XOLTA web app

User manual

About the web app

With the XOLTA web app, you can monitor your battery energy storage system, for example, how much energy comes from the solar panels, grid, and batteries. You can also view the battery charge level and operational status. Different charts show your history of energy consumption, purchasing of power from the grid, energy prices, energy production, and estimates of savings in costs and CO2.

To control when your battery energy storage system purchases, stores, and uses electricity, and at what times and prices, you can create one or more policies.

Get access to the web app

Before you can access the XOLTA web app, you need to follow the link from the e-mail you received during the installation of your **BESS**[1]. The link will take you to the web app where you are required to enter your e-mail address and create a password.

After creating yourself as user, you can access the web app at https://app.xolta.com/ on any type of device:

- Smartphone
- Tablet
- Laptop
- Desktop

> **Note**: For the best experience, XOLTA recommend using the Google Chrome browser.

[1] Battery energy storage system

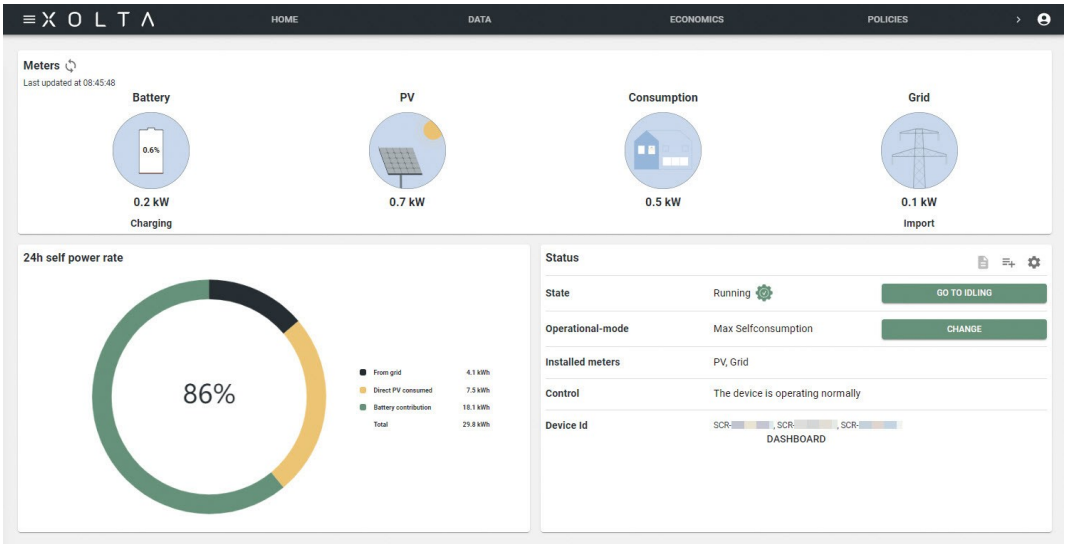
Tabs

Depending on how your system is set up by XOLTA or your XOLTA supplier, one or more of these areas are available to you:

- **HOME**
- **DATA**
- **ECONOMICS**
- **POLICIES**

The HOME tab

On a desktop computer, the **HOME** tab looks like this:



> **Note**: On a mobile device, the page looks slightly different, but the information available is the same.

