EXPERT PRO
EXPERTOS EN PROYECTOS

PRODUCT PREVIEW · GUIDED TOUR

Solar Site Screening & Energy Yield Pack

Rank up to ten sites on nineteen attributes, then model monthly energy with P50 and P90 for the winner.

Up to 10 sites | 19 attributes | 300 months | P50 / P90



Illustrative demonstration data from the worked example. Not investment advice. 10 pages.

S1 · SITE & RESOURCE SCREENING

Nineteen attributes, five categories, six vetoes

Nineteen attributes per site feed five weighted categories through locked scoring scales, so two analysts screening the same sites get the same answer.

Five weighted categories

Solar resource, grid access, land, permits and social context, and construction logistics — each a weighted blend of attribute scores.

Six fatal flags

Disqualify a site outright regardless of score: no irradiance rescues a plot with no grid capacity.

A screening energy ceiling

Gives the first order of magnitude of annual output per site, at a flat screening performance ratio.

A sealed handoff

The winner's attributes export to S2 through a sealed Handoff; land price and line distance continue to S3.

A scorecard, not a yield study

One-to-five bands let the committee interrogate any score in ten seconds; S2 replaces the ceiling with a monthly engine.

Resource data quality is scored because sigma is money

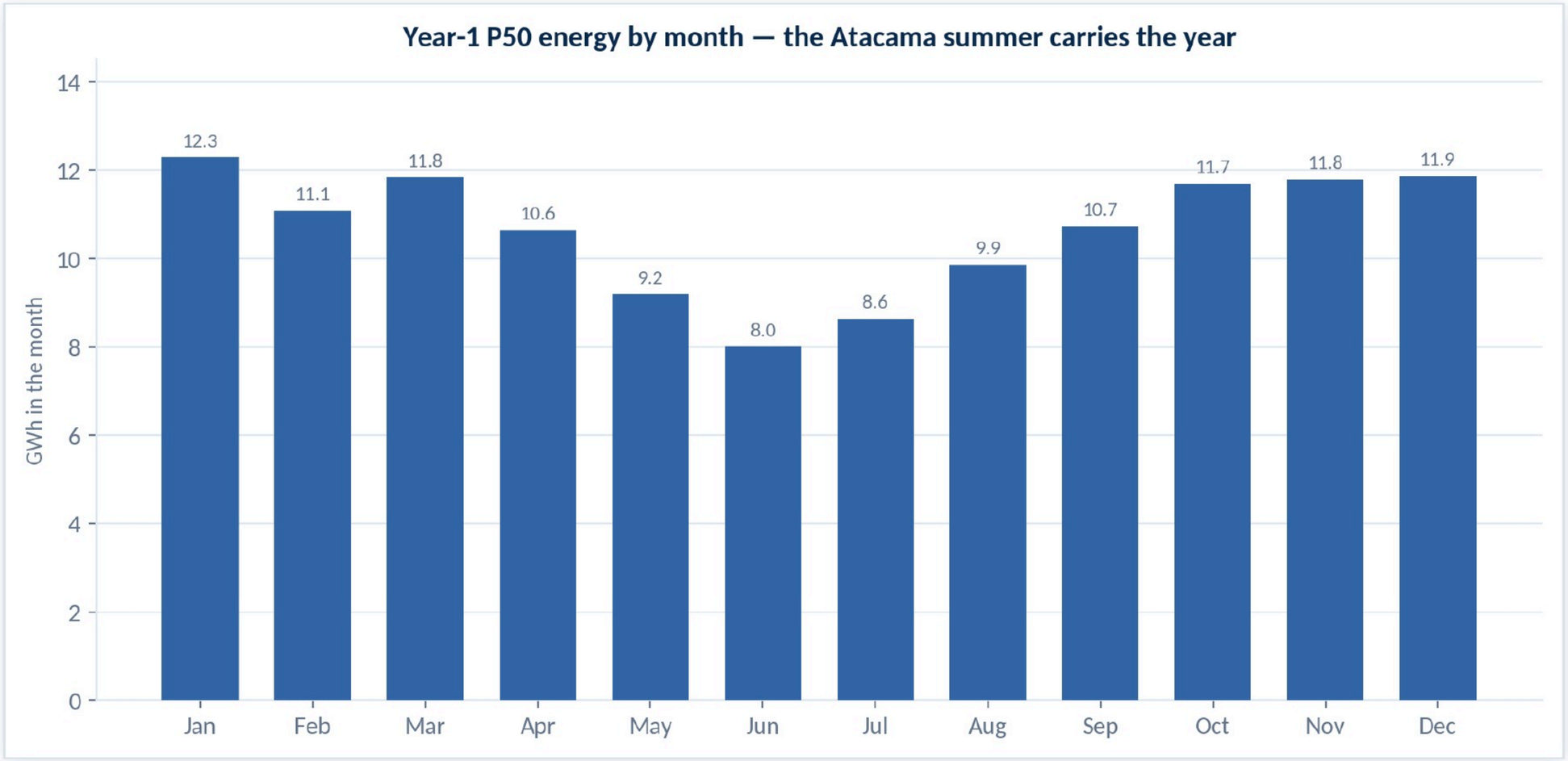
Measurement uncertainty dominates — ±15% satellite-only against ±5% ground-correlated — which is why S1 scores On-site MCP 5, Reference station 3, Satellite only 2.

