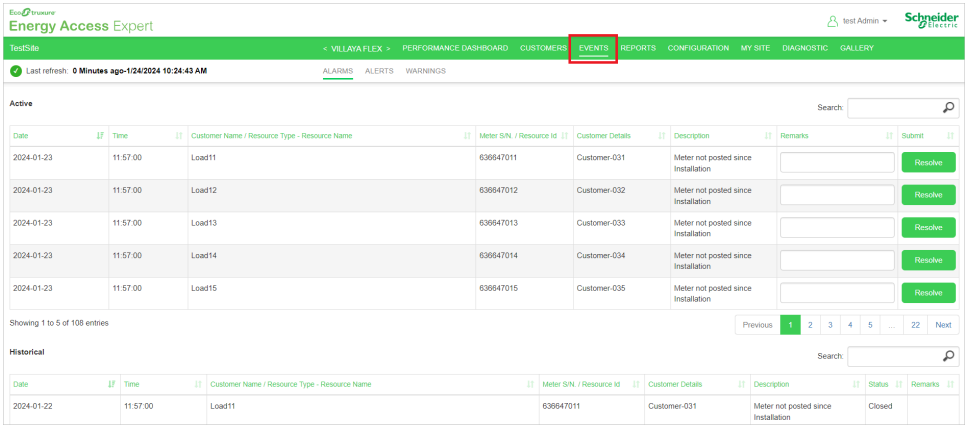
Set data logs against the customer or device gives you the recently updated new parameter, and the user can verify the acknowledgment status. Acknowledgement statuses are successful, in progress, or failed.



NOTE: Transaction details can be exported in the format of excel , csv file , and pdf files .

Events

Various notification types are displayed on the events tab. Alarms, alerts, or warnings automatically triggers depending on specific devices whenever a meter anomaly or error occurs. The alarms, alerts, or warnings appear under the **EVENTS** tab.



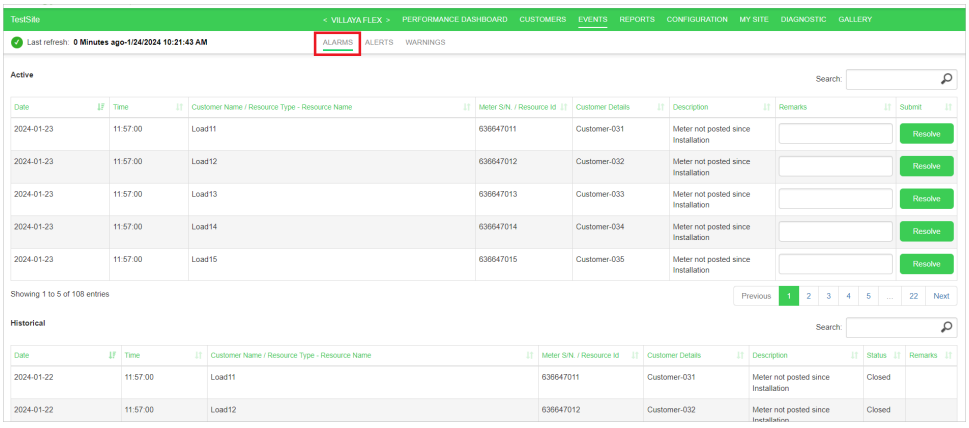
Active: The alarms, alerts, or warnings that are in active state appears under the **Active** section.

Historical: The alarms, alerts, or warnings that are resolved and closed appear under the **Historical** section.