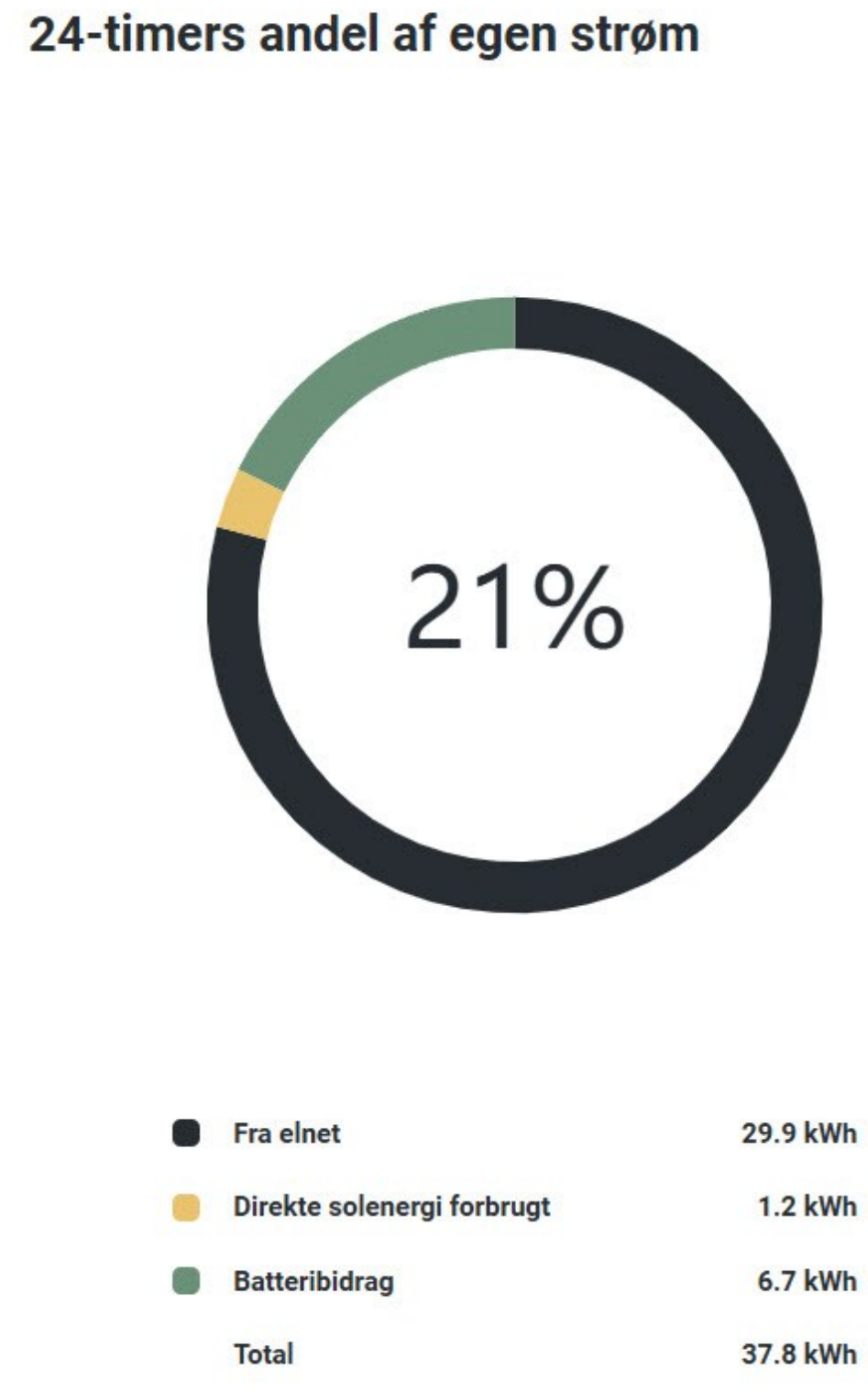
The **HOME** tab provides an overview of the battery performance in relation to the energy production and consumption at the site.

Consumption is determined using three power measurements: the battery inverter, the PV installation, and the grid connection point. The battery measurement reflects the **SoC**[1] and the current charge or discharge power. The PV measurement represents solar power production, as recorded by the installed smart meter. The grid measurement indicates the power being

