

Energy Use and Demand Charge Tracker

How-to guide: what the workbook does, how to use it and what every number means.

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Energy Use and Demand Charge Tracker

Log monthly electricity bills and sub-meter readings, and see cost, peak and billing demand, ratchet charges, load factor and energy per unit of output.

For: Plant and facility managers, energy managers, maintenance engineers and plant controllers.

Version 1.0.0 · updated 15 October 2026

Quick start

1. On Setup, type your plant name, currency, output unit and targets, then the demand part of your tariff: rate per kW, ratchet, contract demand and fixed fees.
2. On Monthly Bills, add one row per bill: the month, days billed, kWh, peak kW, the energy, demand and other charges, and the month's production.
3. Read the Check column: it flags a demand charge that does not match your tariff, duplicate months and impossible load factors.
4. On Sub-meters, add each meter's kWh per month to see where the energy goes (optional).
5. Open the Dashboard; change the '12 months ending' date to look at any year.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Your plant, currency, output unit, targets, the demand part of your tariff and the sub-meter list.
Monthly Bills	One row per electricity bill: energy, peak demand, charges and production.
Sub-meters	Energy per sub-meter per month: where the electricity goes.
Dashboard	Energy cost, peak and billing demand, ratchet charges, load factor, intensity and end uses for any 12 months.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Total bill	Energy charges + demand charges + other charges, as entered from the bill.	currency

Quantity	How it is calculated	Units
Load factor	kWh / (peak kW x days x 24). Over several months: total kWh / sum of (peak x days x 24), the hours-weighted average of the monthly load factors.	%
Blended cost	Total bill / kWh: the average price paid per kWh, demand and fees included.	currency/kWh
Ratchet floor	The larger of: ratchet share x the highest peak in the bills of the look-back months before this one (SUMPRODUCT(MAX(...)) over earlier rows), and the minimum share x contract demand.	kW
Billing demand	The larger of the month's own peak and the ratchet floor.	kW
Expected demand charge	Billing demand x demand rate x share charged + fixed demand-related fees: the same formula as the Utility Demand Charge calculator.	currency
Variance vs tariff	Billed demand charge - expected demand charge. The Check column flags it when it is more than the tolerance on Setup.	currency
Paid for past peaks	(Billing demand - own peak) x demand rate x share charged: what an earlier peak or the contract minimum added to this bill.	currency
Energy intensity	kWh / production. Over several months: total kWh / total production.	kWh/unit
Cost per unit	Total bill / production.	currency/unit
Intensity status	On target at or below the target; Near target up to 5% above; Above target beyond.	-
Share of bill (sub-meters)	A meter's kWh / the bill's kWh for the same month. Dashboard: a meter's kWh in the 12 months / the billed kWh in the same months.	%
Unmetered and losses	Billed kWh - the sum of the sub-meter readings in the same months.	kWh
Cost at blended rate (est.)	A meter's kWh x the blended cost: an estimate, because demand charges are not shared out by when each load runs.	currency

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Ridgeway Castings, a fictional business.

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Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

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Energy cost, peak and billing demand, ratchet charges, load factor, intensity and end uses for any 12 months.

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12 months ending

Oct 2025

First month shown

Bills in these months

12

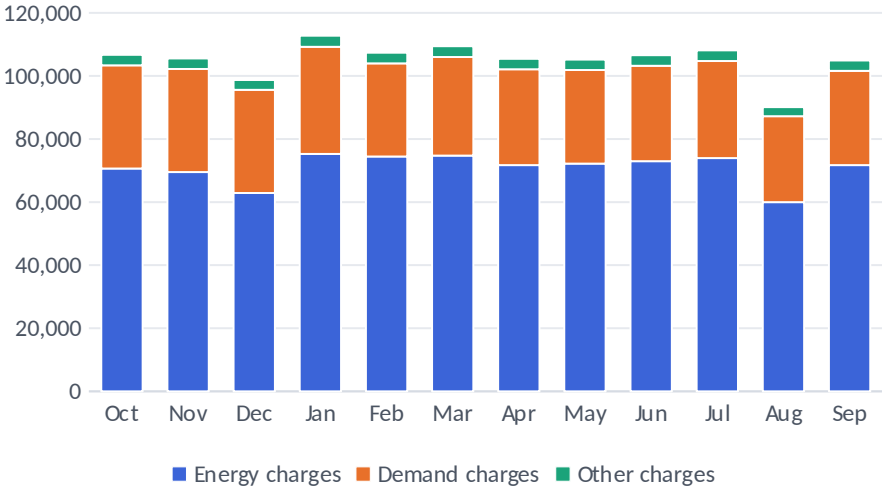
Sep 2026

Last month shown

Money in USD; output in t. Leave the date blank to see the latest 12 bills.

ELECTRICITY COST (USD)	DEMAND CHARGES SHARE	PAID FOR PAST PEAKS (USD)	HIGHEST PEAK DEMAND (KW)
1,260,754	29.4%	9,715	2,310
Total of the bills shown	Demand charges / total bill	Ratchet or contract minimum above own peak	In the 12 months shown

Monthly bill by component



Peak demand and billing demand (kW)

