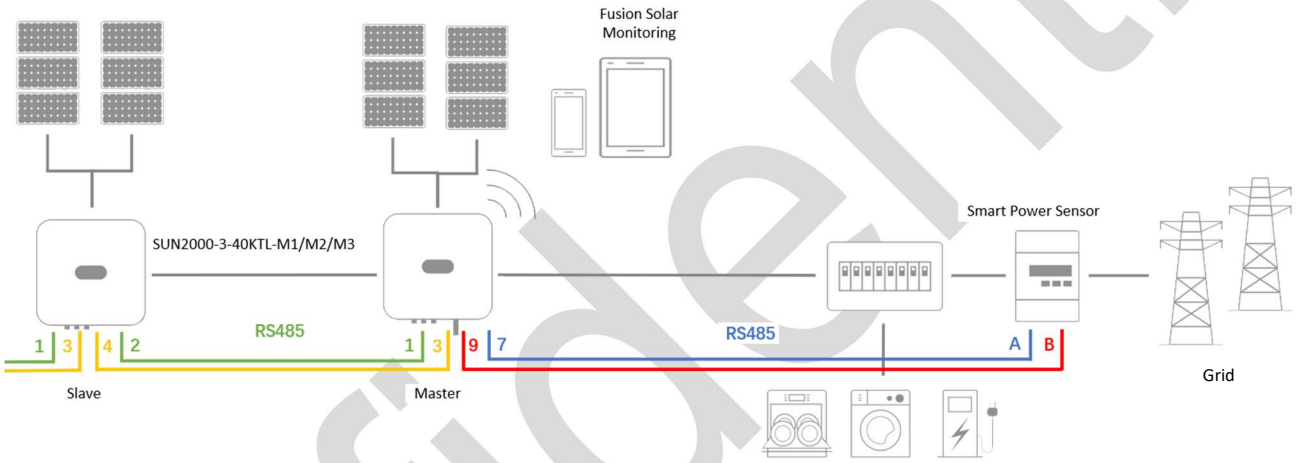
# Inverter commissioning using SmartLogger 3000

Notes:

- For commissioning, **a FusionSolar account is not required.**
  However, for the online monitoring of the system an account is required.
  Please get in touch with your contact person at SKE for the account.
  For more information, see the "**FusionSolar - Monitoring**" manual.
- Before commissioning, all **Huawei inverters** used must be correctly **cascaded via an RS485 wiring and supplied on the AC and DC sides**.
  Please use a **shielded, twisted pair cable** for communication.
  A **CAT7 network cable is recommended.**
- You find the correct Pins for the cascading in the user manual of the inverter(s)
- However, the PIN assignment below can be applied to most of the inverters from Huawei:




## Step 1 – Establish connection to Smartlogger3000:

Make sure that your computer is connected to the **LAN input of the SmartLogger and that no static IP address is set up in your computer LAN settings**.

Open a new **browser window** of your choice and **enter the gateway IP address** of the SmartLogger in the **address bar**.

The following IP address must be entered:

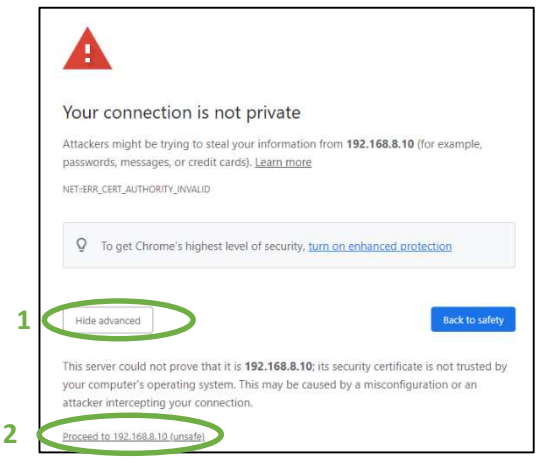
https://192.168.8.10

Please make sure that the https:// is also entered correctly.

The browser will now indicate a "non-private-connection".

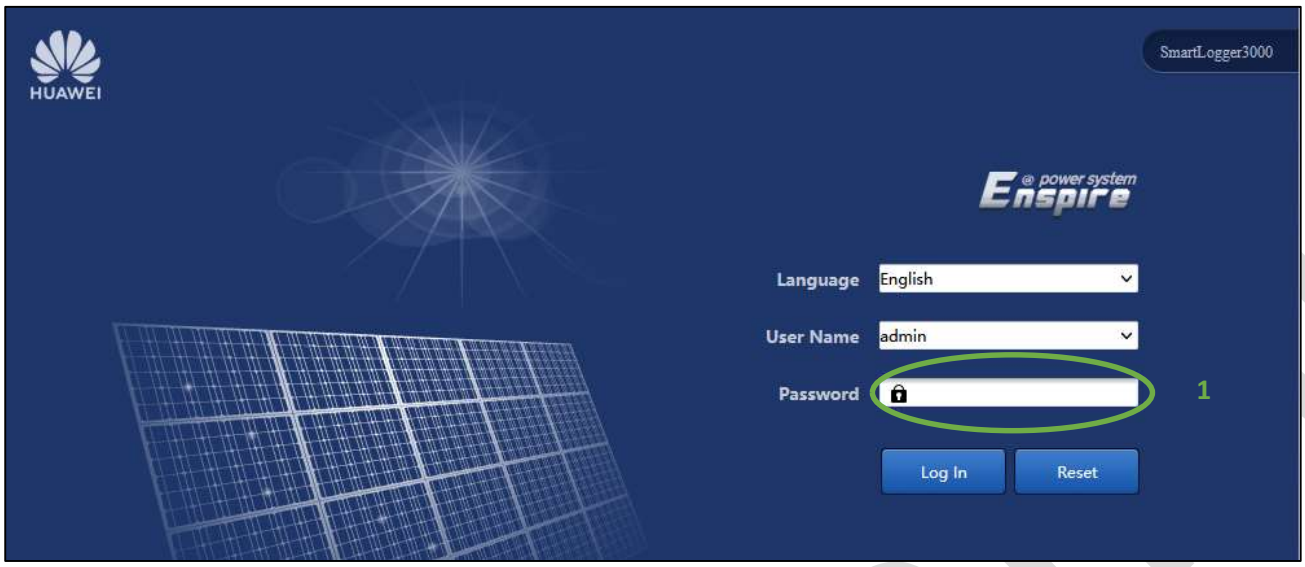
In case of the Google Chrome browser, please click on "Advanced" (1) below and then on

" Proceed to 192.168.8.10 (insecure)" (2).




The SmartLogger web interface called "Enspire" will then open properly.

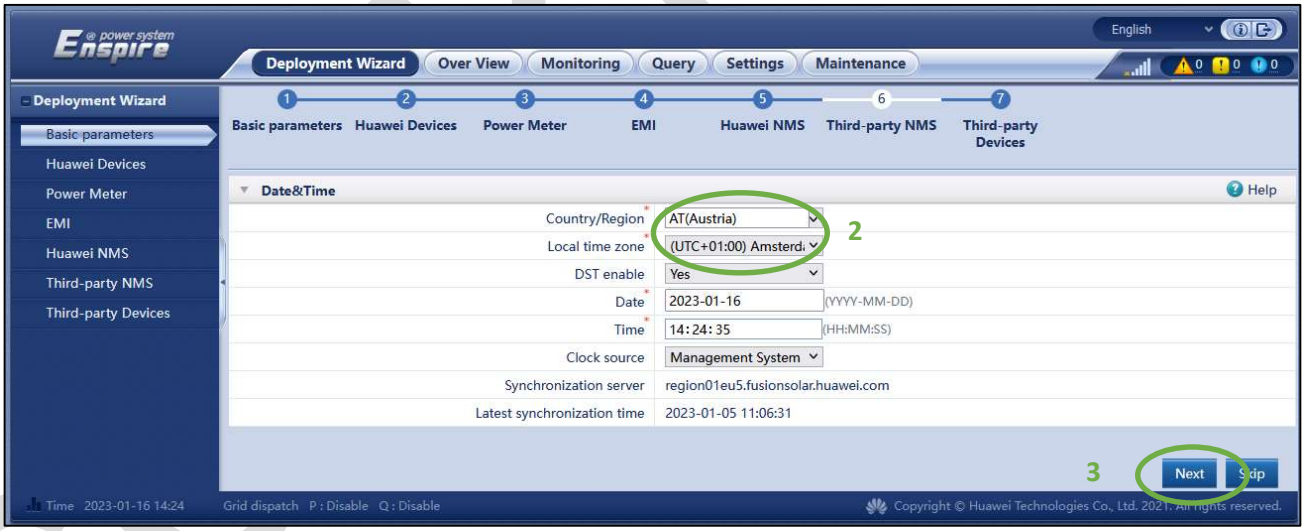
## Step 2 - Login window & password assignment:




The desired language can be set in advance on the login window.

