GoodWe Negative Tariff Testing Procedure

Background:

Negative electricity prices have been rising in Europe. Selling energy becomes a cost instead of profit. To avoid this cost GoodWe has developed the software to maximize the benefit from negative tariffs. The objective of this testing is to evaluate the performance of the inverter under negative electricity pricing conditions, optimize the inverter's negative electricity pricing adjustment algorithm, collect and analyze user feedback, identify potential issues, and ensure its effective operation across varying electricity price fluctuations.

Requirements:

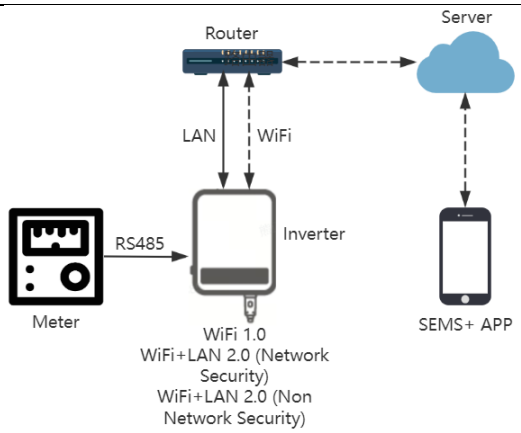
Product Model	Grid-Tie Inverter： DNS G3、MS G3、SDT G3、XS G3、SDT G2(4-25kw)、SDT G2 Plus+ Energy Storage Inverter： ET Plus+、ET Plus+(16A)、EH、EH Plus+、ES G2、ET(15-30KW)
Communication Dongle	WiFi 1.0 WiFi/Lan 2.0 WiFi/Lan 2.0 (Cybe-security version)
Function Configuration	Negative Electricity Price
Test Software	SEMS+ APP
Application Scenarios	Single inverter test / Full Load

Test Cycle:

1. If negative electricity pricing arises during the machine's initial stable operation upon grid connection, and no other issues during the machine's normal operation occur, the testing cycle will last for 30 days.
2. If no issues occur during the machine's operation, or if the negative electricity pricing phenomenon does not occur, the machine needs to be re-operated for 30 days based on the actual situation.
3. The maximum duration for Beta testing is 3 months.

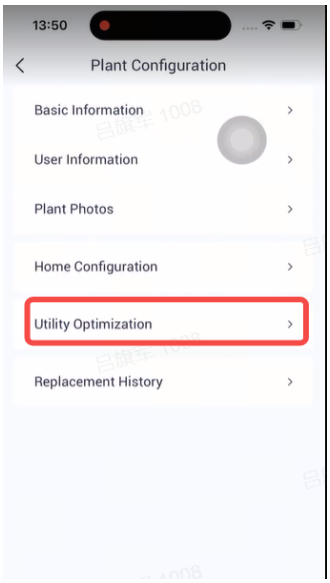
System Set Up:

GoodWe inverter + SEMS+ APP + WiFi 1.0 / WiFi&LAN 2.0 / WiFi&LAN 2.0 (cyber-security) communication modules.

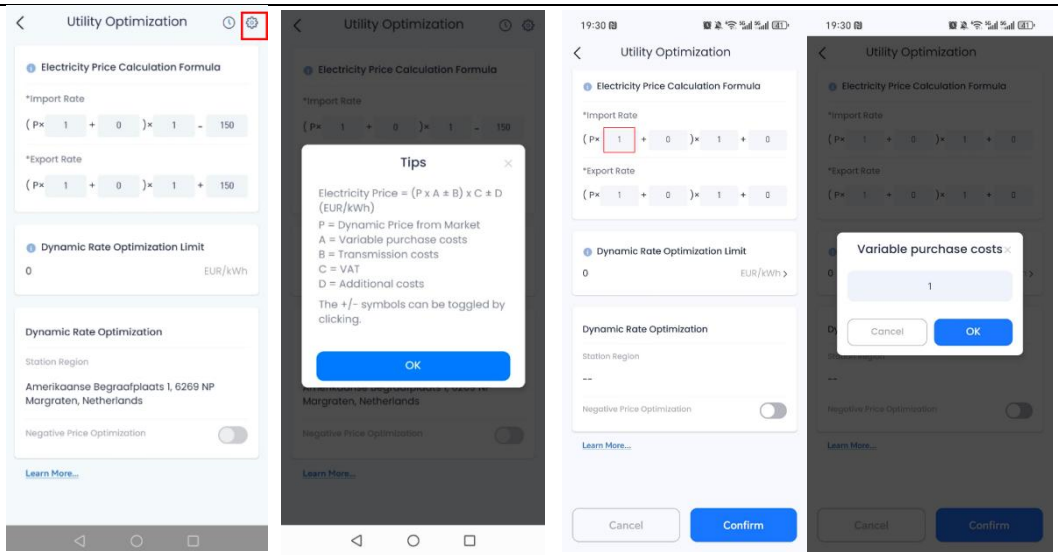


Configuration Steps:

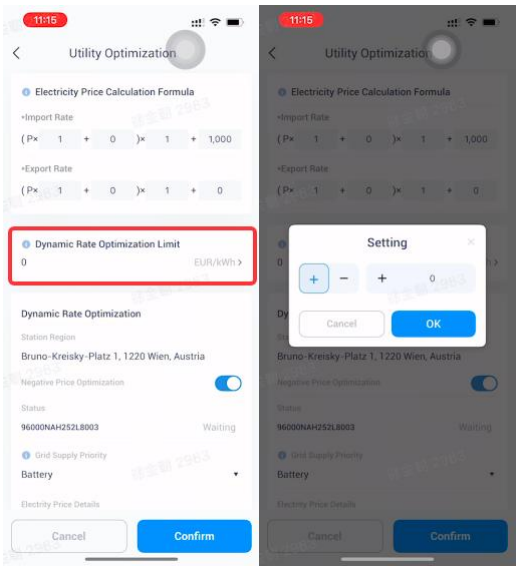
1. Ensure that all inverters installed correctly, and connected to the grid successfully. Make sure the meter is connected correctly and the communication model is compatible.
2. Insert the WiFi 1.0 or WiFi/Lan 2.0 (non-network security) or WiFi/Lan 2.0 (network security) into the inverter's USB port.
3. Download the SEMS+ APP from the official website or use the installation package provided by GoodWe team.
4. Login in to SEMS+ APP and go to the Plant (if no, create it first please).
5. Go to the details page. Select "..." and choose "Utility Optimization".



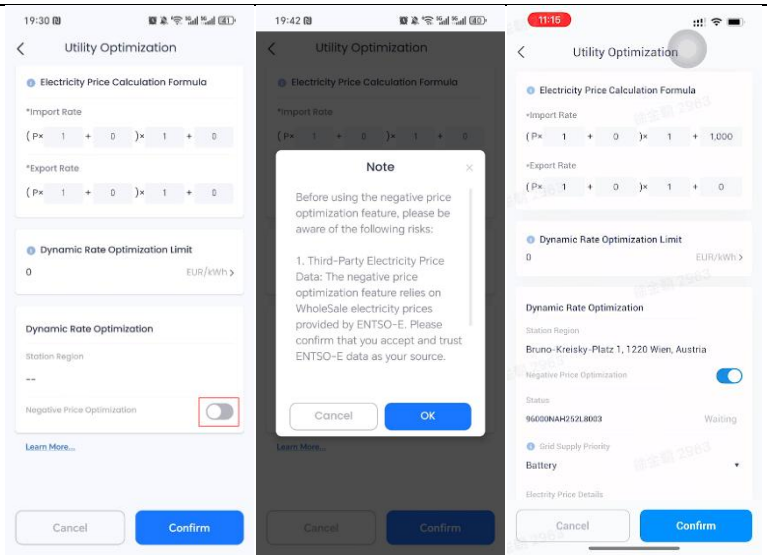
6. On the "Utility Optimization" page, click the "⚙" in the upper right corner to enter the editing mode. Manually input "Variable purchase costs" "Transmission costs" "VAT" and "Additional costs"under " Import Rate " and click "OK". Similarly, input "Variable purchase costs" "Transmission costs" "VAT" and "Additional costs"under " and click "OK" to complete the process.



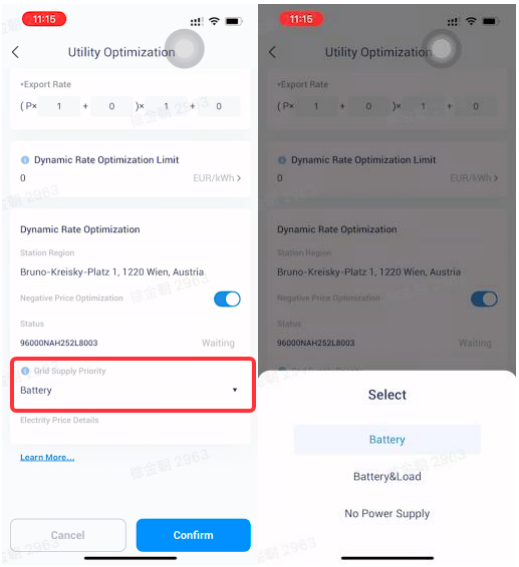
7. Under edit mode, click the area under “Dynamic Rate Optimization Limit” to set the limit value. Click OK to finish the setting.



