
CESC Electronics Co., LTD



Energy management platform

User Manual

Version number: v 3.2. 7

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I. System overview

The energy management platform is designed to realize data collection and aggregation of industrial and commercial energy storage systems, photovoltaic storage charging stations, intelligent microgrids and other equipment, realize real-time diagnosis, coordinated control and energy management of the system, provide guarantee for the safe, stable and efficient operation of the system, and provide users with energy aggregation management, intelligent operation and maintenance services. With "data + AI" technology as the core, focusing on the digital application of energy, and focusing on security and service, we will establish a green energy system life cycle management and intelligent analysis platform to make the operation of energy system more intelligent and make data energy create higher value for users.

Among them, the cloud EMS manages energy based on "station-> equipment", including the following contents:

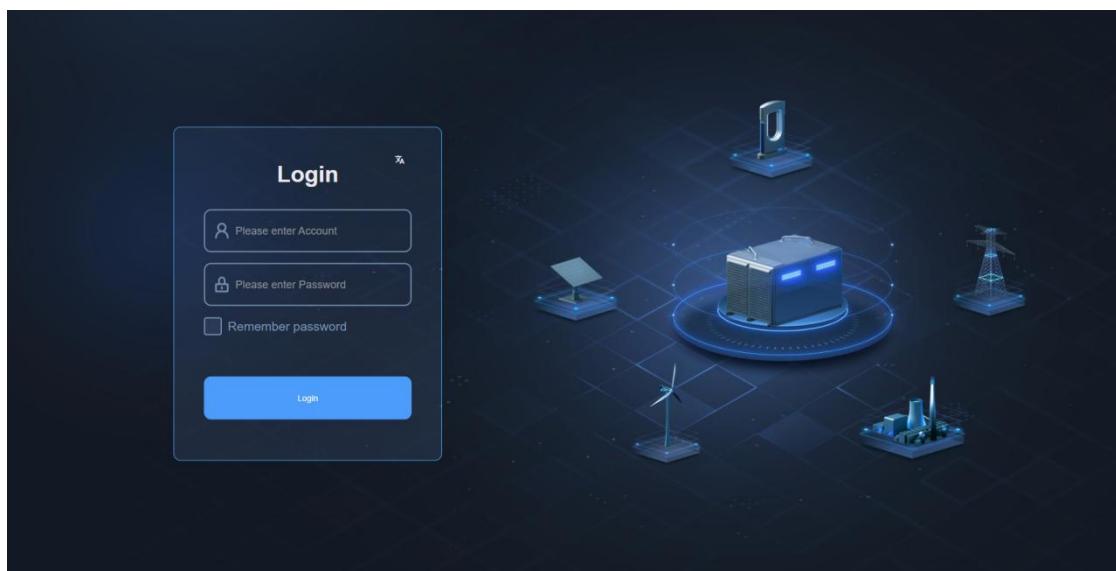
- (1) Statistics on data convergence of multiple stations;
- (2) Statistics on the operation data of a single station;
- (3) Statistics on the operation of each equipment, including piles, clusters, PCS, electricity meters, thermal management, EMS and other equipment according to the actual situation of each site.

II. direction for use

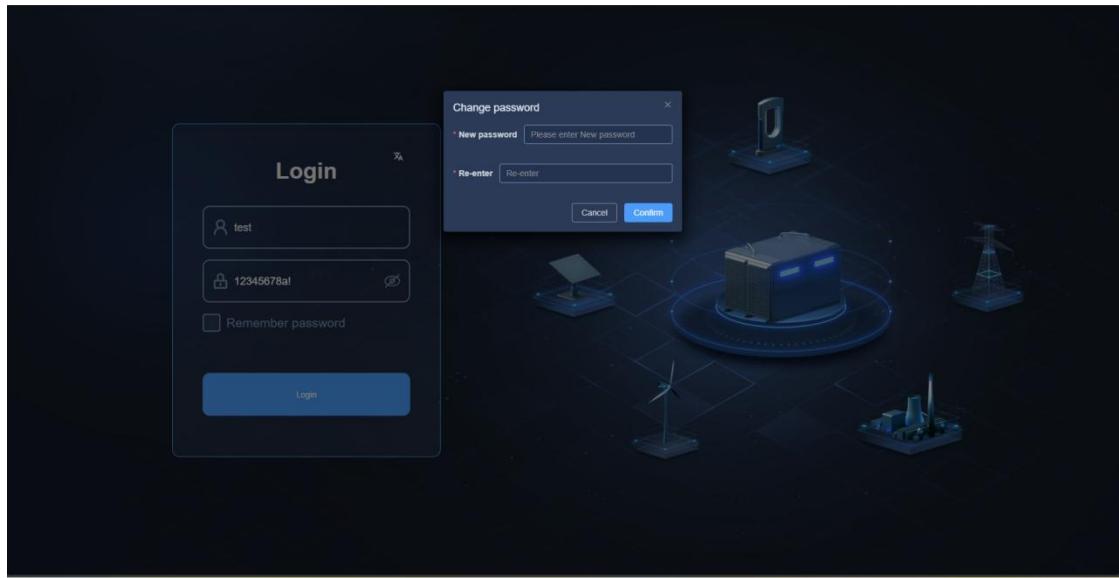
1. Basic functions

1.1 Login and logout

Login: Enter the system address <https://ems.cescpower.com:9088/> in the browser, and a login page will appear. Both the username and mobile phone number can be used as accounts to log in. Enter your account and password, then press Enter or click the "Login" button to access the system. The account and password can be saved for direct use next time. As shown in the figure:



Note: When the initial account is logged in for the first time, you can use your mobile phone number or user name as the account, and the initial password 12345678a! is the login password. After clicking [Login], a password modification pop-up window will be displayed. After the password is modified, the new password will be used as the login password in the future, as shown in the figure:

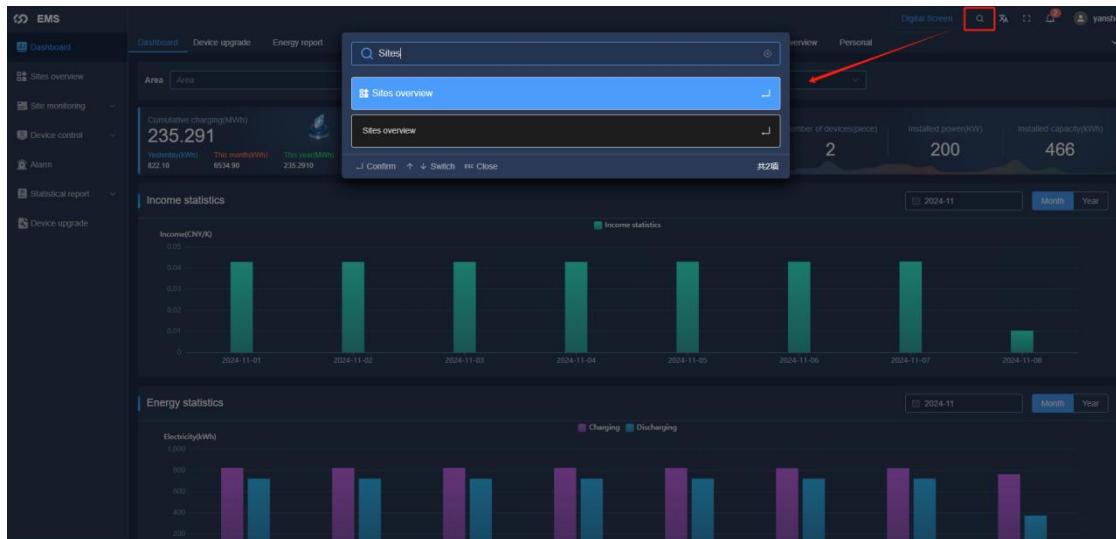


Log out: Click the user pop-up window in the upper right corner, click the button [Exit System] to log out and jump to the login page. As shown in the figure:



1.2 Menu query Click the menu on the right side of the navigation bar

 The icon will pop up the search page, as shown in the figure:



Keyword search: Enter "data" in the search box, all options containing "data" will be displayed, click [Real-time data], and the page will jump to the real-time data page;
 Exit search: Press ESC to close the search page.

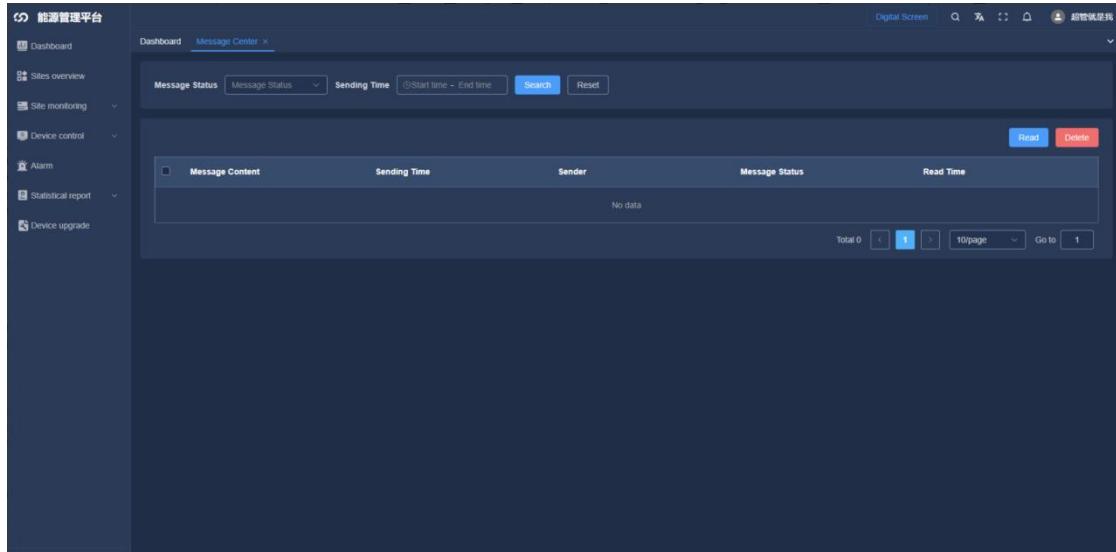
1.3.message center

(1) Message from the notification center: usually real-time level 2 alarm information of the device.

When the unread message number is 0, click on the menu on the right side of the



navigation bar  Icon, enter the notification center interface, all messages can be seen in the message list page, can query, delete, read, such as lower tracing:



Query message: select message status and sending time in the query box, and click [Query];

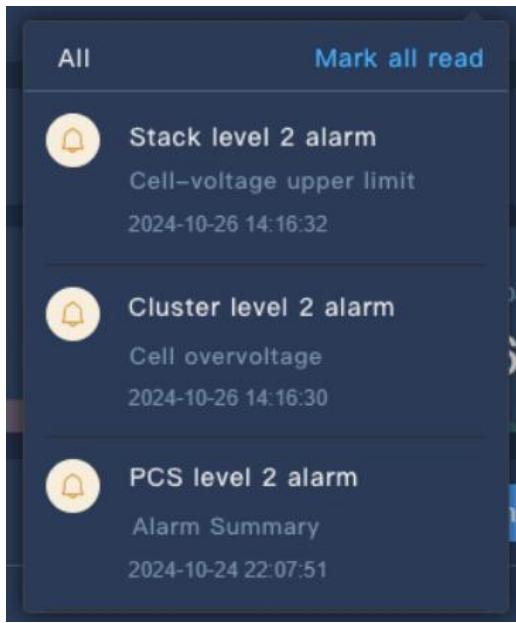
Delete messages: check the messages to be deleted in the first column of the message list or select all, and click the [Delete] button;

Read message: Check the message in the first column of the message list and click the [Read] button.