[1] State of charge

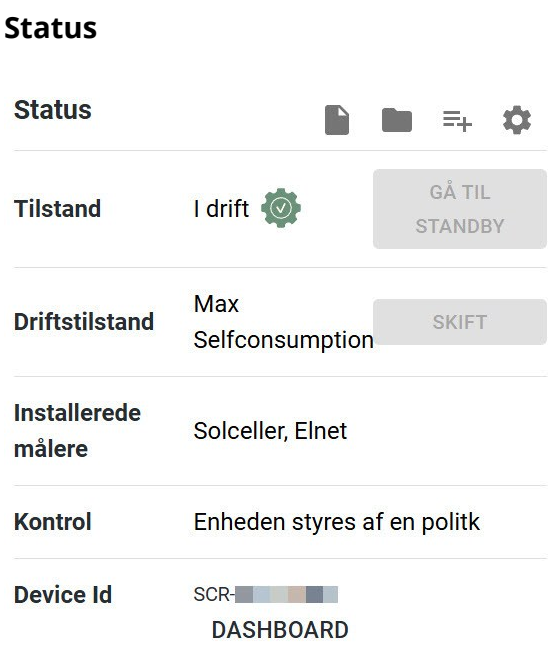
imported or exported, along with the actual power value. All measurements are averaged and updated every minute.

24h self-power rate



This figure shows your electricity consumption over the past 24 hours, broken down by energy sources: The grid, the battery, and solar panels. The percentage indicates how much of your

total consumption came from the battery and solar panels during this period. In the example, this was 21%.



In the **Status** section, you'll find these fields:

- **State** - shows the state of the BESS.
  - 

    The system is operating normally.
  - 

    The system is idle, which means that it operates in standby mode without charging or discharging. It's waiting to respond to operational commands or changes in grid conditions.
  - 

    An offline symbol is displayed when there is no internet connection available. The system will reconnect once connection is restored.
  - 

    If an error occurs, the system displays an error symbol.

- **Operational mode** - states the strategy the battery is following. In other words, how the system currently operates. For example, if it says *Max self-consumption*, the battery will charge when there is excess solar energy and discharge when the demand exceeds solar production.
- **Control**- states whether or not a policy is being used.
- **Device ID** - this is a unique number that identifies the BESS, also known as the SC or SCR number.

> **Note**: If you contact XOLTA support, remember to give the support agent the device ID.

The DATA tab

On the **DATA** tab, you can view a series of energy distribution graphs that illustrate your past electricity consumption, charging activity, grid purchases, and solar production. You can choose to display data for today or review previous days, weeks, and months. The information is updated every 10 minutes.

The *vertical axis* on the left represents power in kW, while the *right axis* shows the **SoC**[1] percentages.

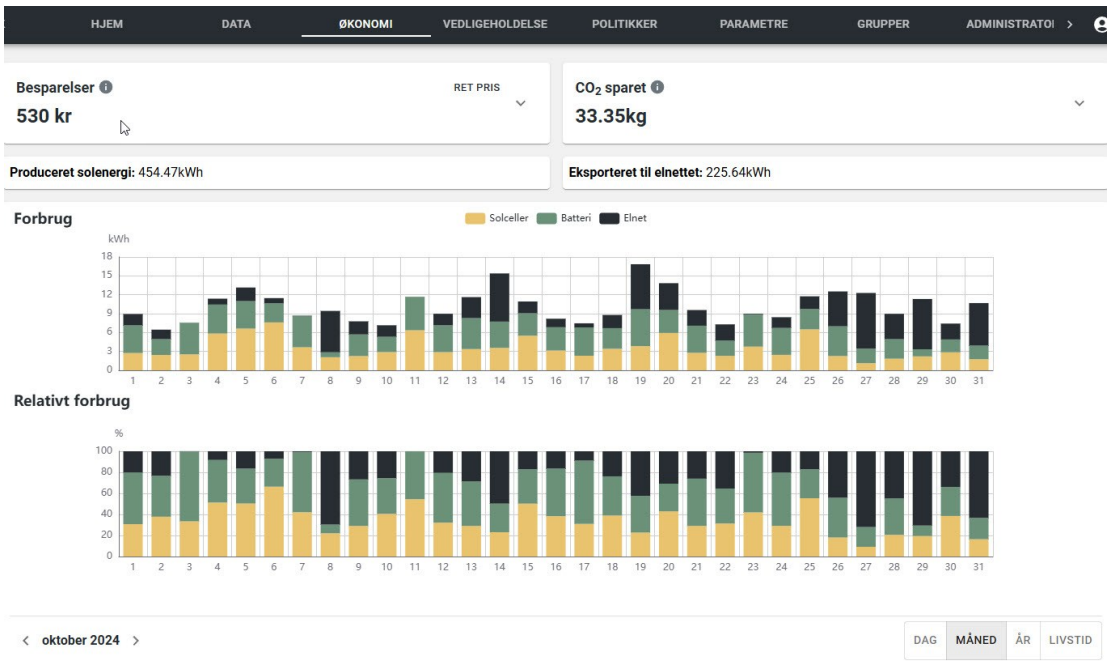
- Green - the charge status curve displays the battery's charge level as a percentage, shown on the right axis.

