

Application Note – Revenue Calculation in the Monitoring Portal

Introduction

Revenue calculation is part of the general performance analysis of a PV site. The revenue value is an estimation of the expected revenues and may be used as an indication of the system's ROI (return on investment).

The revenue calculation is based on time periods and their corresponding rates and on periodic reporting from the SolarEdge inverter. This data may be inconsistent with the utility bill in cases of continuous communication issues, hourly rate changes, or differences in the accuracy of the different meters.

The SolarEdge monitoring portal displays the revenue in the Site dashboard and in the Reports.

It is common for specific sites to have rates defined by contract, therefore rates are set only at the site level. SolarEdge monitoring supports two models of revenue calculation: flat rate and time-of-use.. You can configure the revenue calculation to be based on flat rates or time-of-use plans at site level in the site administration. The default for new sites is "No revenue calculation", meaning revenue will not be displayed.

This document describes how to configure the revenue calculation for a site in the SolarEdge monitoring portal.

Flat Rate Calculation

The flat rate calculation is a simple revenue model in which the rate is fixed per kWh regardless of production time. In this model the revenue for a given period is calculated as follows:

$$\text{Rate per kWh} \times \text{produced kWh in given period}$$

If the rate changes during the selected period, the revenue calculation is done for each period separately and summed.

Configuring Flat Rate Calculation in the Monitoring Portal

You can choose flat rate calculation during site creation, or configure it when the site already exists.

→ To configure flat rate revenue calculation during site creation:

1. In the Site Details window, select **Flat rate** in the Revenue calculation field and enter the rate.
2. The currency is selected by default according to the site location; change if required.

The screenshot shows the 'Create New Site' interface with two tabs: '1 Site Details' (active) and '2 Site Equipment'. The 'Site Details' section includes the following fields:

- Monitored devices: *
- Optimizers & Inverters (dropdown)
- Site name: *
- Peak power: * (input field, unit: kWp)
- Revenue calculation: * (dropdown menu with 'Flat rate' selected)
- Flat Rate (€/kWh): * (input field, unit: ILS ₪)
- Installation Date: * (calendar icon)
- Associated to account: * (dropdown menu with 'Solaredge' selected)
- System physical mapping: (dropdown menu with 'Select a system physical ma' visible)
- Notes: (text area)

On the right side, there is a 'Site Image' section with a placeholder image and a 'Select a Site Image' button.

Figure 1: Configuring flat rate calculation during site creation

→ To configure Flat rate revenue calculation for an existing site:



NOTE

The access to site administration is limited to account manager or account engineer user types.

1. Click the **Admin** icon.
2. Click the **Revenue** tab.
3. In the Revenue calculation section select **Flat rate**. A table of rates and their start date (effective from) is displayed.

