

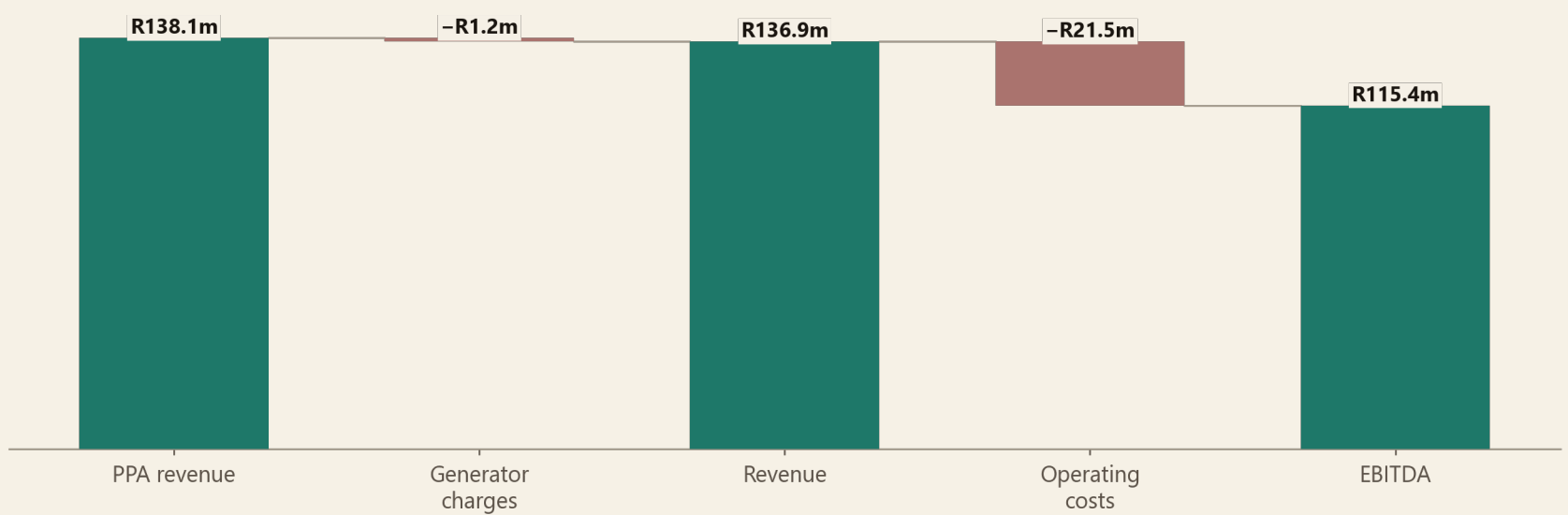
# From sunlight to CFADS, and the price in between

Every ratio a lender tests, from DSCR to LLCR to the stress cases, starts with one line: how much energy the plant sells and at what price. This post builds Riverbend's CFADS from that line, shows where the price sits against the offtaker's alternative, the mechanics that roll it forward for twenty years, and what one degradation assumption is worth.

## 01 YEAR 1, LINE BY LINE

The energy yield report puts the plant's P50 at 2,350 kWh per kWp a year at nameplate: 146,875 MWh on 62.5 MWp. The modules lose 1% of their output in the first year, as their warranty allows, so year 1 delivers 145,406 MWh. The offtaker takes all of it at R0.95/kWh, priced at the point of injection: the PPA counts the kWh the plant puts into Eskom's network. The project pays Eskom's charges for using the network as a generator; the offtaker pays everything on its own side. What is left after operating costs is EBITDA; with no tax to pay in the early years (post 7), it is also CFADS.

EXHIBIT 2.1 Year 1: from PPA revenue to EBITDA (R m)



145,406 MWh x R0.95/kWh = R138.1m. Generator charges: 145,406,250 kWh x 0.445 c + R0.54m = R1.19m.

TABLE 2.2 Operating costs in year 1

| OPERATING COST, YEAR 1     | R M   | BASIS                                    |
|----------------------------|-------|------------------------------------------|
| O&M (full-wrap)            | 12.00 | R240 per kW AC a year, at CPI            |
| Insurance                  | 2.92  | 0.45% of the capital cost a year, at CPI |
| Asset management and SPV   | 3.20  | R3.2m a year, at CPI                     |
| Land lease                 | 2.05  | 1.5% of revenue                          |
| Socio-economic development | 1.37  | 1.0% of revenue                          |
| Total                      | 21.55 |                                          |

Stated in 2029 rand, the prices of the first operating year; each line then rises at CPI or with revenue. Full-wrap O&M: one fixed fee covers preventive and corrective maintenance, spares and an availability guarantee; the inverter overhaul is a lifecycle cost outside it.

