

Configuring Device Control with the Monitoring App

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Introduction

The SolarEdge Smart Energy Management solutions allow increasing the self-consumption of a site. One method used for this purpose is controlling the usage (consumption) of loads using home automation Device Control products.

These products divert power to a load according to pre-configured schedules, using the following modes (refer to *Appendix A – Scheduling Mode Examples* for examples of the two operating modes):

- **Schedule** - The device turns on and off at times set by the user for the user's convenience, regardless of available PV power.
- **Smart Save** - The device (typically a boiler or water pump) is controlled automatically to maximize self-consumption. Grid power is used only if PV power is insufficient to meet the user's "ready by" time. For example, to heat water for 2 hours and have hot water by 18:00, set **Total Time** to 2 hours and **Ready by** to 18:00. The boiler may work before 16:00 if there is available PV power, but in any case you are guaranteed to have hot water by 18:00.

The schedules can be reconfigured at any time and devices can be manually switched ON and OFF.

Device Control configuration can be done locally through the SolarEdge inverter or remotely, via the SolarEdge monitoring app. This document describes how to configure the system using the monitoring portal or Device Control app.



NOTE

Device Control configuration should be done after the Device Control products are installed and communicating with the inverter.



NOTE

The images contained in this document are for illustrative purposes only and may vary depending on cellular phone models and operating system

For detailed installation instructions of the system components (and for local configuration instructions), refer to the following installation guides:

- **Immersion Heater Controller:** <http://www.solaredge.com/sites/default/files/se-device-control-immersion-heater-controller-installation-guide.pdf>
- **Plug-In Socket with Metering:** <http://www.solaredge.com/sites/default/files/se-device-control-plugin-socket-installation-guide.pdf>
- **Switch with Metering:** <http://www.solaredge.com/sites/default/files/se-device-control-switch-installation-guide.pdf>
- **Dry Contact Switch:** <http://www.solaredge.com/sites/default/files/se-device-control-dry-contact-switch-installation-guide.pdf>
- **Device Control ZigBee Module:** <http://www.solaredge.com/sites/default/files/se-device-control-zigbee-module-installation-guide.pdf>

Device Information

When Device Control products are installed, an additional tab appears in the monitoring app. When selecting the tab, a list of communicating devices is displayed:

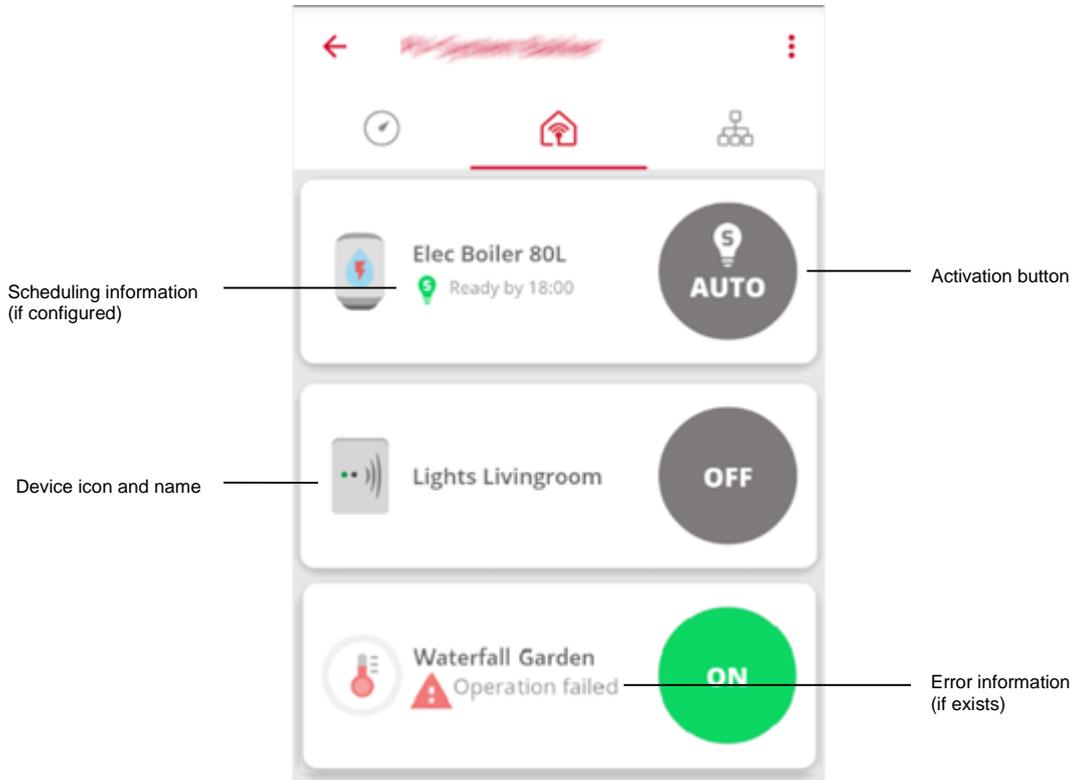


Figure 1: Device list

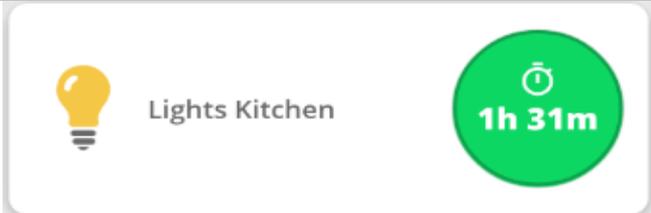
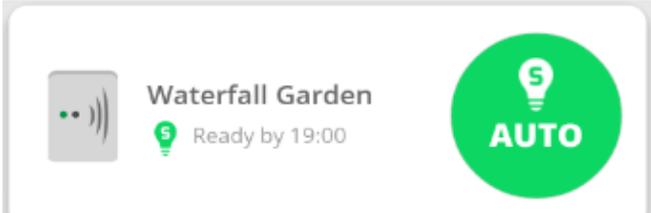
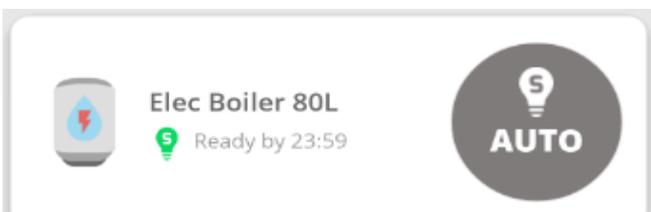
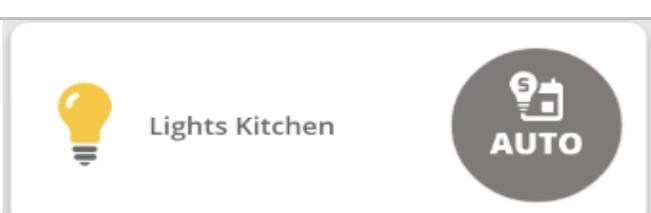


NOTE

If a device is not displayed check its connections and repeat device association as described in the device manual.

Activation Button

The activation button shows the current activation mode and status:

Device Entry	Status and Mode	Description
	OFF	Device is OFF and remains OFF until its mode is manually changed
	ON	Device is ON and remains ON until its mode is manually changed
	ON with timer	Device is ON, and turns OFF according to a preset timer
	Auto ON, Schedule	Device is ON and is operating according to Schedule mode
	Auto ON/OFF, Smart Save	Device is operating according to Smart Save mode: Green icon – device is ON Gray icon – device is OFF
		
	Auto OFF, Schedule and Smart Save	Device is operating according to Schedule and Smart Save modes and is now OFF