[1] State of charge

- Light blue - the battery inverter curve indicates when and how much the battery has charged or discharged. If the curve is above zero, the battery is discharging. If it is below zero, the battery is charging.
- Black - the grid curve shows the amount of electricity you have bought from or sold to the grid. A curve above zero means you purchased electricity, while a curve below zero means you sold electricity.
- Yellow - the solar panels curve displays the amount of electricity generated by your solar panels.
- Dark blue - the consumption curve indicates how much electricity you have used.

> **Tips**:
>
> - You can click on the color fields for each category to toggle the visibility of individual curves, allowing you to focus only on the data that matters to you.
> - To refresh historical data, click the refresh button in the upper-right corner of the chart.

The ECONOMICS tab



On the **ECONOMICS** tab, you can explore your electricity consumption and its sources (solar panels, battery, or the grid). The data can be viewed for a specific day, week, month, or year, and you can scroll back in time.

Savings - estimated absolute savings in monetary terms and CO2 emissions are shown at the top of the screen. CO2 savings are calculated using a value of 150g/kWh.

> **Warning**: This value is currently inaccurate because of a bug in the system.

Consumption - the top bar charts display energy **consumption** in kWh.

Relative consumption - the second graph shows the relative consumption as percentages, indicating how much of your electricity came from the grid, solar panels, or battery.

> **Note**: If you need precise electricity consumption details, these are available at elo-verblik.dk.

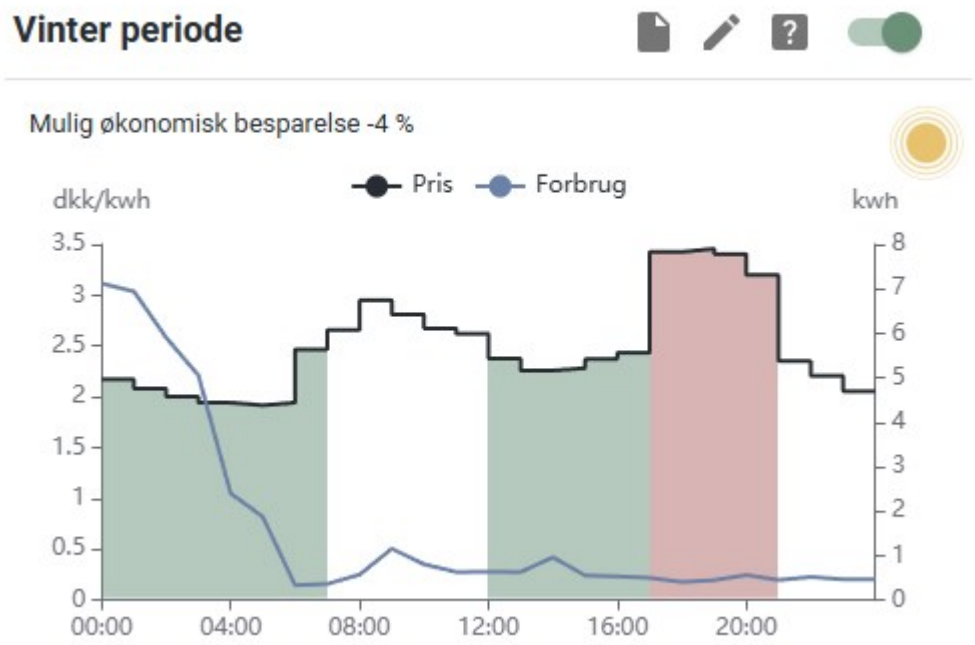
The POLICIES tab

On the **POLICIES** tab, you can create the policies that determine when your battery energy storage system purchases, stores, and uses electricity, and at what times and prices.

