

Preliminary solar investment proposal

Preliminary screening | 2026-09-07

Al-Noor Logistics Warehouse - illustrative demo

KSA | Validate inputs before a decision

Installed DC capacity	245.3 kWp
Module count	446 x 550 W
Required area / usable area	1,471.8 / 1,500 m2
Initial EPC cost	SAR 635,634
Year-1 PV generation	453,805 kWh
Year-1 avoided electricity bill	SAR 119,078
Year-1 net project cash flow	SAR 102,102
25-year project NPV	SAR 560,405
Project IRR	16.7%
Cash-flow payback	6 years
25-year net cash benefit	SAR 2,316,934

This scenario is a discussion document, not an EPC offer or investment approval. The inputs are illustrative and have not been independently verified.

Assumptions and operating plan

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Annual electricity use	553,846 kWh
Year-1 specific yield	1,850 kWh/kWp
Target PV generation / load	82%
Onsite use / PV generation	82%
Annual PV degradation	0.5%
Tariff / OPEX escalation	2% / 2%
Discount rate	8%
Routine O&M, year 1	SAR 13,798
All O&M, year 1	SAR 13,798
25-year O&M, escalated	SAR 441,958
Inverter replacement, year 12	SAR 79,033
Insurance / admin, year 1	SAR 3,178
Loan ratio / interest / tenor	0% / 5.5% / 10 years
Effective tax / depreciation	0% / 25 years

Extra cleaning: 4 visits/year at SAR 0 per visit. Add-on inspection SAR 0, monitoring SAR 0, spares SAR 0 per year. Avoid double-counting services included in the base contract.

25-year project cash flow

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All monetary values in SAR. OPEX includes O&M, insurance and lease. Year 0 includes the upfront grant. Replacement is a separate cost.

Year	Savings	OPEX	Replace.	Project CF	Cumulative
0	0	0	0	-635,634	-635,634
1	119,078	16,976	0	102,102	-533,531
2	120,853	17,316	0	103,537	-429,995
3	122,653	17,662	0	104,991	-325,003
4	124,481	18,015	0	106,466	-218,538
5	126,336	18,376	0	107,960	-110,578
6	128,218	18,743	0	109,475	-1,103
7	130,129	19,118	0	111,010	109,908
8	132,067	19,500	0	112,567	222,475
9	134,035	19,890	0	114,145	336,620
10	136,032	20,288	0	115,744	452,364
11	138,059	20,694	0	117,365	569,729
12	140,116	21,108	79,033	39,975	609,704
13	142,204	21,530	0	120,674	730,378
14	144,323	21,961	0	122,362	852,741
15	146,473	22,400	0	124,074	976,814
16	148,656	22,848	0	125,808	1,102,622
17	150,871	23,305	0	127,566	1,230,188
18	153,119	23,771	0	129,348	1,359,536
19	155,400	24,246	0	131,154	1,490,690
20	157,716	24,731	0	132,984	1,623,674
21	160,066	25,226	0	134,840	1,758,514
22	162,451	25,730	0	136,720	1,895,234
23	164,871	26,245	0	138,626	2,033,861
24	167,328	26,770	0	140,558	2,174,418
25	169,821	27,305	0	142,516	2,316,934

Simple year-1 payback: 6.2 years. Discounted payback: 8.4 years. Equity IRR: 16.7%.

Tariff basis, methods and next steps

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Monthly progressive tariff configuration: tier 1 up to 6,000 kWh at 0.22; tier 2 up to 1,000,000,000 at 0.32; tier 3 up to 1,000,000,000 at 0.32; remaining kWh at 0.32. Variable surcharge: 0 SAR/kWh. Unused upper limits may be 1,000,000,000. Export value: 0 SAR/kWh.

Monthly bill before solar: SAR 14,169. After solar: SAR 4,246. The demo assumes identical monthly load and solar allocation. Slab savings are recalculated each year after PV degradation; tariff escalation is then applied. Fixed charges, VAT, demand charges and time-of-use effects are excluded.

Initial CAPEX occurs in year 0; annual cash flows occur at year end. NPV discounts project cash flow at the chosen rate. IRR is reported only for a cash-flow series with one sign change. Payback is the first cumulative crossing with linear interpolation; future costs can reduce the cumulative balance again.

Financing uses equal annual principal and interest on opening debt. Tax is a simplified effective-rate estimate with straight-line depreciation; no loss carry-forward, tax credits, replacement depreciation or VAT model. Project and equity tax bases differ by loan interest. Replacement cost is escalated from initial CAPEX. No residual value is assumed.

Input provenance: Solara_Fast_Estimate_CORRECTED.xlsx and Solara_Model_CORRECTED.xlsx (11 July 2026), and Solara_Site_Final_2026-08-19-v4.zip. Historical planning inputs are not certified current tariffs or quotations. The 10% replacement allowance in year 12 is a new explicit demonstration assumption.

NEXT ENGAGEMENT

1. Collect 12 months of utility bills, actual tariff class and interval load data.
2. Check usable area, structure, shading, electrical capacity and grid/export conditions.
3. Obtain site-specific energy simulation, EPC offers, O&M scope and replacement pricing.
4. Review finance and tax assumptions; compare proceed, resize, wait, tender or reject.
5. Agree a separate paid feasibility scope and advisory fee before detailed delivery.