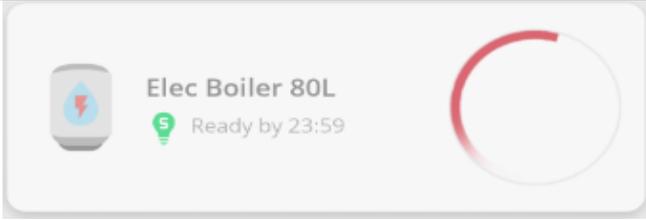
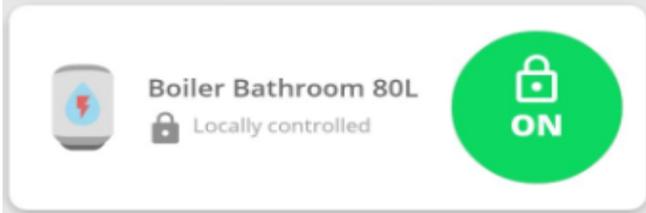
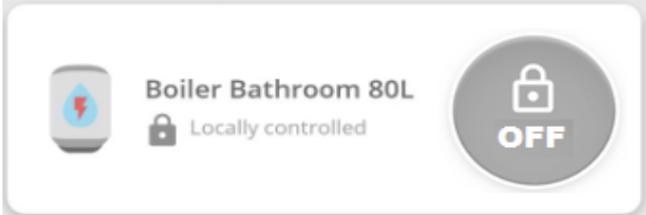
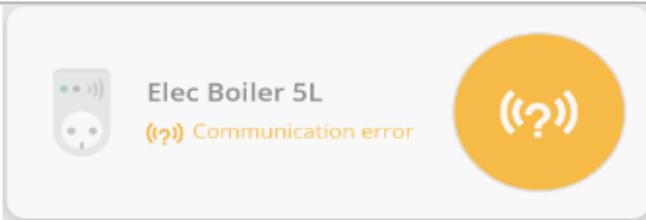
Device Entry	Status and Mode	Description
	Pending	The selected mode is being applied to the device
	ON/OFF, Locally controlled	Device is controlled manually from the device and not from the app; Local control ends after an hour, or if cancelled manually from the device within an hour Green icon – device is ON Gray icon – device is OFF Note: Local control is available for the immersion heater only
		
	No communication	There is no communication with the device or its status is undetermined. Check the device connections and repeat device association as described in the device manual.

Table 1: Activation button options

Device Dashboard

Tap the device entry anywhere other than the activation button to open the device dashboard, which shows additional device information:

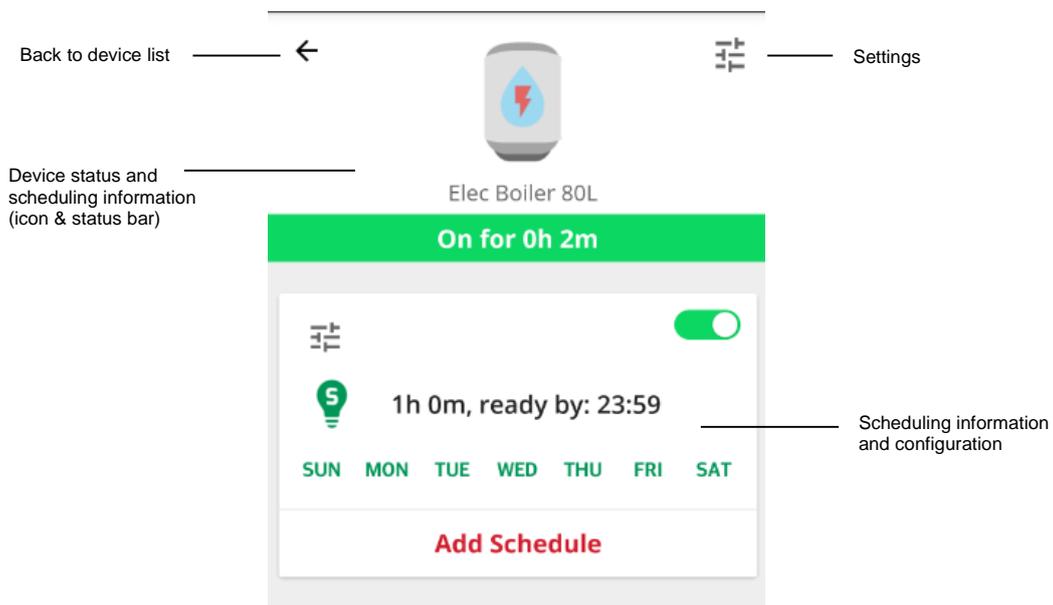


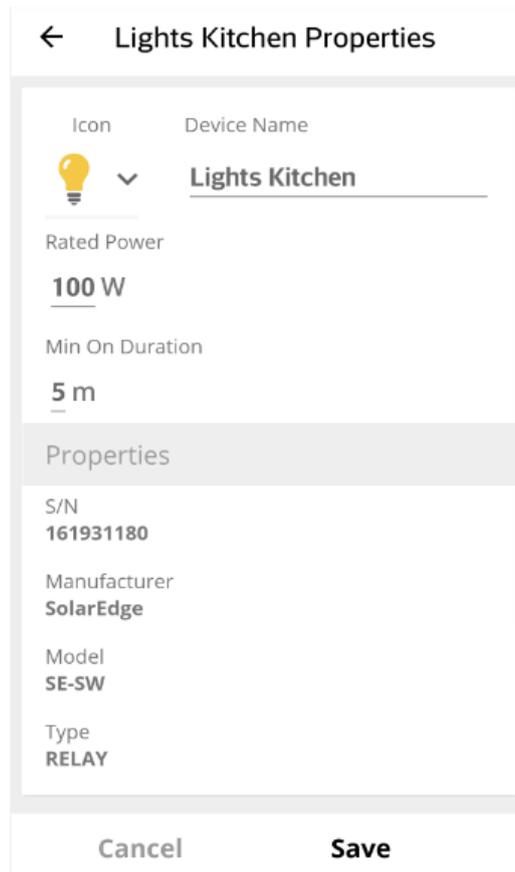
Figure 2: Device dashboard

Settings

Tap the Settings icon  to edit the device properties, and then tap **Save**. The following properties can be edited:

- Icon
- Name, up to 50 characters
- Power, 0-100,000W
- Minimum ON time, 0-1,440 minutes

The device serial number, manufacturer, model and type are read from the device and cannot be modified.



← Lights Kitchen Properties

Icon Device Name

  Lights Kitchen

Rated Power

100 W

Min On Duration

5 m

Properties

S/N
161931180

Manufacturer
SolarEdge

Model
SE-SW

Type
RELAY

Cancel Save

Figure 3: Settings screen

Status and Scheduling Information

The device icon and status bar show the current device status and scheduling information:

Icon and Status Bar	Status and Mode	Description
<p>←  ⋮</p> <p>Elec Boiler 80L</p> <p>On for 0h 2m</p>	ON without timer	Device is ON The elapsed time since it turned ON is displayed
<p>←  ⋮</p> <p>Elec Boiler 5L</p> <p>On for 0h 1m (2h 0m left)</p>	ON with timer	Device is ON, and turns OFF according to a preset timer The elapsed time since it turned ON and the remaining time until it will turn OFF are displayed
<p>←  ⋮</p> <p>Lights Kitchen</p> <p>On for 5h 16m (17:00 - 23:00)</p>	Auto ON, Schedule	Device is ON and is operating according to Schedule mode The elapsed time since it turned ON and the schedule are displayed
<p>←  ⋮</p> <p>Lights Kitchen</p> <p>ON (Ready by 23:00)</p>	Auto ON, Smart Save	Device is ON and is operating according to Smart Save mode: The Ready by time is displayed (the latest time for the requested energy to be diverted to the load)
<p>←  ⋮</p> <p>Elec Boiler 5L</p> <p>STAND BY</p>	Auto OFF, Schedule or Smart Save	Device is OFF and is operating according to Schedule or Smart Save mode
<p>←  ⋮</p> <p>Waterfall Garden</p> <p>OFF</p>	OFF	Device is OFF

Table 2: Activation information

Scheduling Information and Configuration

Schedules can be configured, viewed and edited from the device dashboard.

To configure a new schedule, tap the lower part of the screen and configure a schedule as described in *Configuring Devices* on page 7. Up to four schedules can be configured per device.

→ To enable/disable/delete a schedule:

- Use the toggle button  near the schedule name to enable or disable a schedule. Disabled schedules appear grayed out.
- Tap **DELETE** to delete a schedule. Deleting all device schedule will turn the device OFF.