When the unread message number is greater than 0, click the menu on the right side



of the navigation bar  Icon, open the pop-up window, click the message in the pop-up window, jump to the notification center interface, as shown in the figure below:



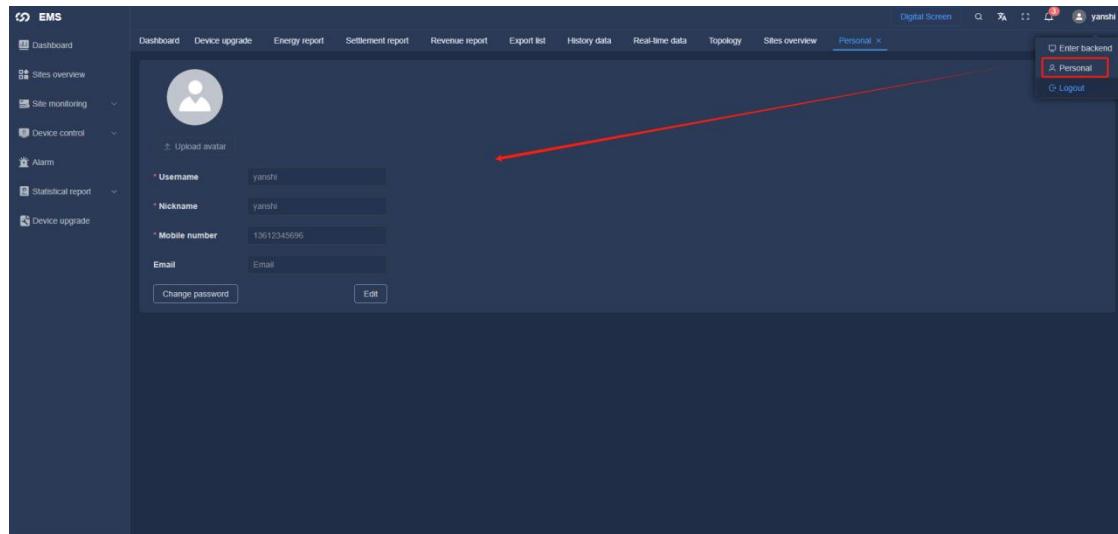
(2) Floating message above: at the top of the navigation bar, usually the system version information notification. When the text is too long, it is displayed by scrolling. When you click to close, the message will not be displayed again, and the message status will be read.

(3) System pop-up message: It is usually a first-level warning of the system. When the warning pops up, it can be accompanied by audio. Click to close, the pop-up window will be closed, and the message status will become read, as shown in the following figure:

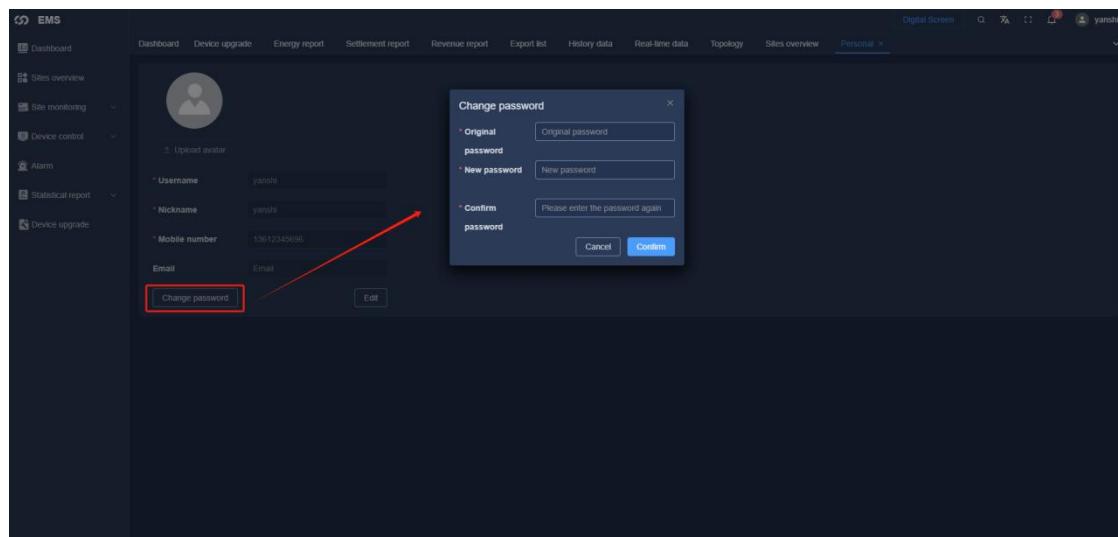


1.4 Personal Center

Click the user pop-up window in the upper right corner, and click the button [Personal Center] to jump to the personal center page, as shown in the figure:



Click the [Edit] button to modify the avatar, nickname, mobile phone number and email address. Click [Change Password] to pop up the password modification page; as shown in the figure:



2. Front desk function

2.1 Digital screen

Click the [Digital Screen] button on the right side of the navigation bar to jump to the screen guide page. The site type displayed in the guide page matches the site type selected when building the site. As shown in the figure:



- (1) The platform name, number of sites, installed capacity, total charging/discharging power and total revenue can be viewed in the top area above the "Home page".
- (2) Resource information area, where you can view the information of the power station set up, including the number of connected power stations, installed capacity, total charging/discharging quantity, total revenue, and ranking of electricity and revenue.
- (3) The middle map area shows the current location of the power station. You can click the drop-down box to view the details of the power station, as shown in the figure:



2.2 Data dashboard

Click the data Board in the right menu to switch to the data board page. In this page, you can view the detailed data of any site under all sites of this account. As shown in the figure:



- (1) The query bar is located at the top of the page, which can be searched according to the region, site group and site name. The platform name, number of sites, installed capacity, total charging/discharging power and total revenue can be viewed in the top

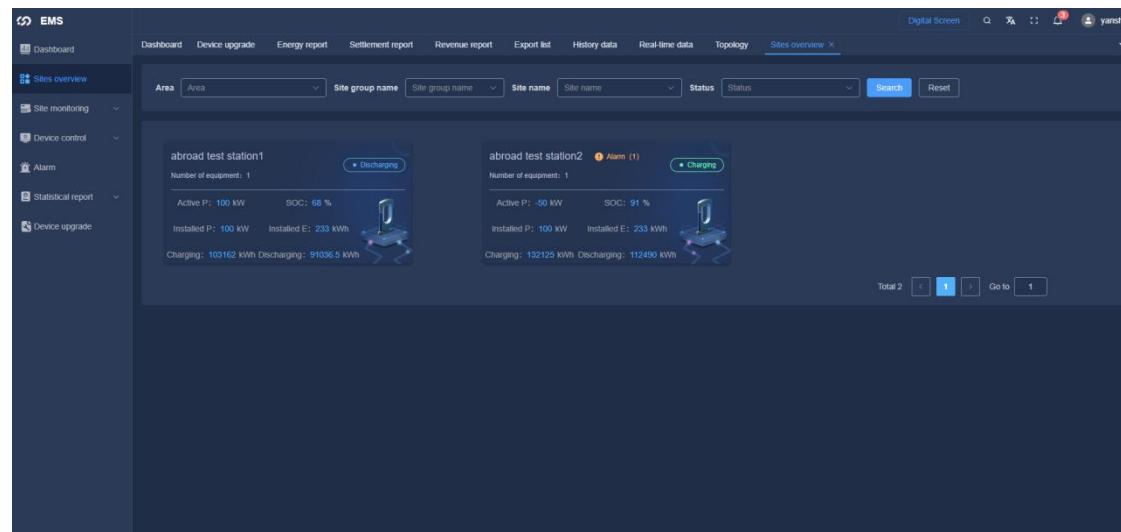
area.

(2) At the top of the data list page, you can view the cumulative charging/discharging power, cumulative revenue, and comparisons for yesterday, this month, and this year. The number of devices, installed power, and installed capacity within the station can also be checked. You can view the set power station information, including the number of connected devices, installed capacity, and installed power. Below the list is a bar chart that shows the revenue indicators, power indicators, and system efficiency of the station.

(3) In the bar chart, you can click the year button to select the year, and switch the horizontal axis to the unit of year, so that you can compare the data of each year; click the month button to select the month, and switch the horizontal axis to the unit of month, so that you can compare the data of each month.

2.3.Overview of multiple stations

Click on the "Multi-Station Overview" in the right menu to switch to the data details page, as shown in the figure:



(1) Site Search: On the page, there is a search bar in the designated area. Select Zhejiang Province/Shaoxing City/Shangyu District from the search box. The site

group dropdown will display all site groups under Zhejiang Province/Shaoxing City/Shangyu District. Choose a site group, and the site name dropdown will show all sites under that group. Select the site and its status, then click the [Search] button. The site list will display the queried site cards, each representing a single site.

(2) Site status: normal, alarm, fault, interruption; the normal state is divided into three states: charging, discharging and standby.

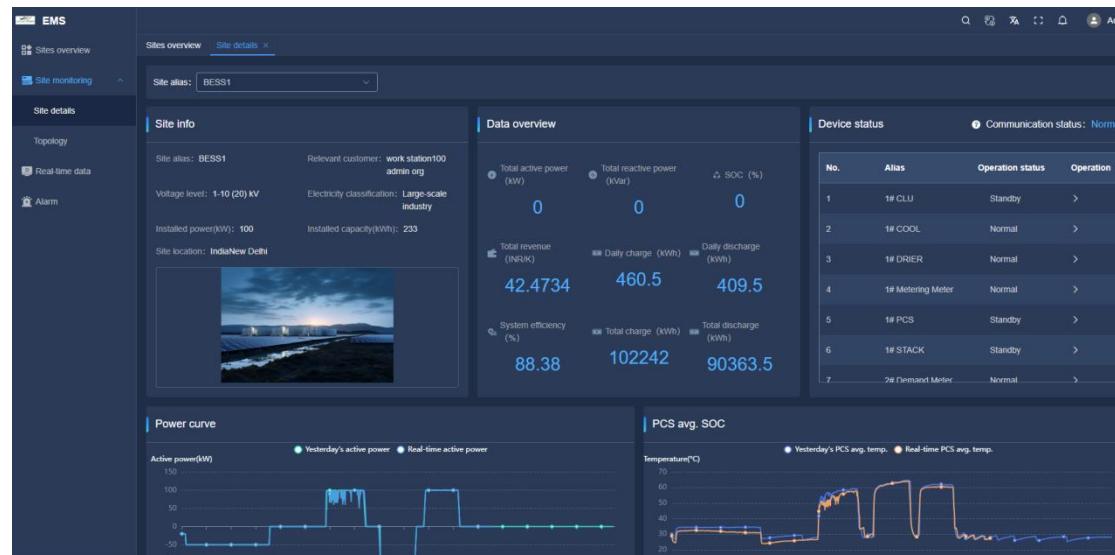
(3) Basic data of the site: The site name, status, SOC, number of equipment, installed power, installed capacity, charge/discharge power and active power are displayed in the site card.

View site details data: Click on the site card to jump to the site details page, which is the same as [single site Details] page is consistent.

2.4 Single station monitoring

2.4.1 Single station details

Click on the right menu [Single Station Details] to switch to the site data details page, as shown in the figure:



(1) Click the drop-down box of site name to select the site, and switch the data details

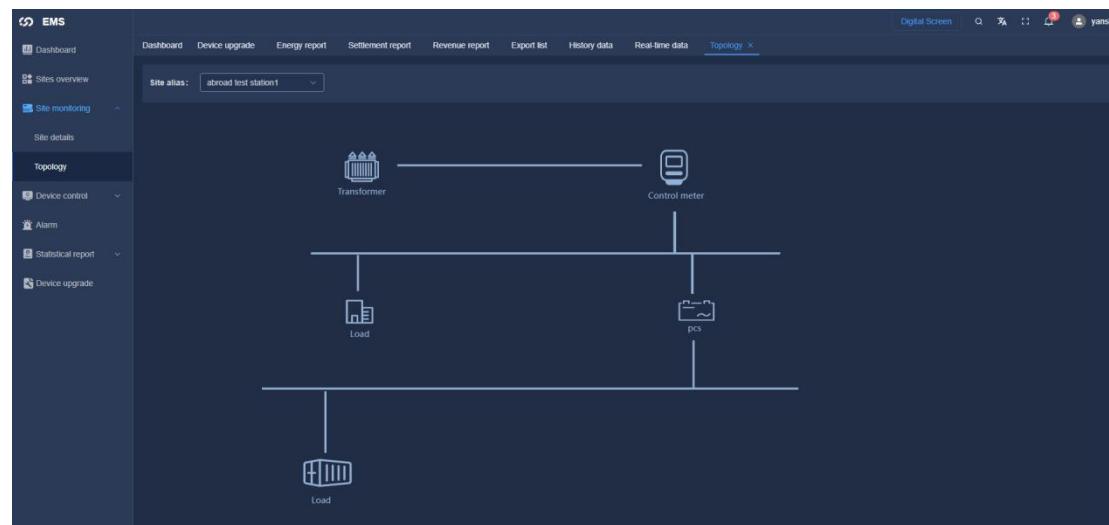
list to the data of the site.

