

Industrial Zone Commercial Center Postpaid Solution

Online Postpaid Solution, Industrial Zone, Commercial Building & other 3PH scenario.
TOU/Multi-tariff, Max Demand, Online Billing, Vending, Monitoring&Management.

Ver. Date: July,6th 2023

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District, Shanghai, China



0. Major Targetting Application Scenario

The major targetting application scenario for Acrel Online Postpaid Solution will be as following:

(1) Industrial Zone - Factory&Enterprise

In industrial zone, normally there will be lots of factories or enterprises mainly using the 3-phase power system for overall building power supply. For their monthly electricity bills, they are normally calculated by max demand&multi-tariff/TOU electricity price. Also, we use postpaid control logic since their power **couldn't** be easily shut down just due to temporary overdue electricity bills.

(2) Commercial Center - Owner&Tenant

In commercial center, owner of the building rent out a lot of separate shop sections for their tenant and need to charge their electricity bills mothly. And for tenant's monthly electricity bills, they are normally calculated by max demand&multi-tariff/TOU electricity price. Also, we use postpaid control logic since their power **couldn't** be easily shut down just due to temporary overdue electricity bills.

(3) Important Scenario - Hospital, Police Station, etc.

In some important application scenario like hospital, police station and etc. The most important things is their power shall **never** be shut down. Thus remote on-off control won't be applied for such application. And for the monthly electricity bills, they are normally calculated by max demand&multi-tariff/TOU electricity price.

Extra Noted: For above scenario, normally we only need 1 postpaid energy meter installed on the 3-phase incoming circuits side for monitoring and billing the overall building's electricity consumption and monthly electricity bill. No sub-metering of the buidling requested.



(1) Industrial Zone



(2) Commercial Center



(3) Important Scenario

1. What can Acrel Online Postpaid Solution do?

A complete electricity online prepaid solution could realize the function below

(1) Online WEB Platform Electricity Vending via Administrator&Online Mobile APP Auto-vending

Utility company could set Administrator office in different region and use Acrel Prepaid&Postpaid System Platform for selling the electricity online.

Or could also integrate Acrel Prepaid&Postpaid APP [designed for end power user] with local online payment methods for doing a Online APP Electricity Vending. [End power user use mobile APP to topping up electricity themselves.]

(2) Auto-generated Energy Report and Electricity Bill

End power user could check their daily, monthly energy consumption and their electricity balance credit by using Acrel Prepaid APP.

(3) Manage End Power Users Account and or other ADMIN System Function for Utility Side

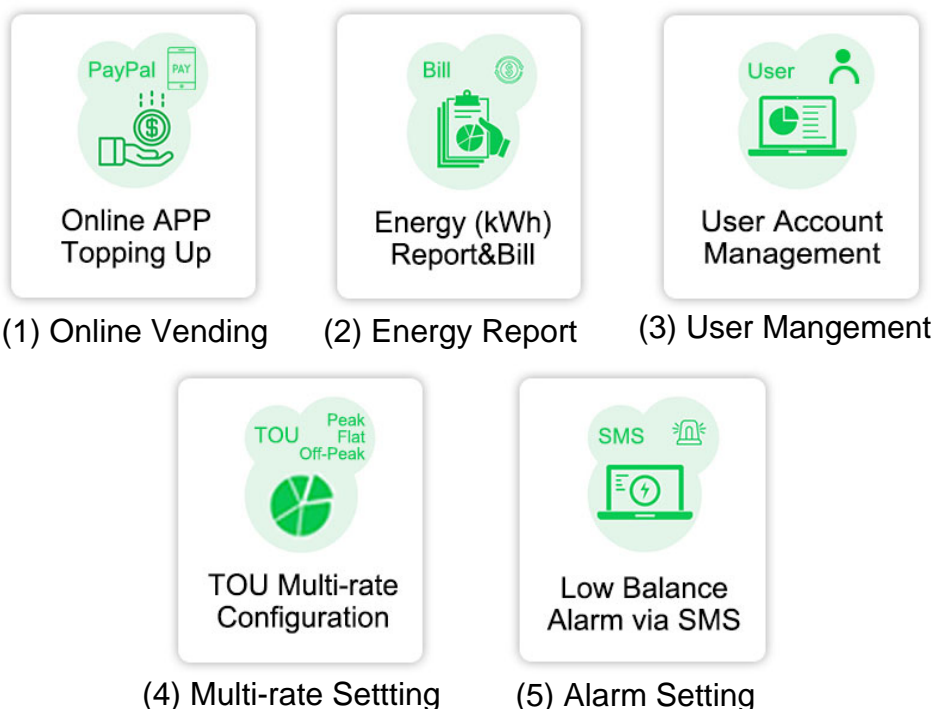
Utility or power selling company could create, manage the all the "user account" for their end power user to realize remote account management, **manual remote load on-off control**, remote metering reading function and etc. All the operation will be done on Acrel Cloud Prepaid Platform (this platform designed and opened to utility or power selling company only)

(4) Set Multi-rate/TOU Electricity Price according to your country's billing Policy

Utility or power selling company could set electricity price for each kwh used by end power user, different electricity price rate setting like flat rate, step rate or multi-tariff will be all available.

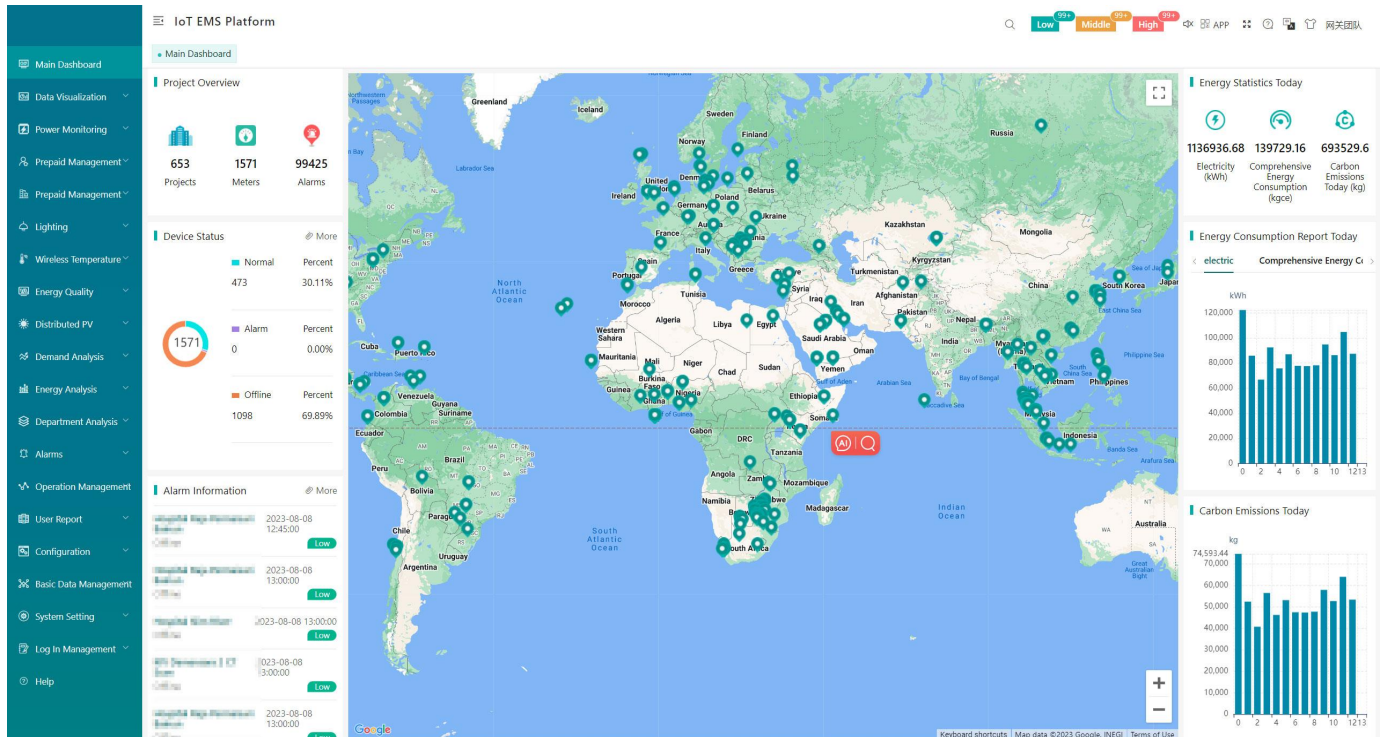
(5) Low Balance Credit Alarm Setting for reminding of Topping Up the Electricity in time

A low balance alarm will be sent to end power user when their remain balance was lower that a certain threshold, form like by sending SMS or APP warning. This threshold could be set on Acrel Cloud Prepaid&Postpaid Platform by utility or power selling company.



2. GIS Analyzing

- (1) Utility side could manage all the project/building position all over the country.
- (2) Utility side could manage all the devices that connected to Acrel Cloud Prepaid&Postpaid System to know where these devices are located and which building was monitored by this devices.
- (3) Utility side could receive all kinds of alarm including devices off-line alarm for example for checking the working status of the devices in countrywide project.