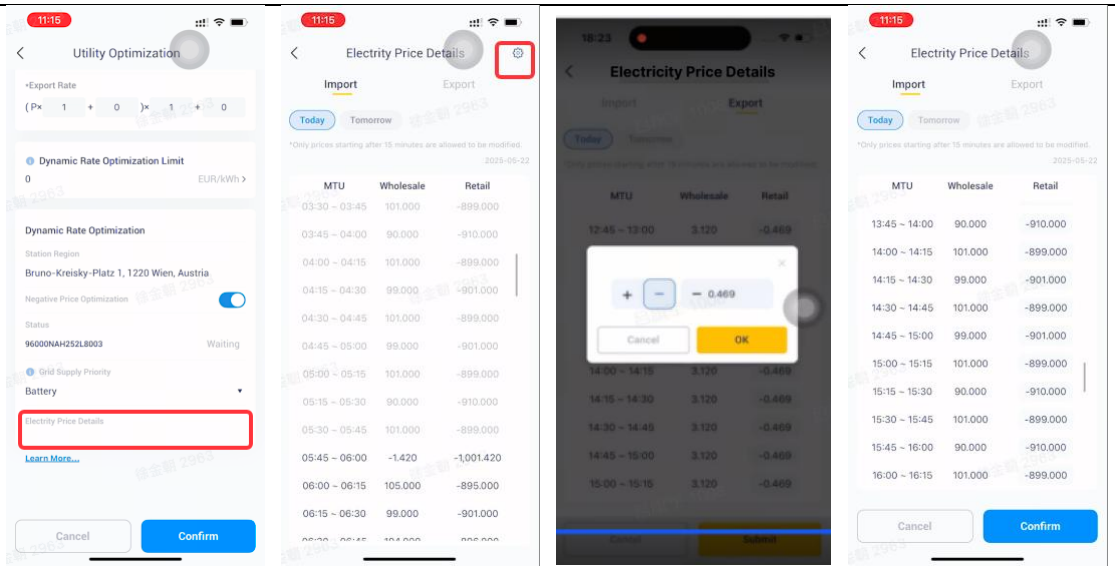
8. Switch on the "Negative Price Optimization”. When the prompt box pop up, click "OK". and then click "Submit" to initiate the negative electricity price optimization strategy.(Note: Confirm whether the Bidding Zone which obtain automatically is their own region. If the region is incorrect, please contact GW technical support to modify the region.)

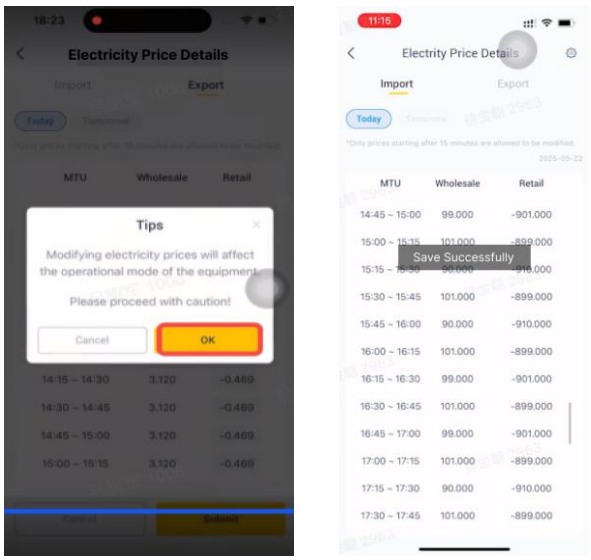


9. Click the area under “Grid Supply Priority”, select the priority of purchasing electricity from the grid.



10. Click "Electricity Price Details", and then select "Export" to verify the accuracy of the retrieved electricity price information. If any errors, click on the edit icon in the upper right corner to manually modify the incorrect electricity prices. (Note: Electricity price information for the next day is retrieved daily at UTC+1 time.) After making the necessary modifications, click "OK". (Note: If you want the currently modified price to take effect, you need to make the modification 15 minutes in advance.) Click "Submit" and when the prompt box pop up click "OK" and will prompt message "Save successfully" .