Above the list, three modules are displayed: Power Station Information, Overview Data, and Equipment Status. The Power Station Information module shows the name of the power station, its affiliated customer, voltage level, power consumption category, installed power capacity, and location of the station; the Overview Data module allows viewing of the total active/reactive power, SOC, total revenue, daily charging/discharging volume, system efficiency, and total charging/discharging volume of the site; the Equipment Status module displays the communication status of the site, with all measurement points and their statuses listed in the table. Clicking on an equipment item redirects to the real-time data page for that specific device.

(2) Below the data detail list are the curve charts of energy storage power, average SOC of reactor, PCS and average temperature of reactor. Here, we mainly look at the real-time data of the day, and yesterdays data can be used for reference. You can zoom in or out by sliding the mouse, or click the horizontal axis to view the data comparison of different time periods.

2.4.2 Main wiring diagram

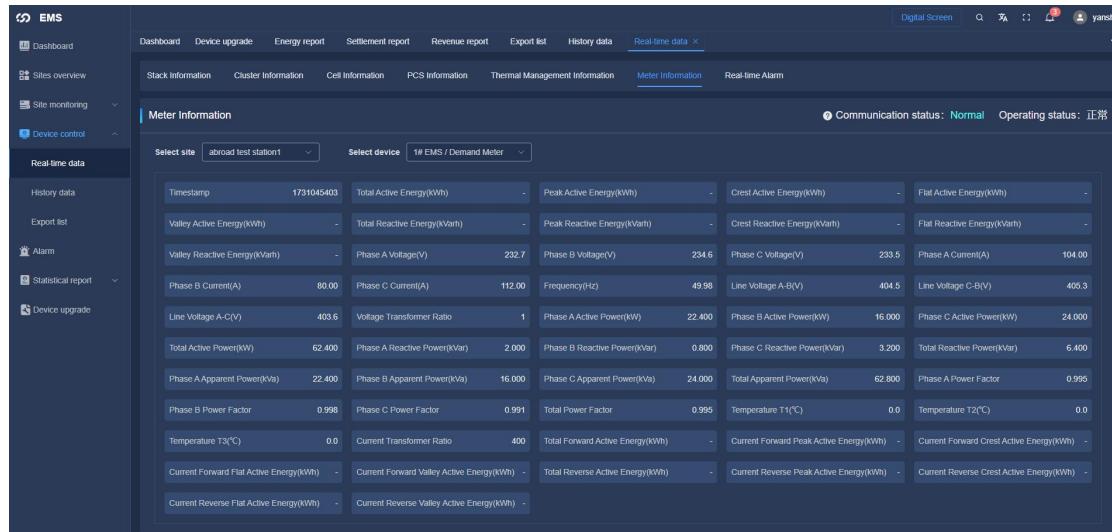
Click the "Main Wiring Diagram" in the right menu to switch to the drawing page, and query according to different sites, as shown in the figure:



2.5.equipment centralized control

2.5.1 Real-time data

Click on the right menu of [Real-time Data] to switch to the device data page, as shown in the figure:



The screenshot shows the EMS (Energy Management System) interface. The left sidebar has a tree structure with nodes like EMS, Dashboard, Sites overview, Site monitoring, Device control, Real-time data, History data, Export list, Alarm, Statistical report, and Device upgrade. The 'Real-time data' node is expanded. The main content area has a header with tabs: Dashboard, Device upgrade, Energy report, Settlement report, Revenue report, Export list, History data, Real-time data (which is selected and highlighted in blue). Below the header are sub-tabs: Stack Information, Cluster Information, Cell Information, PCS Information, Thermal Management Information, Meter Information (which is selected and highlighted in blue), and Real-time Alarm. The 'Meter Information' section contains two dropdown menus: 'Select site' (set to 'abroad test station1') and 'Select device' (set to '1# EMS / Demand Meter'). The main table displays various electrical parameters for this specific meter. The table has 10 columns and 15 rows of data. The columns are: Timestamp, Total Active Energy(kWh), Peak Active Energy(kWh), Crest Active Energy(kWh), Flat Active Energy(kWh), Valley Active Energy(kWh), Total Reactive Energy(kVArh), Peak Reactive Energy(kVArh), Crest Reactive Energy(kVArh), Flat Reactive Energy(kVArh), Phase A Voltage(V), Phase B Voltage(V), Phase C Voltage(V), Phase A Current(A), Line Voltage A-B(V), Line Voltage C-B(V), Phase B Current(A), Phase C Current(A), Frequency(Hz), Line Voltage A-B(V), Line Voltage C-B(V), Line Voltage A-C(V), Voltage Transformer Ratio, Phase A Active Power(kW), Phase B Active Power(kW), Phase C Active Power(kW), Phase B Active Power(kW), Phase C Active Power(kW), Phase A Reactive Power(kVar), Phase B Reactive Power(kVar), Phase C Reactive Power(kVar), Total Reactive Power(kVar), Phase A Apparent Power(kVA), Phase B Apparent Power(kVA), Phase C Apparent Power(kVA), Total Apparent Power(kVA), Phase A Power Factor, Phase B Power Factor, Phase C Power Factor, Total Power Factor, Temperature T1(°C), Temperature T2(°C), Temperature T3(°C), Current Transformer Ratio, Total Forward Active Energy(kWh), Current Forward Peak Active Energy(kWh), Current Forward Crest Active Energy(kWh), Current Forward Active Energy(kWh), Current Forward Valley Active Energy(kWh), Total Reverse Active Energy(kWh), Current Reverse Peak Active Energy(kWh), Current Reverse Crest Active Energy(kWh), Current Reverse Active Energy(kWh), Current Reverse Valley Active Energy(kWh), and Current Reverse Flat Active Energy(kWh). The table also includes a row for 'Communication status: Normal' and 'Operating status: 正常' (Normal).

(1) Search Equipment: Select the heap information, click on the drop-down menu for site selection to choose Guangdong Huichuang No.1 Site, and select all heap devices from Guangdong Huichuang No.1 Site from the equipment drop-down menu. This drop-down menu allows multiple selections. Choose "Guangdong Huichuang No.1 Equipment / No.1 Heap Device," then click the [Query] button. The page will display based on the number of measurement points set by the site. For example, "Guangdong Huichuang No.1 Equipment / No.1 Heap Device" includes 9 sections: heap information, cluster information, individual unit information, PCS information, meter information, thermal management information, fire protection information, DI/DO, and real-time alarms. The page will show these 9 labels.

(2) You can click the corresponding label to view the data of the corresponding label. The alarm, communication and system status of these devices are displayed in the upper right corner of each tab page, and the data corresponding to the label is displayed below the list. For example:

(3) Click [Cluster Information], and the list shows SOC value and the highest/lowest

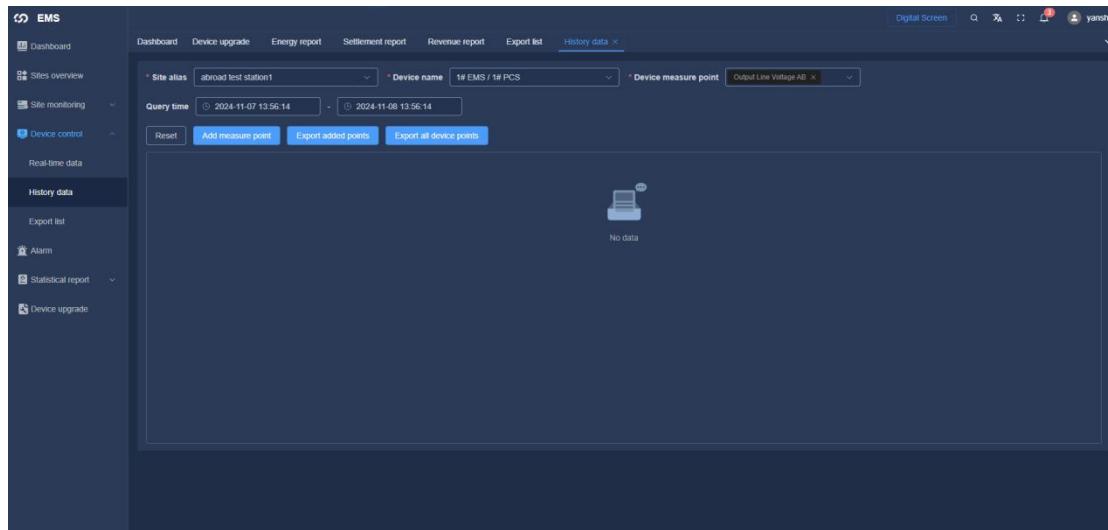
value, SOH value and the highest/lowest value, total voltage value, current, highest/lowest single cell voltage, highest/lowest temperature, positive/negative insulation value to ground, cumulative charge/discharge quantity and single charge/discharge quantity;

Click [Single Body Information] to display the local EMS, battery stack, PACK, single body, voltage, temperature, SOC and SOH data of the device in the list;

Click [Real-time Alarm] to display the alarms occurring in the device. The list includes the device type, device serial number, alarm level, alarm content, and start time.

2.5.2 Historical data

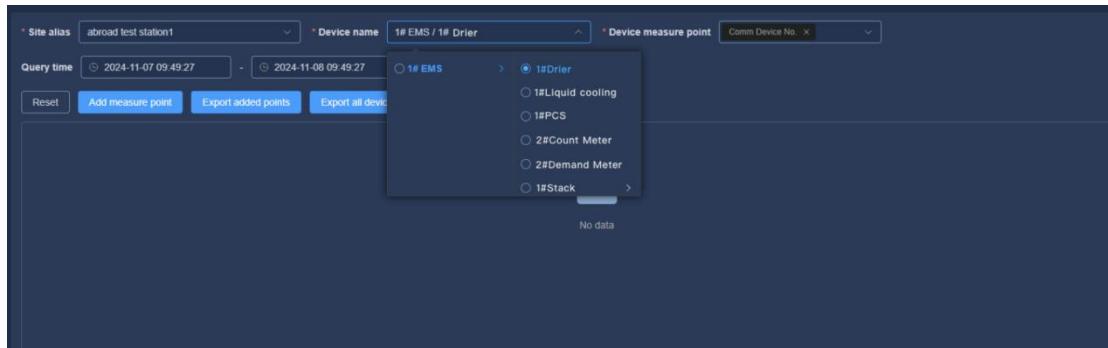
Click on the "Historical Data" in the right menu to switch to the data query page, as shown in the figure:



pay attention to:

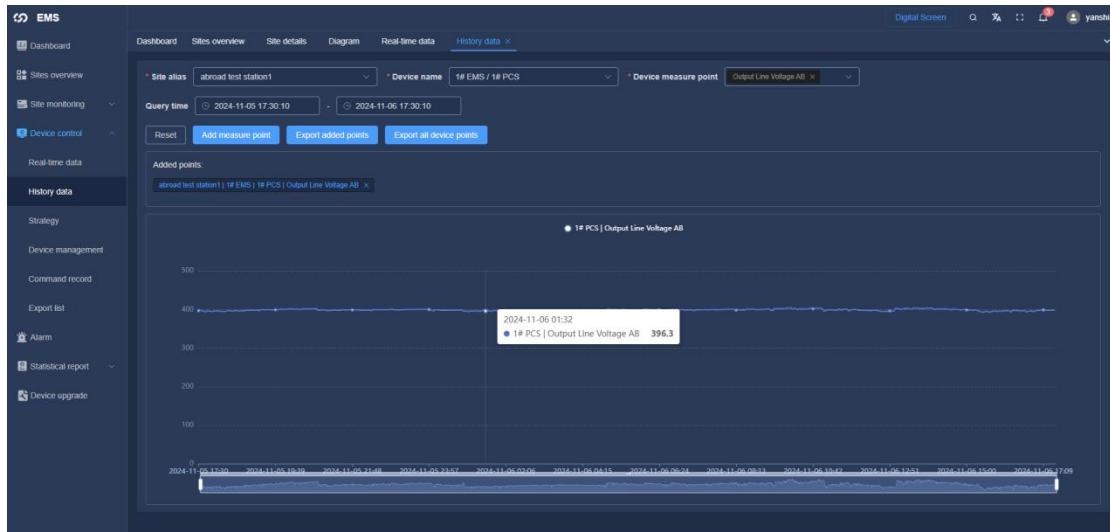
- (1) The site name drop-down box displays the sites under the account by default, which is linked to the device name and the measurement point of the device. When the site name changes, the device name and the measurement point also change.
- (2) The content of the device name drop-down box displays all devices corresponding to the site. The difference with the local EMS is that you can select and

view clusters separately, as shown in the figure:

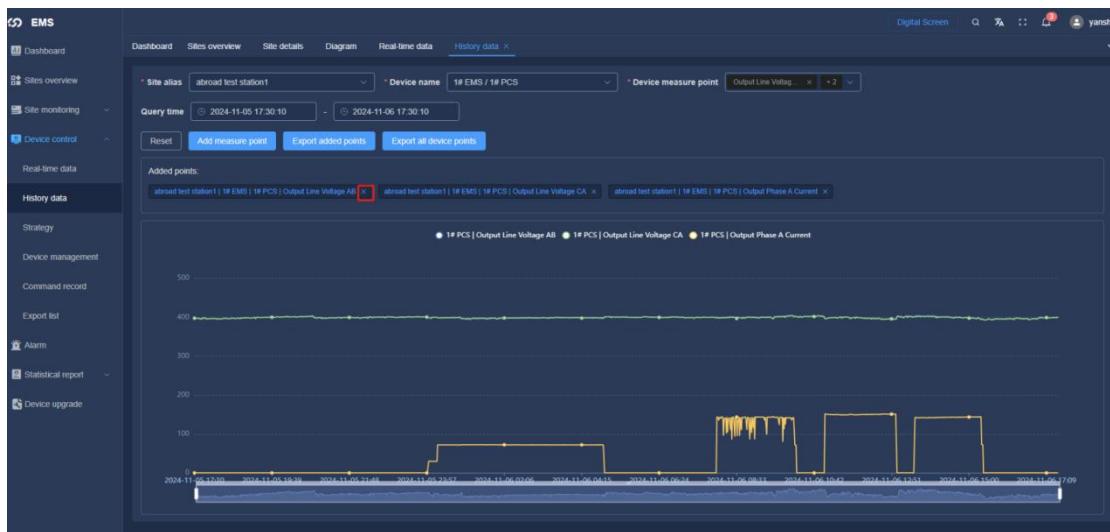


- (3) The default query time is one day forward from the current time, and the maximum query time is within 7 days.
- (4) Up to 5 measurement points can be added in the device measurement point selection box, and measurement points can be added again after clicking add curve.
- (5) Only after adding the curve can you export the selected measurement point.
- (6) The single body does not support querying the data of measurement points, and can only export the measurement points.
- (7) Export the same measurement point, the interval between two operations is 5 minutes, and the same measurement point can be exported again after 5 minutes.

Add measurement point: Select site, equipment, measurement point and time, click the [Add measurement point] button. If there is data for the query measurement point within the query time, a curve chart will appear, as shown in the following figure; if there is no data, the curve chart will not appear.



Delete the added measurement point: click the [] icon behind the measurement point to delete the curve of the measurement point;



Hide the measurement point in the curve chart: Click the icon in front of the measurement point above the curve chart to hide the curve of the measurement point, and click again to cancel the hiding.

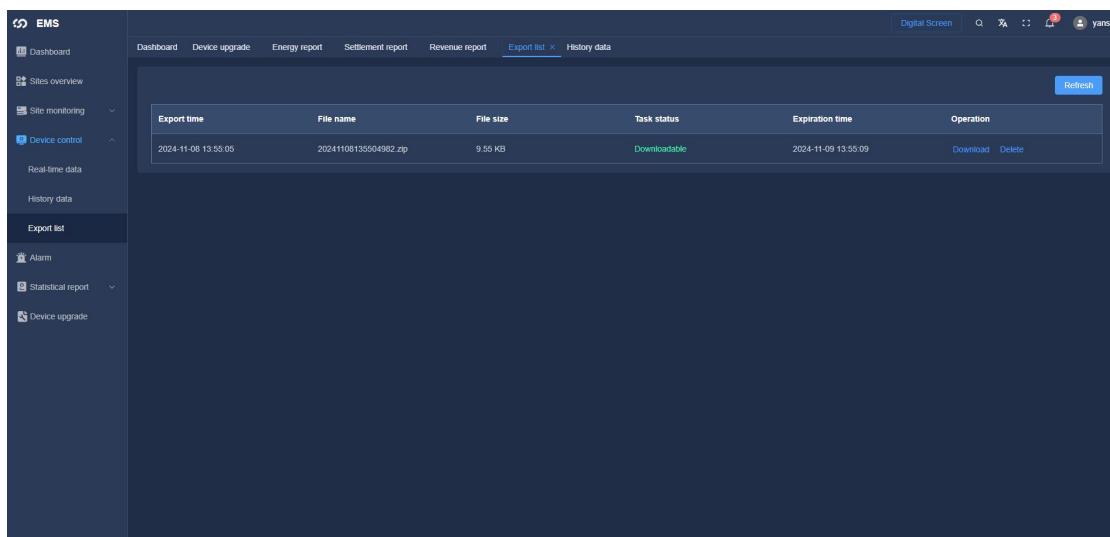


Export the added measurement points: After the measurement points are added, click the [Export the added measurement points] button to add a piece of data in the export list, and you can download the measurement point data in the export list.

Export all measurement points of the equipment: Select the equipment and time, click [Export all measurement points of the equipment], add a data to the export list, and download all measurement points of the equipment from the export list (this operation has a time limit, you can continue to export again after 5 minutes).

2.5.3 Export list

Click Export List in the right menu to switch to the export list page, as shown in the figure:



The task status is divided into three types: export in progress, downloadable and failed.

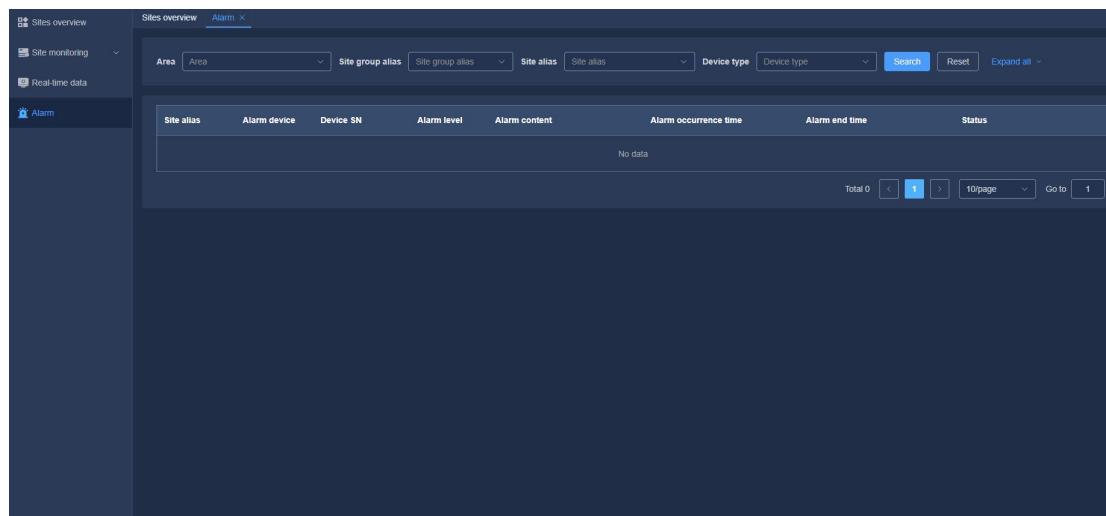
Exporting: there is no expiration time, can be deleted;

Downloadable: there is an expiration time, which expires 24 hours after the export time, and the data will not be displayed in the list, which can be deleted and downloaded;

Failure: There is an expiration time. The data will not be displayed in the list after 24 hours from the start of the export time. You can view the failure reason and delete it.

2.6 Fault alarm

Click the [Fault Alarm] in the right menu to switch to the alarm list page. The query toolbar is placed on the page, and the alarm list is placed below, as shown in the figure:



- (1) In the search box of the region, select Zhejiang Province/Shaoxing City/Shangyu District. All site groups in Zhejiang Province/Shaoxing City/Shangyu District will be displayed in the site group drop-down box. Select the site group, and all sites under the site will be displayed in the site name drop-down box. Select the site and equipment type and click the [Query] button.
- (2) The alarm list displays the device type, serial number, alarm level, alarm content,

alarm occurrence/end time, and status. The status is displayed as in progress and ended, respectively. The list is sorted by status, with the in progress alarms at the top of the list.

2.7 Statistical statements

2.7.1 Income statement

Click the [Income Statement] in the right menu to switch to the income list page. The query toolbar is placed on the page, and the income table is below it, as shown in the figure:

Date	Charging Income (CNY)					Discharging Income (CNY)					Income (CNY)
	Sharp	Peak	Shoulder	Valley	Total	Sharp	Peak	Shoulder	Valley	Total	
2024-11-08	0	11.5	0	134.4	145.9	0	258.5	0	0	258.5	112.6
2024-11-07	0	12	0.3	134.4	146.7	0	409.5	0	0	409.5	262.8
2024-11-06	0	12.5	0.3	134.4	147.2	0	409.5	0	0	409.5	262.3
2024-11-05	0	12	0.3	134.7	147	0	409.5	0	0	409.5	262.5
2024-11-04	0	12	0.3	134.85	147.15	0	409.5	0	0	409.5	262.35
2024-11-03	0	12	0.3	134.7	147	0	409.5	0	0	409.5	262.5
2024-11-02	0	12	0.3	134.55	146.85	0	409.5	0	0	409.5	262.65
2024-11-01	0	12	0.3	134.7	147	0	409.5	0	0	409.5	262.5
Total	0	96	2.1	1076.7	1174.8	0	3125	0	0	3125	1950.2
Construction s...	-	Operation income=Electricity price subsidy*Discharging quantity			Electricity price subsidy (CNY/kWh)	-	-	Operation income (CNY)	-	-	-

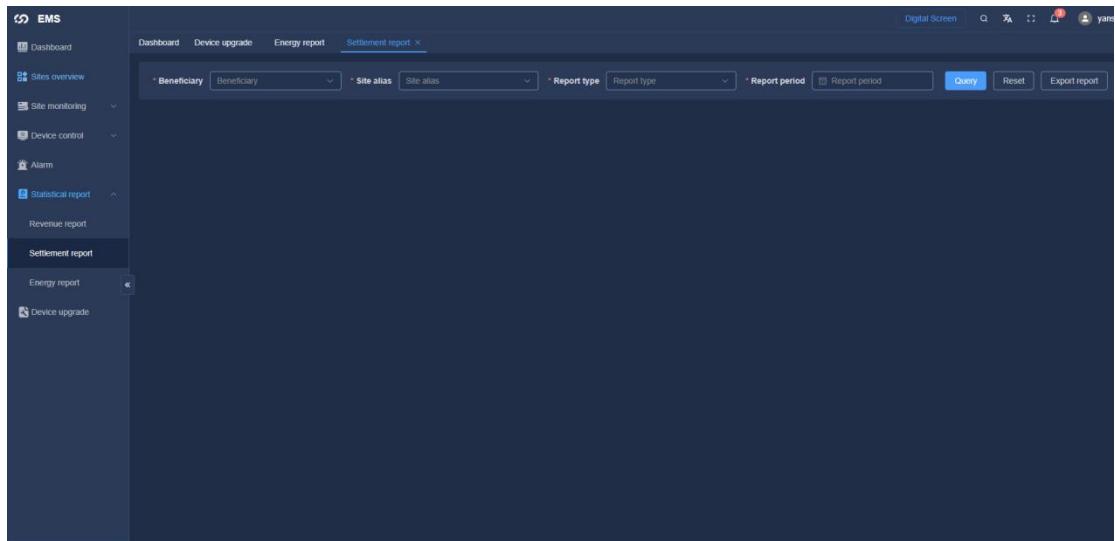
Site revenue query: you can query according to region, site group, site name and date.