Uncertainty component	Satellite-only	Ground-correlated (MCP)
Spatial variability	0.50%	0.50%
Representativeness of monitoring period	1.25%	1.25%
Inter-annual variability	3.50%	3.50%
Measurement uncertainty	15.00%	5.00%
Total resource uncertainty (RSS)	15.5%	6.3%

S2 · ENERGY YIELD

The year is not flat, and neither is the revenue

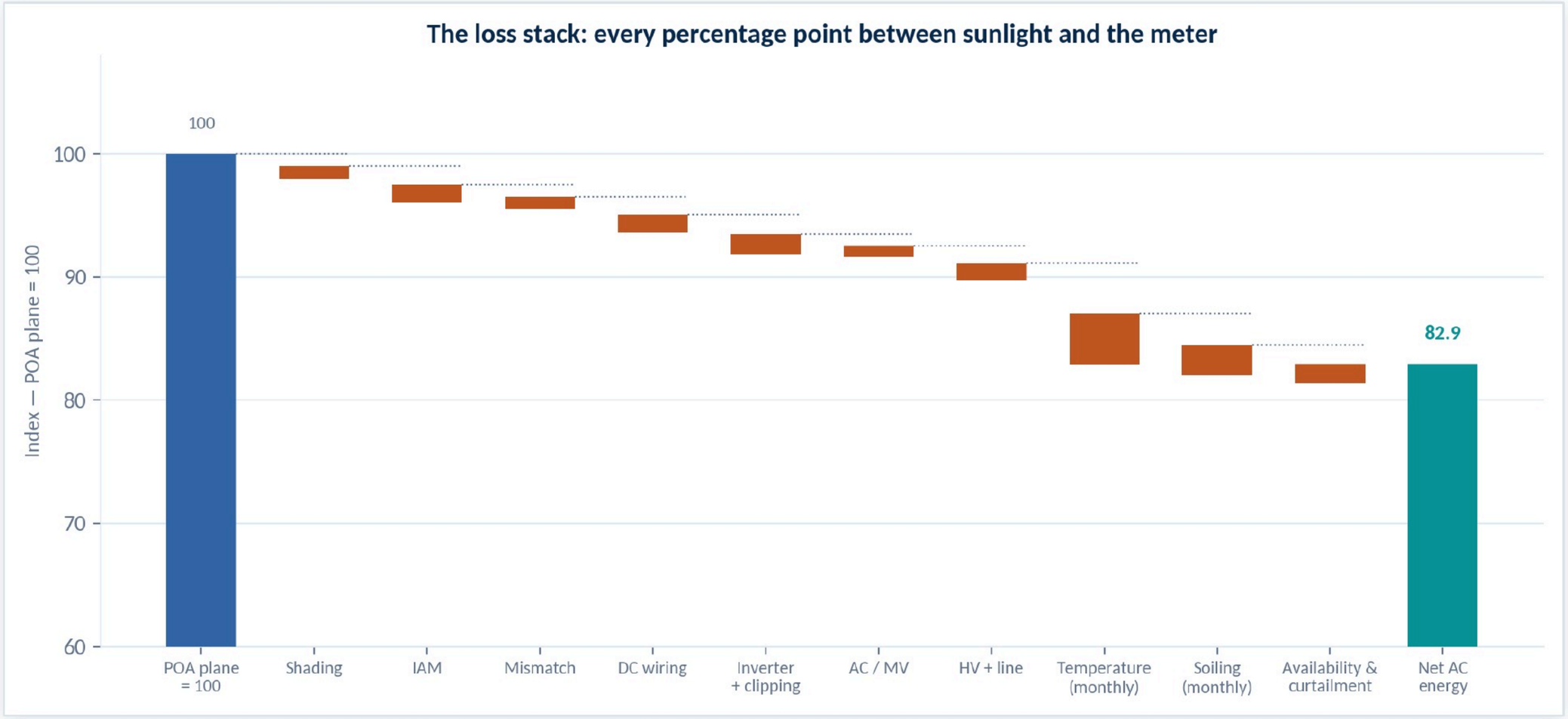
Twelve monthly numbers, not one annual average: the Atacama summer carries the year and the winter sets the DSCR floor.



