Solar Savings Assessment

FREE EDITION | A DN69-IP initiative | Nurtured by DN69-RISE

Rooftop solar PV: indicative savings, system and budget. This assessment is provided free of charge as part of the DN69-IP (Intellectual Philanthropy) initiative, nurtured by DN69-RISE. Figures are indicative and subject to a site survey.

Facility reviewed

Company / Owner:	SAMPLE - Example Plastics Co., Ltd. (fictional)
Facility type:	Factory
I am a:	Facility owner
Address:	Chon Buri
Report date:	15 Nov 2026

Executive summary

THB 8,446,013
Est. cost (PV only, excl. VAT)

3 years 6 months
Payback after tax

28.3%
IRR after tax (30 years)

481.7 kWp
System size (741 panels)

54%
Solar coverage

THB 2,604,639
Year-1 net saving

THB 84,985,075
30-year net position

354.7 t
CO2 avoided per year

54%
Electricity bill reduction (Year 1)

In short: a 481.7 kWp solar system could generate about 709,470 kWh in Year 1, covering roughly 54% of your consumption.

Your electricity bill: today and with solar



Monthly averages for Year 1 at today's tariff, before the O&M cost shown in the budget pages. Indicative only.

Your routes at a glance

	EPC: you buy the system	PPA: provider owns it (20-year tenor)
Upfront investment	THB 8,446,013 (excl. VAT)	THB 0
Year-1 saving	THB 2,604,639 (net of O&M)	THB 868,392
30-year net position	THB 84,985,075	THB 54,204,601
IRR after tax (30 years)	28.3%	-

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Your inputs and assumptions

Everything below is what you entered or chose. If a value is wrong, the results change: please tell us.

Input	Your entry
Roof area	6,000 m2
Electricity provider; monthly bill	PEA; THB 450,000
Retrofit level	L0
Shading	No Shading
O&M package	Full Scope
PPA discount you would like	30%
What matters most to you	Not specified
Connect me with a provider	No

Assumption	Value	Basis
Specific yield (after shading)	1,473 kWh/kWp/yr	PVsyst simulation for this location
Electricity price escalation	1.5% per year	Indicative
Panel degradation	0.4% per year	Indicative
System cost	THB 17.54 per Wp	Sizing and budget model, excl. VAT
O&M cost	THB 290,000 per year, flat	10% of Year-1 gross savings, rounded up; Full Scope
CO2 factor	0.4999 kg per kWh	Grid average
Analysis period	30 years	Panel performance warranty
Value of solar electricity	THB 4.08 per kWh	Facility average rate, rising 1.5% per year

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What to prepare for the site survey

Having these ready makes the survey faster and the final figures more accurate:

- [ ] Your last 12 months of electricity bills (and meter data if you have it).
- [ ] Roof drawings or photos, roof material and age, and any structural information.
- [ ] The single-line electrical diagram, transformer capacity and main distribution board location.
- [ ] When you use most power (daytime or night) and your operating hours.
- [ ] Any plans to change the roof, the building or your electricity use in the next 5 to 10 years.
- [ ] The person who can approve the project and arrange site access.

We will advise which approvals (utility, regulator, local authority) apply to a system of your size.

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System and budget

481.7 kWp (741 panels of 650 Wp). Inverters: 2 x 150 kW, 1 x 100 kW (400 kW AC, AC/DC 83%). Panel-level optimizers are required above 200 kW AC (371 units).

Indicative budget (EPC route)

Item	THB
PV modules	2,167,425
Inverters	605,000
Optimizers	927,500
Balance of system and installation	4,334,850
Soft costs (design, permits, supervision, testing)	411,238
TOTAL, Option 1 Solar PV (excluding VAT)	8,446,013

All amounts in THB, excluding VAT. Indicative; confirmed at site assessment.