→ To edit a schedule:

1. If the schedule is disabled, enable it with the toggle button  near the schedule name.
2. Tap the schedule's Settings icon . You can edit the following:
 - For **Schedule** mode: start and end times; days when the schedule should be applied
 - For **Smart Save** mode: total and ready by times; days when the schedule should be applied

For details on how to edit these settings refer to *Configuring Devices* on page 7.

Configuring Devices

This section describes how to configure the device operation mode: ON, OFF or AUTO (**Schedule** and **Smart Save** modes).

1. Tap the activation button. The button expands and shows the activation options; the current activation mode is darker:

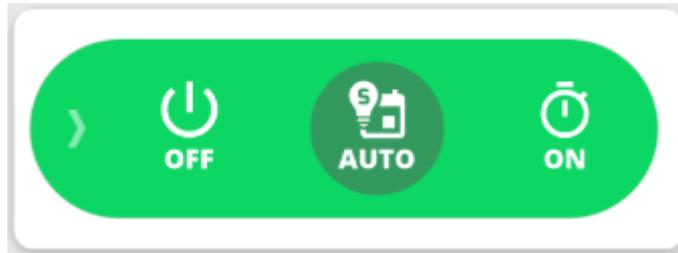


Figure 4: Activation mode



NOTE

You can tap the arrow on the left or tap anywhere on the screen outside the button to collapse the button without making a selection.

2. Tap **OFF** to turn the device OFF. The device remains OFF until its mode is manually changed.

→ To configure ON mode:

1. Tap ON. The following window is displayed:

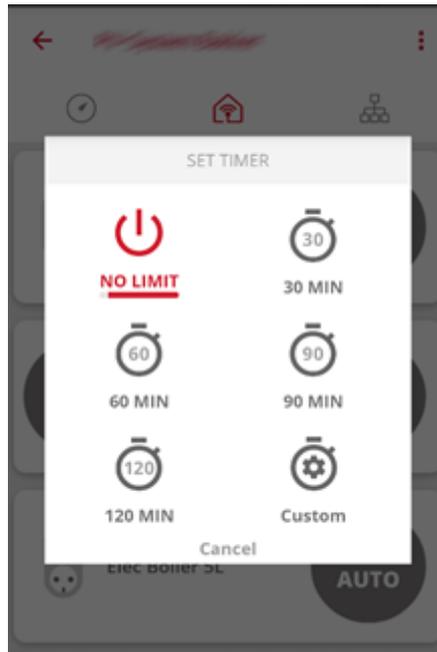


Figure 5: ON mode configuration

2. Select the required ON mode:

- **NO LIMIT** (default): Device turns ON and remains ON until its mode is manually changed
- **30/60/90/120 MIN**: Device turns ON and remains ON for the selected period. At the end of the period:
 - If the device was initially set to AUTO it will either remain ON or be turned OFF, according to the configured schedule
 - In any other case the device will be turned OFF
- **Custom**: A timer (hh:mm) is displayed. Configure the required time frame and tap **SET TIMER**. Device turns ON and remains ON for the configured period.

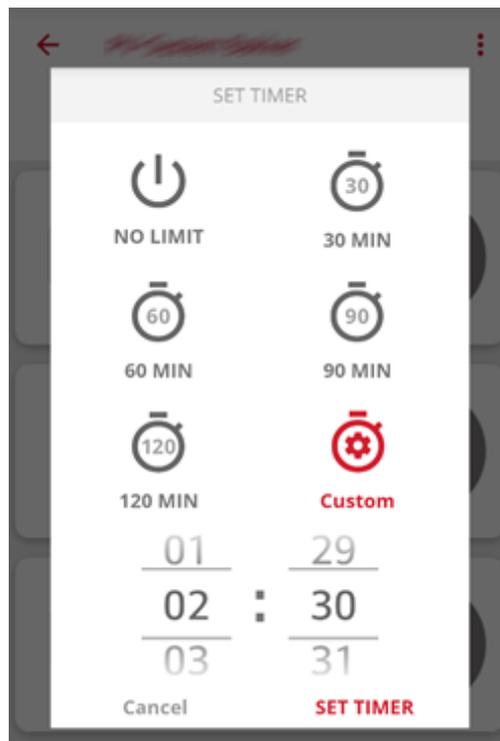


Figure 6: Custom timer configuration

→ To configure **AUTO** mode:

1. Tap **AUTO**. If **Schedule** mode or **Smart Save** mode are configured the device switches to **AUTO**, otherwise the following is displayed:

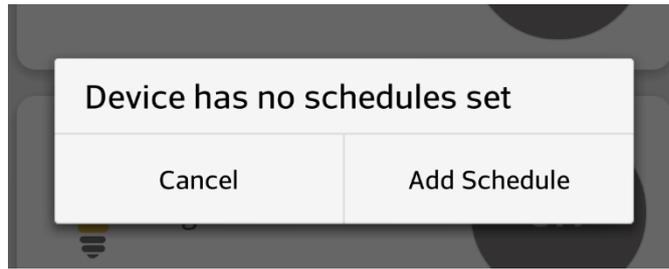


Figure 7: Adding a schedule



NOTE

You can add a schedule also by tapping the device window anywhere but the activation button.

2. Tap **Add Schedule**. The following is displayed:

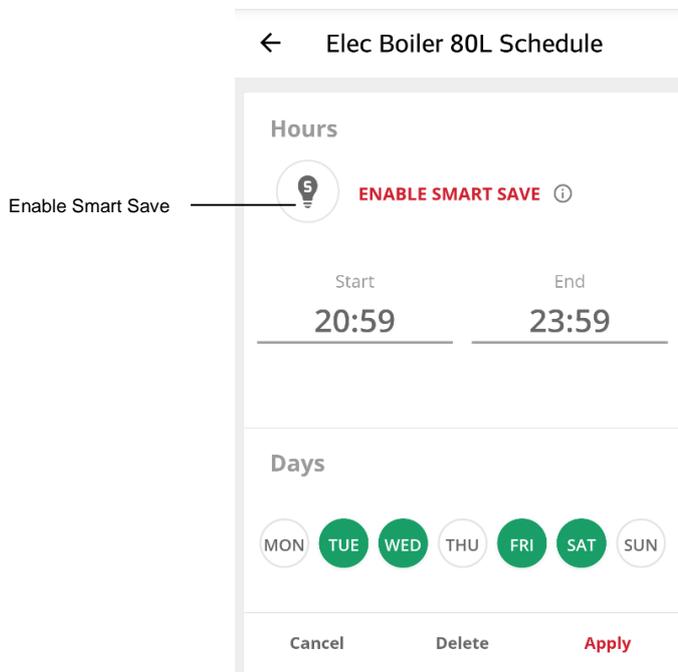


Figure 8: Configuring a schedule

3. Configure one of the following modes:

■ **Schedule:**

- a. Tap the start time. A clock is displayed. Configure the required start time.
- b. Repeat for the end time. If the end time is earlier than the start time the ON period will end the following day. For example if a start time of 23:00 and an end time of 19:00 were configured, the device will turn ON that day at 23:00 and turn OFF the following day at 19:00.
- c. Select the days when the schedule should be applied (default: all days): tap a day to select/deselect.
- d. Tap **Apply**. The system will automatically switch to **AUTO** mode.

■ **Smart Save:**

- a. Tap the **Smart Save** button . The following is displayed:



Figure 9: Configuring Smart Save mode

- b. Tap the total time. A timer (hh:mm) is displayed. Configure the minimum accumulated time the load must remain on. Currently this also sets the maximum accumulated time the load can be on throughout the day – in Q1 2017 this will be changed so it will configure the minimum accumulated time only.
 - c. Tap the ready by time. A clock is displayed. Configure the latest time for the requested energy to be diverted to the load.
 - d. Select the days when the schedule should be applied (default: all days): tap a day to select/deselect.
 - e. Tap **Apply**. The system will automatically switch to AUTO mode.
4. You can configure up to four schedules per device. The device will be ON according to each of the schedules.



NOTE

In case of overlapping **Schedule** and **Smart Save** modes, the **Schedule** mode takes precedence.