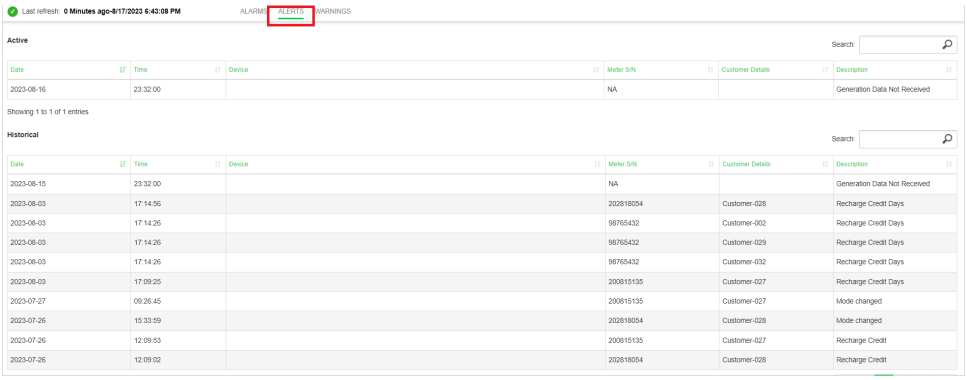
> **NOTE:** Once the active alarms, alerts, or warnings are resolved, the system automatically updates the alarms, alerts, or warnings under **Historical**.

Resolve: If the Issue is resolved for the alarms, alerts, or warnings that are in the active state, then the user manually enters the remarks and resolves the Issue.

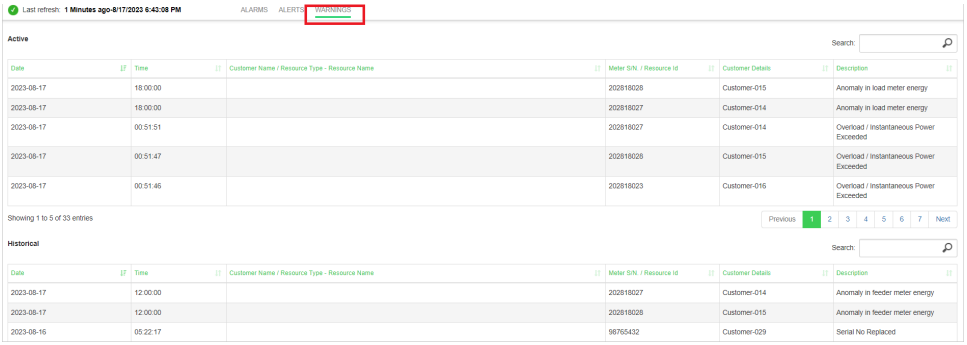
Alarms



Alerts



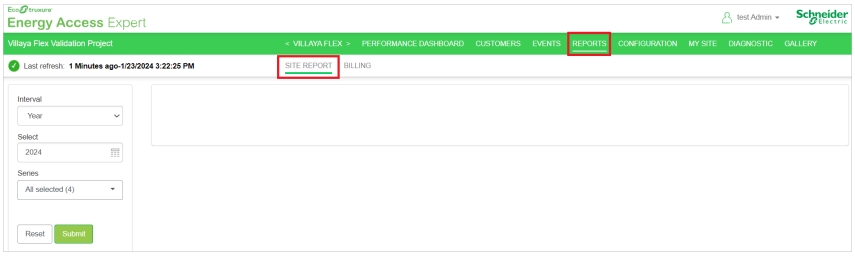
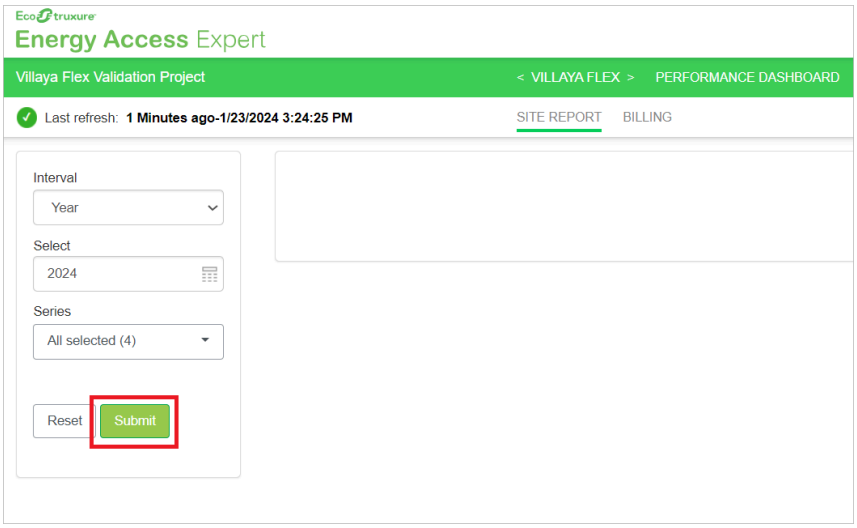
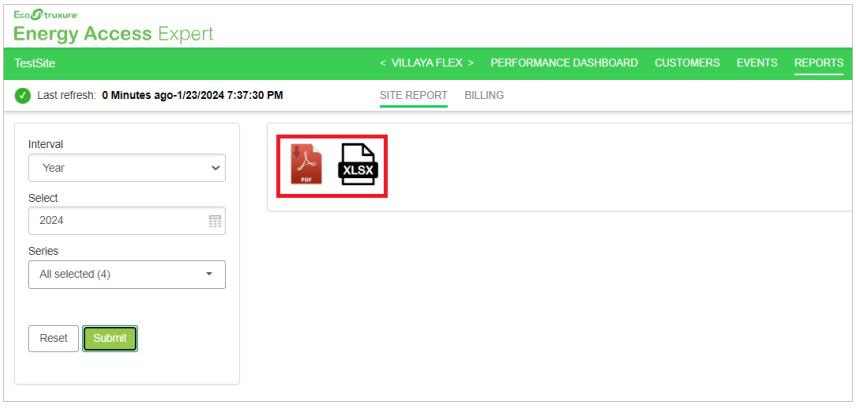
Warnings