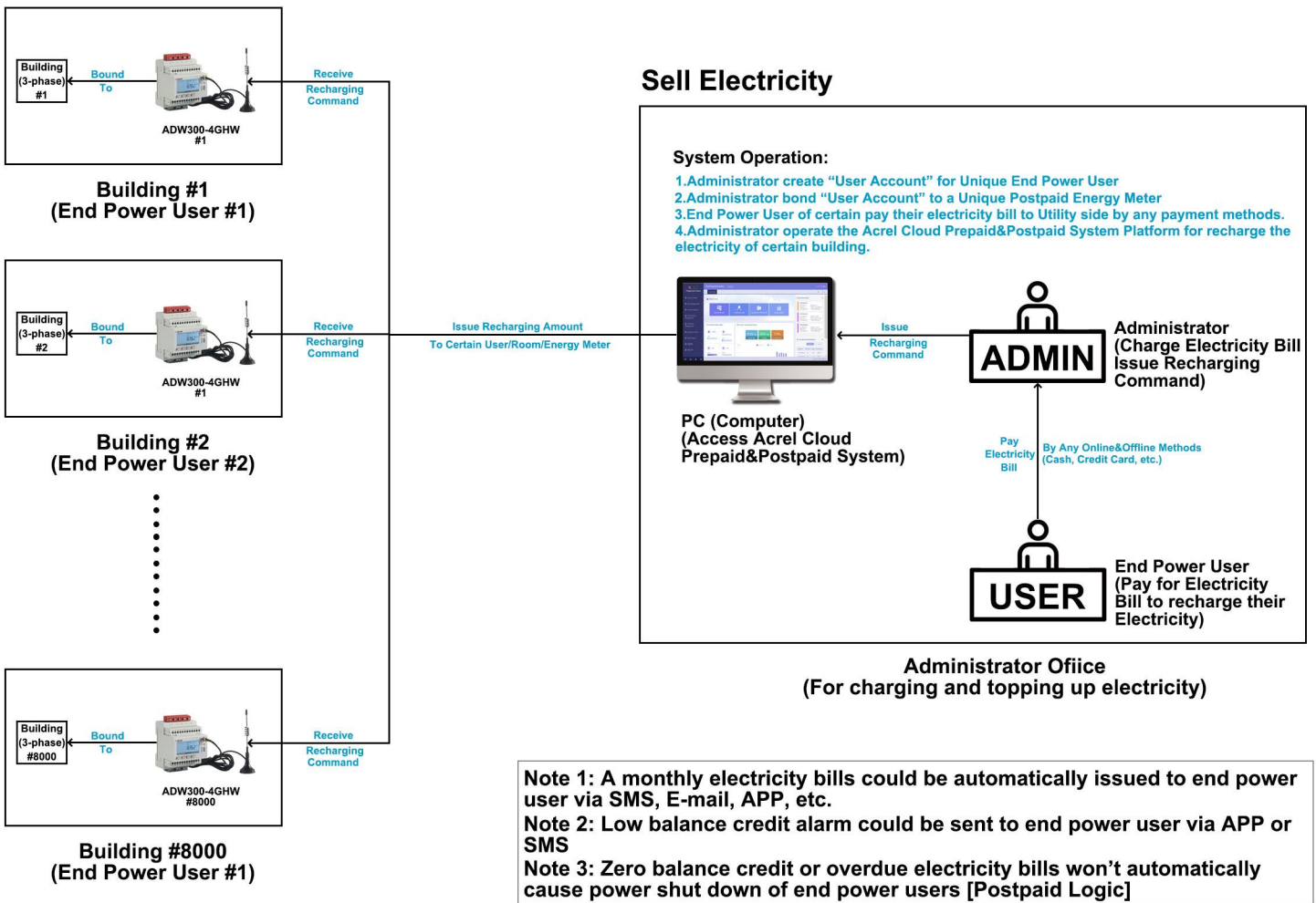
(1) GIS Analysing and Command Interface

The screenshot shows the 'Project Management' form in the IoT EMS Platform. The form is divided into several sections: 'Basic information' with fields for Project Name, Billing model (Platform prepaid or Meter prepaid), Customer Name, Address, Longitude, Latitude, Organization, Construction area, energy users, Picture, and Remark; 'User association' with search boxes and checkboxes for selecting users; and 'Address book' with fields for Project manager, Username, member, Phone, and Email. At the bottom, there are 'Save' and 'Cancel' buttons.

(2) Write in Project/Building Logistic Location Information

3. Vendor&Topping up Logic - Online WEB Platform Electricity Vending via Administrator

- (0) Utility Side set administrator office for certain region to do the Online Electricity Vending by using WEB based system platform.
- (1) Administrator create "User Account" for a unique End Power User of certain building/room.
- (2) Administrator bond "User Account" to a certain building/room and then bind to a certain postpaid energy meter.
- (3) End Power User of certain building/room contact administrator office, do the payment according to their monthly electricity bills. [monthly electricity bills will be issued to end power user via SMS, E-mail, mobile Application and etc.]
- (4) Administrator operate Acrel Cloud Prepaid&Postpaid System to recharging the certain "User Account" after receiving the payment from End Power User which already bound to certain "User Account".



3. Vendor&Topping up Logic - Online Mobile APP Auto-vending

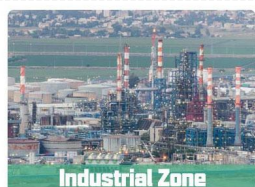
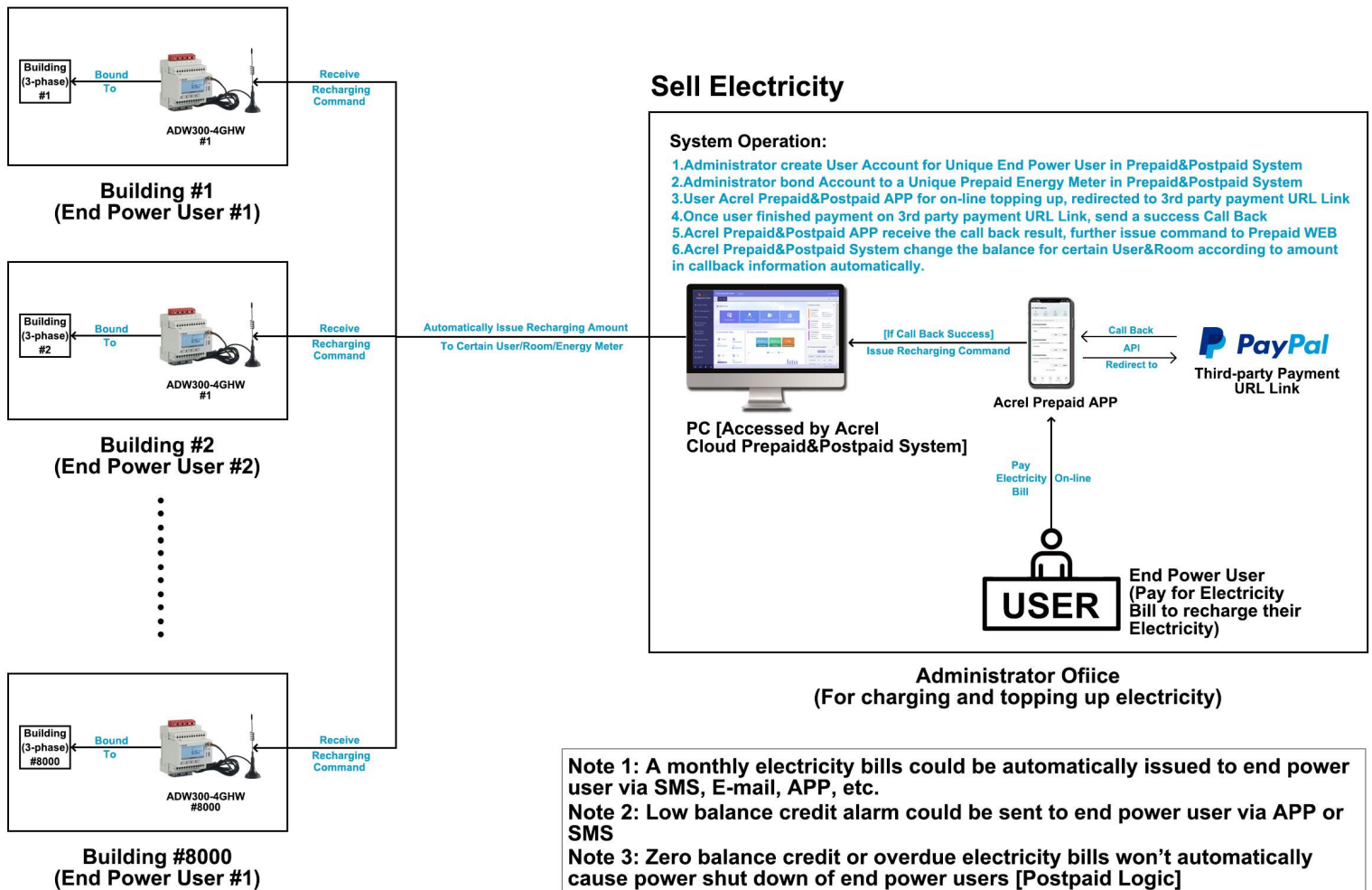
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(1) Administrator create "User Account" for a unique End Power User of certain building/room.

(2) Administrator bond "User Account" to a certain building/room and then bind to a certain postpaid energy meter.

(3) End Power User of certain building/room contact administrator office, do the payment according to their monthly electricity bills by using Acrel Prepaid&Postpaid APP online via local 3rd party payment url. [Monthly electricity bills will be issued to end power user via SMS, E-mail, APP or etc.]

(4) Once Acrel Prepaid&Postpaid System get the success call back from 3rd party payment gateway, platform side will automatically recharging the credit balance for this certain end power user.

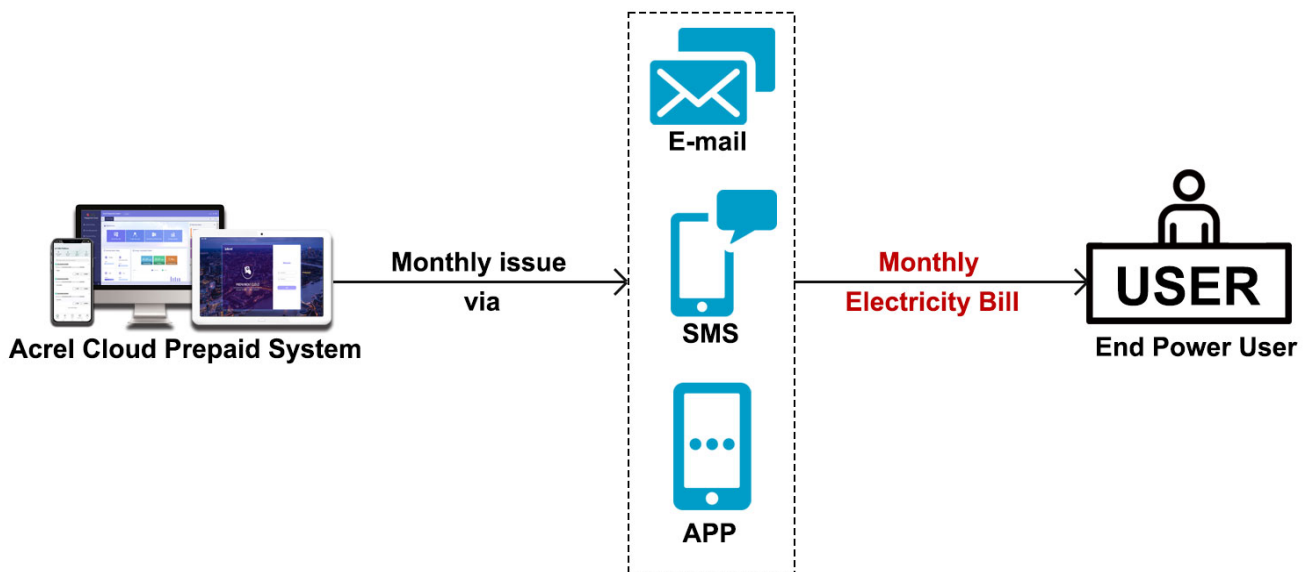


**Major Building Scenario for
3-phase End Power User**

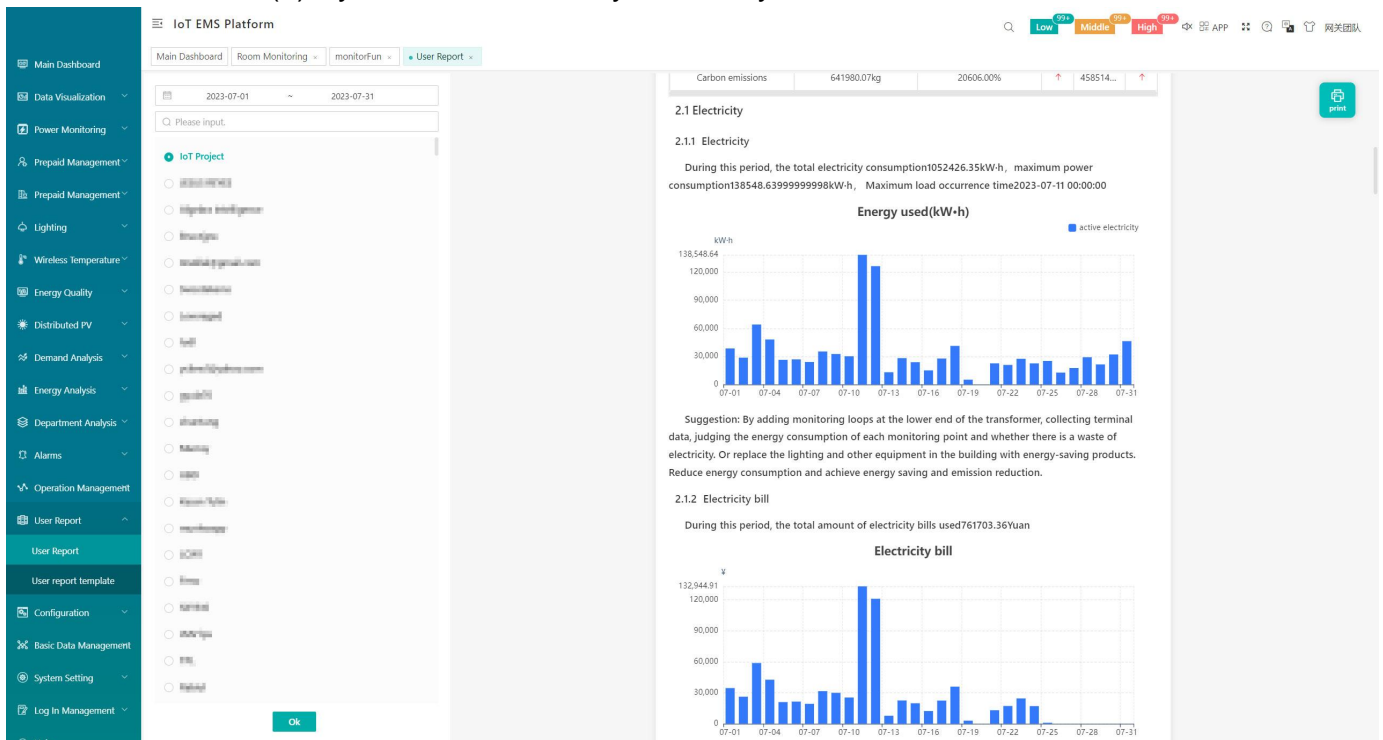
4. Auto-generated Energy Report and Electricity Bill

