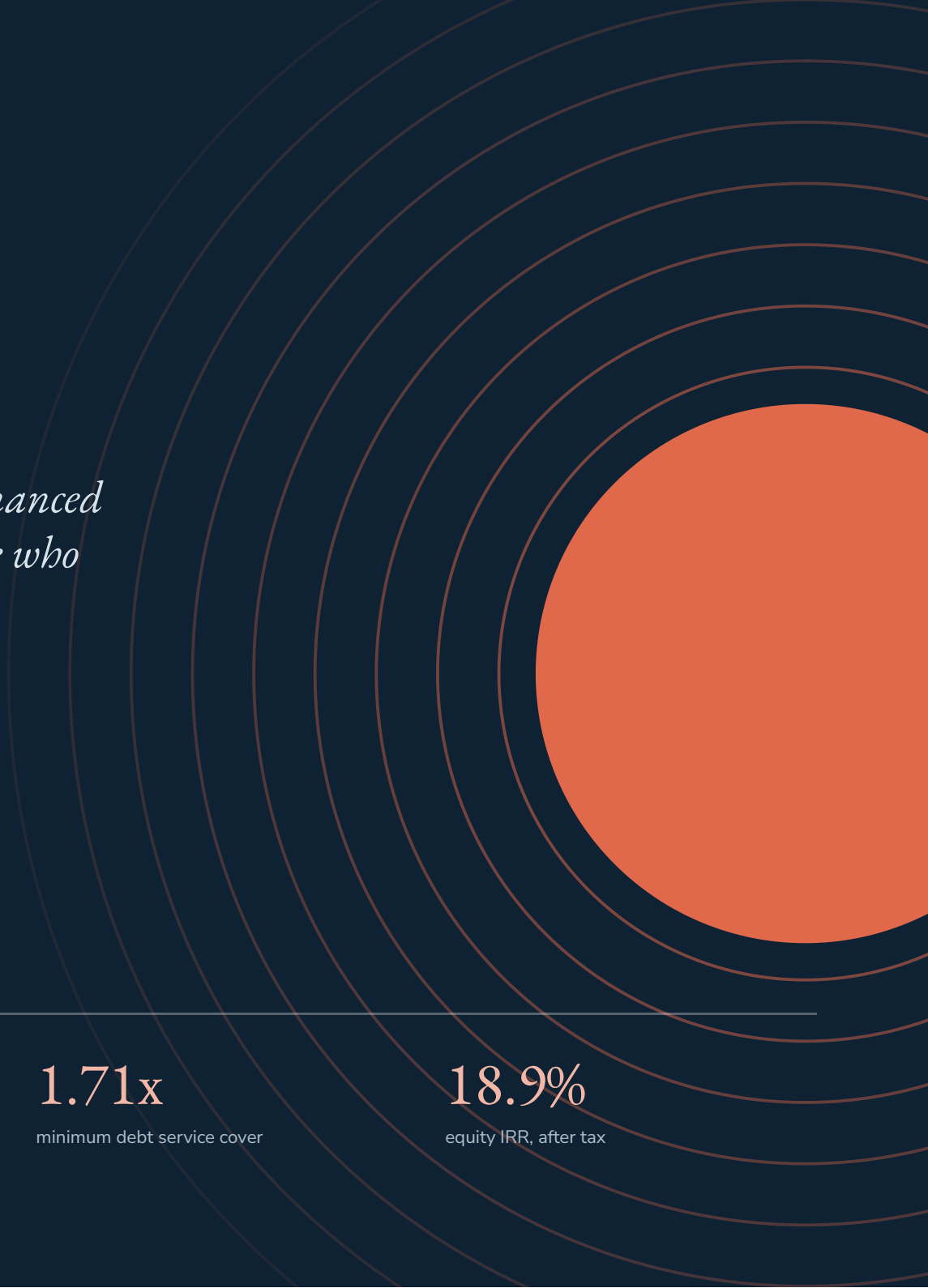
PROJECT FINANCE · MODEL REPORT · HYPOTHETICAL PROJECT

Project Coral

Can a US$345m small-scale LNG plant be financed with bank debt, and what does it pay the people who fund it?



US$345m	58%	1.71x	18.9%
total cost incl. financing	funded by senior debt	minimum debt service cover	equity IRR, after tax

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A gas plant that earns a fee, not a bet on *the price of gas*.