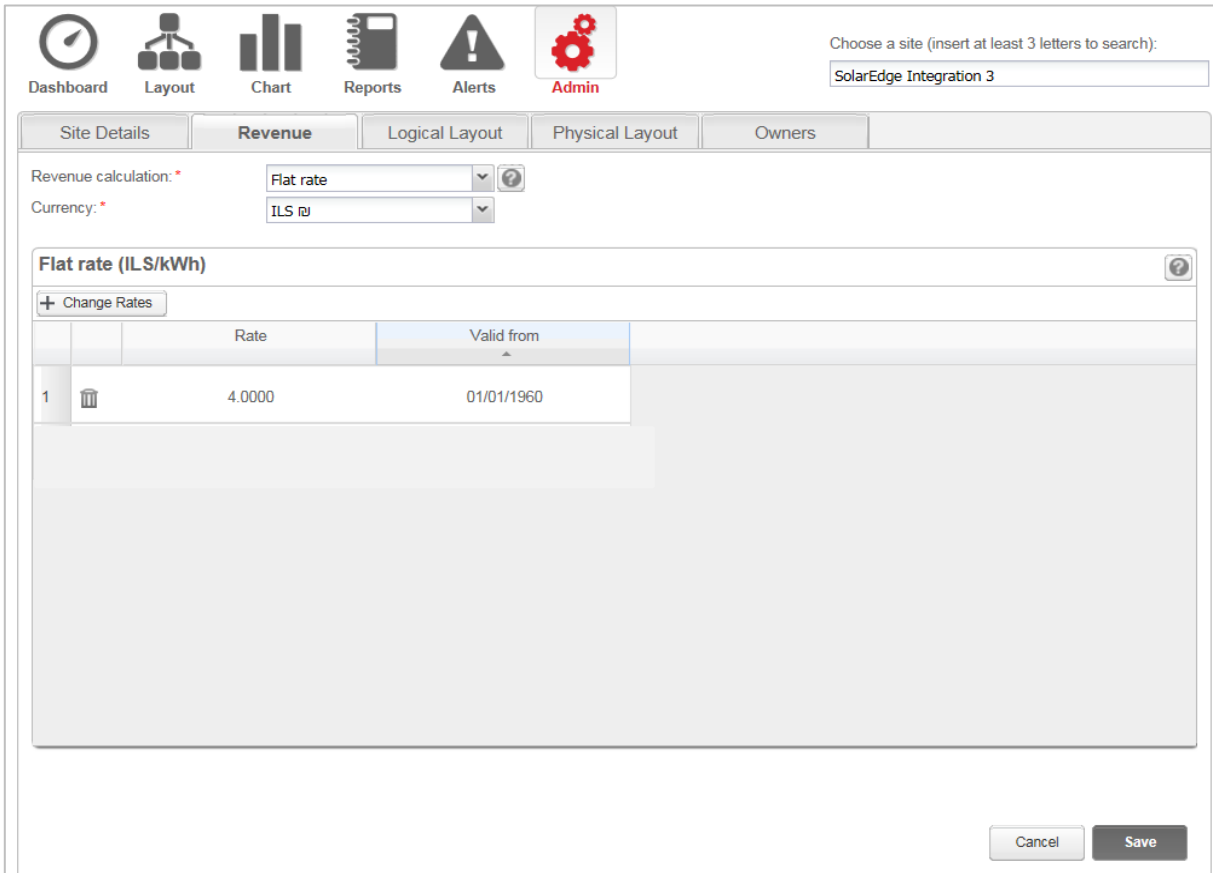


Figure 2: The Revenue tab in Admin

4. In the rates table specify the rates needed for revenue calculation and their effective date.
5. If the rate per kWh changes, click **Change Rates**. The following window is displayed:

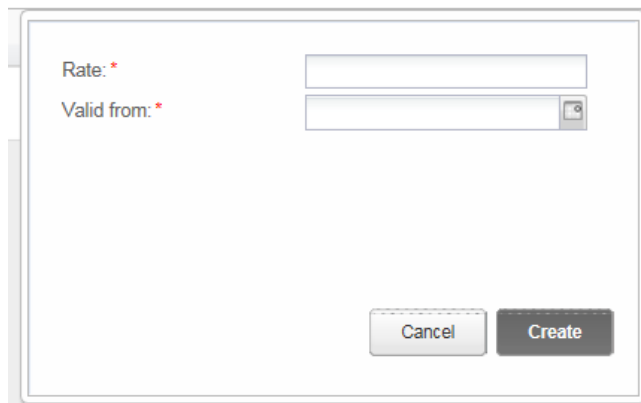


Figure 3: Adding a rate

6. Enter the new rate and the effective date. Click **Create**. A new entry is added to the rates table, and the revenue will be calculated according to the new rate from its start date.
7. Click **Save**.

Time-of-Use Rates Calculation

Time-of-use rate programs are offered in various countries to promote energy consumption when the electric demand is low (off-peak), and lower consumption when the demand is high (on-peak). Such use habits help the utility level the consumption and decrease the peak power production required during high demand periods. This ensures greater power reliability.