- (1) Acrel Cloud Prepaid&Postpaid System could automatically generate a monthly electricity bills and energy report while issuing down to end power user via E-mail, SMS, APP, etc.
- (2) Monthly electricity bills will be based on TOU/Multi-tariff energy consumption and max demand of this month.
- (3) End power user could also check their energy consumption or electricity bills on their Prepaid& Postpaid APP.

Noted: Utility side could customize the format of monthly electricity bill&energy report.



(1) System issue Monthly Electricity Bills to End Power User



(2) Customized Monthly Electricity Bills

5. End Power User&Project Management

- (1) Utility side could creat "User Account" and "Project" for end power user to identified them.
- (2) All the information could be centralizedly managed by utility side.
- (3) Postpaid Energy Meter ADW300-4GHW was recognized by a unique SN code. Thus, when the utility side create a unique account for certain end power user. They could bind this unique postpaid energy meter to certain end power user for calculating and billing their building's overall energy consumption and electricity bills.

The screenshot shows the 'Project Management' interface of the IoT EMS Platform. It features a sidebar with navigation options like 'Main Dashboard', 'Data Visualization', and 'Project Management'. The main content area displays a table with the following columns: Project Name, Customer Name, Address, Principal, and Phone. Below the table, there are pagination controls indicating a total of 653 items and a current page of 15.

Project Name	Customer Name	Address	Principal	Phone
Project Test	Muhua	044 Hong Road		
Wangjiantan-Center	The Shanda Road 1100 Building	The Shanda Center, BinzhouDistrict	zha	15898292542
Capital Street Sub	Capital Street	Capital Street		
Shangde TestArea	4404	1000	1000	+86 159 3896914
Test 1	Handong	Test		
Test	QIA	Test (public) sub		
Wangjiantan	Test (public) sub	Test (public) sub		
EMMS	EMMS Comp	Lijiangyuan-Center (EMMS)		
Wangjiantan	Capital Street	Wangjiantan-Center	Wangjiantan	15898292542
Wangjiantan	Wangjiantan	Wangjiantan	Wangjiantan	15898292542
Wangjiantan	Test	Test	Test	15898292542
Wangjiantan	Wangjiantan	Wangjiantan-Center, Shanda Road, Binzhou District	Wangjiantan	15898292542
Wangjiantan	Wangjiantan	Wangjiantan-Center, Shanda Road, Binzhou District	Wangjiantan	15898292542
Wangjiantan	Wangjiantan	Wangjiantan-Center, Shanda Road, Binzhou District	Wangjiantan	15898292542
Wangjiantan	Wangjiantan	Wangjiantan-Center, Shanda Road, Binzhou District	Wangjiantan	15898292542

(1) Project&User Account Management

The screenshot shows the 'User association' form in the IoT EMS Platform. It is divided into two main sections: 'Basic information' and 'User association'. The 'Basic information' section includes fields for Project Name, Billing model (Platform prepaid, Meter prepaid), Customer Name, Address, Longitude, Latitude, Organization, Construction area, energy users, Picture, and Remark. The 'User association' section includes a search bar for keywords and a list of users to be associated. At the bottom, there are 'Save' and 'Cancel' buttons.

(2) Write in Project&User Account Information

6. Remote Control Logic - Postpaid Control

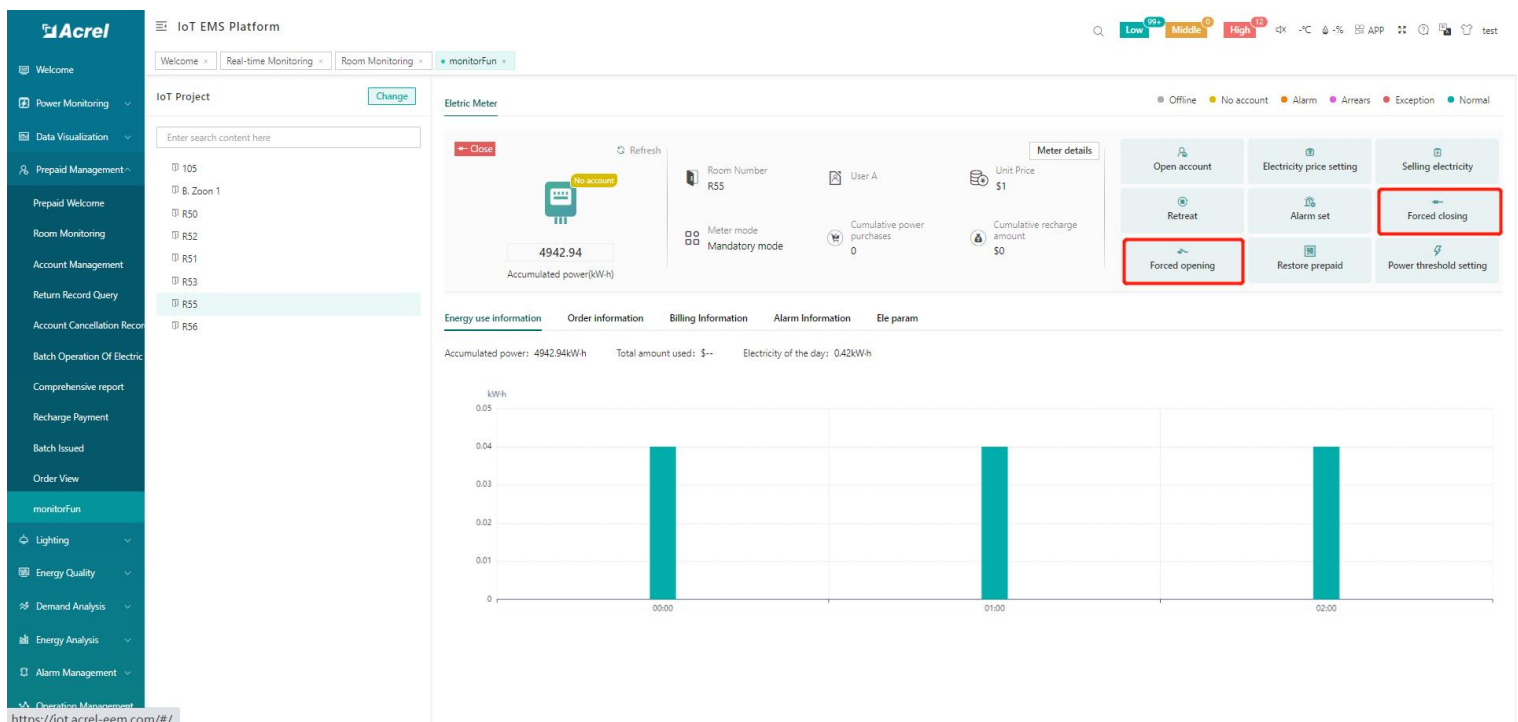
For remote switch on/off control of circuit's CB (circuit breaker), basic control logic was as below [pic 6.1]:

- (1) **Important Noted:** Overdue electricity bill and zero balance credit **won't** cause automatical switch off control in postpaid model. And for some important power, we **won't** apply control function.
- (2) Postpaid Control: Administrator use Acrel Cloud Prepaid&Postpaid System, enter the "room mangement" interface, and issue "force closing/switch on" or "force opening/switch off" command to control the on or off status of circuit's Circuit. [pic 6.2]
- (3) ADW300-4GHW receive the control command via 4G communication.
- (4) ADW300-4GHW use DO relay to connect to the shunt trip of CB. When receiving switch on/off control command, it will give DO output to shunt trip of CB respectively for switch on/off control.

Note: Control mode of ADW300-4GHW could be remotely changed from platform between **Postpiad Control Mode** and **None Control Mode**



(6.1) Illustration of Remote Control Logic

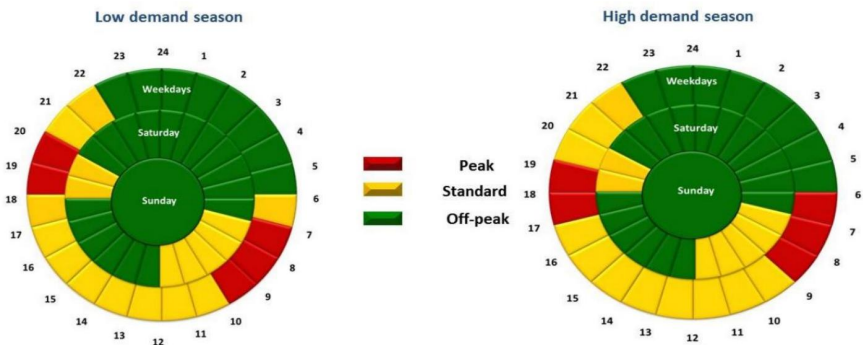


(6.2) Administrator use Acrel Cloud Prepaid&Postpaid System to issue "Control Command"

7. Multi-tariff (TOU) Electricity Price Setting by Utility Side

- (1) In most 3-phase scenario like factory, enterprise, commercial center, etc. The monthly electricity bills of certain end power user's building was based on a combination of **Basic Electricity Price + Multi-tariff/TOU Electricity Price**.
- (2) For multi-tariff/TOU electricity price, different country have different regulation and rules. So, Acrel side will cooperate for customize the the special multi-tariff/TOU setting on both ADW300-4GHW postpaid energy meter and system platform according to the government request.
- (3) For basic electricity price, it's based on max demand which request postpaid energy meter ADW300-4GHW also have this function and could upload max demand data to system platform.