After tax, NPV and bankability (Option 1)

Measure	Result	Status
IRR after tax (project)	28.3%	Meets target
NPV at 8% (after tax)	THB 18,842,840	Meets target
Payback after tax	3 years 6 months	Meets target
Levelised cost of energy	1.58 THB/kWh	
IRR if the electricity price grows 0% / 1.5% / 3% a year	26.7% / 28.3% / 29.9%	Meets target
PPA provider IRR after tax	18.3%	Meets target
PPA provider payback after tax	5 years	Meets target
PPA provider lowest debt-service cover	1.77	Meets target
Debt share the bank can support at your PPA discount	Up to 90%	Meets target

Indicative. Includes 0.3% insurance, an inverter replacement in year 12 and 20% corporate tax with 5-year depreciation. Not tax or financial advice.

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Year-by-year (EPC route, THB)

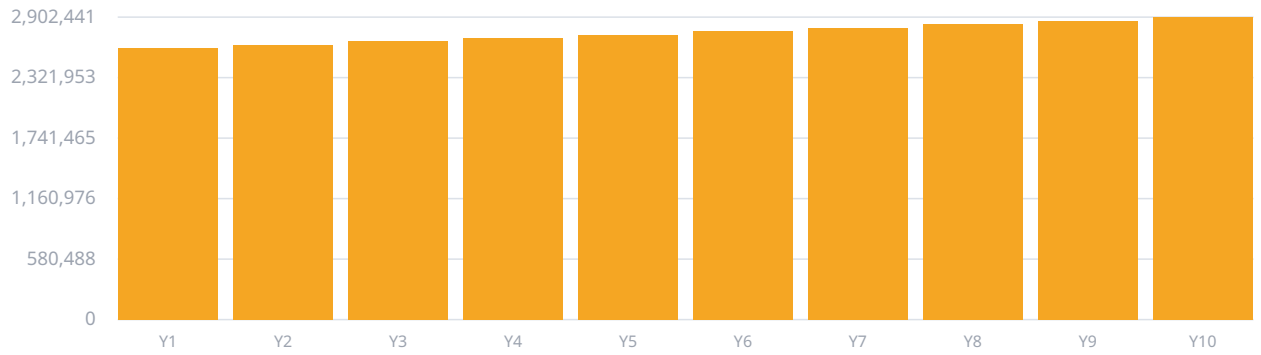
Year	Generation (kWh)	Value	O&M	Net saving	Cumulative net
1	709,470	2,894,639	290,000	2,604,639	(5,841,374)
2	706,633	2,926,307	290,000	2,636,307	(3,205,067)
3	703,806	2,958,321	290,000	2,668,321	(536,746)
4	700,991	2,990,685	290,000	2,700,685	2,163,938
5	698,187	3,023,403	290,000	2,733,403	4,897,341
10	684,334	3,192,441	290,000	2,902,441	19,067,792
15	670,757	3,370,931	290,000	3,080,931	34,111,582
20	657,449	3,559,399	290,000	3,269,399	50,077,540
25	644,404	3,758,405	290,000	3,468,405	67,017,224
30	631,619	3,968,538	290,000	3,678,538	84,985,075

Payback = when cumulative net savings turn positive. Brackets mean money still to be recovered.

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Annual Net Savings (Year 1-10)

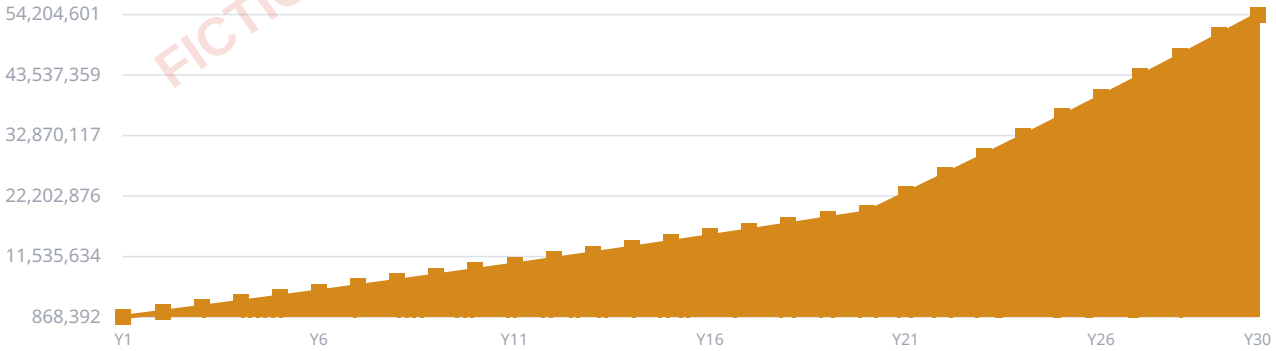


Cumulative Net Position (30 Years)