Year-1 P50 energy by month, from the S2 engine — 127,631 MWh in total.

Every percentage point between sunlight and the meter

Ten losses stand between the plane of array and the export meter. The stack is visible, editable and additive — no black box.



The loss stack as the workbook computes it: seven constant losses, then temperature, soiling and availability.

Sigma adds in quadrature; a z-score does the rest

Independent errors combine as a root sum of squares, then one-tailed normal scores convert the median into the levels lenders actually finance.

Total sigma — demo

$$\sigma = \sqrt{(0.035^2 + 0.030^2)} = \sqrt{(0.001225 + 0.000900)} = \sqrt{0.002125} = 4.6098\%$$

Resource 3.5% and modelling 3.0% in quadrature: cal_sigma_tot at Inp_Scenarios!D8.

P75 factor

$$1 - 0.6745\sigma$$

One-tailed normal score for the 75% exceedance level; cal_f_p75 at Inp_Scenarios!D9.

P90 factor

$$1 - 1.2816\sigma$$

Φ(γ) = 0.1 solves to γ = 1.282, hence P90 = μ − 1.282σ (Pacudan, 2016).

P90 factor — demo

$$P90\ factor = 1 - 1.2816 \times 0.046098 = 0.94092$$

127,631 MWh of year-1 P50 times this factor gives the exported P90 of 120,091 MWh.

S2 · ENERGY YIELD

Ten cards say whether the plant is worth financing

Out_YieldReport leads with the active scenario, then year-1 metrics, the exceedance ratio and the twenty-five-year total.