A policy is presented visually as a chart that predicts the actions the policy will take on a specific day based on the weather, spot prices, tariffs, taxes, and historical consumption. Certain user-defined settings will also affect the policy.

Upper-right corner - the app displays a sun or cloud icon, indicating the expected weather. This helps determine whether the battery should charge from the grid.

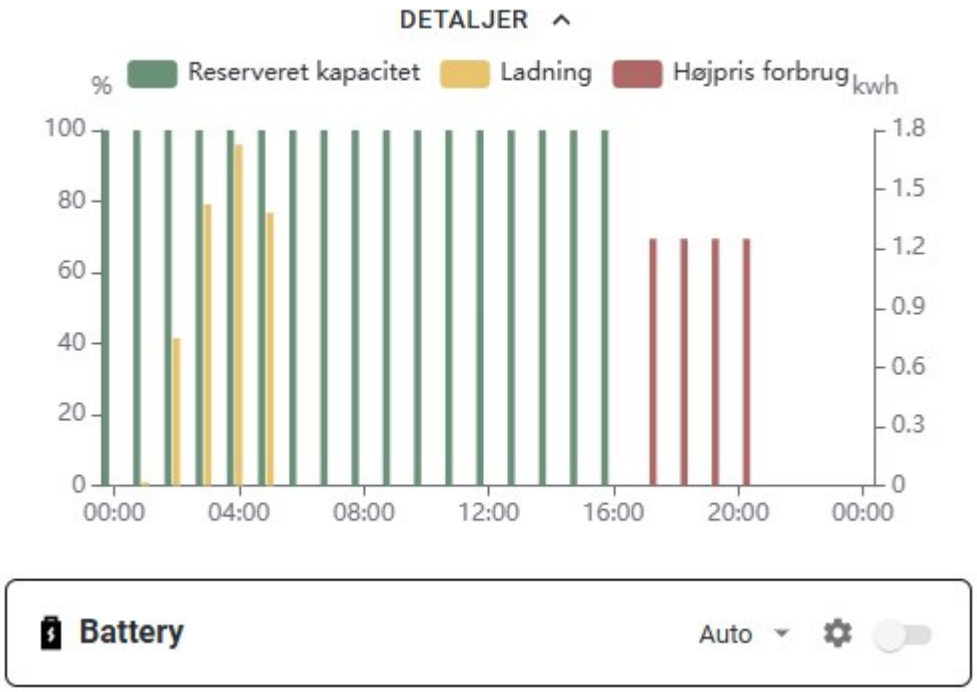
> **Warning**: The estimate of your potential savings in the **upper-left corner** is currently inaccurate because of a bug in the system.



Explanation of the chart:

- **Black line**: Displays daily grid electricity prices, including VAT and taxes. The price varies depending on the configuration of the policy. For example, if the **Collect tariffs automatically** check box is selected, the value is the sum of the spot price, tariffs, fees, and taxes.
- **Blue line**: Shows your average historical electricity consumption hour by hour for the last five weekdays or the last five weekend days, depending on when the calculation is made - on a weekday or a weekend.
- **Green shading**: Highlights what the system considers to be low-price periods. Because it's typically feasible to charge from the grid when the electricity is cheap, these periods have charging potential.
- **Red shading**: Based on your configuration, the red shading marks the times of day when purchasing power from the grid is most expensive. Your battery will attempt to discharge in this period.

The Details section



Under **Details**, you can view the day's planned charging and consumption schedule. This shows how the battery is expected to operate if the policy is active.

> **Note**: These calculations are performed around midnight, so the policy does not function during this brief period.