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Cumulative savings, PPA route (THB)



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PPA option and discount check

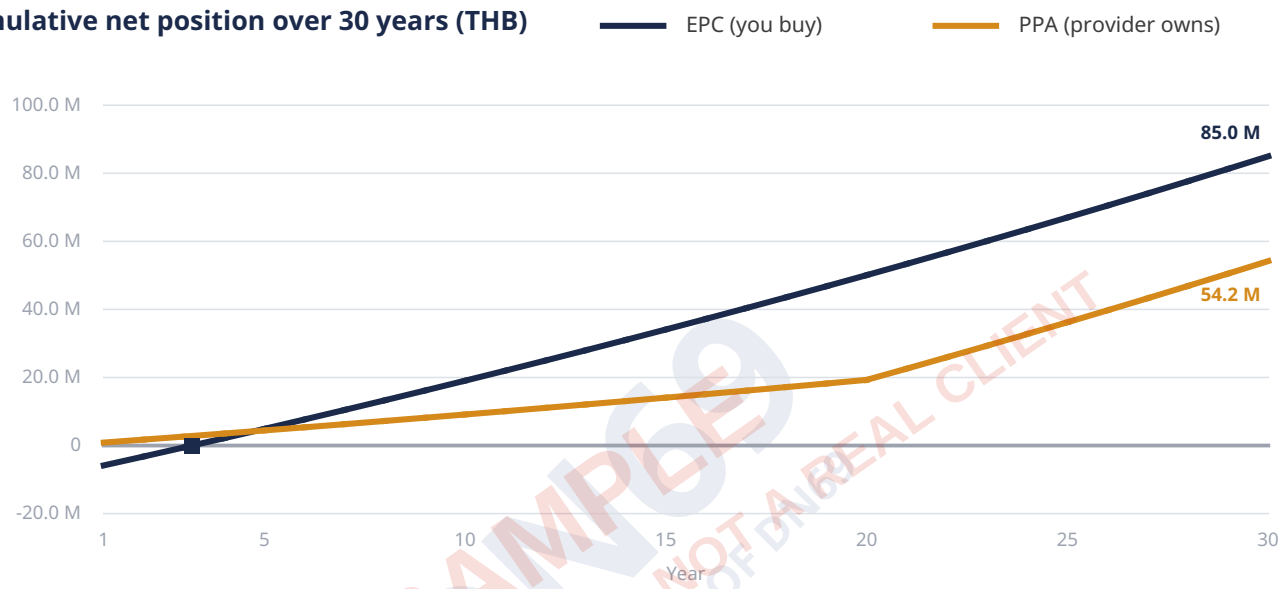
Discount requested: 30% over a 20-year tenor. After the tenor the system is handed to you and savings become 100% of the electricity value, less your O&M.

Can be more

Achievable, but a higher discount is usually negotiable for a suitable site. Indicative only; the final discount depends on a provider's assessment.

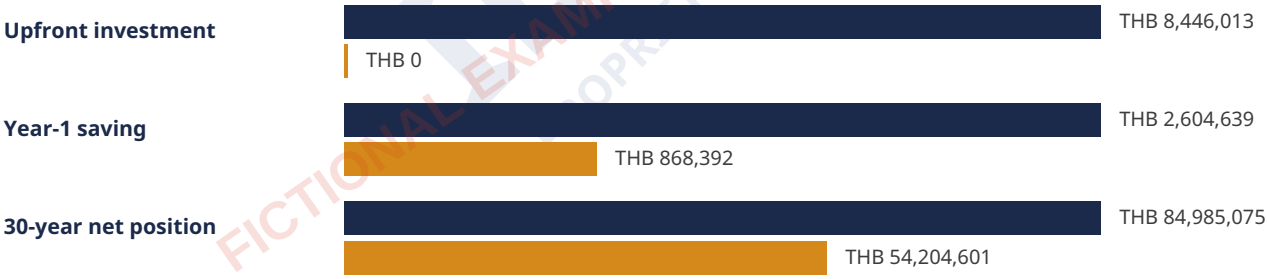
EPC and PPA compared

Cumulative net position over 30 years (THB)



EPC payback (pre-tax): 3 years 2 months. EPC overtakes PPA in year 5.