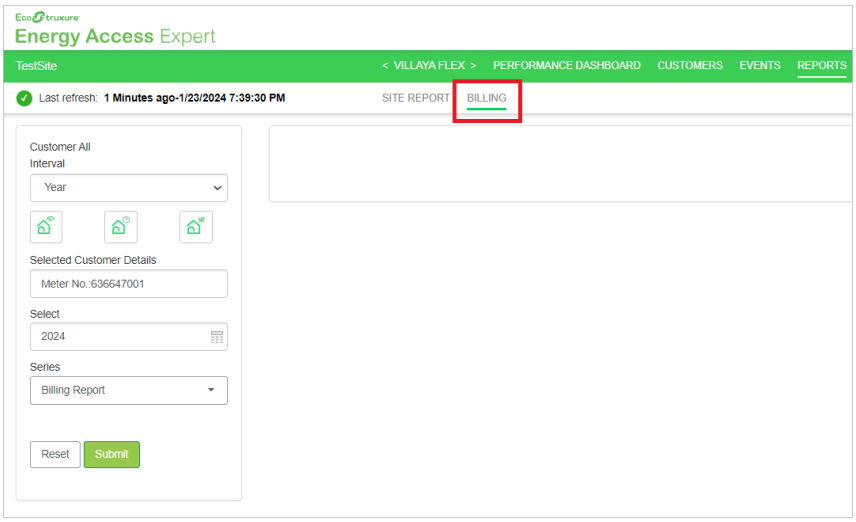
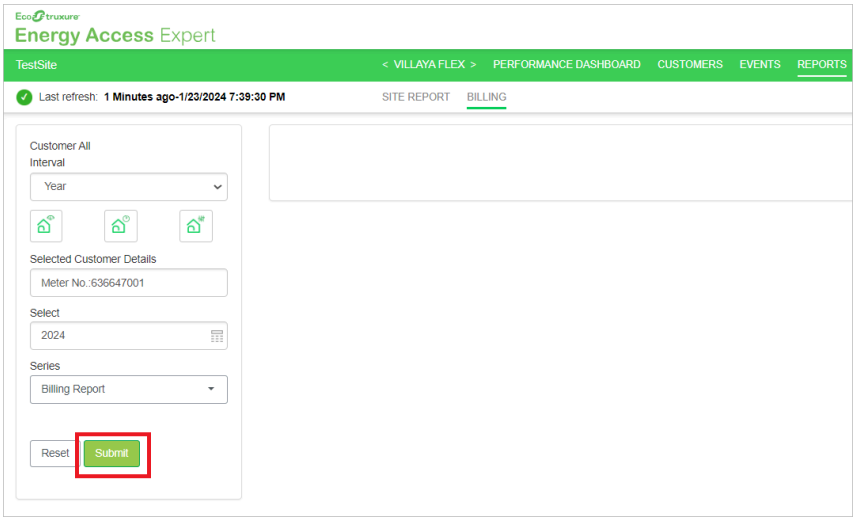
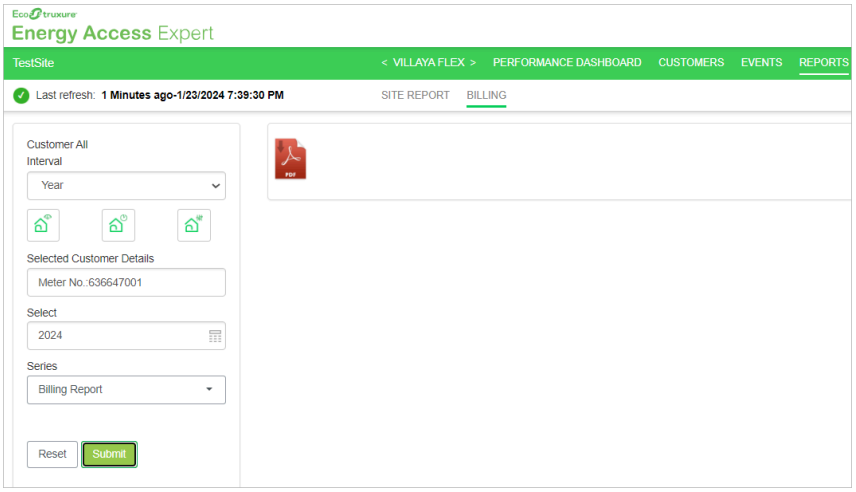
Reports