Nigeria holds the largest gas reserves in Africa, yet many factories and power users sit far from a pipeline. Small-scale LNG is one way to reach them: gas is cooled into a liquid at a plant, then moved by truck to customers who would otherwise burn diesel.

Project Coral is a hypothetical 0.6 million-tonne-a-year plant of this kind. A gas company would deliver its own gas to the plant, pay a fixed fee for every unit turned into LNG, and take the LNG away. The plant never owns the gas, so its income does not swing with gas prices. That arrangement, called a **tolling contract**, is what makes the project bankable.

I built the model to answer the three questions a lender and an equity investor would ask before committing money, and then to show which assumptions the answers depend on.

> *The project carries 58% debt with room to spare, earns equity investors 18.9% a year, and still meets lenders' minimum cover if the fee falls 15%.*

58%
debt / total funding

How much can it borrow?

US$201.8m of senior debt, limited by the 65% gearing cap. The cash flows could support US$246.7m at the lenders' 1.40x cover test.

1.71x
min. DSCR

Can it repay the loan?

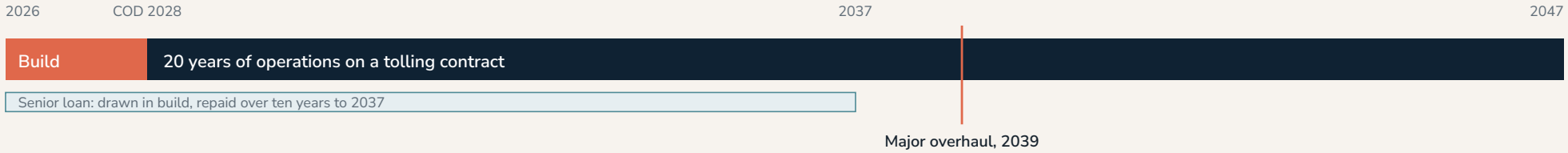
Yes. Repayments are shaped to the cash flows, so cash covers debt service 1.71 times in every year of the ten-year loan.

18.9%
equity IRR

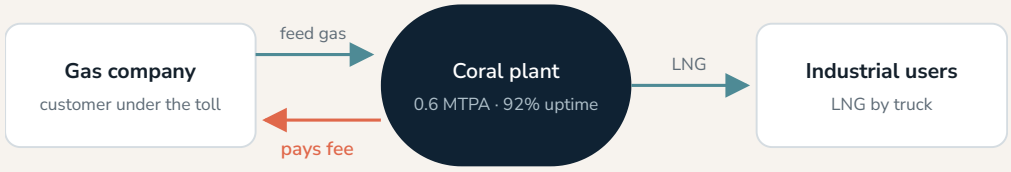
What do investors earn?

An 18.9% equity IRR and 5.8x money back. Equity is repaid by 2033, five years after the plant starts.

Two years to build, twenty years to earn.