127,631

MWh year-1 P50

the demo's headline energy

120,091

MWh year-1 P90

94.09% of P50 — this is what sizes debt

2,591

kWh/kWp year 1

pre-degradation specific yield

81.5%

Indicative annual PR

inside the 78–84% tracker band

38.3%

NCF on AC capacity

38 MWac denominator

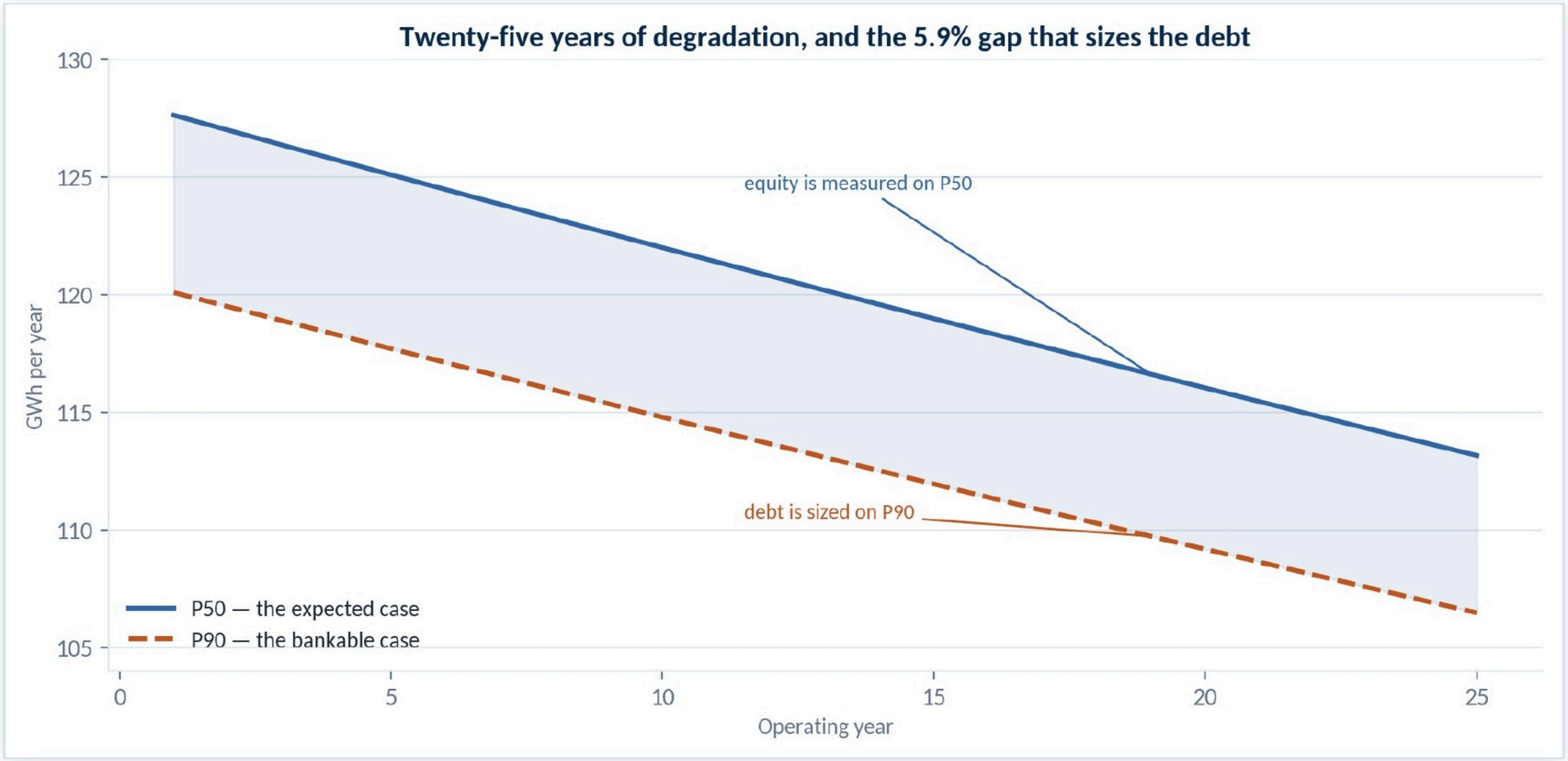
3,006.5

GWh 25-year P50

already net of degradation

Degradation is a 25-year straight line you can see

Year 1 loses 1.5% to light-induced degradation, then 0.5% a year — and the P90 line below it is what the bank will lend against.



The two exported series: P50 for equity, P90 for debt, over the 25-year model life.

WHAT YOU RECEIVE

What is in the download

Format: Excel + ZIP.

XLSX	S1 screening workbook (primary download)
XLSX	S2 energy yield model
GUIDE	S1 and S2 user manuals and a Pack Quick Start
DEMO	An illustrative utility-scale demonstration case and licence documentation

Before you buy

- Desktop Excel 2019 or Microsoft 365.
- It does not calculate CapEx, debt or investment returns.
- It does not replace a site walkover, grid study, measurement campaign, PVsyst-class simulation or independent energy report.
- For the full chain including finance, compare the five-model suite.

Every workbook opens on the complete worked example, so you can follow the finished answer before entering your own data.

WHO BUILT IT

Built by the ExpertPro team

ExpertPro builds the financial and decision infrastructure behind capital projects, at the intersection of project finance, engineering economics and data.

7	100+	15+	50+
senior specialists	years of combined experience	professional certifications	delivered projects

The team

- Project finance and public-private partnerships, PMP® and APMG CP3P® certified
- Data architecture and data science, led by a mathematician
- Process automation and governance, with more than twenty years in banking
- Information security and compliance: ISO/IEC 27001 Lead Auditor and CEH
- Enterprise systems integration and machine-learning engineering

Every model

- Built to the FAST Standard 02c: Flexible, Appropriate, Structured, Transparent
- No macros and no hidden logic; one formula per calculation row
- A documented source and status behind every input
- A checks panel that must read green before results leave the workbook
- A complete user manual and a worked demonstration case

Master's degrees in industrial engineering, information technology and business, a degree in mathematics, and programmes from MIT (applied AI) and HarvardX (data science). Delivery in five Latin American countries, across energy and utilities, transport, logistics, agroindustry and healthcare.