Time-of-use Overview

Time-of-use programs define rates that vary periodically based on power demand. For example:

- **Seasonal:** Summer and winter rates are often higher as more cooling or heating is required during these seasons than in spring and fall.
- **Weekly:** Weekday rates are often higher than weekend or holiday rates, as the overall energy demand increases during weekdays as a result of industrial and commercial consumption.
- **Daily:** In cooler regions more heating is required during the dark hours which results in higher rates, while in warm climate regions, rates are often lower during the night as heating is less required.

Periods and Rates

In many cases, time-of-use programs define three rate periods, which are illustrated below:

- **Peak:** The electricity demand is high
- **Shoulder/Part-Peak:** The electricity demand is moderate
- **Off-peak:** The electricity demand is low

Rates are set for each period separately. In some cases, these rates may also vary depending on the season and/or market segment (residential, commercial, etc.).

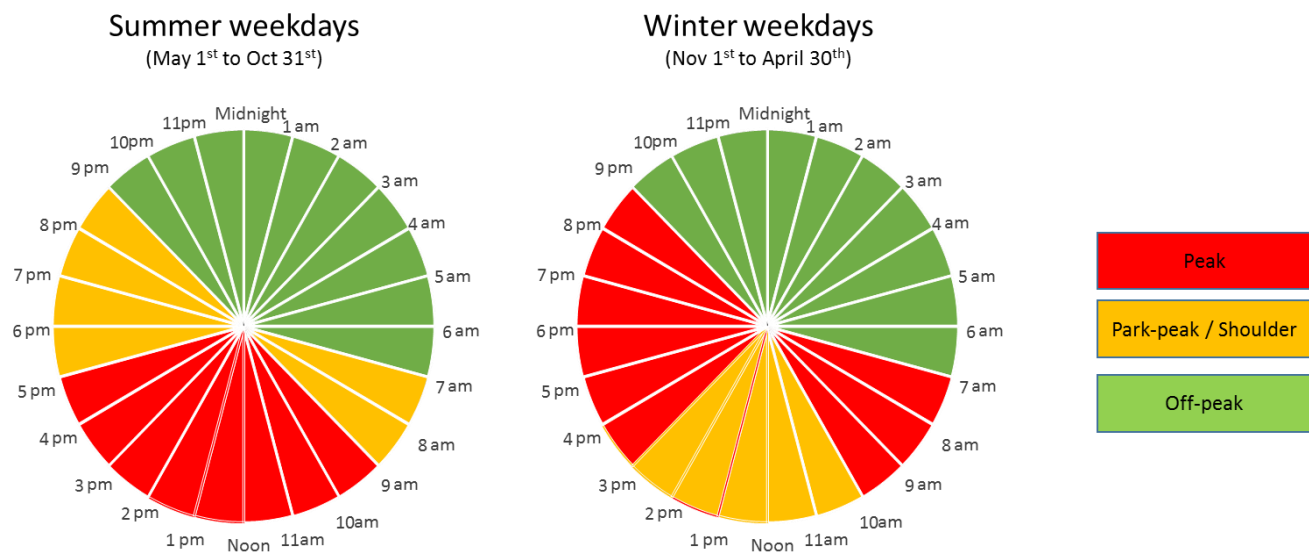



Figure 4: Time-of-use program example

Configuring Time-of-use Rates in the Monitoring Portal

You can configure the revenue calculation to be based on time-of-use plans at site level in the site administration. This configuration is available only for an existing site, not at the site creation stage. That is, if you want to use this plan, first create a site and then change its revenue calculation plan as described below.

→ To configure Time-of-use revenue calculation for an existing site:

1. Click the **Admin** icon.
2. Click the **Revenue** tab.

3. In the Revenue calculation section select **Time-of-use rate**.
4. The currency is selected by default according to the site location; change if required.
5. From the list of Time-of-use calendars select the calendar that matches your site. The calendar is a matrix representing the peak, part-peak and off-peak periods. For detailed information about the calendar, click the  icon and open the plan file (.xls format). An empty table of rates and start date (effective from) is displayed.