(1) The password for the already created user "admin" is "**Changeme**".
After the **initial login**, you will be prompted to enter your **desired password**.
Please do **not give this password to the system owner**.
After **logging in again**, you will automatically be taken to the SmartLogger **deployment wizard.**

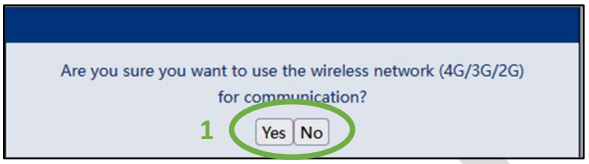
## Step 3 – Deployment wizard - basic parameters:




(2) At the basic parameters, only the **country** and the **time zone** must be set correctly.
The **date** and **time** will be **automatically adopted** if the system communicates with the FusionSolar Portal later.
If it is an offline plant, please set this correctly as well.
"**DST enable = YES**" means that the system will **automatically set the summer and winter time**.

(3) Please continue with a click on **"Next".**

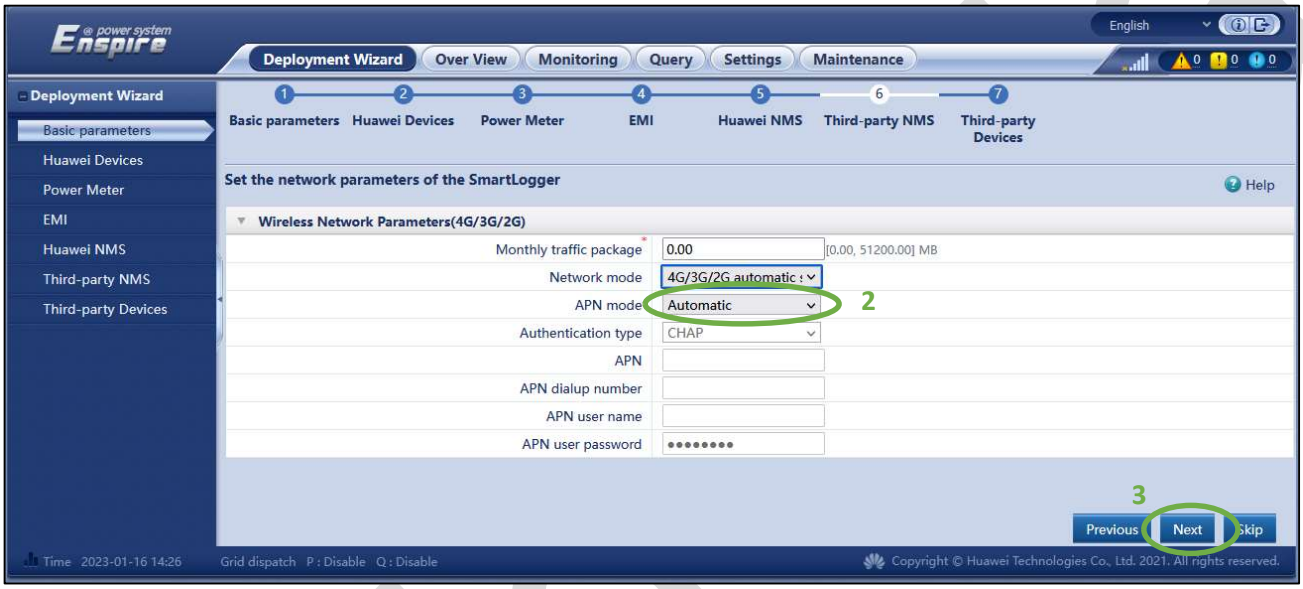
## Step 4 - Deployment wizard - communication to the management system (FusionSolar):




(1) In the following window, you will be asked if you want to use a **4G/3G/2G sim card for communication**.

If the SmartLogger should communicate with FusionSolar via a **network cable**, please **press "No".** If this is the case, please ignore the sim card parameter settings below.

4G/3G/2G sim card parameter settings:




(2) The **APN mode** here is set to "**Automatic**" by default.

Please do not forget to **mount the antenna on the SmartLogger**. It is included in the scope of the delivery.

If the SmartLogger is already connected to the Internet, you can see the **connection bar in the upper right corner** of the window.

If this is not the case, it is recommended to enter the **APN data** of the sim card provider **manually**.

To do this, please set the APN mode to "Manual".

(3) Please confirm the entry by clicking on "**Next**".

Network and IP address settings:


If a **network cable** is used to communicate with FusionSolar, please connect it to the **WAN input** of the SmartLogger.

(4) Confirm the entry with "**Yes**".

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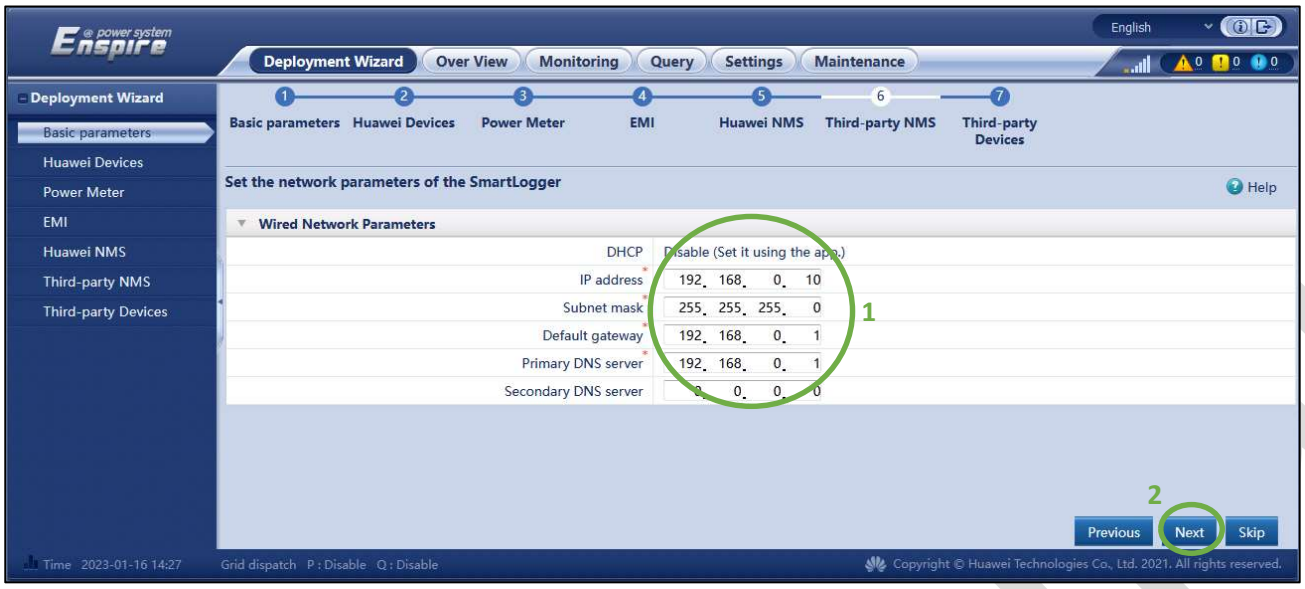



(1) Here, the IP addresses must be entered, according to the configuration of the local network.
It is advisable to consult a local IT network technician here, who will tell you the correct IP addresses.

(2) Confirm the input by clicking "Next".