How the money flows



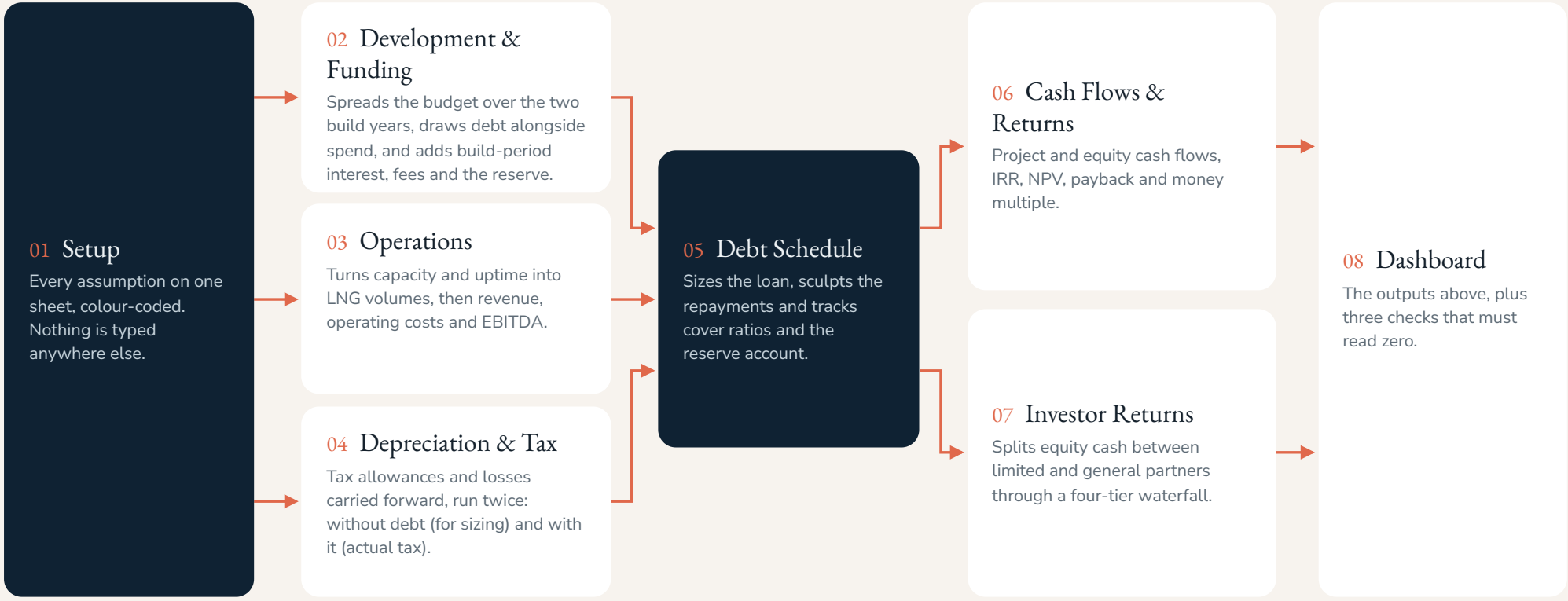
US$3.20 per MMBtu, rising 1.5% a year · plant never owns the gas

The model also has a **merchant** switch, where the plant buys gas at US$3.00 and sells LNG at US$9.00. Section 06 compares the two.

Key assumptions

ITEM	INPUT
Development cost (2 trains, storage, pipeline link, 10% contingency)	US$310.5m
Output at full availability	27.9m MMBtu a year
First-year ramp-up	75%
Fixed O&M + insurance	5.5% of hard costs
Cost inflation	2.5% a year
Major overhaul, operating year 12	20% of trains cost
Loan: rate · tenor · upfront fee	9% · 10 years · 2%
Lenders' tests: max gearing · min cover	65% · 1.40x
Corporate tax · tax depreciation	30% · 15 years

Eight sheets, one direction of travel.



Built to be audited

Inputs are blue on cream, formulas black, links green. Each sheet runs on the same 2026 to 2047 timeline, so any row can be traced across sheets by column.

No circular references

Interest is charged on opening balances and debt is sized on cash flow before the interest tax saving. That keeps the model stable and the sizing slightly conservative.

Checks that must hold

Sources equal uses; the loan is fully repaid at maturity; the waterfall pays out every dollar of equity cash. All three read zero in every case tested.

Lenders test two limits. The *lower one* wins.

USES	US$M	SOURCES	US$M
Development cost	310.5	Senior debt	201.8
Interest during build	19.1	Sponsor equity	143.3
Upfront loan fee	4.0		
Debt service reserve (6 months)	11.5		
Total uses	**345.1**	**Total sources**	**345.1**

Sizing the loan

201.8

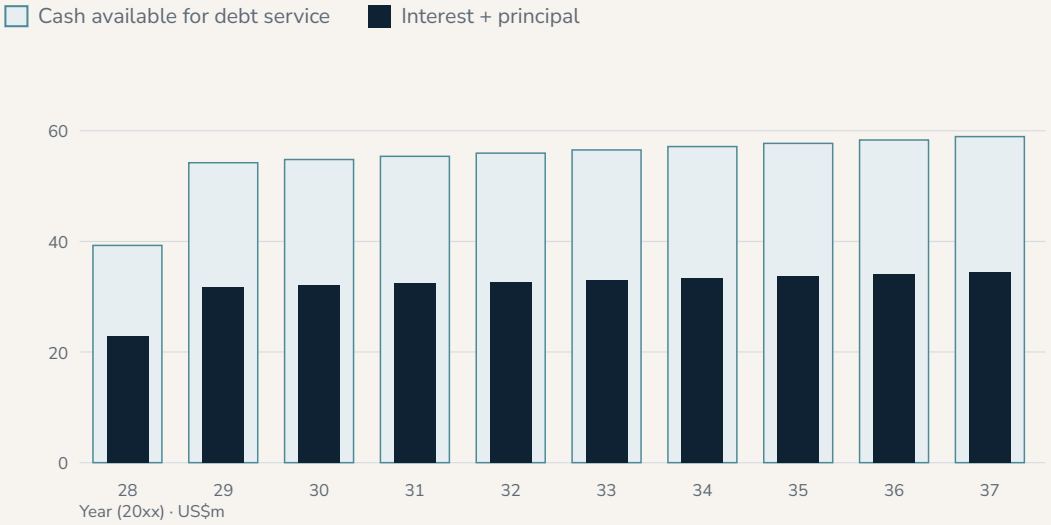
Gearing test: 65% of the US$310.5m development cost. **Binding.**

