Seasonal Performance Forecast

January 25, 2026

Phoenix, AZ | 12-Month Irradiance Patterns

SUMMER AVG GHI

7.73 kWh/m²

WINTER AVG GHI

3.70 kWh/m²

SEASONAL VARIATION

109%

PEAK MONTH

June

Seasonal Irradiance Summary

Season	Avg GHI (kWh/m²/day)	Std Dev	Relative to Annual
Winter	3.70	±1.02	-35.7%
Spring	6.82	±1.44	+18.6%
Summer	7.73	±1.13	+34.5%
Fall	4.70	±1.30	-18.3%

Monthly Forecast Detail

Month	Avg GHI	Min	Max	Variability
Jan 2025	3.90	2.88	4.44	13.8%
Feb 2025	4.63	2.41	5.73	18.0%
Mar 2025	5.62	2.28	7.00	22.8%

Apr 2025	7.19	5.04	8.14	12.7%
May 2025	7.65	4.79	8.79	16.1%
Jun 2025	8.40	2.14	9.04	14.9%
Jul 2025	7.72	3.30	8.57	12.6%
Aug 2025	7.10	5.13	8.45	10.6%
Sep 2025	5.69	3.42	6.84	15.3%
Oct 2025	4.88	2.15	6.09	19.0%
Nov 2025	3.47	1.02	4.53	28.4%
Dec 2025	3.09	0.89	3.63	23.3%
Jan 2026	3.14	0.70	3.93	29.1%

Operational Planning Insights:

- Summer production is 109% higher than winter
- Plan maintenance during lower-production winter months
- Peak output months: ['June', 'July', 'May']

Methodology: Monthly aggregation of daily GHI values from NASA POWER. Seasonal groupings: Winter (Dec-Feb), Spring (Mar-May), Summer (Jun-Aug), Fall (Sep-Nov). Variability measured as coefficient of variation within each month.

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Data Source: NASA POWER API