You can query by compound query or single query. The revenue table can be switched to year, month and day.

Note: The added site needs to be configured with electricity price first, and the income statement can take effect.

2.7.2 Settlement statement

Click the [Settlement Statement] in the right menu to switch to the settlement list page, where the query toolbar is placed on the page and the settlement table is placed below, as shown in the figure:



Transaction Inquiry: In the toolbar at the top, you can perform queries based on revenue object, site name, report type, and cycle. For example: select "Site Maintenance" for the revenue object, choose "abroad test station1" for the site, select "Monthly Report" for the report type, and set the cycle to "November." Click "Query" [Query], and a report will pop up. The report mainly displays three sections: site subsidies, charging and discharging fees, and owner splits, as shown in the following figure:

Site Name	abroad test station1			Settlement Cycle	2024-11-01~2024-11-30				
Construction subsidies (CNY)				Operation subsidy (CNY)	Operation subsidy=Electricity subsidy*Discharge capacity				
Electricity subsidy (CNY/kWh)				Discharge capacity					
Charging and discharging costs									
Charging electricity price (CNY/kWh)	Sharp period	Peak period	Shoulder period	Valley period	Summary	yield spread (CNY)			
Charging capacity (kWh)	#####	1.00000000	0.60000000	0.30000000	0.31870000	1574.8000			
Charging fee (CNY)	0.000	72.500	3.000	2,693.000	2,768.500				
Discharge electricity price (CNY/kWh)	#####	1.00000000	0.60000000	0.30000000	1.00000000				
Discharge capacity (kWh)	0.000	2,457.000	0.000	0.000	2,457.000				
Discharge cost (CNY)	0.0000	2,457.0000	0.0000	0.0000	2,457.0000	yield spread=Total cost of discharge/Total charging cost			
Owner's share									
Customer Name abroad test client1			Sharing ratio (%)						
Unit price for operation and maintenance (CNY/kWh)	0.0	Operation and maintenance expenses (CNY)	0.0000	Settlement amount (CNY)	100				
Discounted unit price (CNY/kWh)	0.0	Profit sharing fee (CNY)	0.0000		Settlement amount=yield spread*Sharing ratio-Operation and maintenance expenses+Profit sharing fee				
Investor share									
Customer Name abroad test client1			Sharing ratio (%)						
Unit price for operation and maintenance (CNY/kWh)	0.0	Operation and maintenance expenses (CNY)	0.0000	Settlement	0				

Export report: Click the [Export Report] button to save the report locally.

Note: The settlement statement will take effect only after the added site configuration is completed.

2.7.3 Power report

Click the [Power Report] in the right menu to switch to the electricity meter power page. The query toolbar is at the top of the page and the power table is at the bottom, as shown in the figure:

Date	Charging Amount (kWh)					Discharging Amount (kWh)					Efficiency (%)
	Sharp	Pkak	Shoulder	Vally	Total	Sharp	Peak	Shoulder	Vally	Total	
2024-11-08	0	11.5	0	448	459.5	0	257	0	0	257	55.93
2024-11-07	0	12	0.5	448	460.5	0	409.5	0	0	409.5	88.93
2024-11-06	0	12.5	0.5	448	461	0	409.5	0	0	409.5	88.83
2024-11-05	0	12	0.5	449	461.5	0	409.5	0	0	409.5	88.73
2024-11-04	0	12	0.5	449.5	462	0	409.5	0	0	409.5	88.64
2024-11-03	0	12	0.5	449	461.5	0	409.5	0	0	409.5	88.73
2024-11-02	0	12	0.5	448.5	461	0	409.5	0	0	409.5	88.83
2024-11-01	0	12	0.5	449	461.5	0	409.5	0	0	409.5	88.73
Total	0	96	3.5	3589	3688.5	0	3123.5	0	0	3123.5	84.68

Note: If the site is not configured for electricity price, there is no data in the electricity report.

Query: You can query according to the region, site group, site name and date. You can query by compound query or single query; and you can click to query



Switch the table mode.

The meter system page is the same as the meter power.

2.8 Equipment upgrade

Click the [Device Upgrade] in the right menu to switch to the device upgrade page. The site group under the organization is displayed on the left side of the page, which can be switched. After selecting the group, the sites and devices contained in the group will be displayed above the right side, and the upgrade list of the site group will be displayed below, which can be queried by device type, as shown in the figure:

The screenshot shows the EMS Device Upgrade interface. On the left is a dark sidebar with navigation options: Dashboard, Sites overview, Site monitoring, Device control, Alarm, Statistical report, and Device upgrade (which is selected). The main content area has a header 'Dashboard Device upgrade'. Below the header, it says 'abroad test site group1 includes 1 sites: [abroad test station1] 1 sites contain a total of 0 BMS devices, of which 0 devices have been upgraded with the software package'. A search bar shows 'Device type: BMS' and a 'Search' button. A table lists the upgrade packages:

Device type	Upgrade pack	Version number	Upload time	Operation
BMS	BMS_UPGRADE_PACK_V2.0.8.zip	2.0.8	2024-11-06 17:47:19	Delete Upgrade

. The table has a footer with 'Total 1' and a page navigation section. The top right of the interface shows 'Digital Screen' and other system icons.

Upload: First select the site group, then click the upload button, select the corresponding upgrade package according to the device type, as shown in the figure:

This screenshot shows a modal window titled 'Device Upgrade' over the main EMS interface. The modal has a header 'abroad test site group1 contains the sites: [abroad test station1]'. It contains a section for 'Upload upgrade pack' with a 'Select File' button and a 'Drag the file here' placeholder. Below this, there is a 'Device type' dropdown menu with 'EMS' selected, and a list of other device types: 'EMS', 'PCS', and 'BMS'. At the bottom of the modal are 'Cancel' and 'Confirm' buttons. The background of the main EMS interface is visible, showing the same upgrade list as the first screenshot.

Note:

- (1)The prerequisite for using this function is that the account has a site group assigned.
- (2)Upgrade package file name format: The last three digits are the version number, such as BMS_UPGRADE_PACK_V3301.7.1.2.4.tar, and the version number is V1.2.4
- (3)After deleting the upgrade package in the upgrade list, it will be rolled back to the

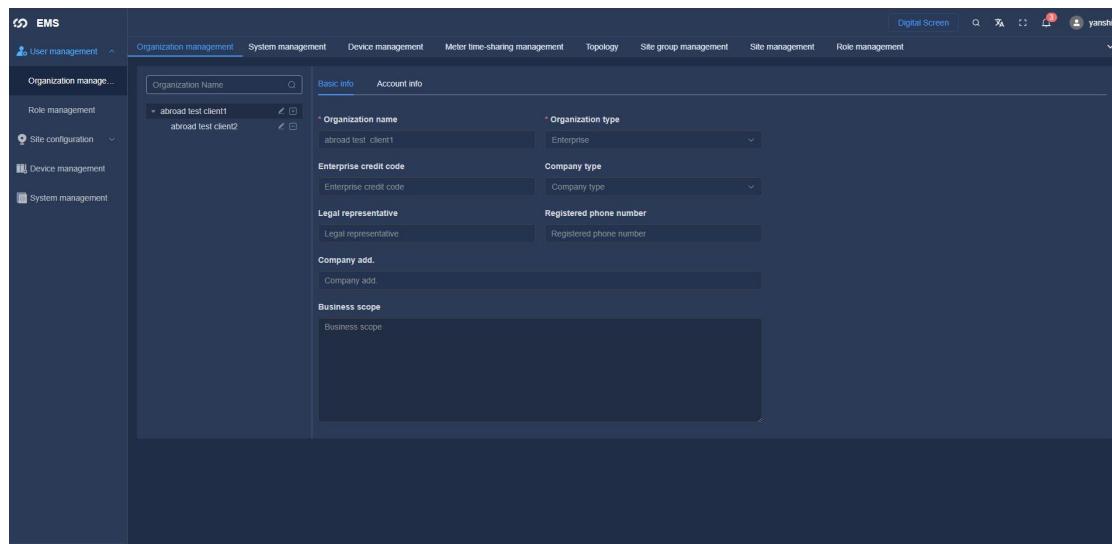
previous version.

3. Background functions

3.1. User management

3.1.1 Organizational management

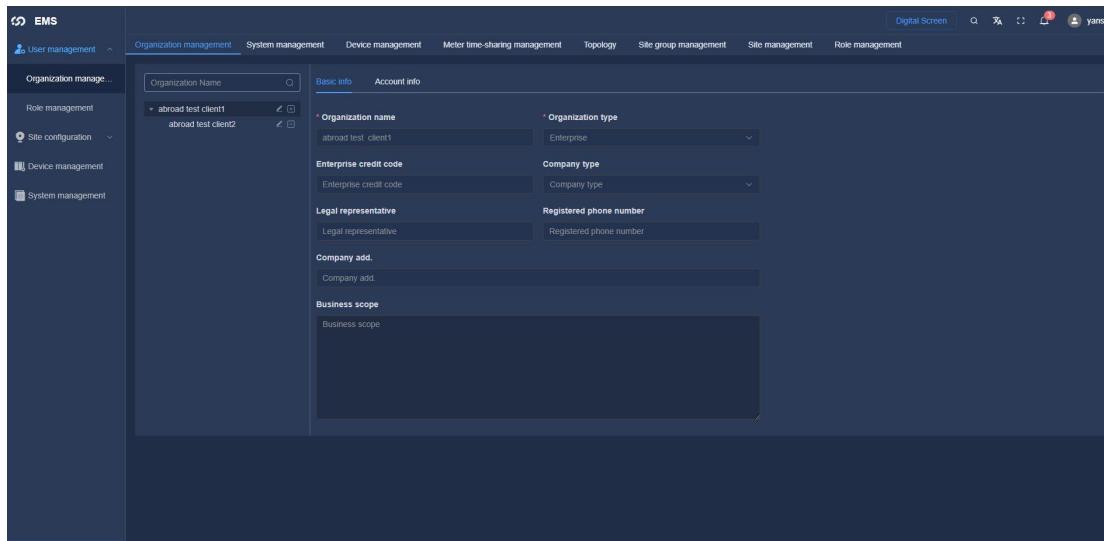
Click the user pop-up window in the upper right corner and click the button [Enter background] to jump to the background. As shown in the figure, switch to the organization management page. The left menu of the organization management page can add organizations and modify or delete organizations.



(1) Add organization: Click the add icon , Switch to the new organization page, enter the customer name as shown in the figure, customer type is divided into enterprise and individual, select enterprise or individual, as shown in the figure below:

(2) Check the organization information: Click any organization in the organization menu or search in the query box at the top of the list, and the basic information of the organization will appear on the right, as shown in the following figure:

(3) View the account: Click [Account Information] to switch to the account list page, and you can modify, delete, reset password and add new accounts. As shown in the figure:

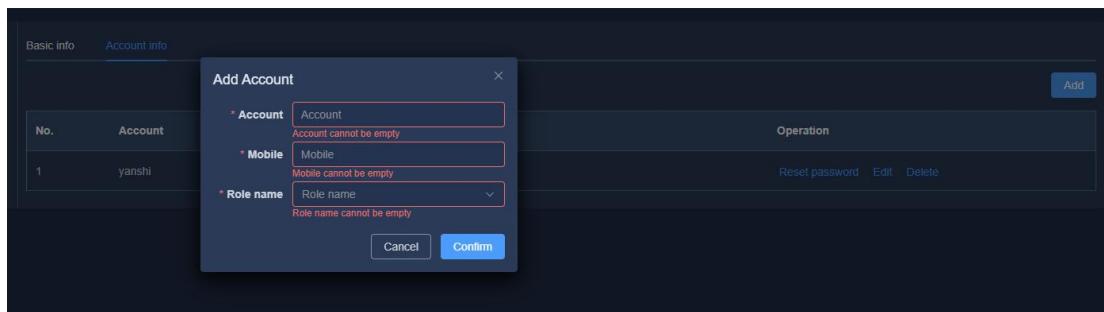


Note:

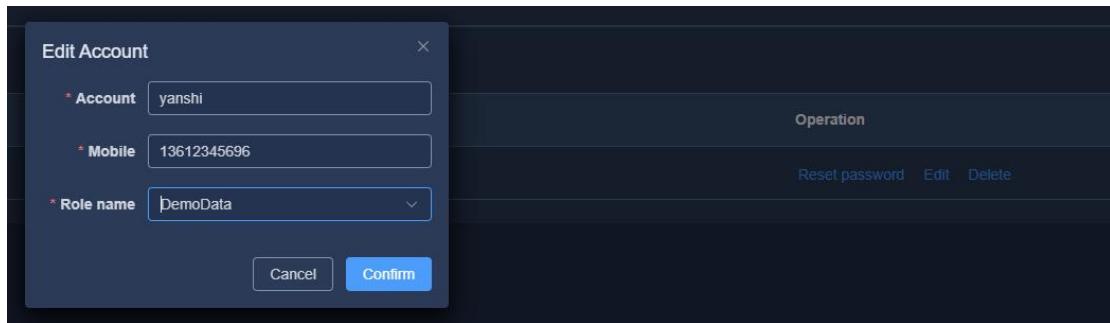
- (1) The first-level organization is usually created by the super administrator. The corresponding account is the administrator account, which does not need to be created by the customer, and the role of the administrator account cannot be changed at will.
- (2) Multiple secondary organizations can be created under a primary organization.
- (3) A first-level organization can only have one account, while a second-level organization can add multiple accounts.