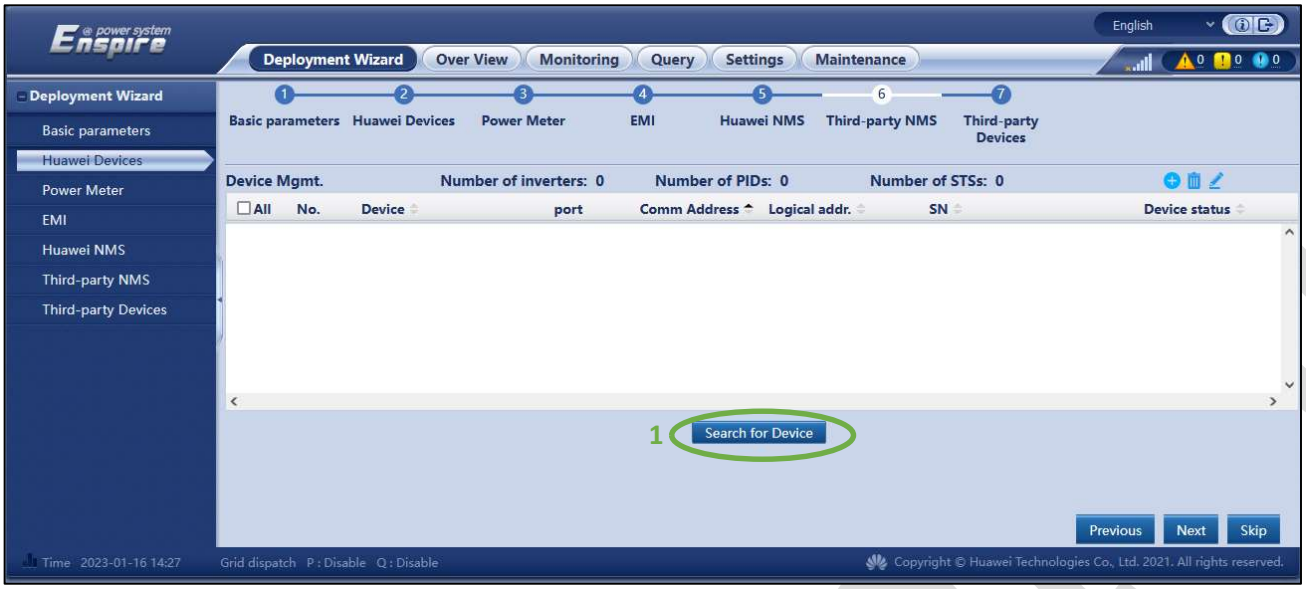
Note: Whether the SmartLogger can communicate with the management system can be viewed under "Settings" -> "Comm. parameters" -> "Management system".

Note: If the SmartLogger still cannot communicate with the management system despite correct entry of all IP addresses, it is recommended to open the following ports in the network:

27250; 27251; 2121; 2122; 50000-51000; 55000-56000; 8080; 16100; 10000-12000

The ports marked in green are more likely to be needed than the others.

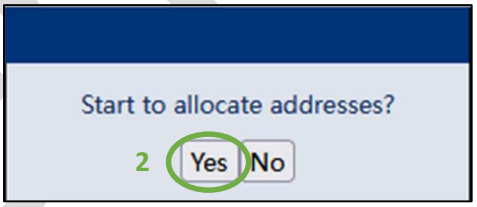
## Step 5 - Deployment Wizard - Add Huawei devices (inverters):




(1) Here, all already **connected Huawei inverters** can now be found by clicking on "**Search for device".**

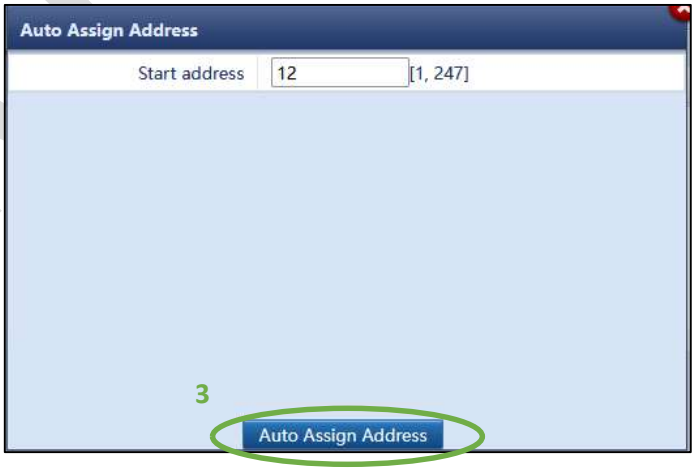
(2) You are now asked whether you want to start with the **allocation of the addresses**.

Please confirm this with **"Yes".**

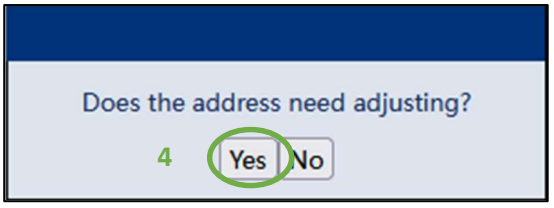



(3) In the next window, leave the **"Start address"**, as suggested by the SmartLogger and confirm the entry with **"Auto Assign address"**

The desired communication addresses can also be changed after the devices have been added.




(4) In the next window, also confirm the entry with "Yes".



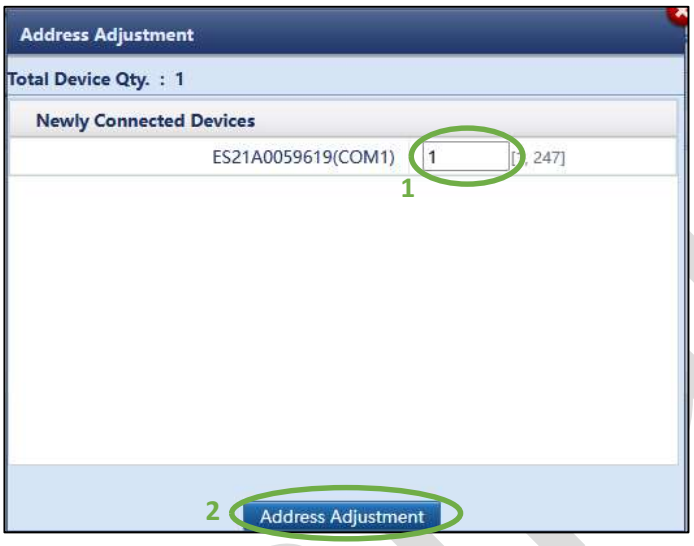
**All inverters found should now be listed here:**

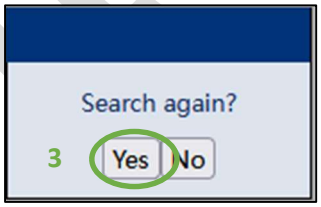
(1) The desired **communication address** can be set either here, or **at a later time**.

(2) Please confirm the entry by clicking on "**Address adjustment**".

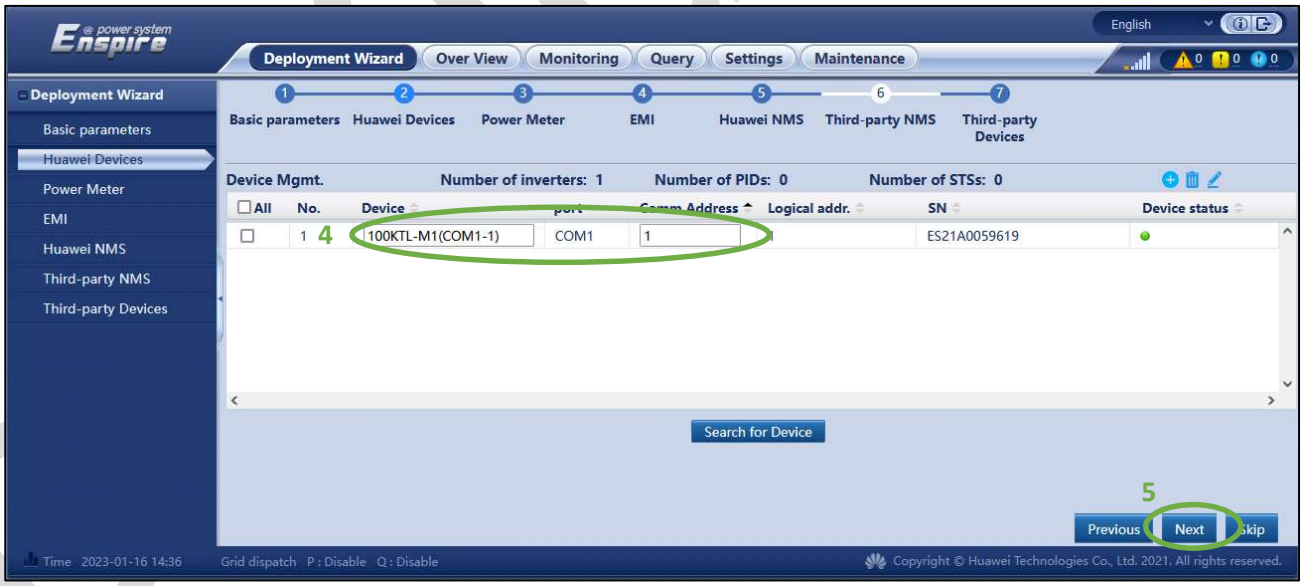
(3) In the following window "**Search again?**" please click on "**Yes**".