Low Demand Season		
Date	Tariff Rate	Time Period
Weekdays (Monday~Friday)	[Flat-Standard]	6:00~7:00
	[Peak]	7:00~10:00
	[Flat-Standard]	10:00~18:00
	[Peak]	18:00~20:00
	[Flat-Standard]	20:00~22:00
	[Valley-Off-peak]	22:00~6:00 (next day)
Saturday	[Flat-Standard]	7:00~12:00
	[Valley-Off-peak]	12:00~18:00
	[Flat-Standard]	18:00~20:00
	[Valley-Off-peak]	20:00~7:00 (next day)
Sunday	[Valley-Off-peak]	Whole Day
High Demand Season		
Weekdays (Monday~Friday)	[Peak]	6:00~9:00
	[Flat-Standard]	9:00~17:00
	[Peak]	17:00~19:00
	[Flat-Standard]	19:00~22:00
	[Valley-Off-peak]	22:00~6:00 (next day)
Saturday	[Flat-Standard]	7:00~12:00
	[Valley-Off-peak]	12:00~18:00
	[Flat-Standard]	18:00~20:00
	[Valley-Off-peak]	20:00~7:00 (next day)
Sunday	[Valley-Off-peak]	Whole Day



(2) TOU/Multi-tariff Electricity Price Sample

IoT EMS Platform

Low Middle High
APP
acrel

Main Dashboard

Data Visualization

Power Monitoring

Prepaid Management

Lighting

Wireless Temperature

Energy Quality

Distributed PV

Demand Analysis

Maximum Demand Report

Demand Monitoring

Energy Analysis

Area Analysis

Department Analysis

Alarms

Operation Management

User Report

Configuration

Basic Data Management

Log In Management

Main Dashboard
Three Phase Unbalance
Harmonic Monitoring
Real-time Monitoring
Maximum Demand Report
Demand Monitoring

2023-01
2023-04

Circuit name	January		February		March		April	
	Time	Maximum Demand (kW)	Time	Maximum Demand (kW)	Time	Maximum Demand (kW)	Time	Maximum Demand (kW)
Blow in Control Unit	01-29 13:59	1.3627	02-27 21:59	1.2996	03-31 21:00	1.3704	04-14 13:00	1.3207
led	--	--	--	--	--	--	--	--
for Conditioning Water	--	--	--	--	--	--	--	--
LED	--	--	--	--	--	--	--	--
LED	--	--	--	--	--	--	--	--
Workday	--	--	--	--	--	--	--	--
MPPT Controller	01-29 13:59	1.3627	02-27 21:59	1.2996	03-31 21:00	1.3704	04-14 13:00	1.3207
Switch 005	01-29 13:59	1.3627	02-27 21:59	1.2996	03-31 21:00	1.3704	04-14 13:00	1.3207
Working Asset1	01-29 13:59	1.3627	02-27 21:59	1.2996	03-31 21:00	1.3704	04-14 13:00	1.3207
Working Asset2	01-25 13:00	0.5485	02-27 21:59	1.2996	03-31 21:00	1.3704	04-14 13:00	1.3207

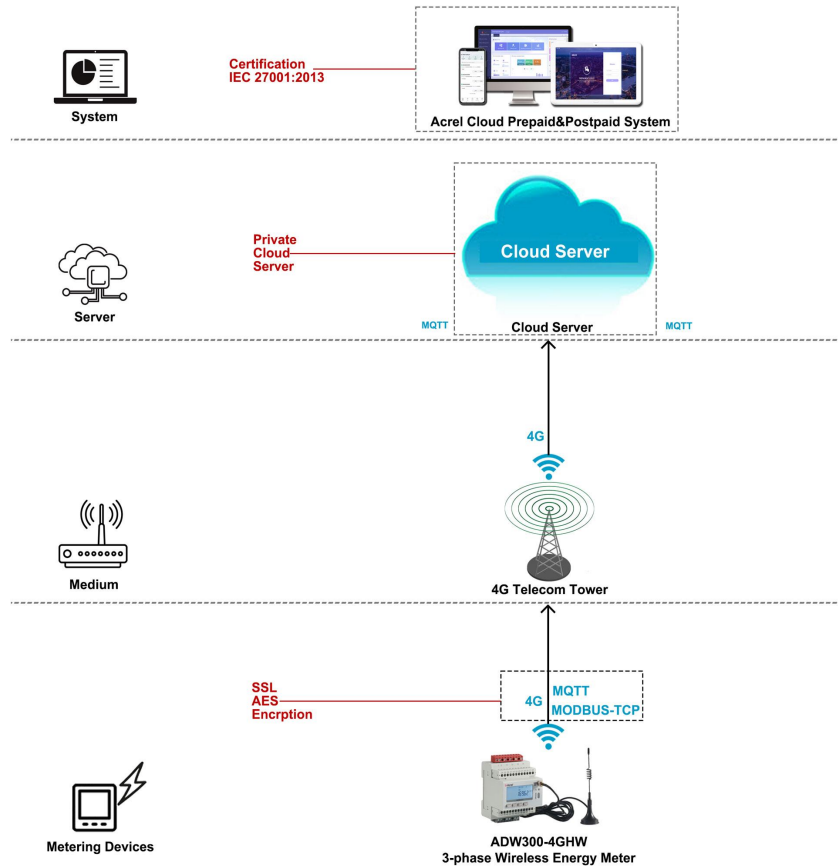
(3) Max Demand Data Uploading to System Platform

8. System Platform Security

- (1) Acrel Cloud Prepaid&Postpaid System got a IEC 27001:2013 certification for approving the system security level on information security management of design, development of electrical meters and etc.
- (2) For safety of data transmission between Acrel ADW300-4GHW Postpaid Energy Meter and Acrel Cloud Prepaid&Postpaid System. Normally use the AES, SSL or other types of data encryption methods.
- (3) Cloud Server recommend to use private cloud server for safe and stable data storage.
- (4) For other information about data security, kindly contact Acrel Software Department for more information.



(1) IEC 27001:2013 Certification



(2) Data Transmission Encryption

9. How should we cooperate for realizing a complete Online Prepaid Solution

Stage by stage cooperation move:

Stage 1 - Testing Sample:

Software System: Acrel Prepaid System (3-month Free trial), deployed on Acrel rented cloud server

Cloud Server: Using Acrel rented Cloud Server

Hardware: Several pcs of ADW300-4GHW 4G Wireless Energy Meter [Postpaid Ver.]

Payment Methods: On-line payment.

Stage 2 - Buy-out Service (On-line Payment - Server Transportation):

Software System: Acrel Prepaid System (Buy-out Service), deployed on customer rented cloud server.

Cloud Server: Using Customer rented Cloud Server.

Hardware: Batch order of ADW300-4GHW 4G Wireless Energy Meter (Special manufacturing order for server configuration)

Payment Methods: On-line Platform payment [Set administration site for charge the electricity.]

Stage 3 - Buy-out Service (On-line&APP Payment - 3rd Party Payment API Integration):

Software System: Acrel Prepaid System (Buy-out Service), deployed on customer rented cloud server, also provide Acrel Prepaid APP (for end power user), customer side integrate this Acrel Prepaid APP with their local 3rd party payment methods.

Cloud Server: Using Customer rented Cloud Server.

Hardware: Batch order of ADL100-EYNK/4GHW 1-phase 4G Prepaid Energy Meter. (Special manufacturing order for server configuration)

Payment Methods: On-line Platform payment [Set administration site for charge the electricity.] and APP Online payment. [End Power User do the payment themselves]

10. Actual Scenario Example

- (1) Suppose we have 8000 3-phase end power users in this country. [users of factory/enterprise/commercial building/hospital, etc] We will generally call these scenario as "building".
- (2) Each building was powered by 1 main incoming circuits 3-phase, so by monitoring this main 3-phase incoming circuits, we could know the overall power consumption of this building. [For demo, we assume this incoming circuits are with rated voltage of 3x380Vac L-L&3x220Vac L-N and rated current which is not more than 3x150A AC as default setting]
- (3) For each building we will install 1 post prepaid energy meter with paired CTs and connected to Acrel Cloud Prepaid&Postpaid Platform based on 4G Comms. for postpaid electricity monitoring& billing.

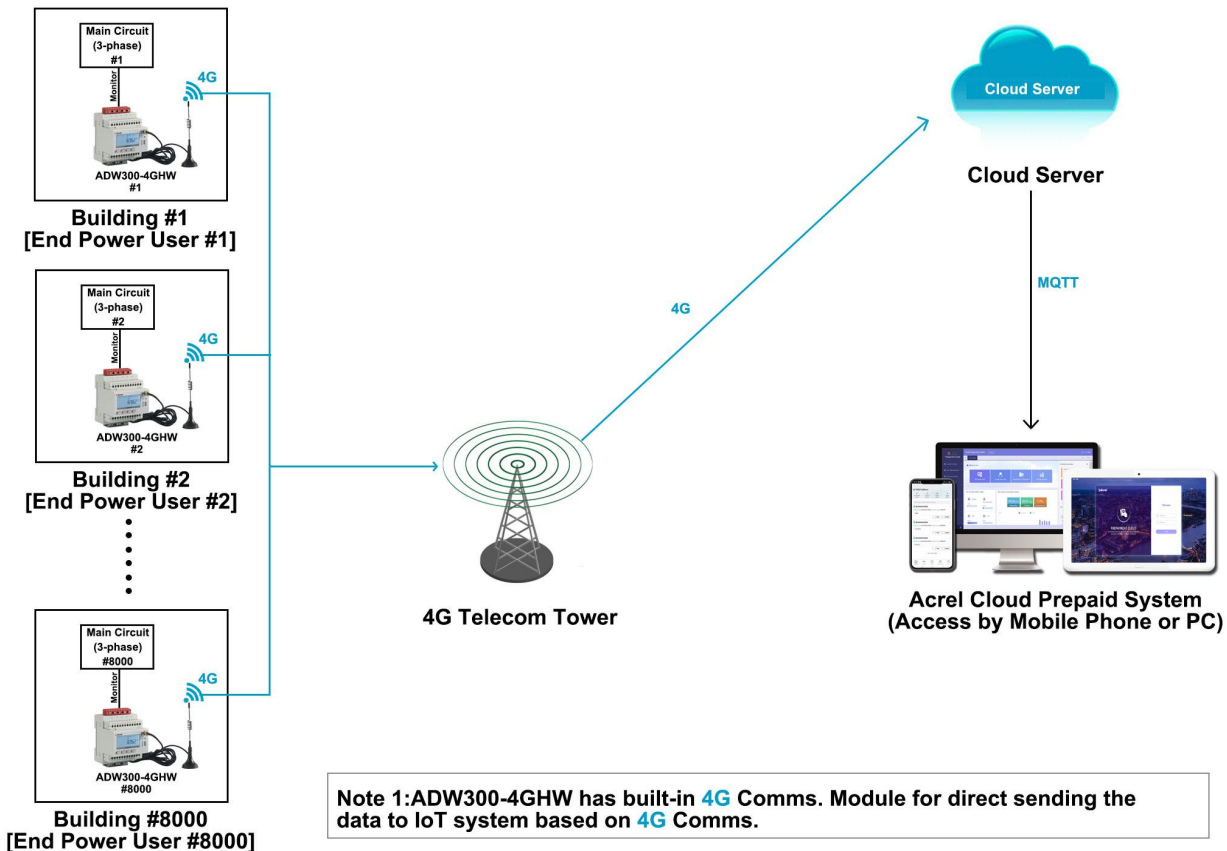
11. Devices Deployment Plan

Building #1 [For End Power User #1]:

- 1* ADW300-4GHW 4G 3-phase Postpaid Energy Meter [for building #1]
- 3* AKH-0.66/K K- 24 150/5 Current Transformer [paired with ADW300-4GHW for current input]

Building #8000 [For End Power User #8000]:

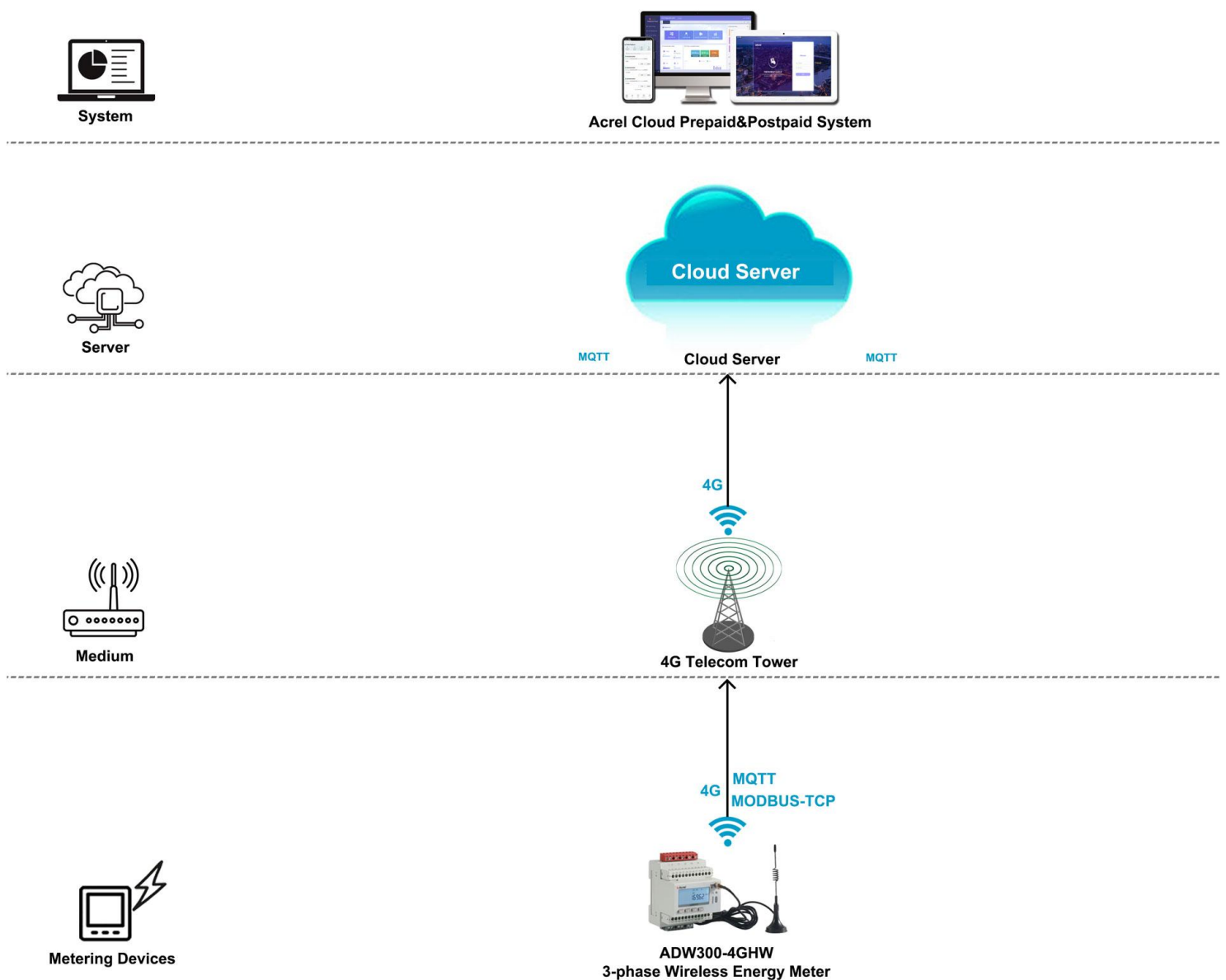
- 1* ADW300-4GHW 4G 3-phase Postpaid Energy Meter [for building #8000]
- 3* AKH-0.66/K K- 24 150/5 Current Transformer [paired with ADW300-4GHW for current input]



**Major Targetting Scenario
3-phase End Power User**

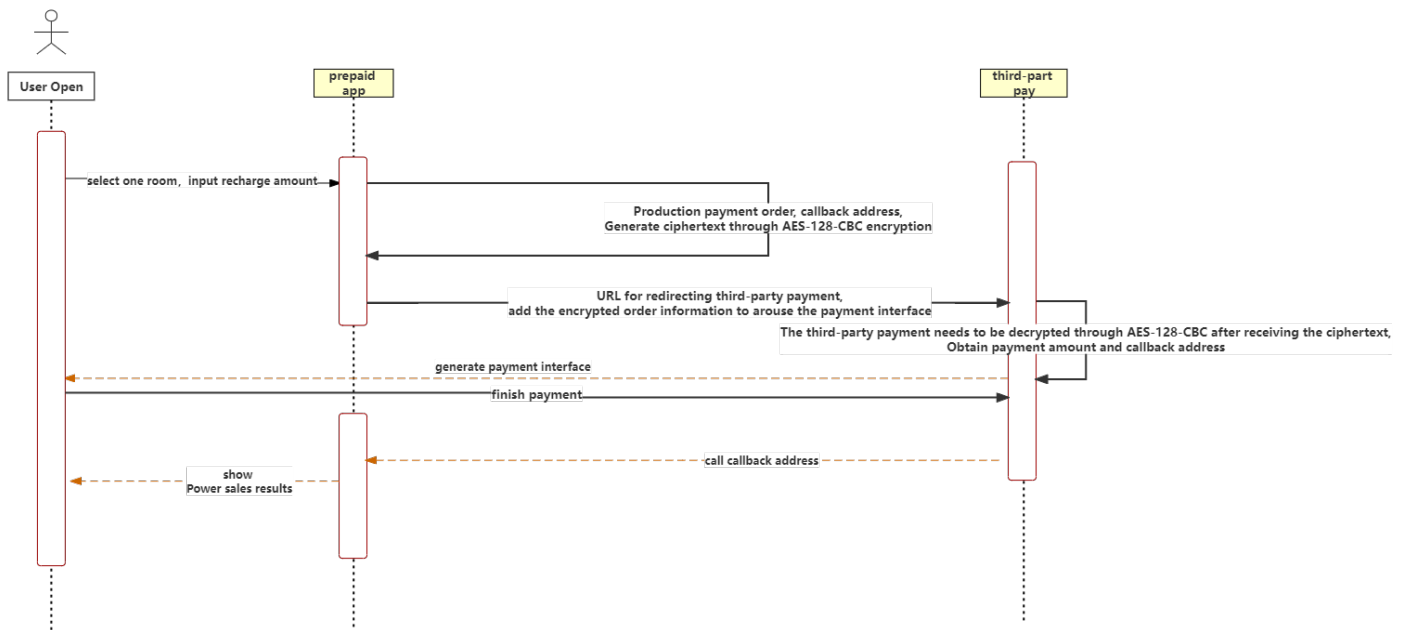
12. Communication Structure&Logic

- (1) 4G Communication could be served as one of the final data upstream methods by sending the data to cloud server deployed in Internet so that Acrel IoT System could be interact with these data collected by bottom metering devices like Energy Meter
- (2) ADW300-4GHW support upstream of 4G communication based on MQTT and MODBUS-TCP which make it possible to directly communication with Acrel Online Prepaid&Postpaid System without using a extra 4G IoT gateway.
- (3) Each ADW300-4GHW has a 4G SIM card tray for installing of the 4G SIM card which could be bought from your local 4G service provider.
- (4) By API between Acrel Online Prepaid&Postpaid System and 3rd party Payment Software or Payment Methods, we could realize also remote automatic/manual **On-line Payment**.



13. Overall Schedule to Realize Online Payment


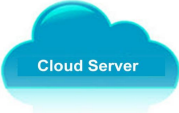


- (1) Buy sample devices from Acrel to test the devices on Acrel Platform and Acrel rented cloud server first for testing some basic Acrel Prepaid System Function and Off-line payment. [In this stage, Acrel System provide 3-month free trail, and will use Acrel rented cloud server]
- (2) After the testing stage, customer need to buy-out Acrel Prepaid System for permanent usage and rent their our cloud server under the instruction of Acrel Technical Group. Once bought both the buy-out service and rent a own cloud service, Acrel software team will deploy Acrel Prepaid System on customer's rented cloud server. [Some OEM and customization of Buy-out service of Acrel Prepaid System was available like changing the Logo of system and access address of system]
- (3) Once software deployed successfully, Acrel technical group assist the customer to first move already bought Acrel hardware devices like prepaid energy meter and IoT gateway from Acrel platform&server to cusomter's platform&server by changing the configuration of IoT gateway like Server address, server port changing.
- (4) Once Platform&Server movement success, will proceed for API between Prepaid System and customer's own 3rd party payment software. To realize a actual Online payment. Will set a API discussion group for this and customer side need to have people who know about API integration. (Acrel Side could provide API protocol in advance for a preview)



Overall API Flow Chart

14. Overall Model Selection&Quotation

(1) This Quotation doesn't include freight charge. To gain a complete quotation, please refer the actual quantity that you want to request for the actual order, once we receiving it. We will issue a Official Proforma Invoice with Acrel Stamps on it for later procedure.

System Software					
Name	Description	System Price	Remark (Choose Host Service or Buy-out Service after 3-month Free Trial of Cloud IoT System)		
 Acrel Cloud Prepaid System	1.System support all the meters over-cross the country connected to the cloud server through smart gateway. 2.Remote meter reading and data collection. (Energy consumption, Credit Balance Amount and etc) 3.Off-line topping up by Cloud Prepaid System. 4.Remote Switch on-off Power Control by Cloud Prepaid System 5.Low balance credits alarm by SMS. 6.Offer 3-month free trial of system with full technical support as for a test phase or pilot project	\$0 (recommended in pilot project) \$xxxYear (for 10 Points) (Price for Host Service Only, recommended in pilot project) \$xxx/Permanent (Limitless Points) (Price for Buy-out Service Only, recommended in late project)	3-month Free Trail (Users don't need to rent a cloud server) \$xx to buy Hosting Service for 1 monitoring points connected to the system 1 year (Users don't need to rent a cloud server) 1-time charging of \$xxx for Buy-out Service of permanent use (A cloud server need to be rent by users)		
Cloud Server					
Name	Description	Server Renting Price (For Reference Only)	Remark		
 Cloud Server	1.Cloud Server could be rent on the cloud server provider like Amazon Cloud. 2.Users of Cloud Prepaid&Postpaid System only need to rent cloud server when they choose buy-out service of our Cloud Prepaid&Postpaid System . And if they are using hosting service or 3-month free trial of our Cloud IoT System, we will use our own cloud server which has been rent on Amazon so that users don't need to rent a cloud server. 3.The quotation of Cloud Server is only a reference price that Acrel has rent on Amazon Cloud.	According to Specs of Rented Cloud Server	Below cloud server specs could support 1000~2000 monitoring points connected to the system (Server: 8 core 16G Operation System: windows server 2016)		
3-phase Wireless Postpaid Energy Meter					
Overview Picture	USAGE&MODULE NAME	DESCRIPTION & SPECIFICATION	QUANTITY	FOB UNIT PRICE (USD)	AMOUNT (USD)
	3-phase 4G Wireless Energy Meter ADW300-4GHW/C	Communication: 4G Wireless Communication (with 4G SIM card)&RS485 (MODBUS-RTU) Rated Voltage: 3x380~456Vac L-L or 3x660Vac L-L (45~65Hz) Rated Current: 3x1(6)A AC (via CTs) Auxiliary Power Supply: 85~265Vac	8000 pcs	/	/
Paired Split-core CT					
Overview Picture	USAGE&MODULE NAME	DESCRIPTION & SPECIFICATION	QUANTITY	FOB UNIT PRICE (USD)	AMOUNT (USD)
	Split-core Current Transformer AKH-0.66/K K-φ24	Current Ratio: 150A/5A AC Aperture: φ24mm (diameter) Accuracy: Class 1.0	24000 pcs	/	/

15. Hardware Devices Overview [Energy Meter & Paired CTs]

Model 1: ADW300-4GHW/C 4G 3-phase IoT Energy Meter

- Monitoring: Up to 1 circuits 3-phase [AC Metering]
- Wireless Comms.: 4G LTE [MQTT, MODBUS Protocol]
- Wired Comms.: RS485 [MODBUS-RTU Protocol]
- TOU/Multi-tariff: Support weekly multi-tariff.
- Max Demand: Support Max Demand metering&uploading
- Rated Current: 3x1(6)A AC [via -/5A CTs.]
- Rated Voltage: Up to 3x660Vac L-L
- Certificate&Standard: CE, CE-RED



3-phase

Multi-Function

IoT APP/WEB

4G/WiFi/LoRa

Model 2: AKH-0.66/K K- 24 150/5 Split-core Current Transformer

- Current Ratio: 150A/5A
- Primary Current: 150A
- Secondary Current: 5A
- Accuracy: Class 0.5 or 1.0
- Certificate&Standard: CE



AC

60~400A

Split Core

Class 0.5

16. Acrel IoT Cloud Prepaid&Postpaid System (Partail Introduction)

Acrel IoT Energy Monitoring System could be access in 2 different ways:

(1) Access through WEB on your computer.