(4) Add organization Create an account before creating a role.

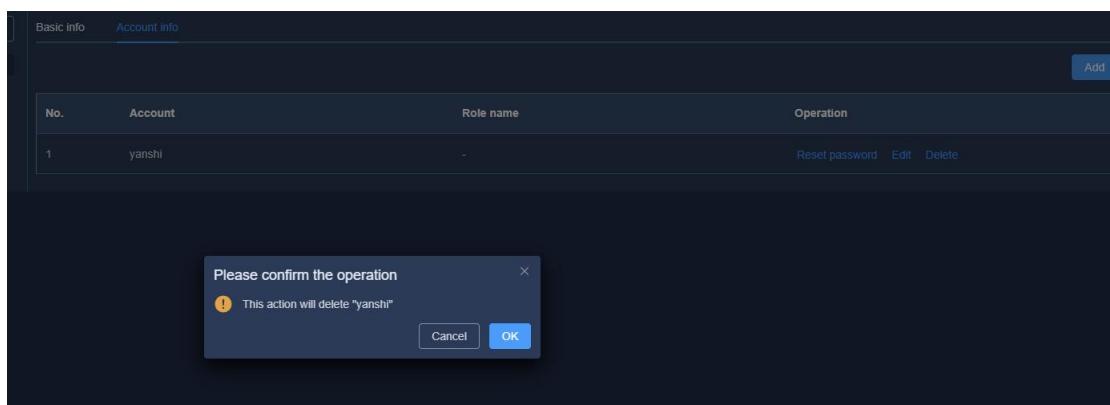
Add Account: Click the [Add] button, a pop-up window for adding an account will appear. Enter your account and phone number, select your role (different roles have different permissions). Click the [Confirm] button to complete the addition. The new account or phone number can be used as your login credentials, with the initial password set to 12345678a! As shown in the figure:



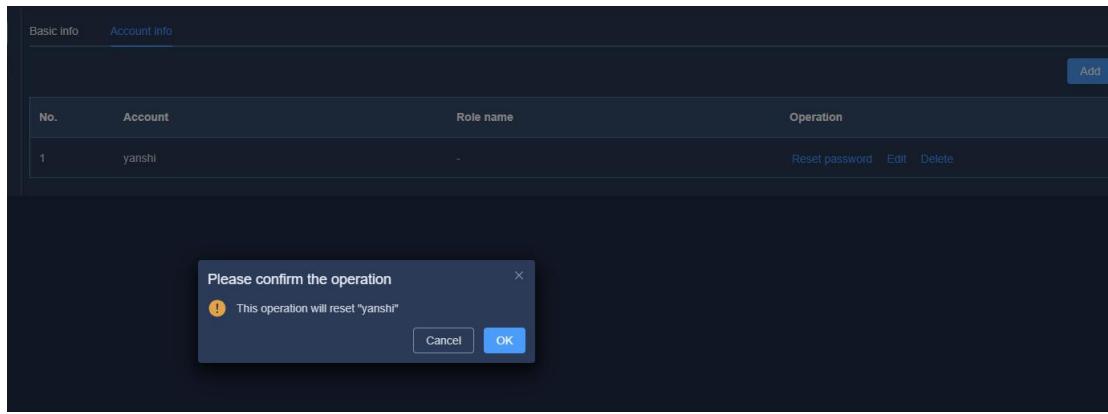
(5) Modify account: Click the [Edit] button, and an edit account window will pop up. You can modify the account number, mobile phone number or role. Click the [Confirm] button to modify successfully. As shown in the figure:



(6) Delete account: Click the [Delete] button, a prompt window will pop up. Click the [Confirm] button, the deletion is successful, as shown in the figure:

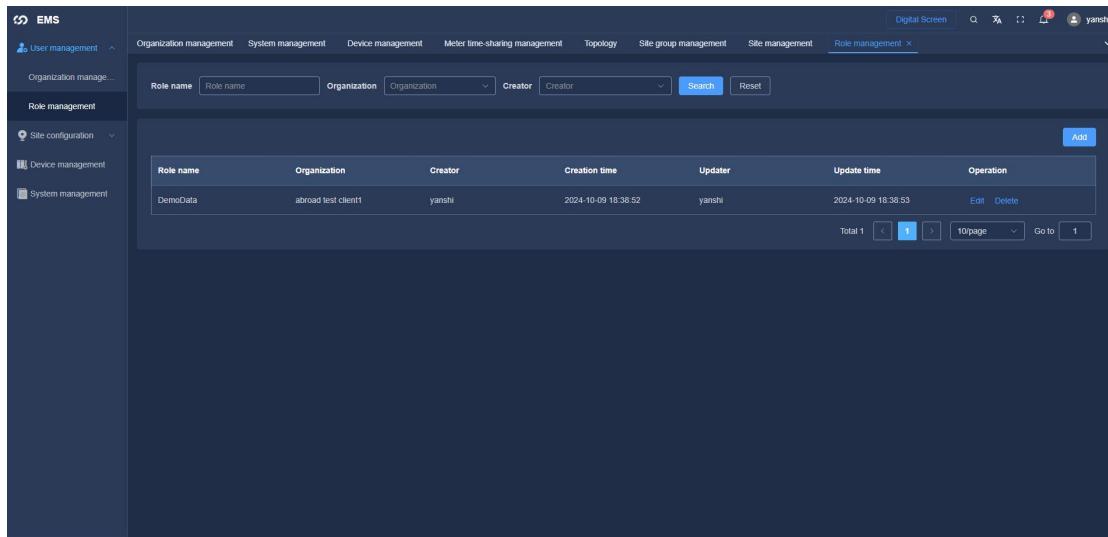


(7) Reset password: Click the [Reset Password] button, a prompt window will pop up, click the [Confirm] button, and the password is reset to the initial password 12345678a As shown in the following figure:

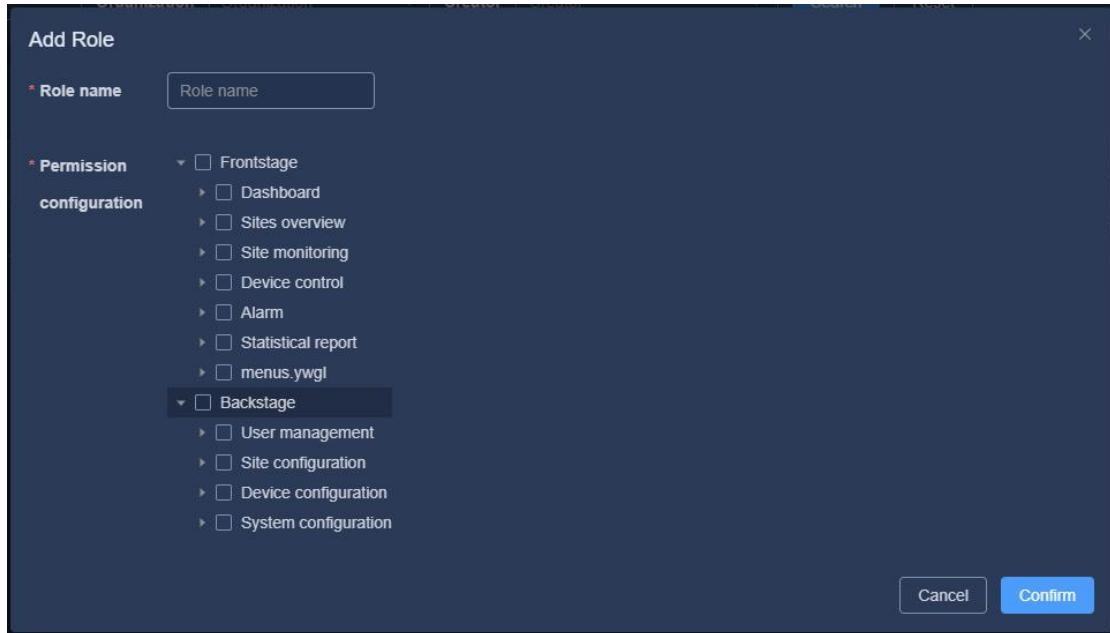


3.1.2 Role management

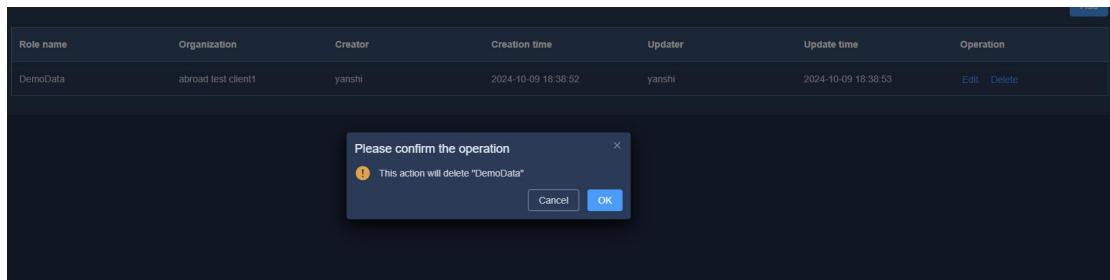
Click the [Role Management] in the right navigation bar to switch to the role management page. In this page, you can add, modify, query and delete roles, as shown in the figure:



- (1) New role: Click the [Add] button, a new page will pop up. You can edit the role name and configure the permission, as shown in the figure below:



- (2) Modify the role: Click the [Edit] button to pop up the modification page, where you can edit the role name and configure permissions.
- (3) Delete a role: Click the [Delete] button to pop up a prompt page, as shown in the figure.



- (4) Query role: In the toolbar above the role list, you can click the [Query] button according to different role names, customers and creators to query.

3.2 Site configuration

3.2.1 Site management

Click the [Site Configuration] button in the right navigation bar, and click the [Site Management] button to switch to the site management page. All sites under this

account are displayed in the site list, and you can add, delete, modify and query sites, as shown in the figure:

Site alias	Site location	Organization	Number of devices of the site	Installed capacity/kWh	Installed power/kW	Operation
abroad test station1	India New Delhi	abroad test ...	1	233	100	Edit Delete
abroad test station2	India New Delhi	abroad test ...	1	233	100	Edit Delete

Note:

- (1)The location of the site must be accurate, which will involve a lot of front desk screening and electricity price calculation.
- (2)Voltage level, electricity consumption classification and accounting for electricity consumption classification must be accurate. Different options may involve price difference.
- (3)If users pay attention to the electricity quantity statistics, they must configure the electricity price information, otherwise there will be no data in the statistical report.
- (4)When building a site, the site specification should be selected according to the actual situation. Once the site is successfully created and delivered, the site specification cannot be switched.

