

Ice machine: solar by day, TOU by night

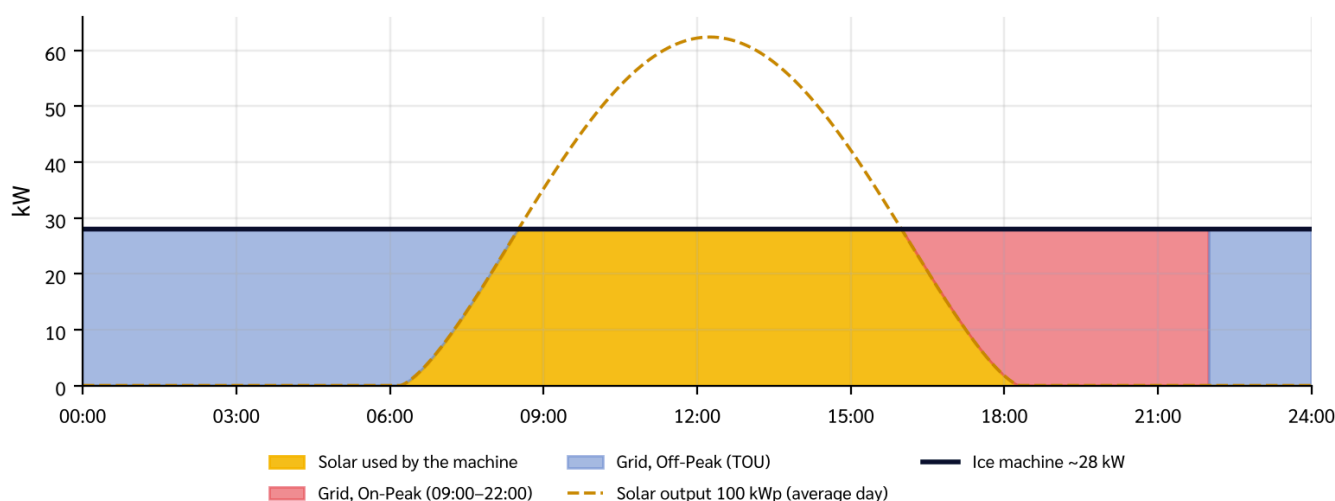
Customer summary · 18 October 2026 · Rev01 · Solar ESS

≈ 28 kWh energy per hour of work	≈ 20,160 kWh machine use per month (24 h × 30 days)	100.1 kWp solar system, 2 × 50 kW inverters	≈ 8,000 kWh solar used by the machine per month
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How it works



- **Daytime (about 08:00–16:30):** the 100 kWp solar system runs the machine. On an average day about 165 kWh of extra solar is left for the other loads.
- **Night, early morning and weekends:** the machine runs on grid power billed at the cheap TOU Off-Peak rate.
- **Only the late afternoon and evening** (about 16:30–22:00 on weekdays) is bought at the On-Peak rate.



Monthly electricity bill for the ice machine

Option	From the grid (kWh/month)	Bill excl. VAT	Bill incl. VAT
A. Normal rate, no solar	20,160	≈ 88,300	≈ 94,500
B. TOU rate, no solar	20,160	≈ 82,500	≈ 88,300
C. Solar 100 kWp by day + TOU by night	12,190 (3,080 On-Peak · 9,110 Off-Peak)	≈ 44,300	≈ 47,400

What they will pay

≈ 47,400 THB a month

incl. VAT, for the ice machine, instead of about 94,500 THB

Saving ≈ 47,000 THB a month · ≈ 565,000 THB a year · system price 1,781,937 THB incl. VAT → payback about 3 years (faster when the extra daytime solar also supplies the other loads).

Tip: if production allows, avoid running 18:00–22:00 on weekdays (On-Peak with no sun) to cut the bill further.

Assumptions: machine ≈ 28 kW running 24 h; month = 22 weekdays + 8 weekend days; solar yield 4.3 kWh/kWp/day (Chiang Rai average); PEA TOU base rates On-Peak 5.80 and Off-Peak 2.64 THB/kWh, normal rate about 4.18 THB/kWh, plus Ft about 0.20 THB/kWh; service and demand charges not included. Figures are estimates; confirm with the motor nameplate and the PEA bill.