NOTE

Calendars shown in **bold** (displayed first on sort order) are the ones associated with the site country.

If you cannot find a calendar that matches your region, contact SolarEdge support for adding a calendar (support@solaredge.com).

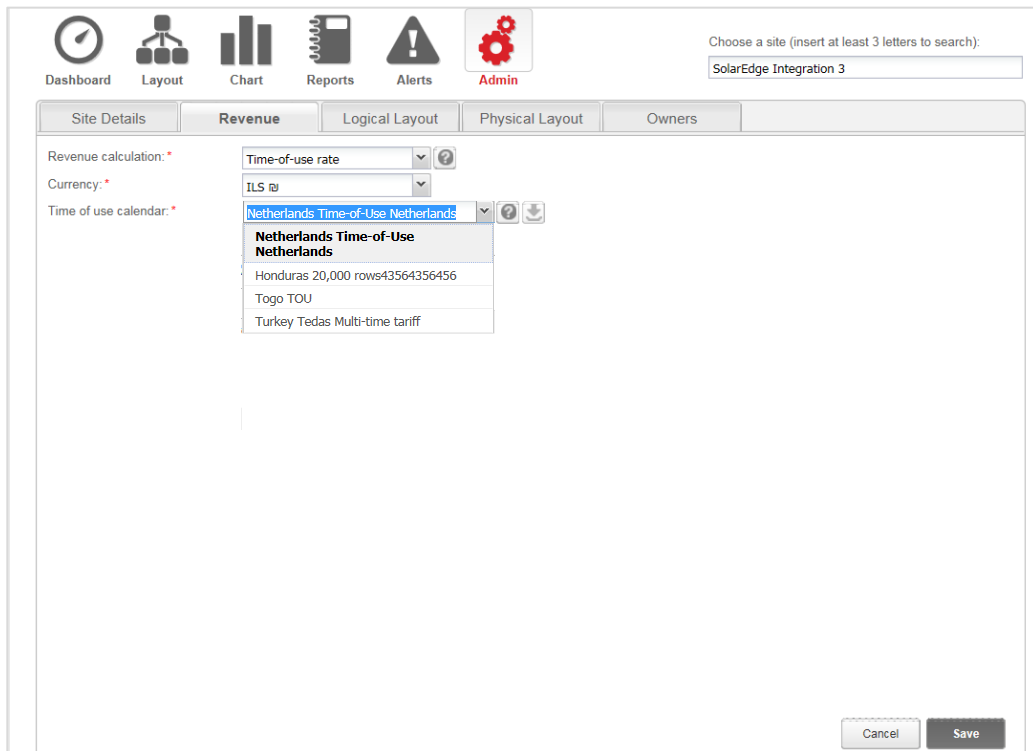


Figure 5: Selecting Time-of-use calendars

6. Click **Change Rates** to specify the rates for the site. The following window is displayed:

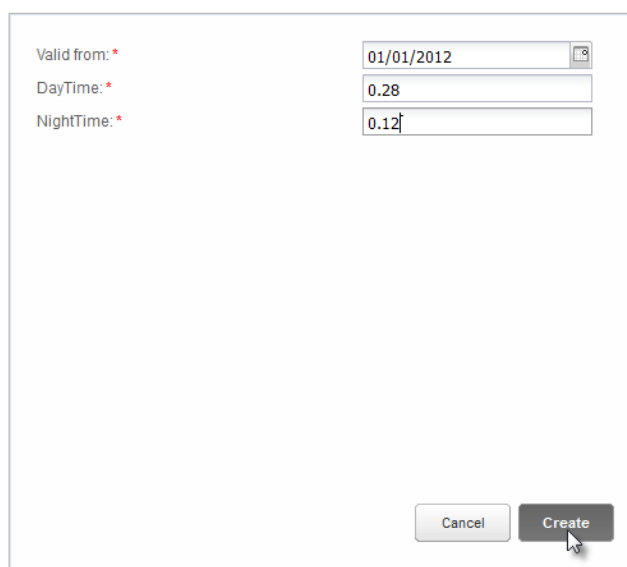


Figure 6: Adding a rate

7. Specify the effective start date.

8. Enter the rates for each period.
9. Click **Create** to add the rates to the table. A new entry is added to the rates table, and the revenue will be calculated according to the new rate during the effective period.
10. Click **Save**.
11. If rates change, repeat the above steps to add new rates.