New site: Click the [Add] button, a new page will pop up, where you can set the basic information of the site. After saving the basic information successfully, click the [Next] button to configure the electricity price information and settlement method, as shown in Figure 1:

EMS

Organization management Site management Device management Edit Site

Basic info

Site alias: abroad test station2 | Operation time: 2024-03-01 00:00:00 | Organization: abroad test client1 | Protocol name: gaoe2

Site Type: Pure Energy Storage

Grid Connection Point

Alias	Operation
No. 1 branch	Add

Site location: China / Beijing / Shijingshan District | Detailed Address: Detailed Address cannot be empty

Site photo: +

Remarks: Remarks

Electricity information

Figure 1

No.	Total discharging range (kWh)	(Dis)charge electricity price	adjustment method	Sharp period (CNY/kWh)	Peak period (CNY/kWh)	Shoulder period (CNY/kWh)	Valley period (CNY/kWh)	Operation
1	0 — 0	Charge electricity price	Customized fixed price	1.3508	1.1257	0.6822	0.2593	Edit Delete
		Discharge price	Customized fixed price	1.3508	1.1257	0.6822	0.2593	

Historical Electricity Price

- 北京市 admin 2024-10-31 14:52:31
- 北京市 admin 2024-10-31 14:52:30
- 北京市 admin 2024-10-31 14:52:29
- 北京市 admin 2024-10-16 14:34:25
- 北京市 admin 2024-10-16 14:34:15
- 北京市 admin 2024-09-27 16:50:39

Save

Figure 2

Electricity Information

Settlement Method

Electricity Allocation

owner: abroad test client1 | 100 %

Investor: abroad test client1 | 0 %

subsidy settlement

operation subsidy: 0 CNY/kWh | 2024-04-17 | 0 kWh

construction subsidy: 0 CNY | 2024-04

Operation Settlement

O&M unit price: 0 CNY/kWh | Designated profit unit price: 0 CNY/kWh

Save

Figure 3

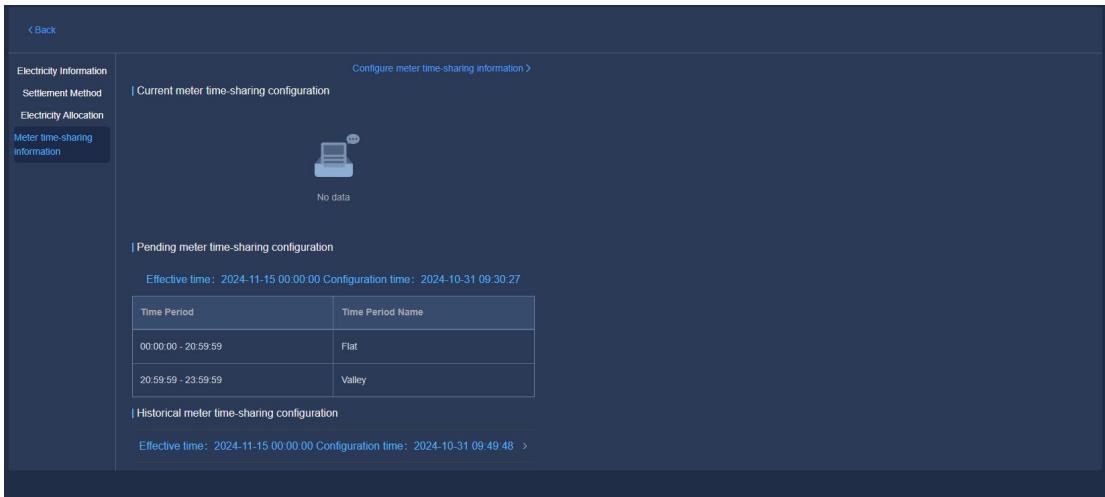


Figure 4

1. Site type configuration: pure energy storage, photovoltaic storage and charging, liquid cooling of energy storage. These types can be selected multiple times, choose the corresponding site type according to your actual situation. After selecting the site type, the digital screen guide page will automatically display a large screen page matching the selected site type, which facilitates real-time monitoring and management of the site.

Bundled point configuration: Multiple bundled points can be set under each energy storage station as an intermediate layer to aggregate and manage the operation data of subordinate equipment. (In the current version, the front-end menu does not open to summarize and view the operation data of subordinate equipment by the dimension of bundled points; the default bundled point can be used when building the station.)

Electricity price configuration: Click the [Next] button to enter the electricity price configuration page, where you can add, modify, delete and view historical electricity prices. After the electricity price is configured, you can view the site power and revenue in the front desk menu. The electricity price configuration interface is shown in Figure 2.

Settlement method: As shown in Figure 3, click [Settlement method] to carry out proportion sharing.

Time-sharing information of the meter: as shown in Figure 4, you can view the current, pending and historical time-sharing configuration of the meter at this site.

Note:

(1)The current version does not support on-demand configuration of electricity price, so the discharge total interval can only be the default value 0.

(2)There are 4 ways to adjust the price, which are grid benchmark price, 1.5 times of grid price and custom fixed price.

Electricity price, customized adjustment of electricity price.

(3) Grid Base Tariff: This refers to the national grid base tariff. The prerequisite for using this tariff is that the station location configured at the time of construction must match the actual location. When selecting this tariff, there is no need to manually input the unit prices for peak, off-peak, flat, and valley hours. The system will automatically obtain the monthly grid base tariff for the region based on the station location, which needs to be configured once a month.

(4) 1.5 times electricity price of the power grid: refers to 1.5 times of the benchmark electricity price of the state grid, and is used in the same way as the benchmark electricity price of the power grid.

(5) Customized fixed electricity price: the unit price of electricity in peak, peak, flat and valley periods should be manually input.

(6) Customized fixed electricity price: there are two types, which can be added or subtracted from the grid benchmark price or 1.5 times of the grid benchmark price.

(7) The electricity price will take effect at 00:00:00 on the second day after it is saved successfully.

(8) If the storage fails when using the grid benchmark price, 1.5 times of the grid price or customized adjustment price, please contact the system administrator to input the electricity price information of this region in the background this month.

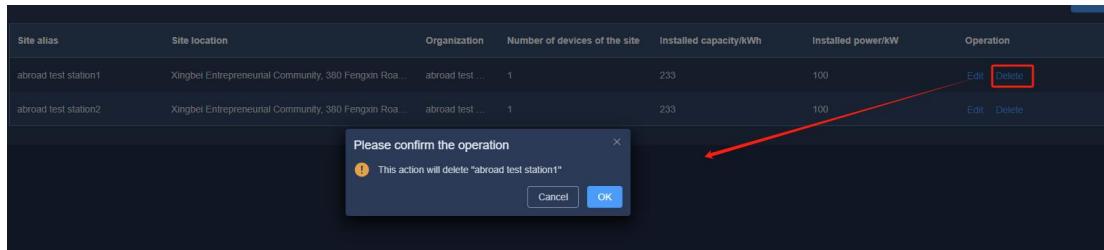
(9) If the electricity price is not configured, the data board, power report and income report of the front desk will have no data.

(10) If no settlement method is configured, there will be no data in the settlement statement at the front desk.

2. Modify the site: Click the [Edit] button, and the modification page will pop up. You can modify the basic information of the site, electricity price information and

settlement method. The current version does not support changing the organization to which the site belongs, otherwise it will lead to abnormal data.

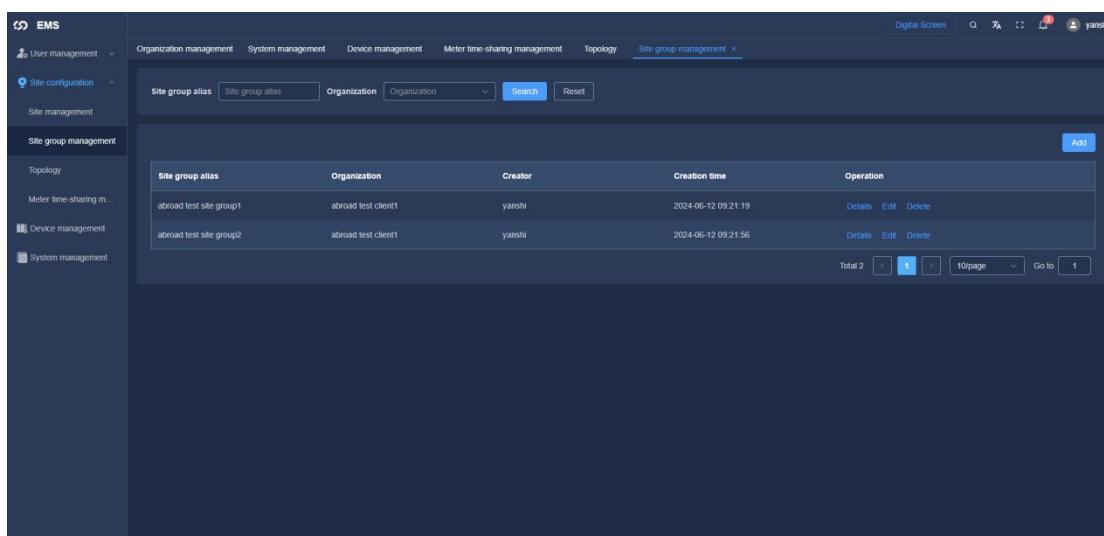
3. Delete site: Delete role: Click the [Delete] button, and a prompt page will pop up, as shown in the figure:



4. Query site: In the toolbar above the site list, you can click the [Query] button according to different site names, site locations and organizations to query.

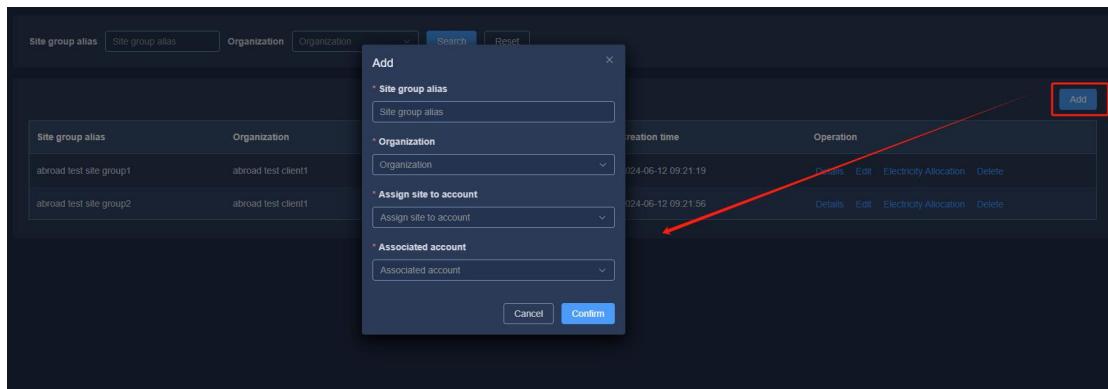
3.2.2 Site group management

Click the [Site Group Management] button in the right navigation bar, and the page is switched to the site group management page. Site group management is the customized combination management of sites. All custom grouping methods are displayed in the list, and you can add, delete, modify and query the site grouping list, as shown in the following figure:



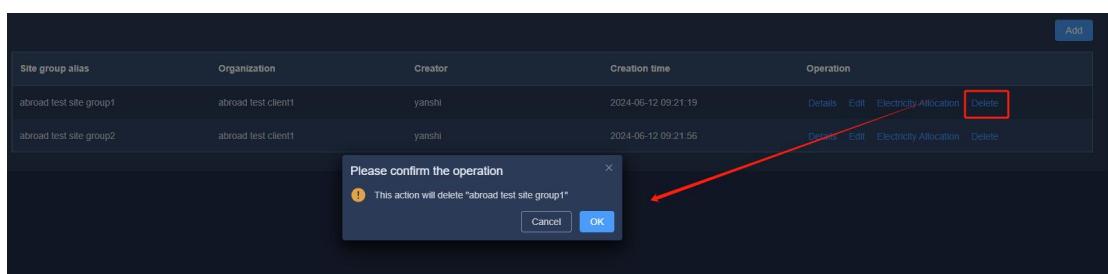
Note: When a site group is added, the sites in each group cannot overlap.

(1) New group: Click the [Add] button, and a new page will pop up. You can set the group name, select the organization, account and site allocation, as shown in the figure:



(2) Modify the group: Click the [Edit] button to pop up the modification page, which can modify the group name, organization, account number and site allocation of the group.