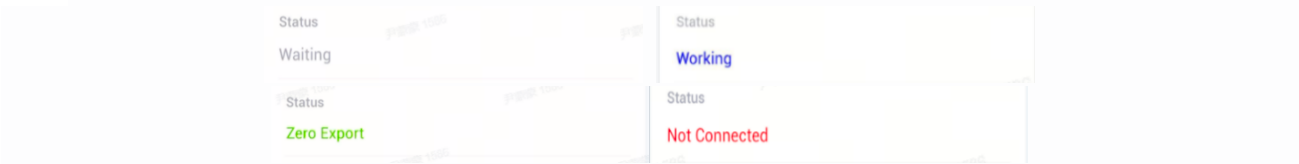
11. Return to the "Utility Optimization" page to check the "Status" which include the following four states:

(1) Waiting (gray): Plan Not Activated or Plan Deploying.

(2) Working (blue): Plan Activated and Anti-backflow Disabled.

(3) Zero-Export (green): Plan Activated and Anti-backflow Enabled.

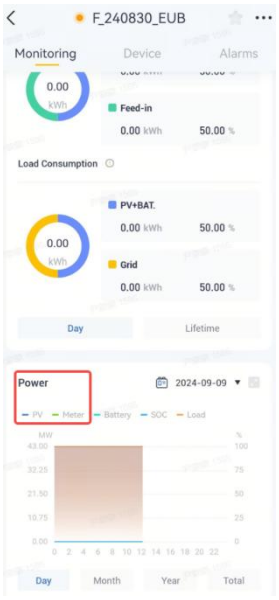
(4) Not Connected (red): Disconnected or Unable to Connect.



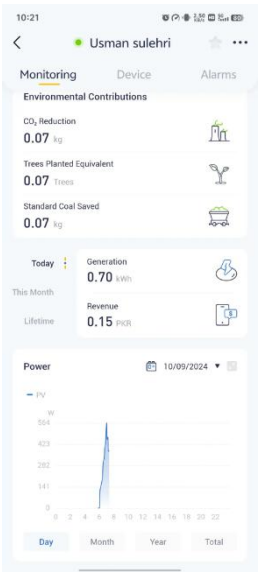
12. Customer needs to monitor the current plant's details page. After Opening the negative price optimization.

1) In the Energy Storage system scenario, the customer will observe a significant decrease in the power values on the grid side of the energy storage system compared to before by reviewing the energy flow. Also confirm PV and Meter on Power charts align with the changes in the negative

pricing periods.



2) In the Grid-tie Inverter scenario, the customer needs to pay attention to the changes in the Grid-tie Inverter's Power chart, confirm that the fluctuations in the power values displayed on the Grid-Tied Inverter's Power chart align with the changes in the negative pricing periods.



13. If any abnormalities or difficulties arise during the testing process, please promptly contact GW technical support.

Testing Objectives:

Inverter Model	
Inverter SN	
Communication Model	
Communication Module SN	

Test Site	
Environmental Status (Temperature, Weather, etc.)	
Site Photos	

Test Procedures	Issues/Suggestions	Results
Download SEMS+ APP smoothly		
Module communication indicator lights constantly lit		
Inverter communication indicator lights constantly lit		
Communication between the inverter and the module normal		
Communication between the inverter and internet normal		
SEMS+ APP monitor plant homepage, during the period of negative electricity prices, the flow chart shows that the grid side reduces its load within 2 seconds and stabilizes within 8 seconds. After the negative electricity price period, it resumes its original configured operation		
SEMS+ APP monitor plant homepage, the grid-connected unit executes negative electricity price optimization. At the bottom, the Power side confirms whether the PV reduces its load to perform anti-reverse flow operations. After the negative electricity price period, the system reverts to its original configured operation		
Manually switch the region properly		
Confirm the Bidding Zone correctly (Bidding Zone selection is available for Sweden)		
Auto-obtain the next-day electricity price normally		
Manual input surcharge normally		
Manual modification the negative electricity price normally		
Status All states display normally		
Confirm if the actual electricity consumption matches the actual bill after successfully enabling negative electricity price		
Fails to enable negative electricity price (e.g., due to network disconnection, failure to obtain real-time electricity prices), maintain the original configuration for operation		