Open the home page and click **REPORTS**.

Site Report

Step	Action
1	Click **SITE REPORT**. 
2	Enter the following details and click **Submit**: • Interval (month/year/life time) • Time period • Series (technical report/financial report/impact report/abnormalities report). 
3	click to download report in excel format and to download report in PDF format. 

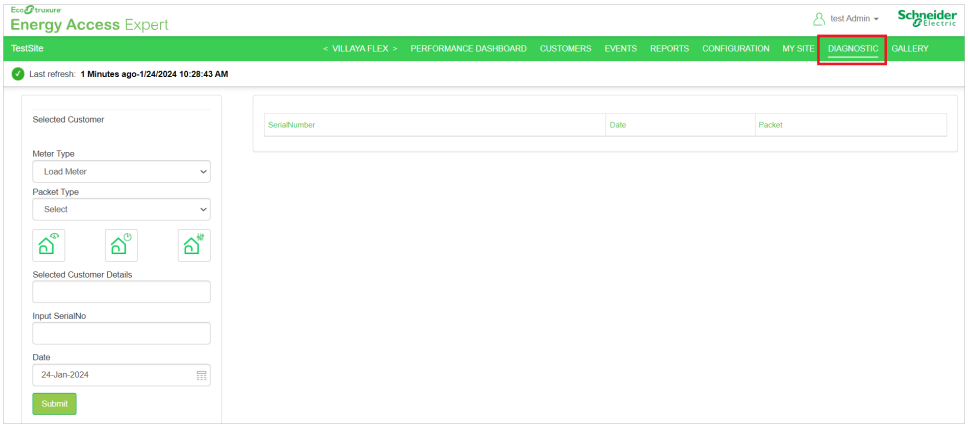
Billing

Step	Action
1	Click **BILLING**. 
2	Enter the following details and click **Submit**: • Interval (month/year/life time) • Selected customer details • Time period • Series (technical report/financial report/impact report/abnormalities report). 
3	click to download report in PDF format. 

Diagnostic

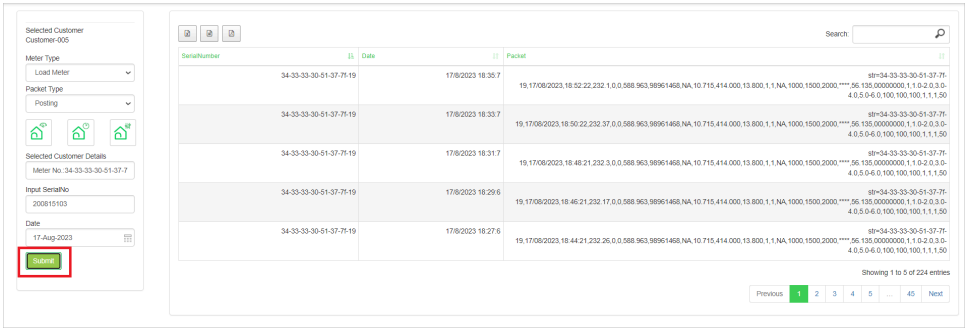
This is a performance check for the devices.