Each line sits against a published benchmark. O&M is inside Meridian Economics' R150 to R250 per kW a year for South African solar (2020 rand), taken forward with inflation. Insurance is at the upper end of IRENA's international range, for South African riot, hail and theft cover. Landowners on South African wind and solar farms are typically paid a share of revenue, here 1.5%. Socio-economic development is carried at the 1% of revenue REIPPPP requires; a private deal has no such rule, so this line is a sponsor's choice and a conservative one.

02 THE PRICE

The offtaker stays on its Eskom Megaflex account. For each kWh the plant wheels, Eskom credits the offtaker's account with its loss-free energy rate for that time of use (the WEPS rate before network losses), less the slice of Eskom's generation capacity charge built into that rate (70% of the charge in 2026/27). So the credit sits below the Megaflex energy rate the offtaker pays: it carries no losses and none of the capacity charge. Every other charge on the account continues: the offtaker still uses, and pays for, Eskom's grid. So the credit, not the full Megaflex rate, is what Riverbend's price has to beat. The credit varies by season and time of day, so it is weighted by when the tracker generates:

TABLE 2.3 The offtaker's alternative: Eskom's wheeling credit

| ESKOM 2026/27, TIME OF USE | CREDIT (C/KWH) | SHARE OF OUTPUT |
|----------------------------|----------------|-----------------|
| High-demand peak           | 586.91         | 0.6%            |
| High-demand standard       | 146.72         | 13.0%           |
| High-demand off-peak       | 97.82          | 4.0%            |
| Low-demand peak            | 243.57         | 9.4%            |
| Low-demand standard        | 136.95         | 53.1%           |
| Low-demand off-peak        | 97.82          | 19.9%           |
| Weighted                   | 141.59         |                 |

Share of output: the tracker's hourly output at the site, modelled from the sun's path for its latitude and tracking, placed in Eskom's time-of-use calendar (weekdays, Saturdays, Sundays and public holidays; high-demand season June to August); it agrees with PVGIS satellite data within 2%. To operating year 1:  $x\ 1.0883 \times 1.0320 \times 1.0300$  (NERSA's 8.83% from April 2027, then CPI for the years NERSA has not set) =  $x\ 1.1568$ , giving R1.64/kWh. Eskom Schedule of Standard Prices 2026/27, Table 7.

TABLE 2.4 Where the price sits

| YEAR-1 TARIFF                                    | R/KWH |                              |
|--------------------------------------------------|-------|------------------------------|
| Sponsor's floor: equity IRR = 16% cost of equity | 0.84  | debt re-sized at each tariff |
| Riverbend's PPA tariff                           | 0.95  | 13.4% above the floor        |
| Offtaker's ceiling: its Eskom credit             | 1.64  | it saves 42.0% at the tariff |

Floor solved by re-running the full model at trial tariffs.