Transitioning from Flat rate to Time-of-use

If the site pricing model has changed from flat rates to time-of-use rates, follow the steps below to ensure accurate revenue calculation. In this procedure you enter the flat rate values that are used until the transition day into the Time-of-use table. This ensures that the revenue will be calculated according to flat rates until the day of transition to the Time-of-use plan.

→ To configure transition from flat rates to time-of-use rates

1. Before changing the revenue calculation to Time-of use, prepare a list of the site's flat rate(s) which will be reentered as detailed below.
2. Follow steps 1- 5 in Configuring Time-of-use Rates in the Monitoring Portal above to set up the Time-of-use revenue calculation.
3. Add a new rates entry for each record of the flat rate pricing (effective date and rate), as follows:
 - a. Click **Change Rate**.
 - b. In the opened window, enter:
 - The effective date as recorded in step 1 above.
 - In all fields, enter *the same rate*.

The screenshot shows the SolarEdge Monitoring Portal interface. At the top, there are navigation icons for Dashboard, Layout, Chart, Reports, Alerts, and Admin. A search bar for sites is visible with 'Kemi' entered. The main content area is divided into tabs: Site Details, Revenue, Logical Layout, Physical Layout, and Owners. The 'Revenue' tab is active, showing 'Revenue calculation:' set to 'Time-of-use rate', 'Currency:' as 'LKR R', and 'Time of use calendar:' as 'Nether'. Below this is a table titled 'Time of use rates (LKR Rs/kW)' with a 'Change Rates' button. The table contains one row with a trash icon and the date '12/02/2014'. A modal dialog box titled 'Energy Rates (Rs/kWh):' is open, containing three input fields: 'Valid from:' with the date '01/01/2010', 'DayTime:' with the value '0.22', and 'NightTime:' with the value '0.22'. At the bottom of the dialog are 'Cancel' and 'Create' buttons.

Figure 7: Entering flat rate values when transitioning to Time-of-use rates

- c. Repeat steps a-b for the next recorded rates.

4. Add a new entry to the table with *different* rates for the time-of-use rates calculation, and an effective date. The table will display the same rates for periods when flat rates were used, and different rates for periods when Time-of-use rates are/will be used.

The screenshot shows the 'Revenue' tab in the SolarEdge software. At the top, there are tabs for 'Site Details', 'Revenue', 'Logical Layout', 'Physical Layout', and 'Owners'. Below these, there are configuration options: 'Revenue calculation:' set to 'Time-of-use rate', 'Currency:' set to 'LKR Rs', and 'Time of use calendar:' set to 'Netherlands Time-of-Use Netherlands'. The main part of the interface is a table titled 'Time of use rates (EUR €/kWh)'. The table has columns for 'Valid from', 'DayTime', and 'NightTime'. There are three rows of data. Annotations with arrows point to the 'NightTime' values in the first and second rows.

	Valid from	DayTime	NightTime
1	01/01/2010	0.2200	0.2200
2	01/01/2012	0.2800	0.1200
3	01/01/2014	0.3100	0.1400

Annotations:

- Flat rate: rates are the same for all durations (points to the 0.2200 value in the first row's NightTime column)
- Time-of-use rates: a different rate for each duration (points to the 0.1200 value in the second row's NightTime column)

Buttons: 'Cancel' and 'Save' are located at the bottom right of the table area.

Figure 8: Flat rate values and Time-of-use rates for transitioning between plans

5. Click **Save**. When the effective date for transition to Time-of-use plan arrives, the revenue calculation will be changed according to the configured setup.