YOUR COMPANY NAME

Powered by Solar Metrix Pro

Date: 2/16/2026

Project: Milan 1000kWp

P50 Expected Yield	P90 Conservative	Total Avg System Loss
1,269,797 kWh	1,218,358 kWh	16.3% (Base: 14%)

Financial Return Statement

Metric	Value	Notes
Total CAPEX	$715,000	Initial System Cost
Payback Period	2.7 Years	Break-even point
25-Year Net Savings	$9,175,447	After inflation & degradation
Return on Investment	1183.3%	Lifetime ROI

System Parameters

Parameter	Value	Parameter	Value
Capacity	1000 kWp	Coordinates	45.490, 9.120
Tilt / Azimuth	39.6° / 180°	Climate Volatility	±3.16% (25-yr)
Module NOCT	45°C	Physics Model	AI Trained (2000-Present)

Monthly Physics Breakdown

Month	POA (kWh/m2)	Avg Temp (C)	Temp Loss %	Soil Loss %	Energy (kWh)	CUF %
JAN	79	4.5	-3.6	1.5	66,730	9.0
FEB	94	6.1	-2.6	1.5	78,626	11.7
MAR	147	10.2	-0.1	1.5	119,685	16.1
APR	157	14.8	1.3	1.5	125,595	17.4
MAY	170	18.1	2.2	1.5	134,788	18.1
JUN	178	26.3	5.4	1.5	135,842	18.9
JUL	187	24.4	4.7	1.5	144,150	19.4
AUG	176	24.3	4.8	1.5	135,134	18.2

Month	POA (kWh/m2)	Avg Temp (C)	Temp Loss %	Soil Loss %	Energy (kWh)	CUF %
SEP	146	19.2	2.8	1.5	115,623	16.1
OCT	109	14.1	0.3	1.5	89,019	12.0
NOV	80	8.0	-2.4	1.5	68,023	9.4
DEC	66	6.2	-3.5	1.5	56,582	7.6

Engine: Solar Metrix Pro. Data: Open-Meteo Archive (2000-Present).

Technical Appendix: Understanding Your Yield

1. How Temperature Affects Production

Solar panels generate electricity from light, not heat. In fact, heat reduces their efficiency. For every degree the panel temperature rises above 25°C, the voltage output drops, leading to power loss. This simulation uses the 'Temperature Coefficient' (Input: -0.35%/°C) to calculate exact losses for every hour of the year based on historical weather patterns.

2. What is NOCT?

NOCT (Nominal Operating Cell Temperature) measures how hot a specific solar panel gets under normal operating conditions. Lower quality panels trap more heat and have a higher NOCT (e.g., 48°C), while premium panels stay cooler (e.g., 42°C). We used a NOCT of 45°C for this simulation.

3. Soiling & Environmental Losses

Soiling refers to power loss caused by dust, bird droppings, snow, or urban pollution covering the glass surface. This engine applies dynamic penalties based on the climate type:
- Arid/Desert Regions: Higher penalties during dry seasons.
- Snowy Regions: Temporary blockage during winter months.
- Regular Rainfall: Helps 'clean' the panels naturally, reducing losses.

4. Maximizing Your Investment (ROI Tips)

Your solar system is a financial asset. The 'Payback Period' is simply the time it takes for your monthly electricity savings to equal the initial cost of the system. Once paid off, the electricity it generates is profit.

Tips to Break-Even Faster:

1. Shift Load to Daytime: Run heavy appliances (AC, pumps, washing machines) between 10 AM and 3 PM when solar power is free and abundant.

2. Keep Panels Clean: A layer of dust can reduce your income by 15-20%. A simple wash every 2 weeks keeps money coming in.

3. Minimize Night Usage: If you don't have batteries, try to reduce consumption after sunset to avoid paying the grid.