Explanation of the chart:

- **Green bars**: Indicate the percentage of the battery's capacity reserved for later use during high-price periods. The high prices are shown with red bars. If the battery charges beyond the reserved capacity, it may discharge back to the reserved level.
- **Red bars**: Reflect the historical high-price consumption, based on the average usage for the same weekday over the past five weeks.
- **Yellow bars**: Show when the battery will charge from the grid, always during the cheapest periods. For example, this might occur at night in winter or midday in summer.

> **Note**: Regardless of the policy settings, the battery will always charge if the weather is favorable, surplus solar energy is available, and the battery has remaining capacity.

The USERS tab

On the **USERS** tab, you can give others access to the web app. To do this, you must add the user by providing an e-mail and password. You can also give time-limited access.

Policies (explained)

A policy is a set of rules that determines when your battery energy storage system purchases, stores, and uses electricity, and at what times and prices. By combining weather forecasts, your historical consumption data, and your electricity provider's pricing, the app calculates the most cost-effective times to purchase and store electricity for use during high-price periods.

Because the weather conditions and the amount of sunshine varies depending on the season, it's often useful to have one policy for summer and one for winter. By default, policies are configured to charge when the prices are lowest and discharge when prices are highest.

If you don't have a policy

If you don't have an active policy, the household consumes energy from the solar panels first, then from he batteries, and finally from the grid. Any surplus energy is first used to charge the battery, and any additional surplus is sold back to the grid.

If you have multiple policies

Even if you have multiple policies, only one policy can be active per site. This means that if you activate a policy, the one that is currently active gets deactivated.

Create a policy

You can create one or more policies to help your **BESS**[1] know when to buy, store, and use electricity, and at what times and prices.

Steps:

1. Open your browser, go to the web address https://app.xolta.com/, and log in using the e-mail and password you specified when creating your web app user account.
2. On the page that appears, click the **POLICIES** tab.
3. Click the circular button with a plus in it.

[1] Battery energy storage system

4. In the window that appears, fill out the fields as described here:

- **Name** - enter a descriptive name, for example, *Summer*.
- **DSO**[1] - select the electricity distribution company that transports electricity to your household through the grid. The DSO determines the grid tariffs that you can see on your energy bill.

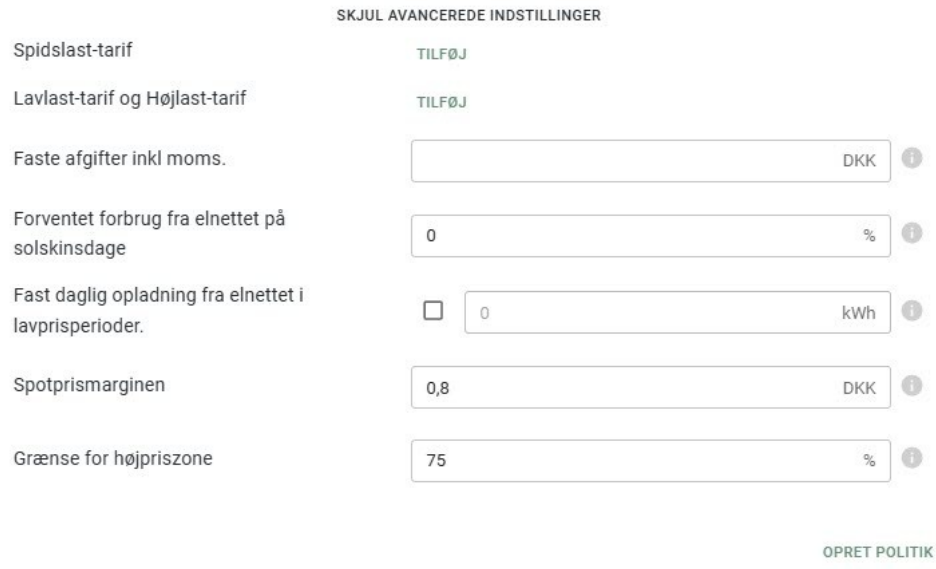
[1]Short for "distribution system operator", also known as "electricity distribution company". This is the company responsible for operating, maintaining, and developing the electrical distribution network, ensuring a reliable supply of electricity to end-users, and facilitating the integration of renewable energy sources and other distributed energy resources.