246.7

Cover test: the debt ten years of cash flow can carry at 1.40x, discounted at the 9% loan rate.

Because the gearing cap bites first, the project borrows US$45m less than its cash flows could support. That headroom is what protects lenders when things go wrong (section 06).

Repayments shaped to the cash flows

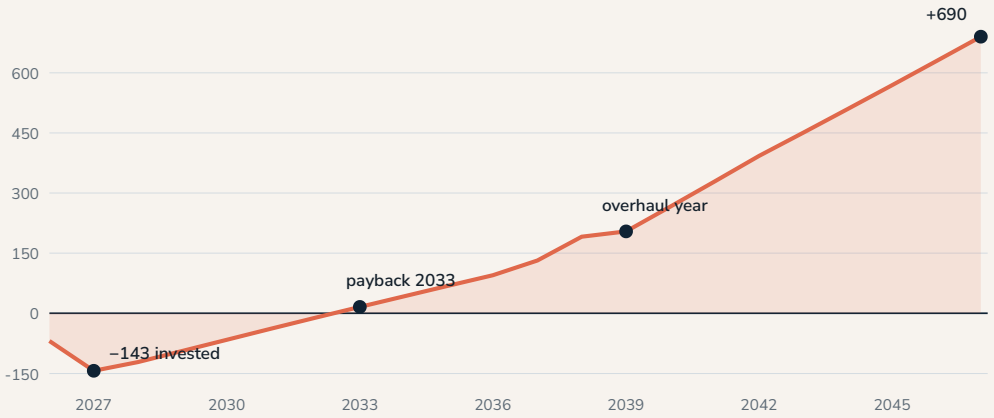


Instead of equal instalments, each year's repayment is set so that cash covers debt service by the same multiple. The result is a flat 1.71x through the loan's life: lighter payments in the ramp-up year, heavier ones as the fee escalates. Lenders call this **sculpting**. The loan life cover ratio (LLCR) is also 1.71x.

US$143m in, US$833m out over twenty years.

14.9%	18.9%	5.8x	2033	US$119m
project IRR, no debt	equity IRR, with debt	equity money multiple	equity payback year	project NPV at 10%

Cumulative cash to equity



Debt lifts the return from 14.9% to 18.9% because the plant earns more on its assets than the 9% the loan costs. Distributions jump in 2038, once the loan is repaid, and dip in 2039 when the plant is overhauled.

Who gets what: the investor waterfall

Equity comes from limited partners (90%) and a general partner who manages the project (10%). Cash is paid in this order:

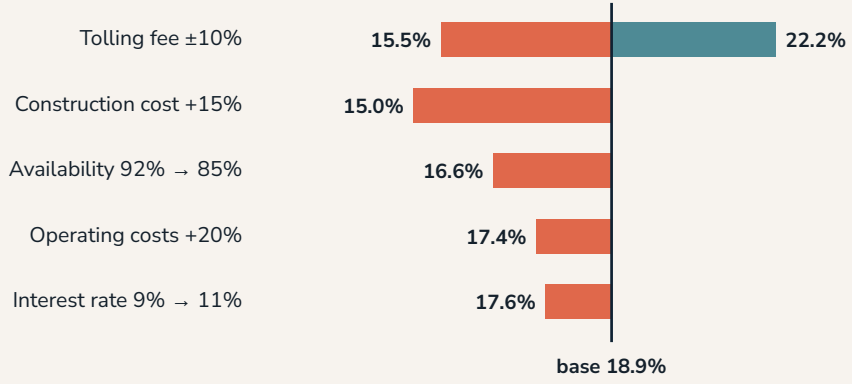
1	LP capital + 8% preferred return	179.8
2	GP capital back	14.3
3	GP catch-up to 20%	12.7
4	Residual split 80 / 20	626.6