(3) Delete the group: Click the [Delete] button, and a prompt page will pop up as shown in the figure:

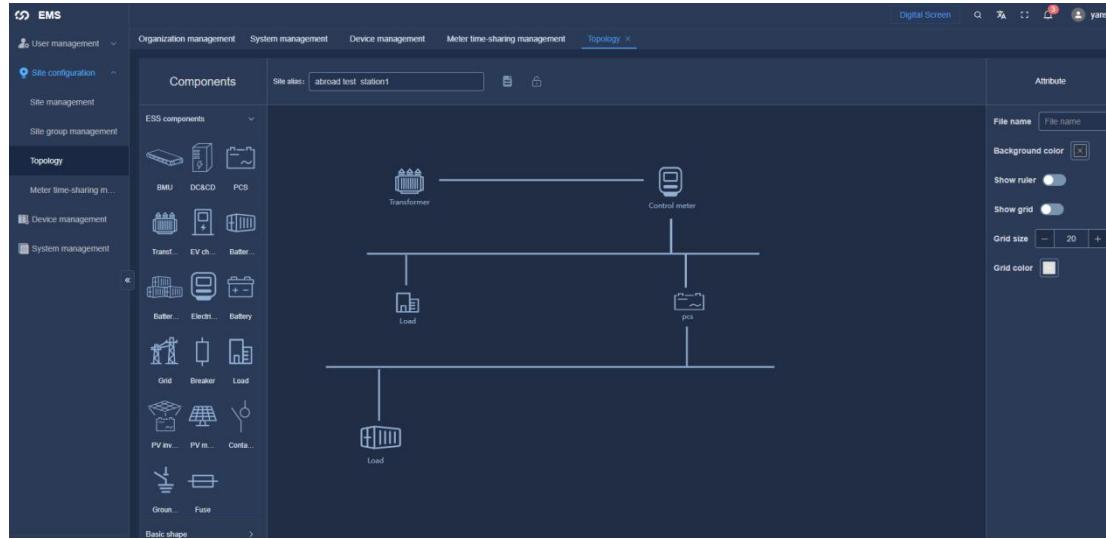


(4) Query group: In the toolbar above the group list, you can click the [Query] button according to different group names and organizations to query.

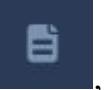
3.2.3 Main wiring diagram

Click the [Main Wiring Diagram] button in the right navigation bar, and the page will switch to the wiring diagram configuration page. On the left toolbar, components are

categorized into two major types based on function and shape: energy storage elements and basic shapes. On the right is the attribute toolbar, where you can make customizations. At the top is the search toolbar, which allows you to search any site under this account, as shown in the figure:



Main wiring diagram configuration: First, search for the site that needs to be configured with the main wiring diagram. Select an icon from the left component bar and drag it to the middle canvas area. Click on the icon in the canvas to zoom in or

out, or set it in the right attribute bar. Click after configuration is completed , Save and upload, which can be viewed in the front desk main wiring diagram.

3.2.4 Time-sharing management of electricity meters

Click on the left navigation bar [Time Division Management of electricity meter] to switch to the time division management page of electricity meter. You can set the peak, peak, flat and valley periods of electricity meter. After allocating to specific sites, the site will calculate the price and income according to the configured peak, peak, flat and valley periods, as shown in the following figure:

The screenshots illustrate the process of managing time-sharing templates in the EMS system. The top image shows the main interface with a list of templates. The middle image shows the configuration details for a specific template, including time periods and rates. The bottom image shows the assignment of a site to a template, with a red arrow highlighting the 'Assign site' button in both contexts.

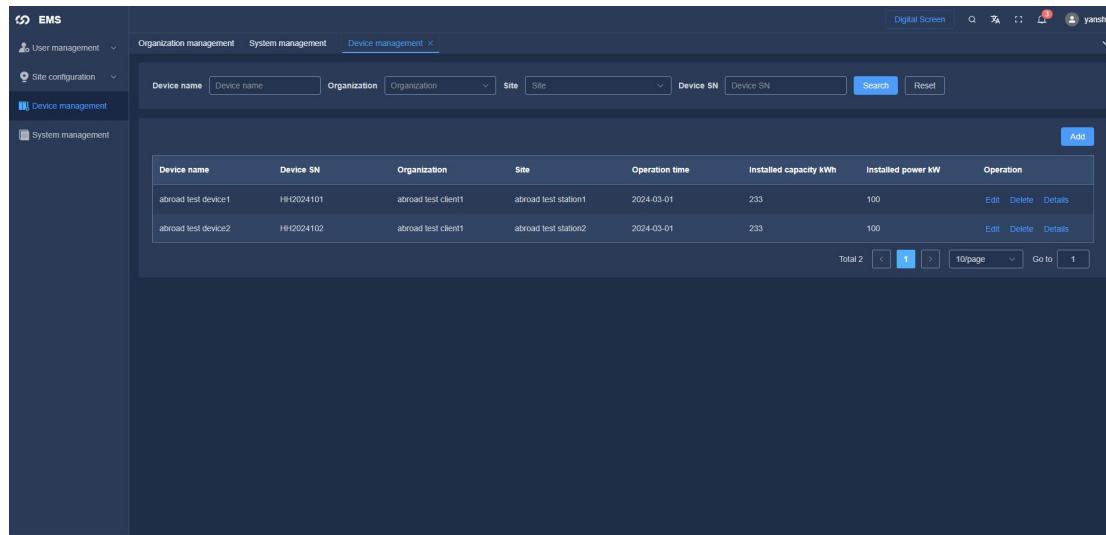
Note:

- (1) The time period should not overlap.
- (2) If the template A is modified or deleted after being assigned to site A, site A will not be affected and will still run according to template A.
- (3) If a site is configured with multiple time-sharing templates for electricity meters, the system only takes the last configuration template.

3.3 Equipment configuration

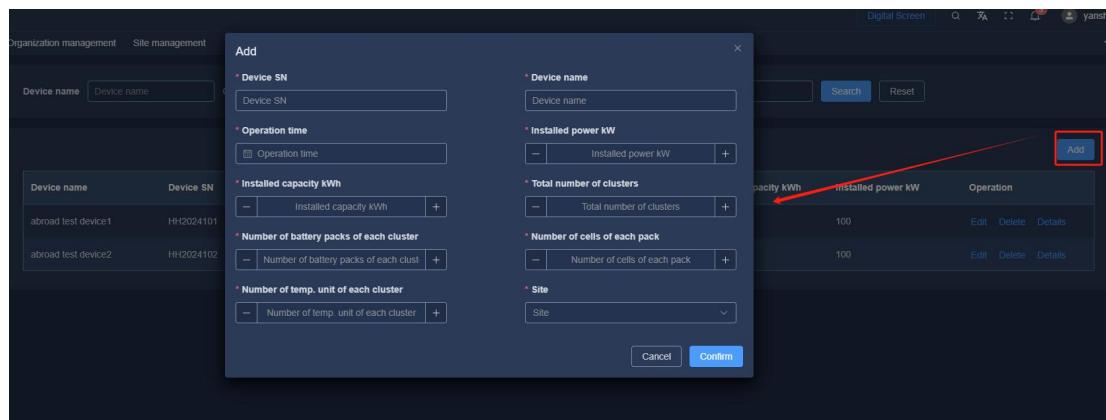
3.3.1 Equipment management

Click the [Device Management] button in the left navigation bar to switch to the device list. All devices under this account are displayed in the list, and devices can be added, queried, modified and deleted, as shown in the figure:



The screenshot shows the EMS Device Management interface. The left sidebar includes 'User management', 'Site configuration', 'Device management' (which is selected and highlighted in blue), and 'System management'. The main content area has tabs for 'Organization management', 'System management', and 'Device management' (selected). A search bar at the top includes fields for 'Device name', 'Organization', 'Site', 'Device SN', and buttons for 'Search' and 'Reset'. Below the search bar is a table with columns: Device name, Device SN, Organization, Site, Operation time, Installed capacity kWh, Installed power kW, and Operation. Two rows of data are shown: 'abroad test device1' and 'abroad test device2'. At the bottom of the table are buttons for 'Total 2', page navigation (1), and '10/page' with 'Go to 1'. A blue 'Add' button is located in the top right corner of the table area.

(1) Add new equipment: Click the [Add] button, the equipment add page will pop up, edit the equipment information, and click the [Confirm] button, as shown in the figure:



The screenshot shows the 'Add' dialog box for equipment configuration. The dialog is divided into two main sections: left and right. The left section contains fields for 'Device SN' (Device SN), 'Operation time' (Operation time), 'Installed capacity kWh' (Installed capacity kWh), 'Number of battery packs of each cluster' (Number of battery packs of each cluster), and 'Number of temp. unit of each cluster' (Number of temp. unit of each cluster). The right section contains fields for 'Device name' (Device name), 'Installed power kW' (Installed power kW), 'Total number of clusters' (Total number of clusters), 'Number of cells of each pack' (Number of cells of each pack), and 'Site' (Site). At the bottom of the dialog are 'Cancel' and 'Confirm' buttons. A red arrow points from the 'Add' button in the top right of the dialog to the 'Add' button in the top right of the main EMS interface window.

(2) Query equipment: In the query toolbar above the device list, you can click [Query] according to the name of the device, customer, site and serial number of the device.

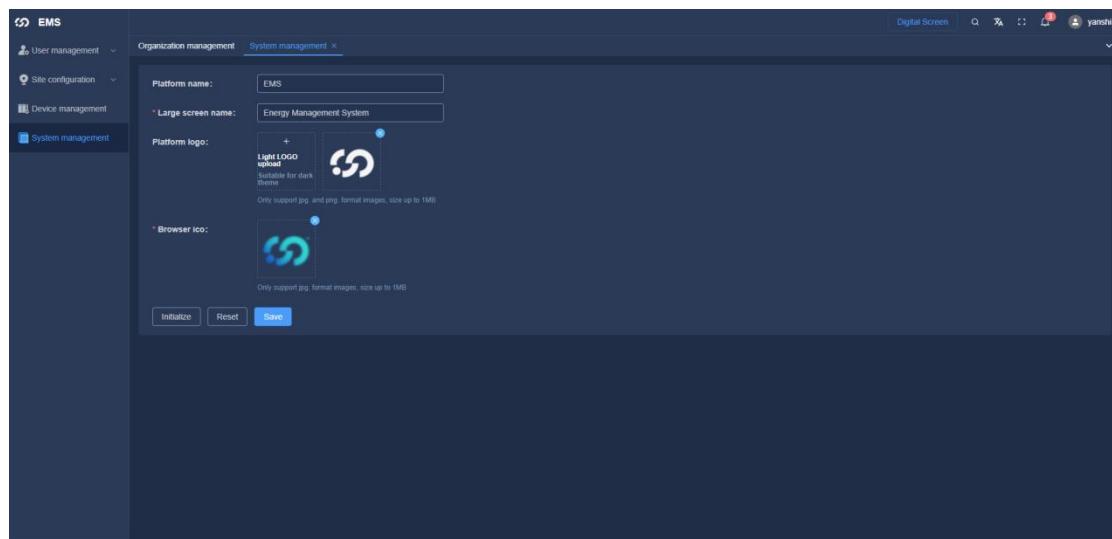
The site and customer can be selected by multiple selections.

- (3) Editing device: Click the [Edit] button to pop up the device editing page, which is the same as adding a new device.
- (4) Delete the device: Click the [Delete] button, a prompt will pop up, click [OK], after the device is deleted, all data about the device will be deleted. Please operate carefully.

3.4 System configuration

3.4.1 System management

Click the [System Management] in the right navigation bar to switch to the system management page. In this page, you can set the platform name, large screen name, platform logo and browser icon, as shown in the figure:



Note:

- (1) Platform name is not a required item. If the platform name is not set, it will be displayed as "Energy Management Platform" by default.

The platform logo is not required. If it is not set, the system default logo will be displayed.

When you log in to the account for the first time, the system management will display the default value. When the organization administrator account is set, it takes effect

on all accounts under the organization. When the user-level account under the organization is set, it only takes effect on that account.

- (2) If only the large screen name and browser icon are set, but the platform name and platform logo are not configured, the platform logo and platform name are not displayed by default.
- (3) Initial Settings: After clicking save, the [Initialize] button will appear. Clicking it will return to the initial configuration.