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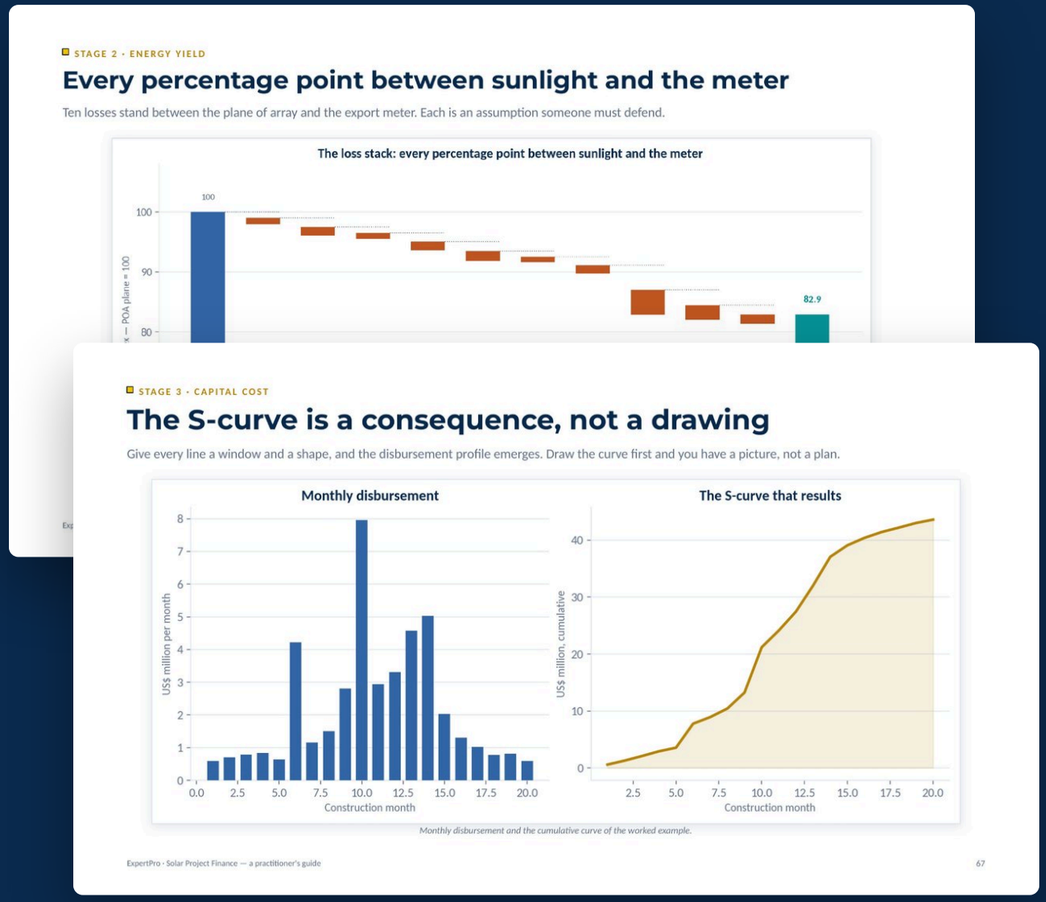
GUIDE PREVIEW · SAMPLE PAGES

Utility-Scale Solar Project Finance Practitioner Guide

How a utility-scale solar project is evaluated in five stages, from site screening to the investment committee's decision.