Access port: <https://iot.acrel-eem.com/>

(2) Access through APP on your mobile phone

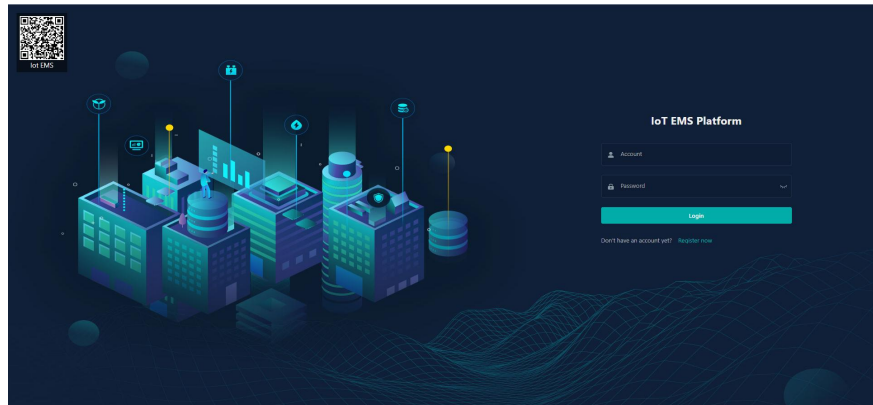
Download Link: <https://play.google.com/store/apps/details?id=com.acrel.iotems>

(1) WEB Accesss (Computer):

Access Port: <https://iot.acrel-eem.com/>

Test Account Name: acrel

Test Account Password: 123456

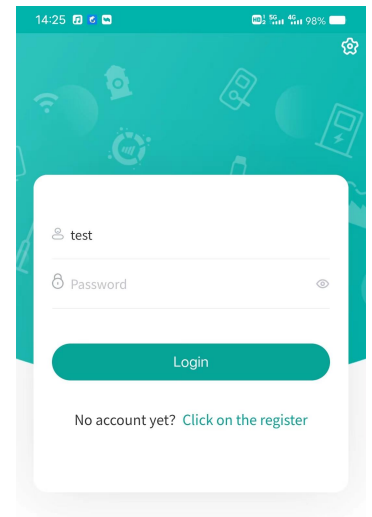
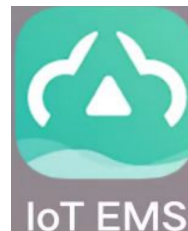


(2) APP Accesss (Mobile):

Download Link: <https://play.google.com/store/apps/details?id=com.acrel.iotems>

Test Account Name: acrel

Test Account Password: 123456

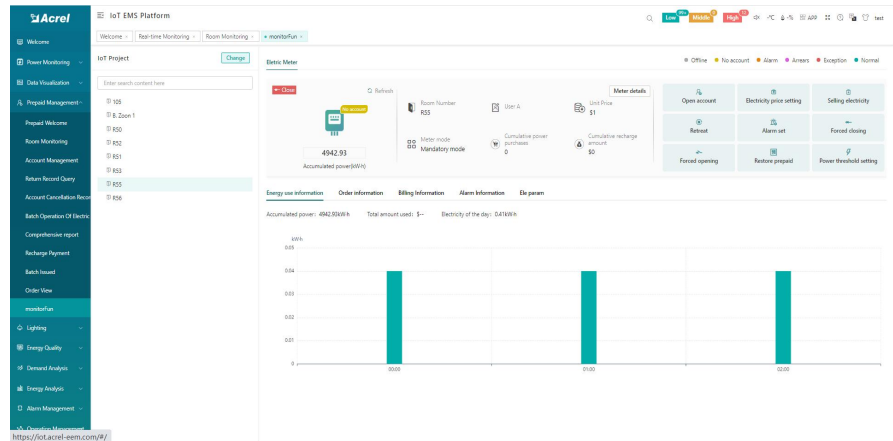


16. Acrel IoT Cloud Prepaid&Postpaid System (Partail Introduction)

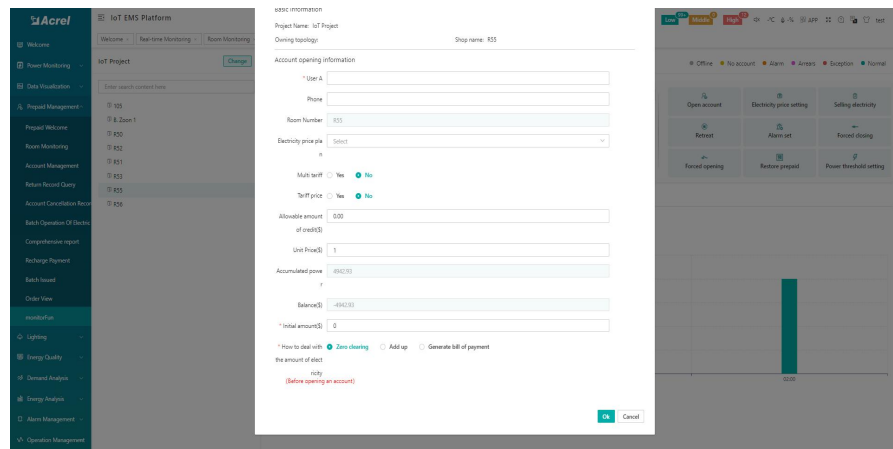
Main Function of WEB side System:

- (0) Prepaid Interface (1) Devices List (2) History Curve (3) Electricity Parameters Report (4) Energy Consumption Report (Daily, Monthly, Yearly) (5) User Report

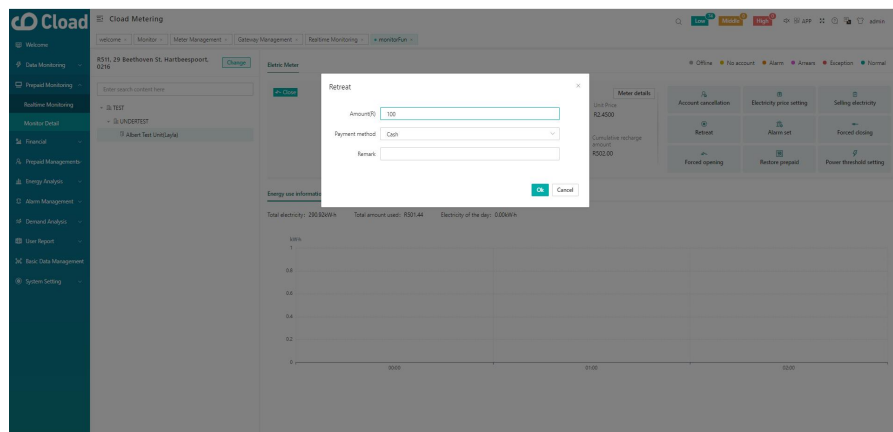
(0) Prepaid Interface-Overview: All basic function of prepaid operation could be seen here. Also, a overview of room balance credit and power consumption was available



(0) Prepaid Interface-Open Account: A prepaid energy meter will formally serve its prepaid billing and control function only after binding a "room" and "user" with it and open account for this certain "room".



(0) Prepaid Interface-Topping Up: Enter amount to issue topping up command to certain "prepaid energy meter" bound with certain "room/user".



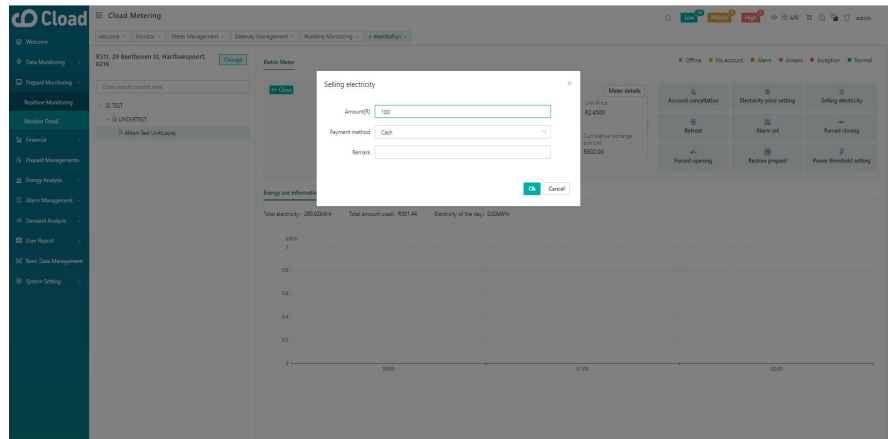
16. Acrel IoT Cloud Prepaid&Postpaid System (Partail Introduction)

Main Function of WEB side System:

- (0) Prepaid Interface (1) Devices List (2) History Curve (3) Electricity Parameters Report (4) Energy Consumption Report (Daily, Monthly, Yearly) (5) User Report

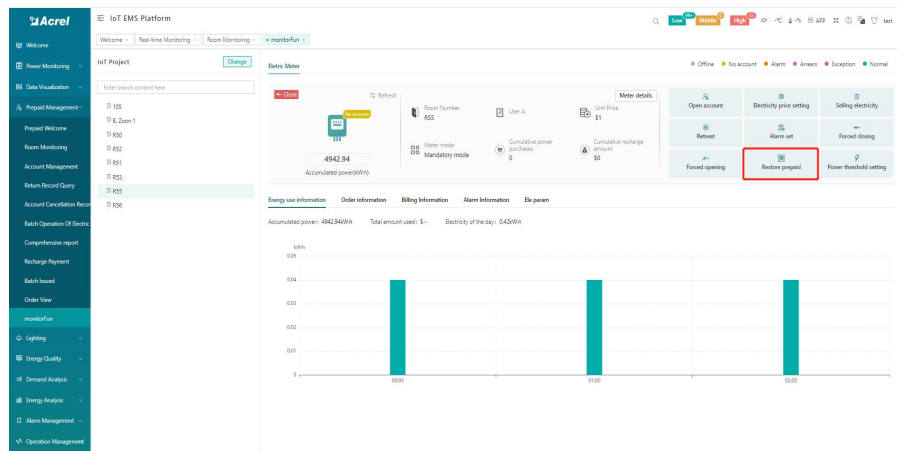
(0) Prepaid Interface-Retreat:

Retreat certain amount from credit balance. Designed for revising the possible false operation



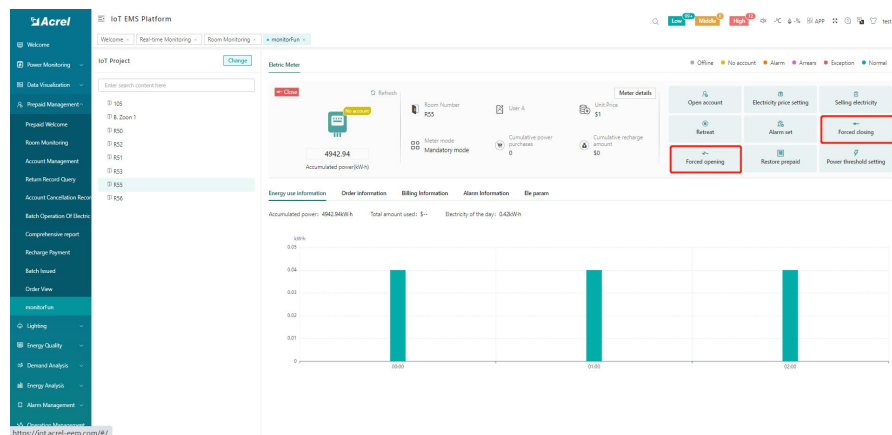
(0) Prepaid Interface - Control -

Prepaid Mode: In Prepaid Mode, when the credit balance below 0, prepaid energy meter will automatically shut down loads power. and when balance above 0, will immediate resume loads power



(0) Prepaid Interface - Control -

Postpaid Mode: In postpaid mode, load's off-on switch control will be fully manually control by platform. Balance credits whether below or above 0 won't influence the load's switch on/off status automatically

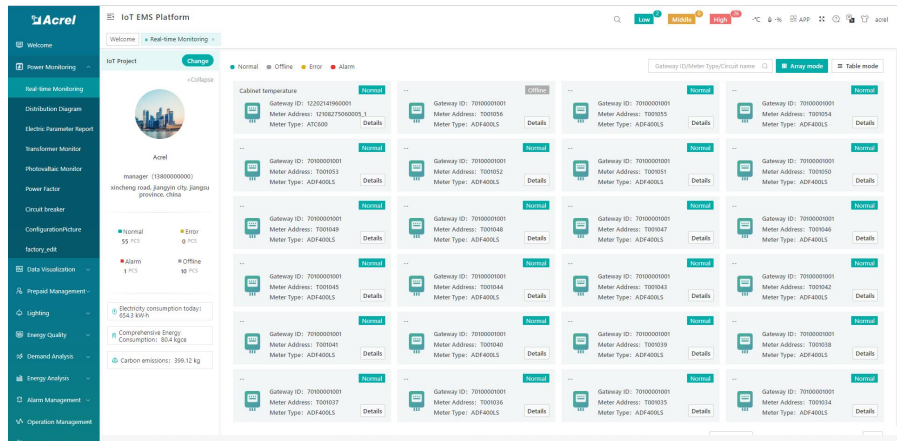


16. Acrel IoT Cloud Prepaid&Postpaid System (Partail Introduction)

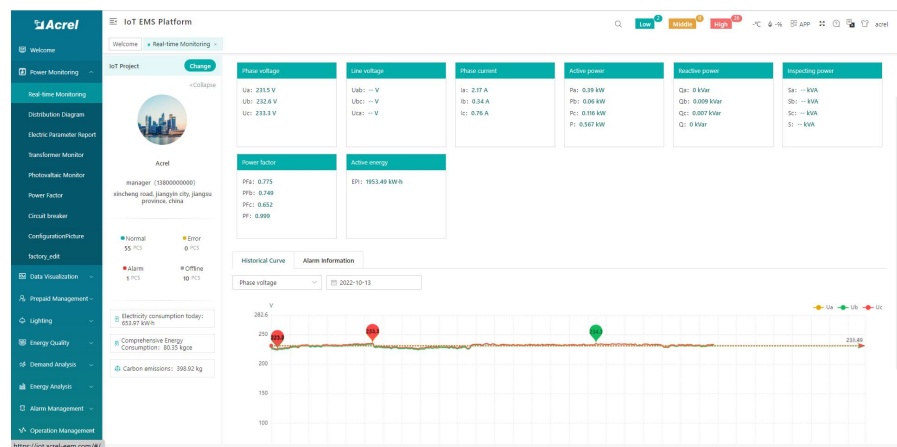
Main Function of WEB side System:

(0) Prepaid Interface (1) Devices List (2) History Curve (3) Electricity Parameters Report (4) Energy Consumption Report (Daily, Monthly, Yearly) (5) User Report

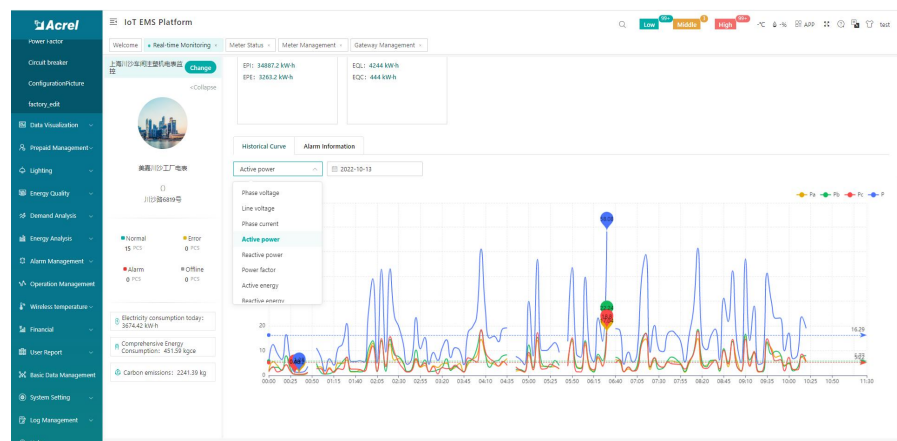
(1) Devices List: Showing the overall devices connected to Acrel System and were bond to certain project. SN code, Online-Offline status, devices model and other necessary information will be shown here.



(2) History Curve: Showing the daily history data curve of all the data that could be collected and upload by energy meter or other basic metering devices.



(2) History Curve: By selecting the items of "data" and "electricity parameter", platform can show the history curve of different data and date.

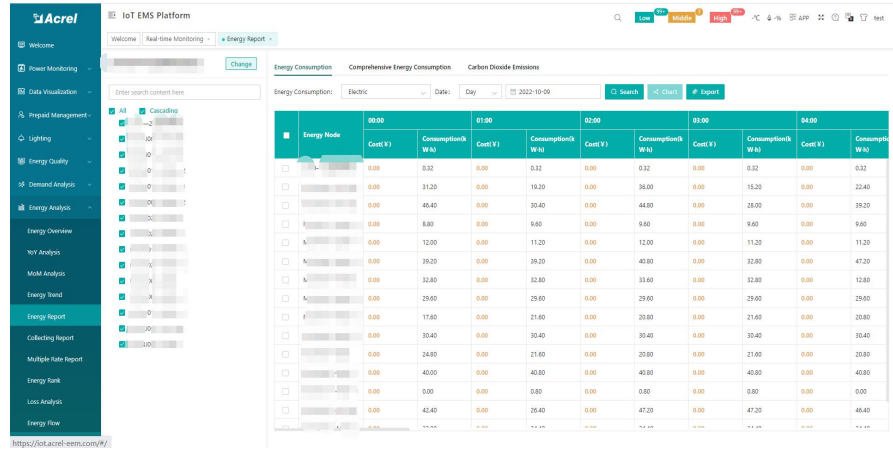


16. Acrel IoT Cloud Prepaid&Postpaid System (Partail Introduction)

Main Function of WEB side System:

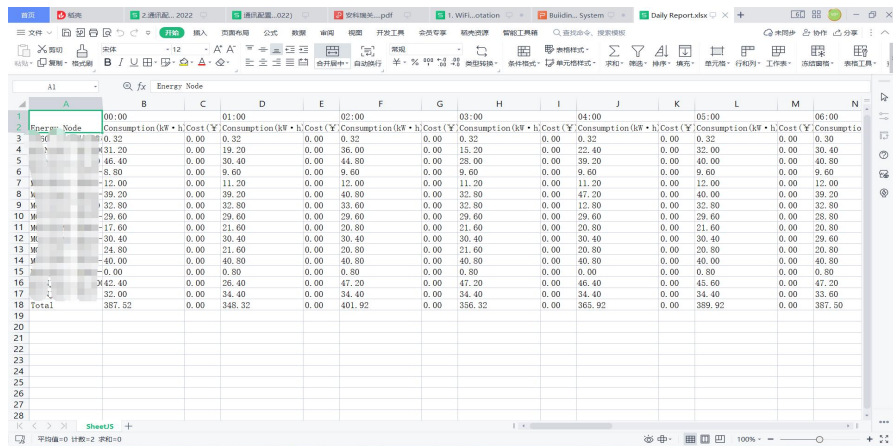
- (0) Prepaid Interface (1) Devices List (2) History Curve (3) Electricity Parameters Report (4) Energy Consumption Report (Daily, Monthly, Yearly) (5) User Report

(4) Energy Report (Daily): This Interface show the daily energy consumption report (calculated by forward active energy)



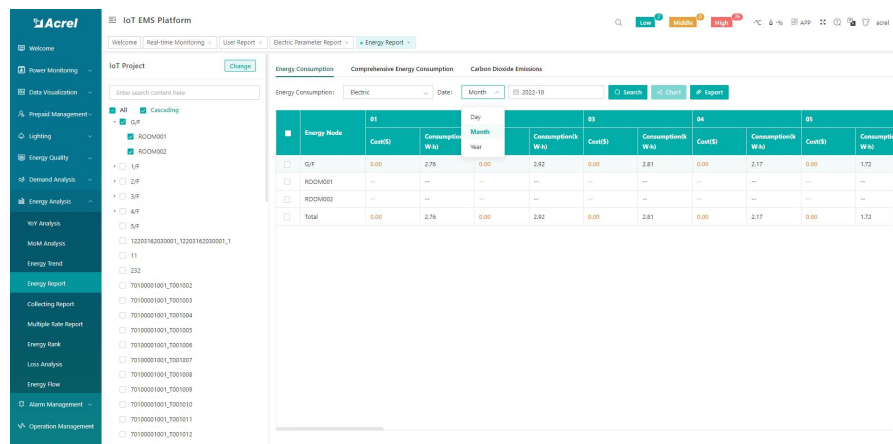
Energy Node	00:00		01:00		02:00		03:00		04:00	
	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)
...	0.00	0.32	0.00	0.32	0.00	0.32	0.00	0.32	0.00	0.32
...	0.00	31.20	0.00	19.20	0.00	36.00	0.00	15.20	0.00	30.40
...	0.00	46.40	0.00	30.40	0.00	44.80	0.00	28.00	0.00	40.00
...	0.00	8.80	0.00	9.60	0.00	9.60	0.00	9.60	0.00	9.60
...	0.00	12.00	0.00	11.20	0.00	12.00	0.00	12.00	0.00	12.00
...	0.00	39.20	0.00	39.20	0.00	40.80	0.00	40.00	0.00	39.20
...	0.00	32.80	0.00	32.80	0.00	33.60	0.00	32.80	0.00	32.80
...	0.00	29.60	0.00	29.60	0.00	29.60	0.00	29.60	0.00	29.60
...	0.00	17.60	0.00	17.60	0.00	17.60	0.00	17.60	0.00	17.60
...	0.00	30.40	0.00	30.40	0.00	30.40	0.00	30.40	0.00	30.40
...	0.00	24.80	0.00	21.60	0.00	20.80	0.00	21.60	0.00	20.80
...	0.00	40.00	0.00	40.80	0.00	40.80	0.00	40.80	0.00	40.80
...	0.00	0.00	0.00	0.80	0.00	0.80	0.00	0.80	0.00	0.80
...	0.00	42.40	0.00	26.40	0.00	47.20	0.00	47.20	0.00	46.40
...	0.00	387.52	0.00	348.32	0.00	401.92	0.00	356.32	0.00	389.92