The inverter search is now completed automatically.




**The inverters found are now listed as follows:**

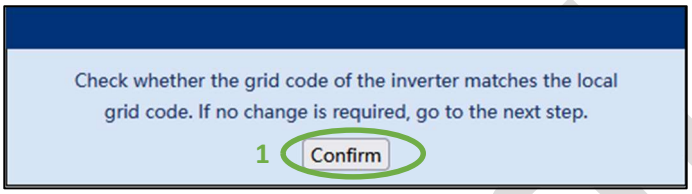


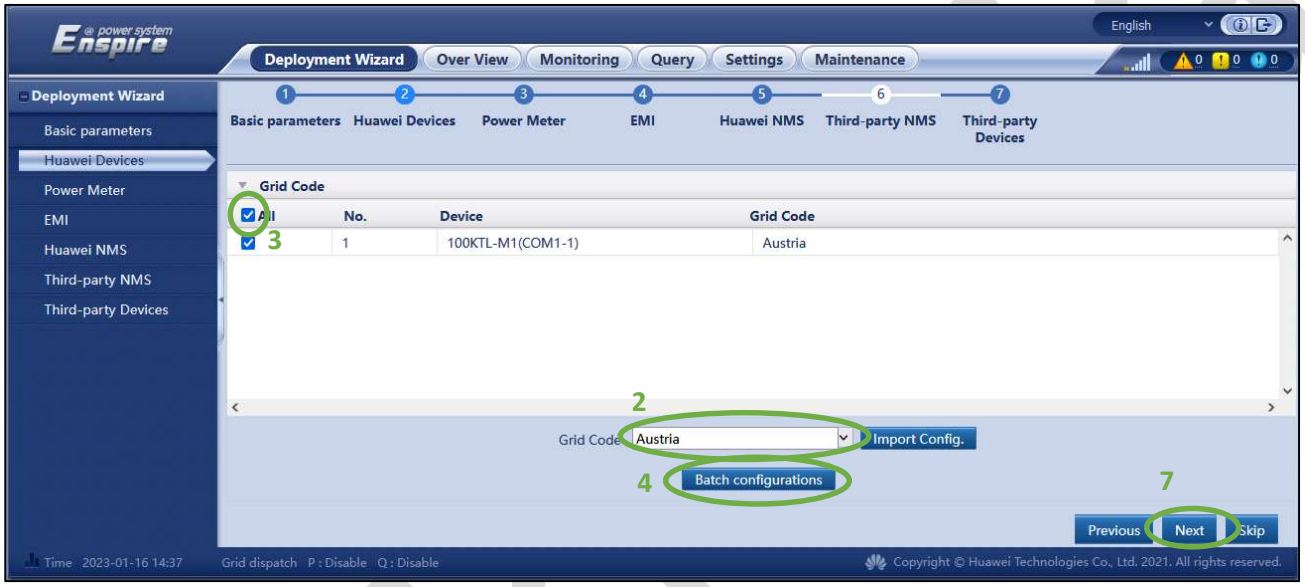

(4) Here the communication address of the inverters, and also the **device name** can be **adjusted.**

(5) Please confirm the entry by clicking on "**Next**".

## Step 6 - Deployment Wizard - Network Code Settings

(1) Clicking "**Confirm**" takes you to the **grid code settings** of the Huawei inverters.



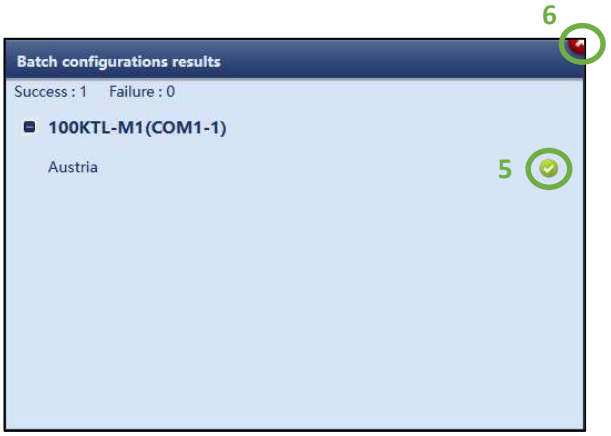

(2) Please select the correct **grid code from the list** of network codes.
If **no grid codes are listed** here, please check the **AC connection** of the inverters again.

(3) Then **mark** all inverters with **"All".**

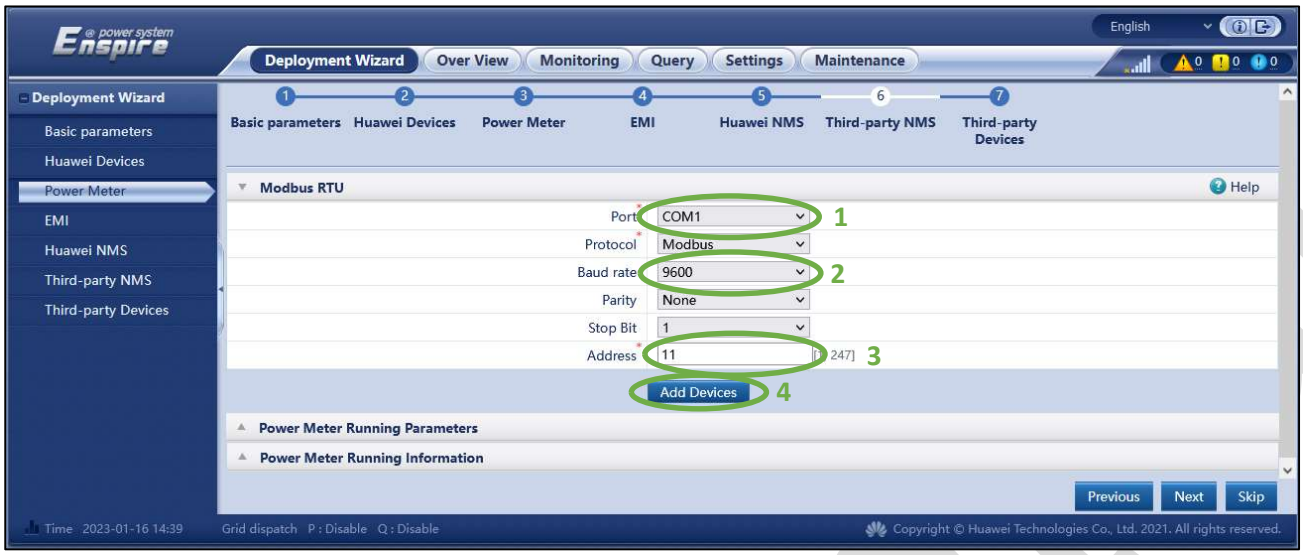
(4) To apply the **grid code** to all inverters, please click on **"Batch settings".** The inverters will do a quick restart.

(5) In the following window you can see whether the desired **grid code** has been applied.

(6) Close the window by **clicking on the red cross**, and then press "**Next**". (7).



## Step 7 - Deployment Wizard - Add Power Meter:




If you have installed a **power meter**, for **measuring consumption**, or for an **export limitation**, please connect it to a **free COM port**.

Since the SmartLogger offers communication with many **third party manufacturers devices**, it is always recommended to refer to the user **manual of the power meter** used.