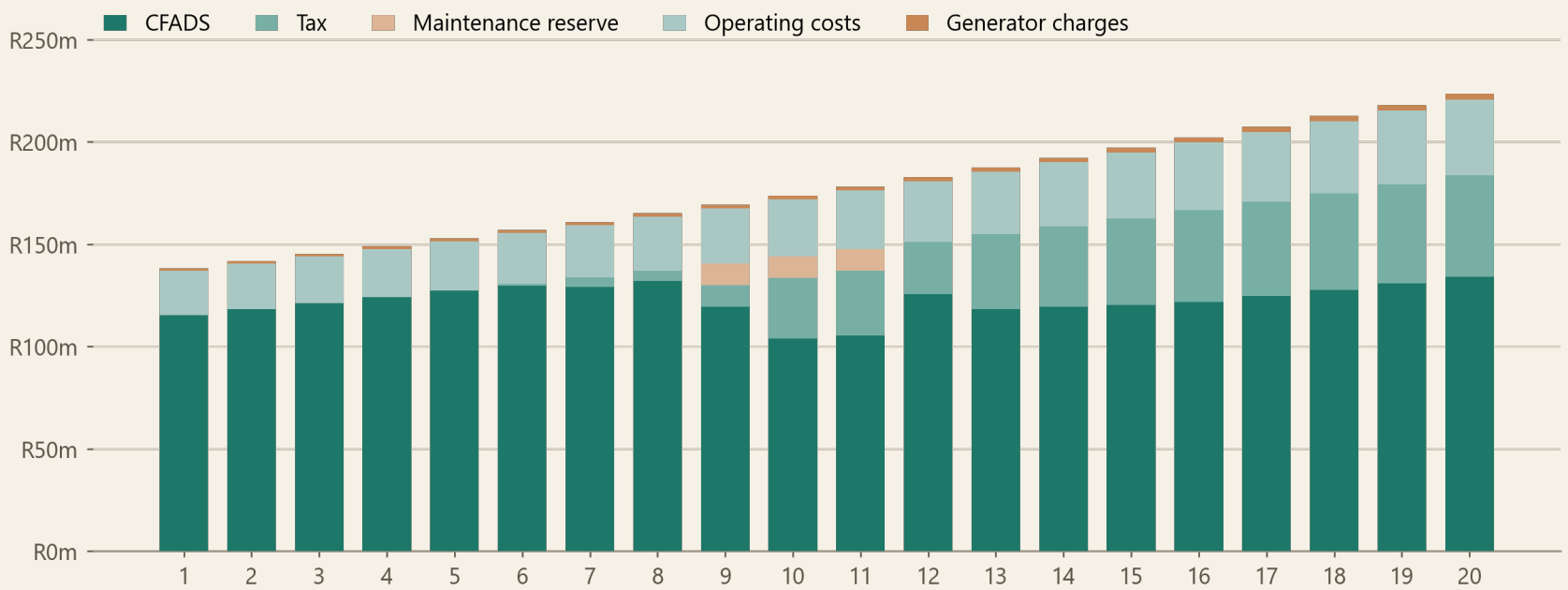
Priced at its floor, the sponsor would hand the offtaker the whole saving; near the ceiling the offtaker gains nothing and a competing supplier wins the contract. At R0.95 the offtaker saves 42%, R2.6bn over the PPA, and the equity earns 21.6% against its 16% cost. Because the tariff and the credit both follow CPI, the saving holds its share; Eskom's credit would have to grow 3.8% a year slower than inflation to erase it within the 15-year debt tenor. A lender reads that margin as the reason the offtaker keeps taking the power.

03 ROLLING IT FORWARD

Year 1 is the easy part. Four mechanics decide whether year 15 is right, and each one compounds:

- Degradation. Output follows the module warranty: 1% lost in year 1, then 0.4% of nameplate a year, so year-20 output is 91.4% of the P50 at nameplate (92.3% of year 1).
- Indexation. The tariff rises with CPI, by at least 3% and at most 6% a year. With CPI at the 3% inflation target from COD, it rises 3% a year: from R0.95 to R1.67/kWh by year 20.
- Generator charges rise at CPI + 2%, from 0.9% of PPA revenue in year 1 to 1.3% in year 20.
- Lifecycle cost. The year-12 inverter overhaul costs R31.1m in that year's rand (R22.5m at today's quote), paid from the maintenance reserve built over the three years before (post 6).

EXHIBIT 2.5 Where each year's PPA revenue goes (R m)



Stacked to PPA revenue. The inverter overhaul reaches the cash flow as reserve contributions in years 9 to 11, not as a spike in year 12; tax grows once the assessed loss is used up.

The P90 case is the same build at 92.5% of P50 output, with costs unchanged. Because costs don't fall with output, P90 CFADS falls by more than the 7.5% cut in energy: that is the cash flow the lender sizes against at 1.20x in post 4.