Open the home page and click **DIAGNOSTIC**.



Enter the details to be updated and click **Submit**.

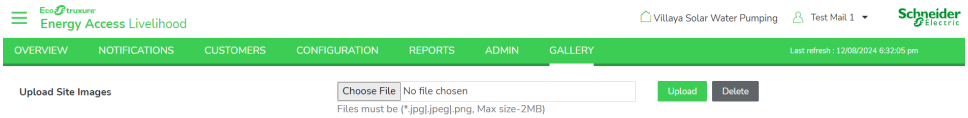
Result: The device performance data is displayed.



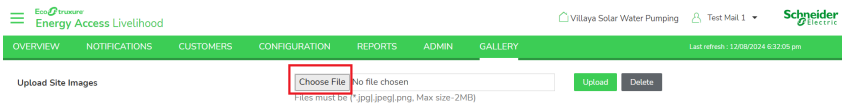
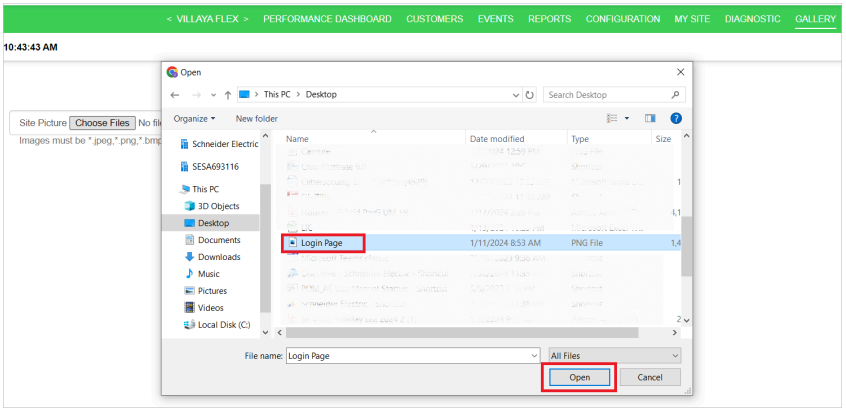
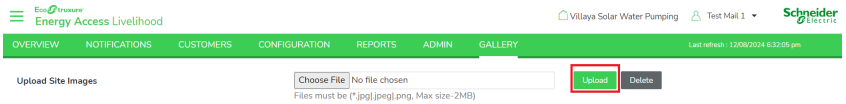
NOTE: Transaction log report can be exported in the format of excel , csv file , and pdf files .

Gallery

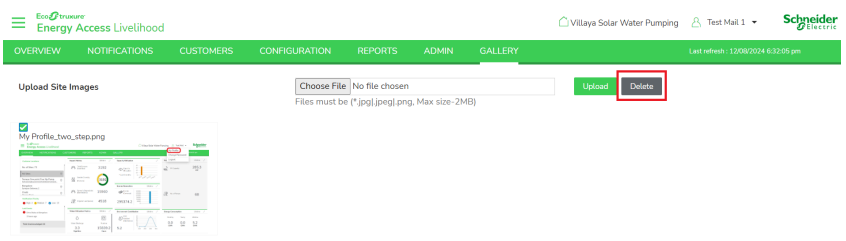
This feature helps you to add and delete images.



Upload Image

Step	Action
1	Click **Choose Files**. 
2	Select the required image and click **Open**. 
3	Click **Upload**.  **Result:** The new image is successfully uploaded.

Delete Image

Step	Action
1	Select the image and click **Delete**  **Result:** The new image is successfully deleted.

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As standards, specifications, and design change from time to time,
please ask for confirmation of the information given in this publication.

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