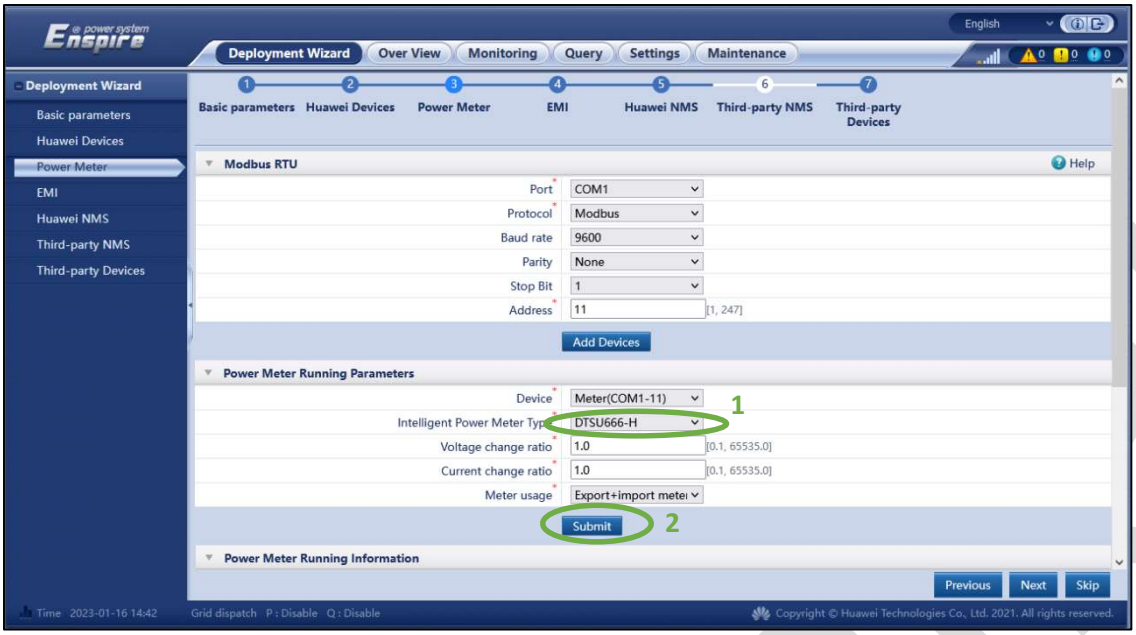
Please refer to the user **manual of the SmartLogger** to find out which **power meters are compatible** with the SmartLogger.

**(1)** Select the **COM port** to which the power meter has been connected to.

**(2)** Check the **baud rate** input and the **communication address**.

**(3)** If the Huawei **Smart Power Sensor DTSU-666-H** is used, please select the **communication address 11**.

**(4)** Confirm the entry with "**Add devices**" and then wait a **few seconds** until the window automatically **refreshes.**



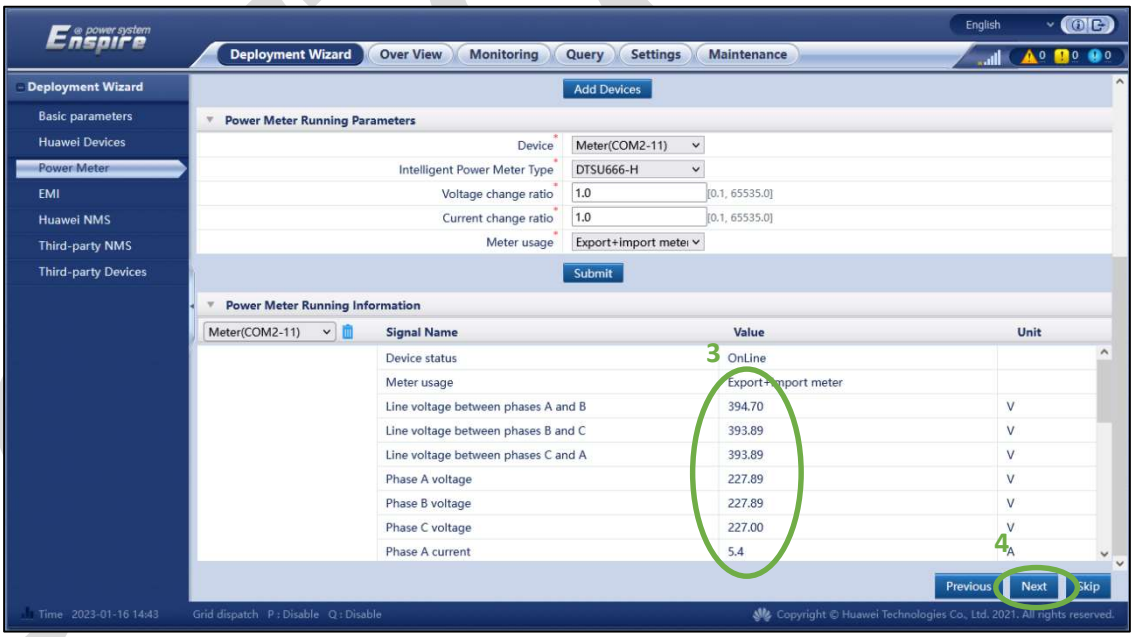

(1) Select the **power meter type** used.

**<u>Please always leave the voltage and current transformer ratio at 1.0!</u>**

If a **compatible** power meter from a **third-party manufacturer** is used, it must be configured correctly using the **manufacturer's operating instructions.**

If the Huawei **Smart Power Sensor DTSU-666-H** is used, **no further settings** need to be made.

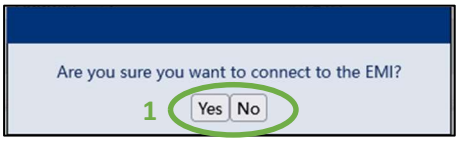
(2) Confirm the entry by clicking on "**Submit**".




(3) To be able to determine whether the **communication** with the power meter is **working properly**, please check the output **voltage and current values for correctness**.

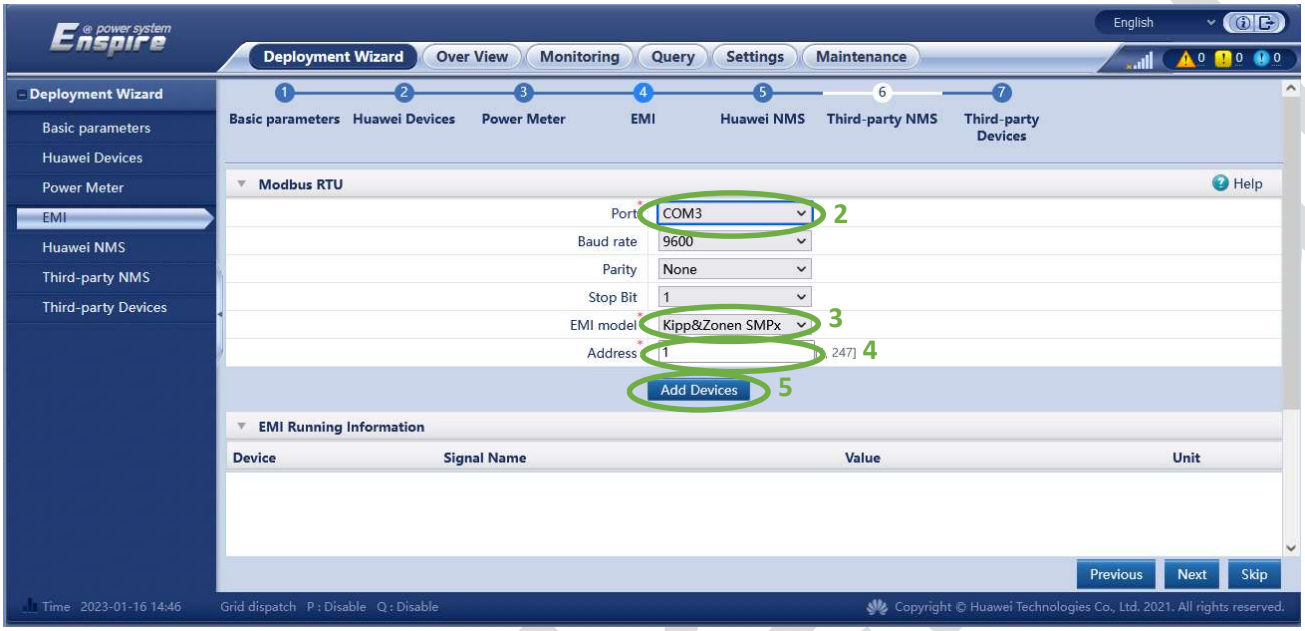
If **no values** are transmitted, please check the inputs and the communication wiring to the power meter again. A **CAT7 network cable is recommended**.