Appendix A – Scheduling Mode Examples

The following figure illustrates a typical example of device operation with **Smart Save** and **Schedule** modes. Note that in **Smart Save** mode, the consumption is reduced by taking advantage of excess PV earlier in the day.

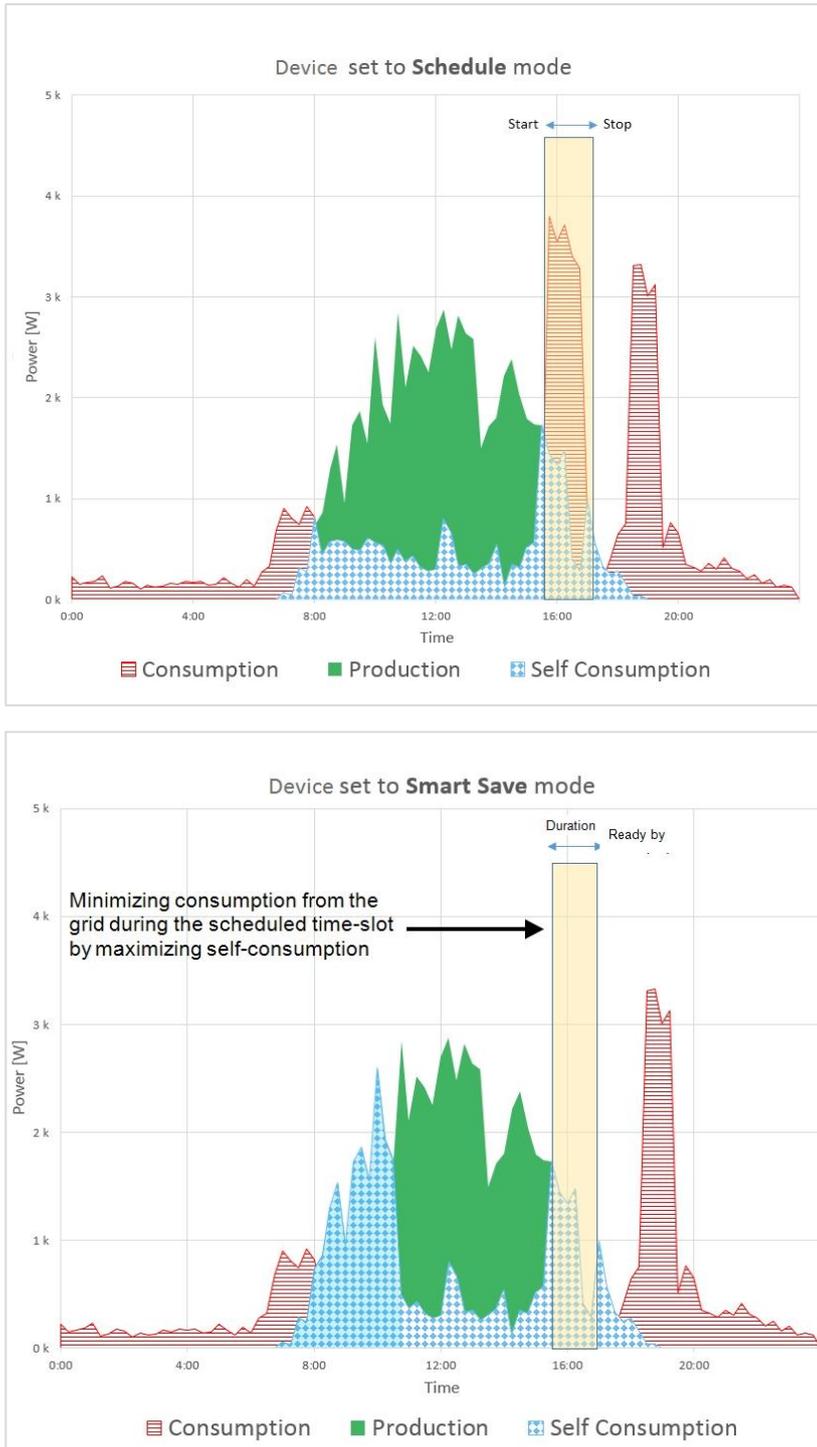


Figure 10: Examples of device operation