04 ONE ASSUMPTION, THREE ANSWERS

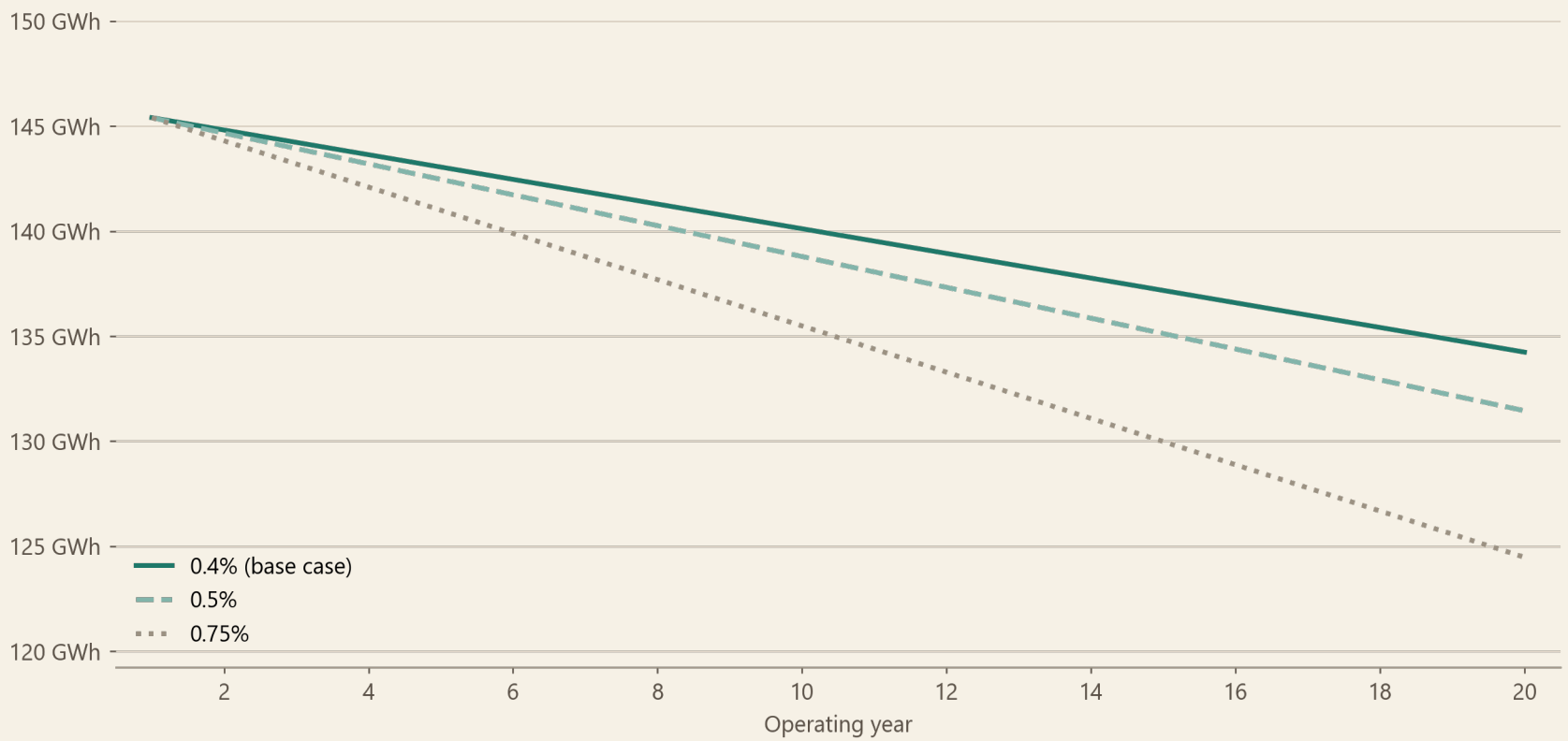
Degradation is an assumption a yield report states in one line, and it compounds. Riverbend uses the module warranty: 0.4% of nameplate a year after year 1. An independent engineer will often use 0.5%, because a warranty is a floor for each module rather than the fleet's expected result; long-run field studies of older modules in hot climates have measured 0.75% and more. The same deal under all three:

TABLE 2.6 One degradation line, three answers

| DEGRADATION AFTER YEAR 1        | OUTPUT, 20 YEARS | EQUITY IRR | MINIMUM DSCR |
|---------------------------------|------------------|------------|--------------|
| 0.4%: the warranty (base case)  | 2.796 TWh        | 21.6%      | 1.57x        |
| 0.5%: an engineer's haircut     | 2.769 TWh        | 21.3%      | 1.56x        |
| 0.75%: field data, hot climates | 2.699 TWh        | 20.7%      | 1.54x        |

Full engine runs; the debt is sized in each. Warranty: N-type TOPCon datasheets (Trina, Jinko, JA, Canadian Solar). Field data: NREL PV Fleet Performance Data Initiative (2022).

EXHIBIT 2.7 Output by operating year under the three rates



The gap opens slowly and never closes: each year's loss carries into every year after it.

05 CONCLUSION

CFADS is built, not assumed. Degradation, indexation and the generator charges compound, and the lifecycle cost moves through the reserve. One degradation line moves the equity IRR by 0.9 points between the warranty and field data, which is why the model carries every line by year, with its own driver, rather than a single margin. Next: the money spent before the first kWh.

The 18 months before the first kWh

Monthly draws, IDC, fees, the DSRA, and why the dates matter.

Riverbend Solar is an illustrative case study: a fictional deal with no real counterparty. Every figure comes from one run of the engine; every exhibit is generated, none is typed.