	PAID IN	PAID OUT	IRR	MULTIPLE
Limited partners	128.9	681.1	18.7%	5.3x
General partner	14.3	152.4	20.3%	10.6x

The catch-up gives the GP 20% of total profit for 10% of the money, which is its reward for running the project.

What breaks the deal, and *by how much*.

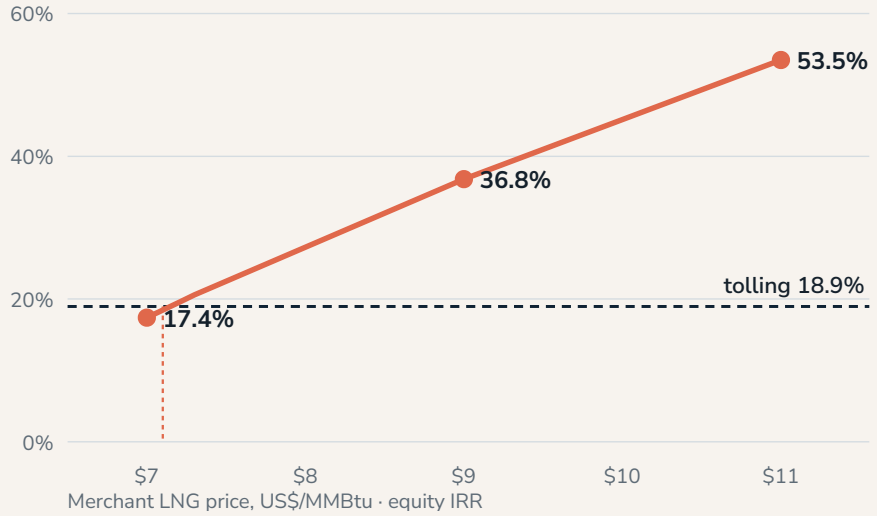
Equity IRR when one assumption moves



CASE	MIN. DSCR	EQUITY IRR
Base case	1.71x	18.9%
Construction cost +15% (more debt and equity)	1.48x	15.0%
Tolling fee −10% (US$2.88)	1.51x	15.5%
Tolling fee −15% (US$2.71): cover test starts to bind	1.40x	13.6%

The fee and the build cost matter most. Even a 15% cost overrun keeps cover above the 1.40x lenders need. The fee can fall about 15% before the cover test, not gearing, sets the loan size.

Tolling or merchant?



Run as a merchant plant at US$9 LNG, equity earns **36.8%**, nearly double the toll. But that return moves with the LNG price. At about **US$7.10**, 21% below the base price, it falls to what the toll pays with no price risk at all.

The model keeps the same loan in both cases to isolate the price effect. In practice lenders would cut the debt for a merchant plant, which pushes the equity return down further.

> *Verdict: finance it on the toll. The merchant upside is real, but it is a commodity bet lenders would price out.*

Every model simplifies. These are the choices I made.

Annual periods

Real project models often run semi-annually to match loan payments. Annual steps keep this one readable; the sizing logic carries over unchanged.

Sizing on pre-interest tax

Debt is sized on cash flow before the interest tax saving. That avoids a circular calculation and leaves a small extra cushion for lenders.

US dollars throughout

Fees and debt are in dollars, so currency risk sits with the customer. A naira-earning version would need an FX line and likely a different loan.

A single overhaul

One overhaul in year 12 at 20% of the trains cost. A fuller model would add a maintenance reserve account funded from cash flow.

No decommissioning

The plant is assumed to stop in 2047 with no clean-up cost or residual value. Both would be small next to the twenty years of cash flow.

Merchant debt held constant

Section 06 uses the same loan in both commercial cases on purpose, so the comparison shows only the price effect.

The Excel model is attached alongside this report. Switch the commercial case or change any input on the Setup sheet, and every output and check updates.

Project Coral is a hypothetical project. Costs and prices are my own assumptions for illustration, not data from any company.

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