128-slide guide | 149-page handbook | 50 MWp worked case | Speaker notes

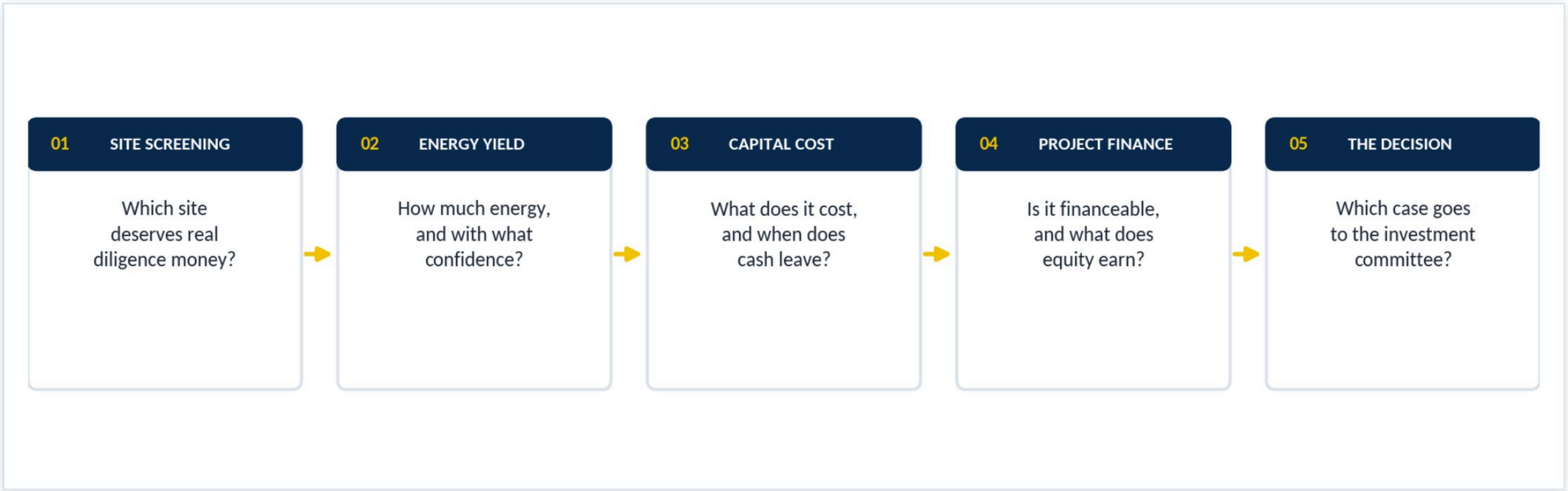


Sample pages from the guide. Illustrative worked example; not investment advice. 12 pages.

BEFORE WE START

Five stages, five questions, five decisions

Each stage answers one question and closes on one decision. Skipping a stage does not save time — it moves the discovery to a more expensive moment.



The evaluation arc from a scouting list to a signed investment decision.

STAGE 1 · SITE SCREENING

Better resource data literally buys debt capacity

This is the argument that pays for a measurement campaign, and it belongs in the screening conversation, not the financing one.

Resource evidence	Total uncertainty (σ)	P90 as % of P50	Debt share at 1.30x coverage
Satellite data only	15.5%	94.0%	70%
Ground-correlated campaign	6.3%	96.9%	76%

Illustrative decomposition for a 27 MWp case, after Pacudan (2016), ERIA bankability chapter.

How resource evidence propagates into the capital structure.

STAGE 1 · SITE SCREENING

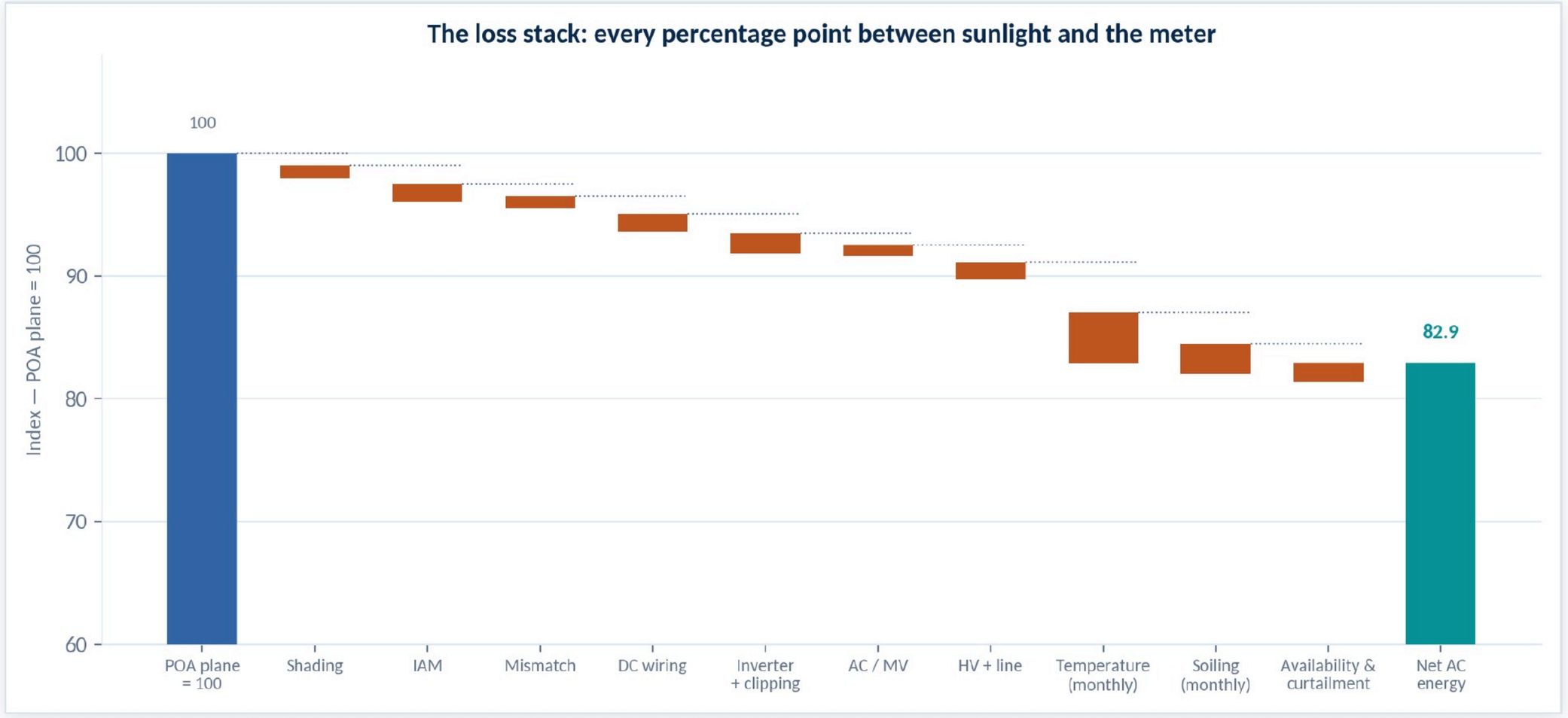
Three Atacama sites, one afternoon, one winner

