

Understanding energy management options

What is energy management?

Energy management is the process of controlling how you use the energy a solar PV system generates and how and when energy is imported from, or exported to the grid. Instead of simply generating solar power and using it as it comes, you can match usage to the times when electricity is cheapest or most abundant.

In our article on [Why customer proposals matter in solar PV](#), we explained how proposals should give customers clarity about tariffs and savings. Energy management is the practical next step — it's how you turn those forecasts into real-world outcomes.

Why is it beneficial?

- **Lower bills:** Shift usage to off-peak times or use stored solar energy to reduce reliance on expensive grid electricity.
- **Better ROI:** Batteries and solar systems deliver more value when paired with smart scheduling.
- **Grid independence:** Managing when you import and export power increases self-sufficiency.
- **Environmental impact:** Using more of your own clean energy reduces carbon emissions.

As explored in [Maximising ROI through energy management](#), it's essential that your customers understand the benefits of choosing the right tariff and configuring charge and discharge times to deliver the best financial outcomes. Energy management is the tool that unlocks those benefits.

What's supported today?

You have several options for managing energy, depending on your system and provider:

- **Manual configuration:** Set charging/discharging schedules yourself (e.g. "charge battery at night, discharge in the evening"). Simple, but requires regular attention to tariff changes.

- **Energy company control:**

Some suppliers offer “smart tariffs” where they automatically control when your battery charges or when appliances run. This can optimise savings, but you give up some control.

- **Third-party apps and devices:**

Independent apps or energy management platforms can integrate with your inverter, battery, or smart meter. They often provide dashboards, automation rules, and optimisation based on real-time prices.

- **Hybrid approaches:**

Many systems allow a mix — for example, you set a baseline schedule manually, but your supplier or app can override it when tariffs change.

Ways you can do this

- **Time-of-use scheduling:** Align battery charging and appliance use with cheaper tariff periods.
 - **Load shifting:** Move high-consumption tasks (washing, EV charging) to times of surplus solar or low grid prices.
 - **Automated optimisation:** Use apps or supplier platforms that adjust settings in real time.
 - **Integration with smart meters:** Allow systems to respond directly to half-hourly tariff data.
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Modelling energy management in Easy PV

Easy PV lets you model how energy management settings affect system performance and customer savings through the **Consumption Task**.

How you use it

- **Annual consumption inputs:** Enter the property’s annual usage from bills, typical profiles, or smart meter data.
- **Tariff configuration:** Select the customer’s current tariff and any proposed new tariff to compare savings.
- **Energy management options:**
 - **Export limitation:** Apply an export cap if required by the DNO.
 - **Forced charging/discharging:** Define periods when the battery should charge or discharge to/from the grid, such as overnight charging on off-peak tariffs.

What you see

- **Generation and consumption profiles:** Graphs showing direct use, battery storage, and exports.
- **Import/export flows:** Annual and daily views highlighting when grid imports are highest and when exports peak.
- **Financial benefits:** Costs and earnings based on tariffs, showing how energy management impacts bills.
- **Battery utilisation:** Insights into how effectively the battery is used across the year.

Why it matters

By modelling energy management in Easy PV, you can demonstrate not just the technical design but the **real-world financial and behavioural impact** of different settings. This helps you set realistic expectations and show customers how their system interacts with tariffs, batteries, and the grid.

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Revision #5

Created 25 November 2025 16:42:18 by Matt Agnes

Updated 29 April 2026 08:38:29 by Matt Agnes