The EPC line starts below zero because it includes the upfront cost; the PPA line starts at zero because there is no upfront cost.



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Environmental impact

354.7 t CO2 avoided in Year 1 and about 10,045 t over 30 years (0.4999 kg per kWh, allowing for panel degradation).

Equipment considered

Classes shown are indicative; final selection is made at site assessment. Brand names appear in the Equipment Glossary on the Knowledge Hub. They are not an endorsement.

Equipment	What it does	Indicative class for your system
PV modules	Convert sunlight to DC power	Mono n-type, 650 Wp class x 741
Inverter	Converts DC to grid AC	400 kW AC in total
Optimizers	Panel-level optimisation	Required (371)
Mounting, cables, protection	Hold panels; carry and protect power	As required by roof, utility and standards

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Equipment	What it does	Indicative class for your system
Monitoring, meter	Track output; utility compliance	Inverter-level monitoring, CT or bi-directional meter

Key terms

kWp	Peak power of the array under standard test conditions.
Specific yield	Annual energy per kWp installed (kWh/kWp/yr).
Coverage	Share of your electricity use supplied by solar.
EPC	Engineering, procurement and construction: you buy and own the system.
PPA	Power purchase agreement: a provider owns the system and you pay a discounted rate.
O&M	Operations and maintenance.

Next steps

Read more on the IDN69 Knowledge Hub

Solar PV Project Essentials: https://idn69.dn69.org/knowledge.php#essentials

Equipment Glossary: https://idn69.dn69.org/knowledge.php#equipment

Official Sources: https://idn69.dn69.org/knowledge.php#sources

Need more detail?

This assessment is free and part of the DN69-IP initiative. For a site assessment, a proposal or an introduction to a service provider, please write to the IDN69 team using the link below.

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Conditions to confirm for your site

These items need a site survey, an engineer or an approval. This report cannot decide them.

1. Roof weight: rooftop solar under 20 kg per square metre is reported to be exempt from a building-modification permit (Interior Ministerial Regulation No. 72, 2025). Ballasted or heavy mounting can exceed this. The weight is self-assessed, so have the roof checked by a structural engineer.
2. Roof condition: check the roof age and remaining life against the 25-30 year system life, corrosion on metal sheet, and any asbestos or fragile material, before installation.
3. Roof rights and safety: confirm you may use the roof (owner or landlord consent), leave fire-access pathways, and check whether industrial-estate rules apply if your site is inside an estate.
4. Grid approval: the local utility (PEA, or MEA in Bangkok, Nonthaburi and Samut Prakan) must approve the connection. Insufficient grid capacity at the site is a common reason for rejection. A single-line diagram stamped by an electrical engineer and TIS/IEC equipment datasheets are normally required.
5. Zero export: if the utility does not approve selling surplus power, an anti-backfeed device is required and surplus is lost when your site uses less than the system produces (for example weekends and holidays). These results assume all generated power is used on site.
6. Size and licences: larger systems need more approvals. Roughly, below 1 MW for own use may need no energy licence; 1 MW and above may need an Energy Regulatory Commission licence. Confirm the current rules for your size.
7. Shading and site survey: results use the shading level you selected. Trees, nearby buildings and equipment on the site can change the real output; a site survey or shading study refines it.
8. Tax and incentives: these results include no tax privilege. Investment-promotion (BOI) benefits for newly installed own-use solar closed to applications from 1 July 2025; battery storage may still qualify case by case. Other tax measures, such as a company deduction for certified energy-saving equipment or a household deduction for rooftop systems up to 10 kWp, may apply but are not included. Confirm current eligibility with BOI and the Revenue Department.

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