A 50 MWp DC / 38 MWac single-axis tracker project: the same attributes, the same weights, three very different answers.

What decided it	S01 Llano La Estrella	S02 Pampa Copiapó	S03 Quebrada Sur
Irradiance (kWh/m²·yr)	2,550	2,380	2,200
Resource evidence	14-month campaign, correlated	Reference station	—
Injection headroom vs 38 MWac need	60 MW	30 MW (ratio 0.79)	none available
Distance to that substation	8 km	15 km	—
Terrain slope	2%	4%	12%, against an 8% limit
Flood / alluvial exposure	low	low	high, active fan
Land control	option signed	in negotiation	—
Land price	$3,500/ha	$6,000/ha	—
Weighted score, out of 5.00	4.61 — selected	3.11 — runner-up	2.12 — disqualified

Every percentage point between sunlight and the meter

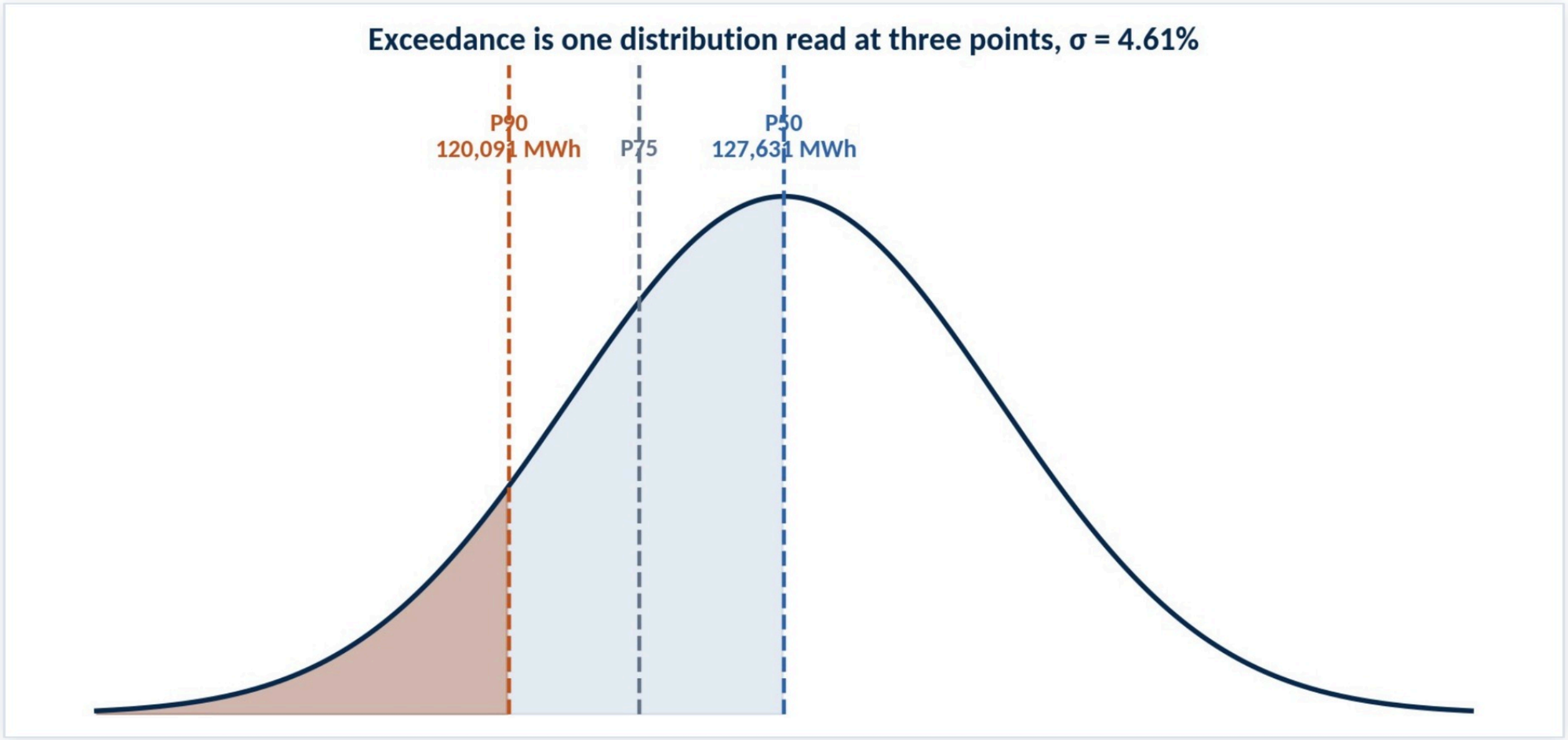
Ten losses stand between the plane of array and the export meter. Each is an assumption someone must defend.



The loss stack of the worked example, indexed to the collector plane.

One distribution, read at three points

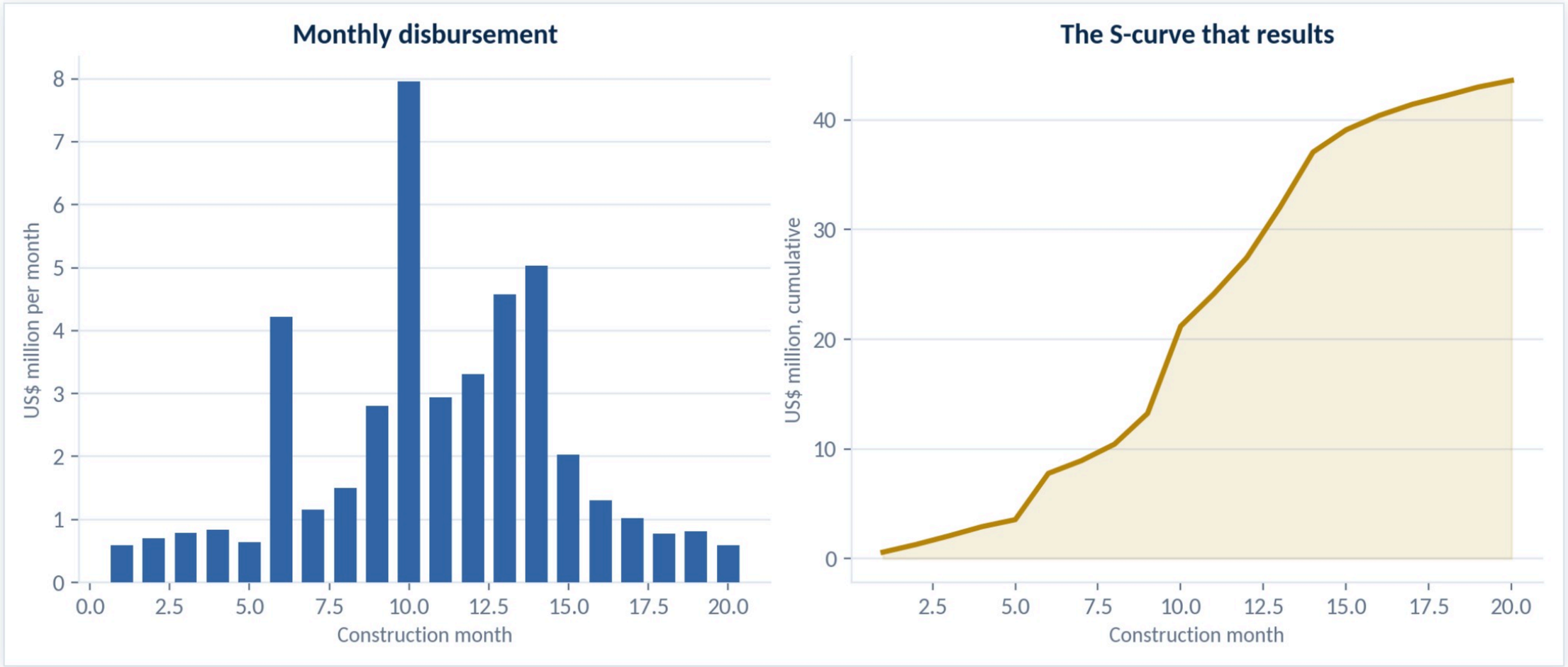
P50, P75 and P90 are not three studies. They are one distribution and one standard deviation, read at three exceedance levels.