Step 8 - Deployment Wizard - Add EMI:




(1) You are asked if you want to install a **digital weather station (EMI).**

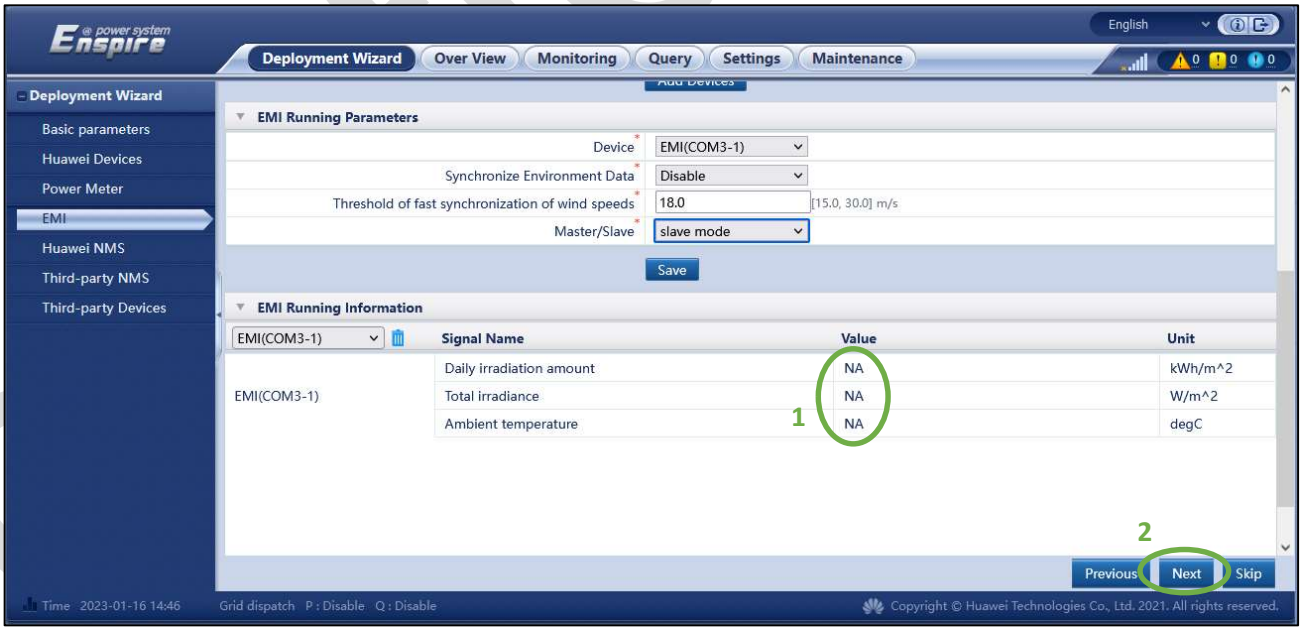
If this is not the case, please click on **"No" and skip step 8.**




(2) First select the correct **COM port**.

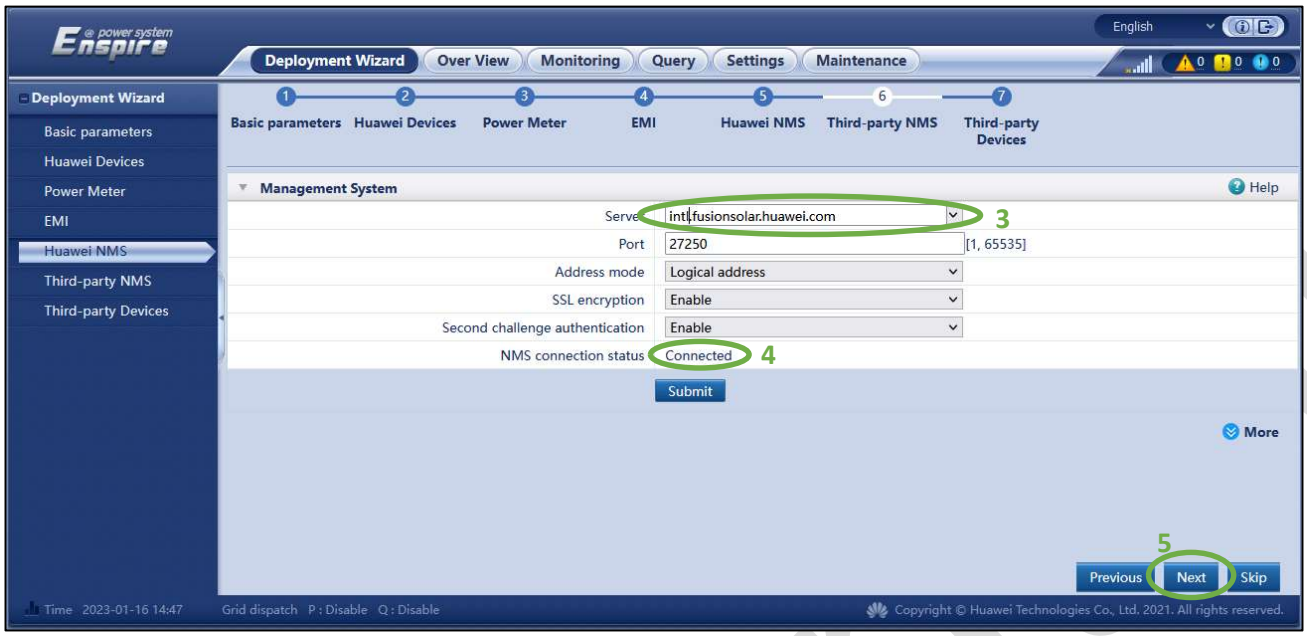
(3) Then select the **EMI model** used from the drop-down menu.
You can find all compatible **EMIs** in the SmartLogger manual.

(4) Select the correct **communication address** and confirm the details by clicking on "**Add device**." (5)




(1) Under the EMI operating information you can now see whether the weather station already provides correct values.
(2) Confirm your entry by clicking **„next“**.

## Step 9 - Deployment wizard - connection to the management system (FusionSolar):

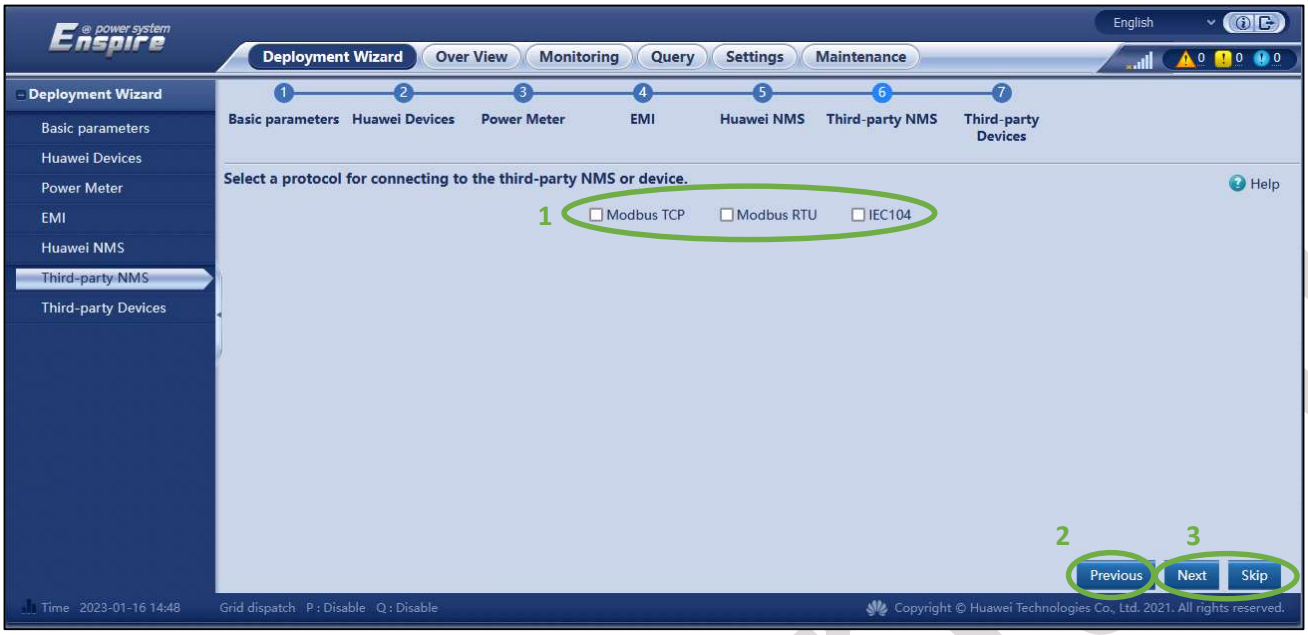



(3) Make sure that the server address **"intl.fusionsolar.huawei.com"** is typed in and confirm this entry with "**Submit**".