> **Tip**: If you don't know your DSO, click the **Find your DSO** link. It opens a page where you can search for DSO based on your geographical address.

- **Area** - this field was pre-filled when you selected the DSO.
- **Tariff model** - select the type of electricity agreement you have with your DSO:
  - *Tariff with spot prices* - XOLTA recommend using this model because it allows you to take advantage of low price periods and provides flexibility. This is helpful, for example, if you have an EV charger or a heatpump.
  - *Fixed tariff* and *Fixed tariff with charge* - these models are less common but are typically used by consumers who prioritize prize stability over the advantages of variable prizes.
- **Collect tariffs automatically** - select this check box to enable the system to automatically retrieve and update electricity prices for you. Otherwise, you need to manually enter these prices and the time periods for peak load, off-peak load, and high-load.

> **Important**: XOLTA strongly recommend using the automatic option. In doing so, we get the latest prices and tariffs for you on a daily basis from Energinet.

- **Show advanced settings** - click to access the advanced settings. XOLTA recommend that you read the description of these fields carefully before using them.



- **Peak tariff** and **Low/high tariff** - if you *didn't* select the **Collect tariffs automatically** check box, you need to manually enter the peak, low, and high tariffs.
- **Price offset** - if you *didn't* select the **Collect tariffs automatically** check box, you need to manually enter the price offset. This covers electricity tax, transmission fees, and potentially other fixed costs.
- **Expected grid consumption on sunny days** - specify the percentage of battery charge you want to draw from the grid on sunny days. You can use this setting to compensate for lower solar production. This may be useful during periods of the year when there isn't enough sunlight to fully charge your battery. By entering a value in this field, you tell the system to supplement your solar panels with power from the grid.

  > **Note**:
  >
  > - If you set the percentage to *0*, the battery will not charge from the grid, assuming the solar panels can meet the demand.
  > - The more solar panels you have, the less you need to charge from grid.

- **Fixed daily grid charge** - select this check box to specify a fixed daily amount of electricity in kWh to charge from the grid during low-price periods. This electricity can then be used during high-price periods. This setting is especially useful if you anticipate higher energy consumption during specific high-price periods, such as during the Christmas holidays.

  > **Note**: The fixed amount will be used instead of your historical consumption. For example, if your historical consumption during a high-price period is 10 kWh, but you set the fixed amount to *6 kWh*, you will only charge 6 kWh.

  > **Important**: Limit the use of this feature to periods of high energy consumption, and remember to disable the feature when you're back to normal. To do this, clear the **Fixed daily grid charge** check box.

- **Spot price margin** - leave the default value, or enter an amount in DKK to help the system determine when it's profitable to buy power from the grid. If the price difference between the average high price and average low price is higher than the spot price margin, then it's profitable to buy.

Example: Let's say you've entered the spot price margin *0,8* DKK. The high price average is 2, and the average low price average is 1. The price difference is 2-1 = 1. Because 1 is higher than the spot price margin 0,8, it's profitable to buy from the grid.

- **Spot high price threshold** - leave the default value, or enter a percentage to tell the system when prices are considered high. For example, if you enter 80 %, the system calculates 80 % of the difference between the highest and lowest price and adds it to the lowest price. The system considers anything above that value as within the high price range. This is when the policy chart turns red, and your household starts consuming power from the solar panels and then from the battery, in that order.

  Example: If the lowest price is 3 DKK and the highest price is 5 DKK, then 80% of the difference is (5 - 3 DKK) × 80 % = 4.60 DKK. The system considers anything above 4.60 DKK to be a high price.

5. When you filled in the required fields, click **Create policy**.

> **Note**: If you change the settings of a policy, the change takes effect almost immediately, but likely you will only notice the effect the day after.

XOLTA

About XOLTA

XOLTA is a Danish company specializing in the development and production of advanced battery systems for energy storage. The solutions are designed for both residential households and businesses, enabling efficient solar energy storage and energy consumption optimization. XOLTA's products promote energy efficiency, reduce dependency on the power grid, and support a sustainable future.

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