Exceedance factors: P75 = 1 − 0.6745σ, P90 = 1 − 1.2816σ, with σ = 4.61%.

The S-curve is a consequence, not a drawing

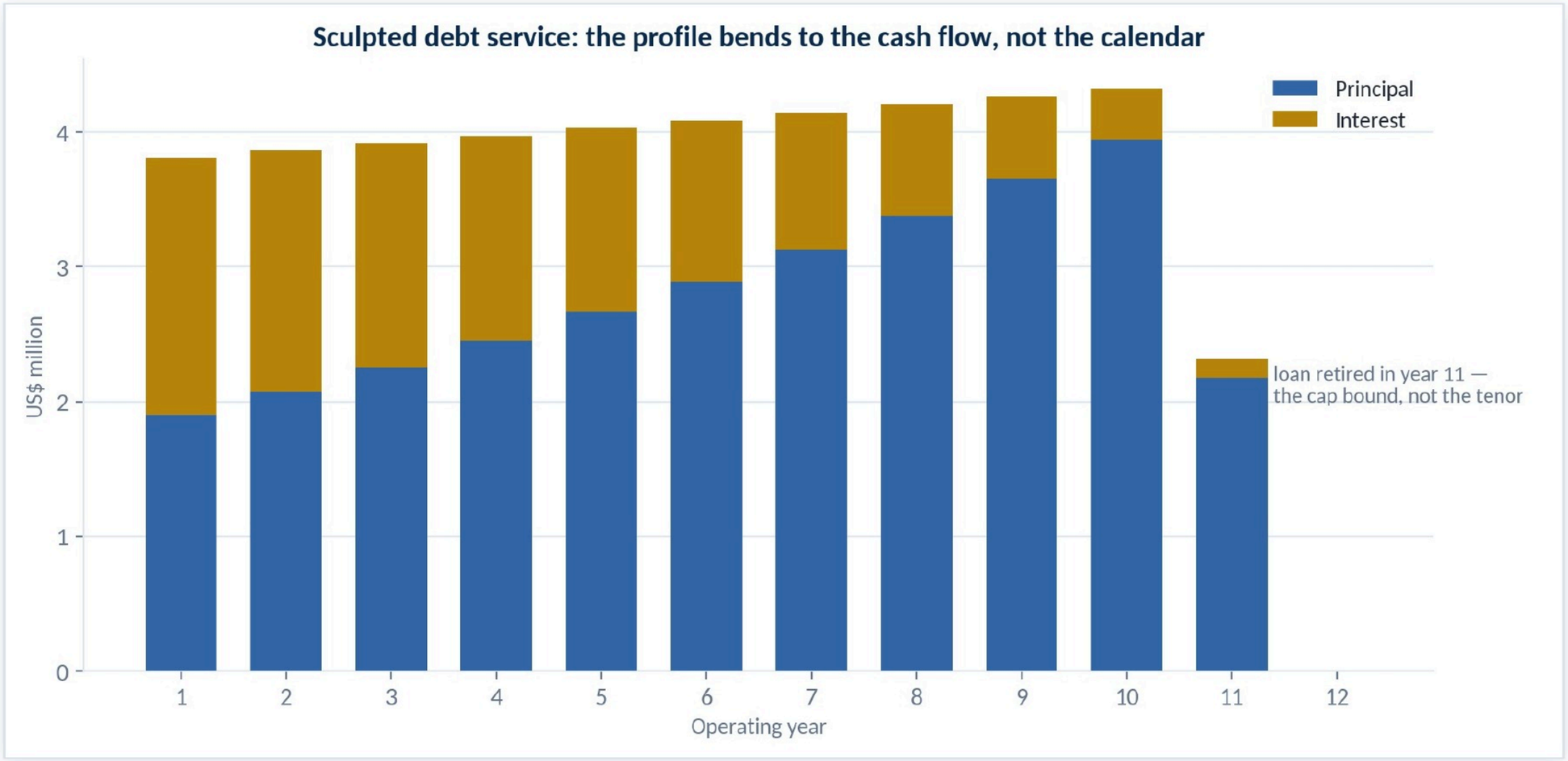
Give every line a window and a shape, and the disbursement profile emerges. Draw the curve first and you have a picture, not a plan.