(4) You can also check under "**NMS connection status**" whether the SmartLogger **has been able to connect to the management system**.
If this is not the case, please observe the notes under step 4.

(5) Confirm the entries by clicking on "**Next**".

## Step 10 - Deployment Wizard - Connecting to a Third Party management system:



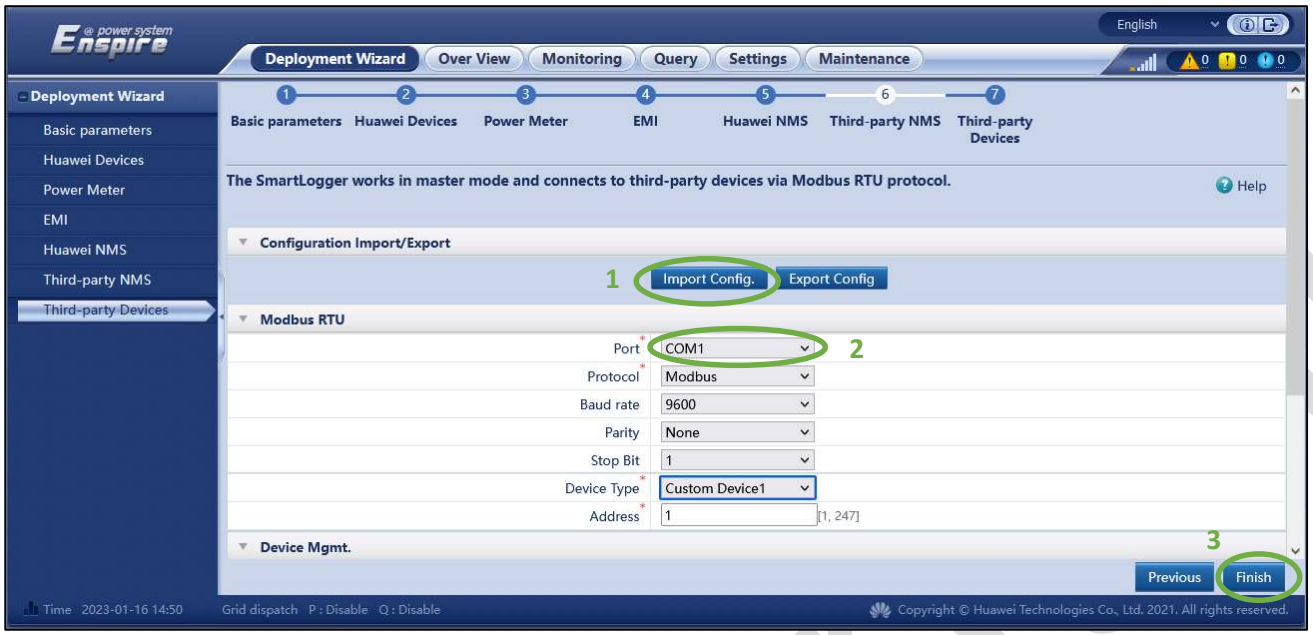

If a plant manager is used, it must be able to communicate with the SmartLogger via **Modbus TCP or Modbus RTU**.

(1) Please select the **desired communication protocol** and confirm it by clicking on "**Next**" (2).

(3) If this is **not required**, the point can also be **skipped**.

**Note:** These settings can also be configured **after the commissioning** under "Settings" -> "**Comm. parameters**".

## Step 11 - Deployment Wizard - Third Party Devices:




(1) If you have **other third-party devices** installed on one of the three **COM ports**, they can be added here.

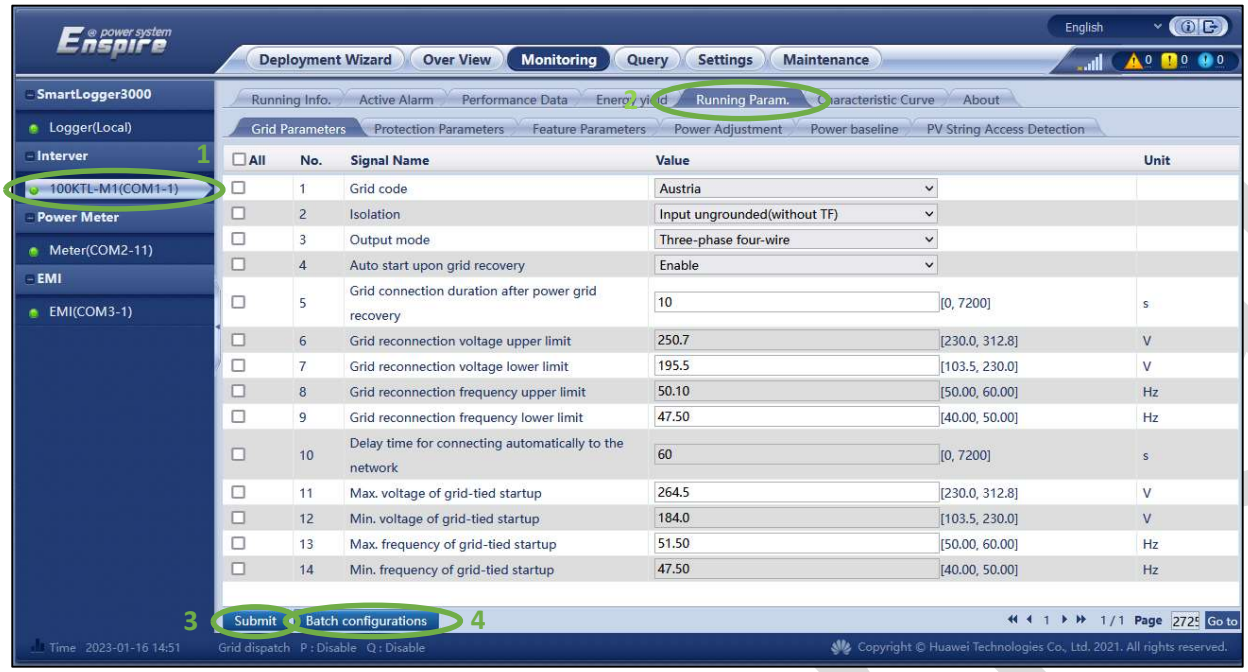
(2) For this purpose, either a **preset configuration file can be imported,** or all **register addresses can be entered manually** at the section "**Device management**".

(3) Confirm the entry with "**Finish**".

**The commissioning of the inverters is thus successfully completed!**

**Note**: For **any power adjustments**, such as a **export limitation**, **ripple control receivers, or reactive power control**, please refer to **step 13.**

## Step 12 - Change device settings:



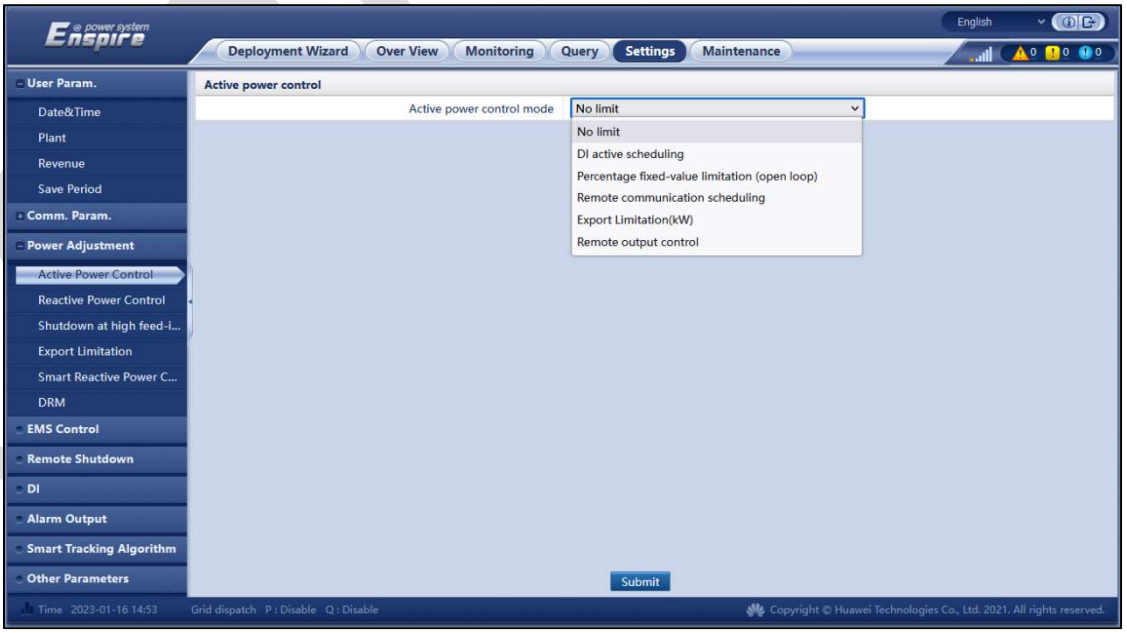

After successful commissioning, you will see the tab "**Monitoring**".
Here you can check whether all devices are working properly.