(4) Energy Report (Daily): This daily energy report could be also export to computer in "Excel" format



Energy Node	00:00	01:00	02:00	03:00	04:00	05:00	06:00
...	0.32	0.32	0.32	0.32	0.32	0.32	0.30
...	31.20	19.20	36.00	15.20	22.40	32.00	30.40
...	46.40	30.40	44.80	28.00	39.20	40.00	40.00
...	8.80	9.60	9.60	9.60	9.60	9.60	9.60
...	12.00	11.20	12.00	11.20	12.00	12.00	12.00
...	39.20	39.20	40.80	40.00	40.00	40.00	39.20
...	32.80	32.80	33.60	32.80	32.80	32.80	32.80
...	29.60	29.60	29.60	29.60	29.60	29.60	29.60
...	17.60	17.60	17.60	17.60	17.60	17.60	17.60
...	30.40	30.40	30.40	30.40	30.40	30.40	30.40
...	24.80	21.60	20.80	21.60	20.80	20.80	20.80
...	40.00	40.80	40.80	40.80	40.80	40.80	40.80
...	0.00	0.80	0.80	0.80	0.80	0.80	0.80
...	42.40	26.40	47.20	47.20	46.40	45.60	47.20
...	387.52	348.32	401.92	356.32	389.92	389.92	387.50

(4) Energy Report (Monthly& Yearly): Same as daily energy report, monthly and yearly energy report could be also checked on platform and exported in "Excel" format.



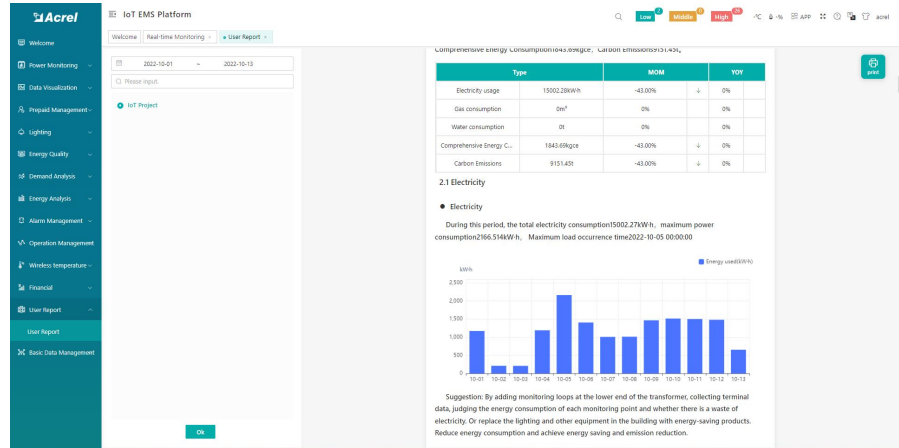
Energy Node	01		02		03		04		05	
	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)	Cost(¥)	Consumption(kWh)
...	0.00	2.76	0.00	2.82	0.00	2.81	0.00	2.77	0.00	1.72
...	0.00	2.76	0.00	2.82	0.00	2.81	0.00	2.77	0.00	1.72
...	0.00	2.76	0.00	2.82	0.00	2.81	0.00	2.77	0.00	1.72

16. Acrel IoT Cloud Prepaid&Postpaid System (Partail Introduction)

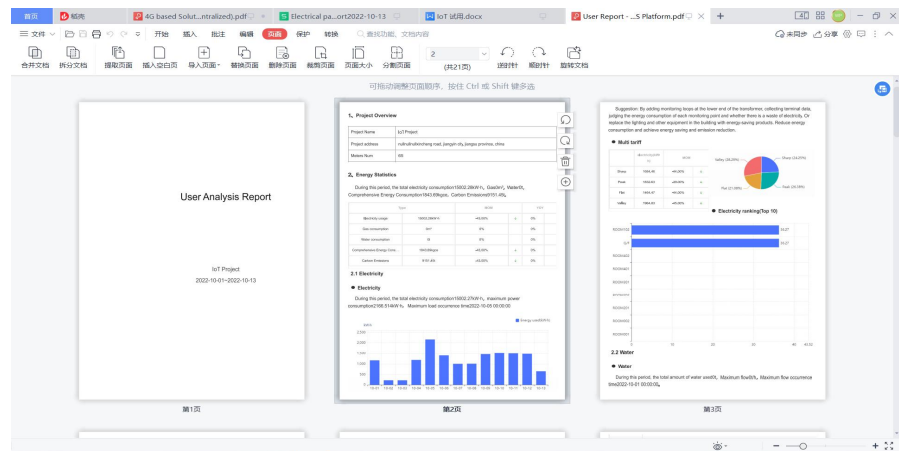
Main Function of WEB side System:

- (0) Prepaid Interface (1) Devices List (2) History Curve (3) Electricity Parameters Report (4) Energy Consumption Report (Daily, Monthly, Yearly) (5) User Report

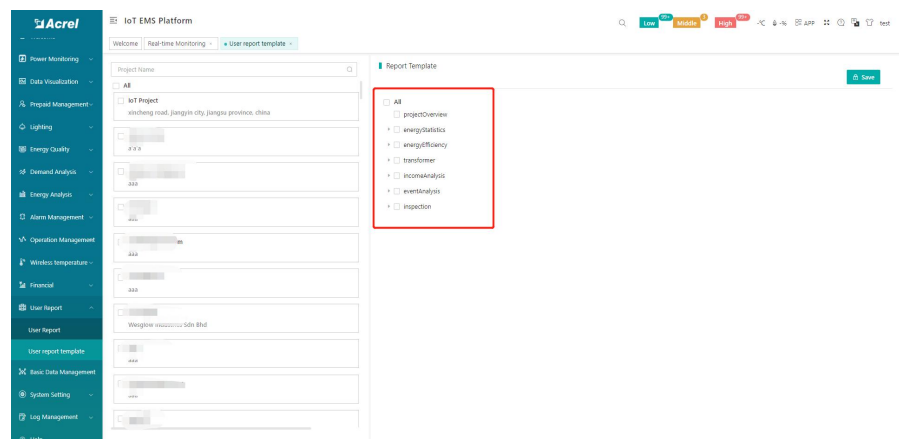
(5) User Report: A comprehensive user report including project overview, energy report, energy analysis and etc could be check on platform



(5) User Report: User report could be exported in "PDF" format into your PC for convenient check and storage.



(5) User Report: User report support template customization in buy-out service of Acrel IoT Energy Monitoring System.

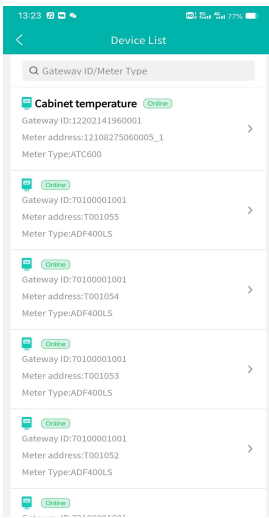


16. Acrel IoT Cloud Prepaid&Postpaid System (Partail Introduction)

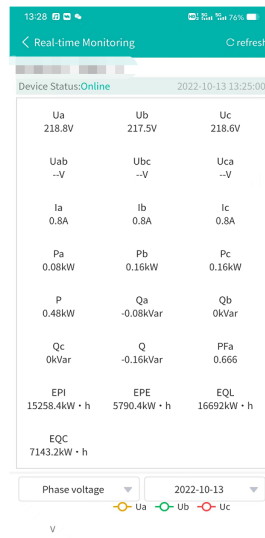
Main Function of APP side System:

(1) Devices List (2) History Curve (3) Electricity Parameters Report (4) Energy Trend (5) Energy Consumption Report (Daily, Monthly, Yearly)

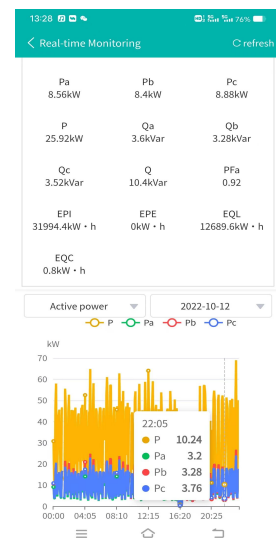
Noted: Since APP side and WEB side of Acrel IoT Energy Monitoring System share the same data, normally recommend our user to add the devices to their account using APP and check the data using WEB platform.



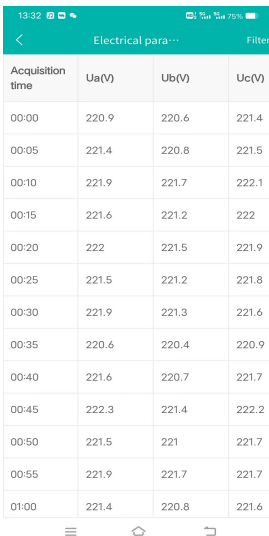
(1) Device List



(2) History Curve

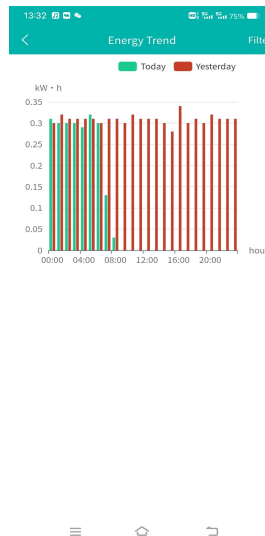


(2) History Curve

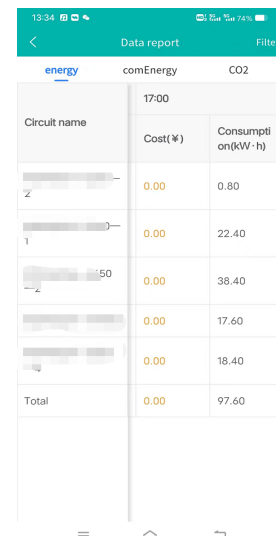


Acquisition time	Ua(V)	Ub(V)	Uc(V)
00:00	220.9	220.6	221.4
00:05	221.4	220.8	221.5
00:10	221.9	221.7	222.1
00:15	221.6	221.2	222
00:20	222	221.5	221.9
00:25	221.5	221.2	221.8
00:30	221.9	221.3	221.6
00:35	220.6	220.4	220.9
00:40	221.6	220.7	221.7
00:45	222.3	221.4	222.2
00:50	221.5	221	221.7
00:55	221.9	221.7	221.7
01:00	221.4	220.8	221.6

(3) Parameter Report



(4) Energy Trend



energy	comEnergy	CO2
Circuit name	Cost(¥)	Consumption(kW·h)
Z	0.00	0.80
T	0.00	22.40
50	0.00	38.40
	0.00	17.60
	0.00	18.40
Total	0.00	97.60

(5) Energy Report