Monthly disbursement and the cumulative curve of the worked example.

Sculpted debt bends to the cash flow

Principal is whatever the target coverage leaves after interest, so the profile rises with the plant's cash instead of following a calendar.



Annual debt service in the worked example, sculpted at 1.30x on the P90 case.

STAGE 4 · PROJECT FINANCE

One worked illustration: 50 MWp in the Atacama

The figures below are internally consistent and reproducible with a hand calculator; the point is the shape of the case, not the digits.

$47.17 M
Total uses
cost, interest, fees, reserve

$30,516,844
Senior debt
gearing cap binds at 70%

$16.65 M
Sponsor equity
the residual that closes it

11.81%
Equity IRR
expected case, dated flows

9.47%
Project IRR
unlevered

1.30x
Min coverage, P90
flat on target by construction

1.39x
Min coverage, P50
headroom above the lock-up

1.42x
Loan life coverage
over the loan's real life

- **Why the cap binds.** Coverage capacity was $40.18 M against a cap of 0.70 × $43.60 M, so the loan books well below capacity.
- **What that causes.** Less debt than the cash flow can carry retires the loan in year eleven and releases the reserve then.
- **Payback.** Cumulative equity cash turns positive around year eleven, the same year cash tax begins.

STAGE 5 · THE DECISION

Four cases, three clear the bar, one is priced out

A 50 MWp Atacama plant judged on one currency and one calendar against a 10% return, 1.20x coverage, positive value and 15-year payback.

11.81%

Base — 70% contracted

1.30x coverage, +$3.29 M value, 11-year payback — clears all four, rank 1

10.65%

PPA price −10%

At $46.8/MWh: 1.30x, +$1.29 M, 12 years — clears all four, rank 2

10.33%

Capital cost +10%

Debt re-sized to $33.6 M: 1.30x, +$0.76 M, 12 years — clears all four, rank 3

8.57%

Fully merchant

1.30x, −$1.9 M, 13 years — fails the return and value hurdles

3 of 4

Cases clearing every hurdle

Ranking by equity return among survivors; the fourth is a priced rejection

INVEST

Verdict, on the base case

Approved with conditions; contracted share written in as the binding one

- **Coverage is flat at 1.30x.** Debt sculpted to a bad-year target pushes stress onto equity returns, not onto lender coverage. The bank is fine; the sponsor is not.
- **Overruns are mostly debt-financed.** Under a binding gearing cap, roughly seventy percent of the overrun is borrowed, so the equity hit is real but muted.
- **Structure, not price, is the negotiation.** Merchant exposure costs 323 basis points against 116 for a ten percent price cut, so the committee bought contracted share.

WHAT YOU RECEIVE

What is in the download

Format: 128-slide PowerPoint + PDF.

PPTX	128-slide Practitioner Guide (PowerPoint, with speaker notes)
PDF	149-page Practitioner Handbook (PDF)
REF	Glossary, reference benchmarks and source bibliography
CASE	One 50 MWp DC / 38 MWac case carried through both documents

Before you buy

- Supplied as PowerPoint (PPTX) and PDF.
- Software-agnostic: it describes a discipline, not a spreadsheet.
- Includes a glossary, eight families of reference benchmarks and a bibliography.
- For Excel models, see the solar suite or the standalone model.

One worked example is carried through both the slide guide and the handbook.

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 guide

- Five stages, each closing on a documented decision
- One worked example carried from the first page to the last
- Formulas and figures you can check with a calculator
- Speaker notes, glossary, benchmarks and a source bibliography

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.