All possible **device-related settings** can now be set here by **clicking on the device** (1) on the left-hand side and then under "**Running parameters**" (2).

(3) Please note, that if you change settings, you also need to **apply the settings to the selected inverter**, by clicking on "**Submit**".

(4) With a click on "**Batch configurations**" you can **select multiple inverters** for the application of the settings.

## Step 13 - Power adjustments: Active power control:



Under "**Settings**" you will find the most important **power adjustment features** on the left side of the menu.

Under **"Active power control"** you will find all common control methods:

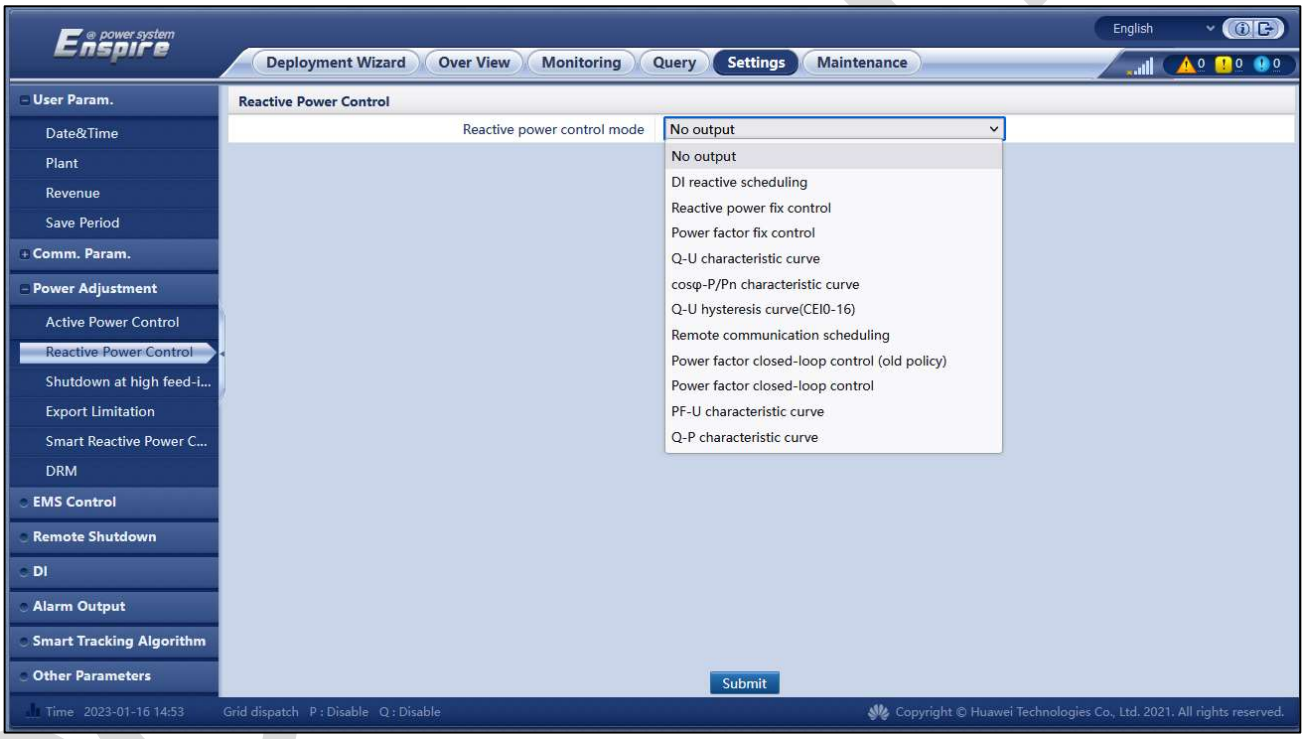
**DI active scheduling** = Configuration of a **ripple control receiver**, which is connected to the **DI inputs** of the SmartLogger.

**Remote communication planning** = This function must be enabled If a **plant manager** is used to **control** and **monitor** the plant. Furthermore, a communication method such as Modbus TCP must be activated.

**Export limitation** = Provided that a **compatible power meter** has been installed at the grid feed-in point and that it has been correctly **configured** an **export limitation** can be enabled here.

**Note**: The SmartLogger can only execute **one active power control mode at a time.**
If **more than one** active power control method is required by your grid operator, it is recommended to install a **plant manager**, which usually communicates with the SmartLogger via **Modbus TCP**.
A **Modbus interface register address list** can be requested from your **contact at SKE.**

Reactive power control:

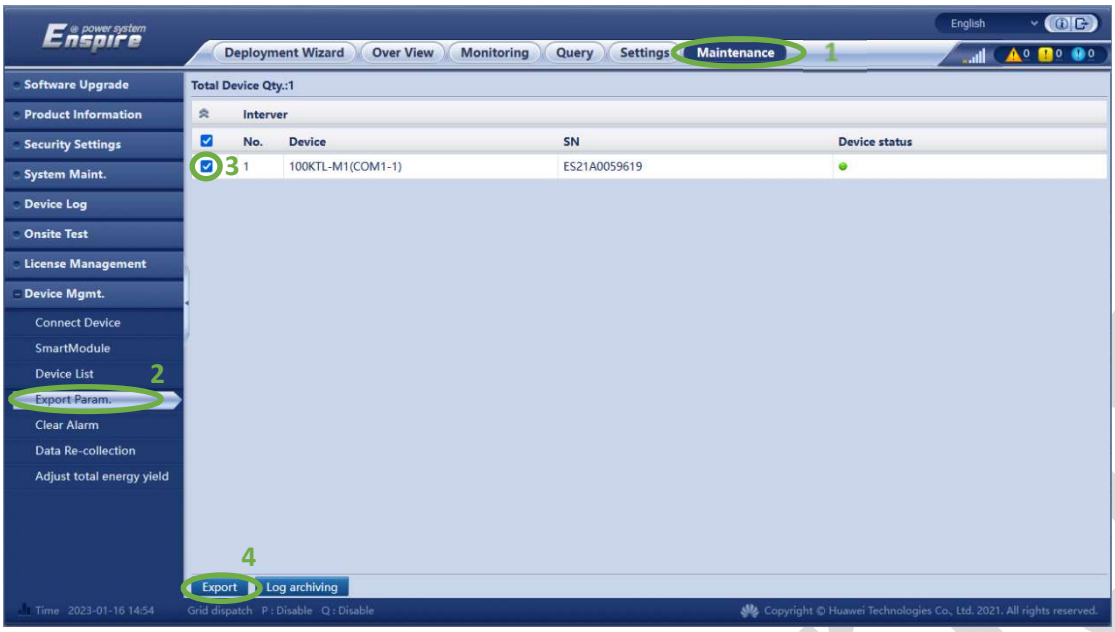



Under “power adjustment” you also find all **reactive power control methods**, which might be **requested by grid operators**.

Click on "**Submit**" to apply the set control method to the system.

**Note**: The **parameters and power adjustment methods** shown,
can also be adjusted **remotely, by using FusionSolar**.
The **pv-plant** must be **created** virtually in **FusionSolar after commissioning**

## Schritt 14 – Parameter-export for your grid operator:




(1) Under "**Maintenance" and "Export param.**“ (2) you have the possibility to **export all set parameters**.

(3) **Select all inverters** on the left-hand side and then click on "**Export**" (4).

The required **time** for the export **depends** on the number of inverters.

The **file** that can be downloaded afterwards is in the **.csv format** and can be **converted to a readable form** with a **spreadsheet software**.

**Note**: Please note that a **connection to FusionSolar is required to virtually create and monitor a plant.**

For more information, please refer to the manual "**Huawei Inverter FusionSolar Monitoring**".