

Cullinan Solar PV

Traditional Mounting vs Jurchen PEG®: CAPEX, OPEX & IRR Impact

Prepared by| CatalystGrid Energy / Bluestone Service Group | September 2026

Executive Summary

Cullinan Ph1 (62.70MWac 82.15MWp(dc) + Ph2 (72.60MWac 95.08MWp(dc) — 135.30MWac177.23MWp(dc) combined

CAPEX SAVING

22.76%

R406.8M / \$22.0M lower total installed cost vs traditional tracker system

OPEX SAVING

≥ 62%

62% cut to your Opex budget vs traditional tracker/fixed-tilt)

IRR IMPACT

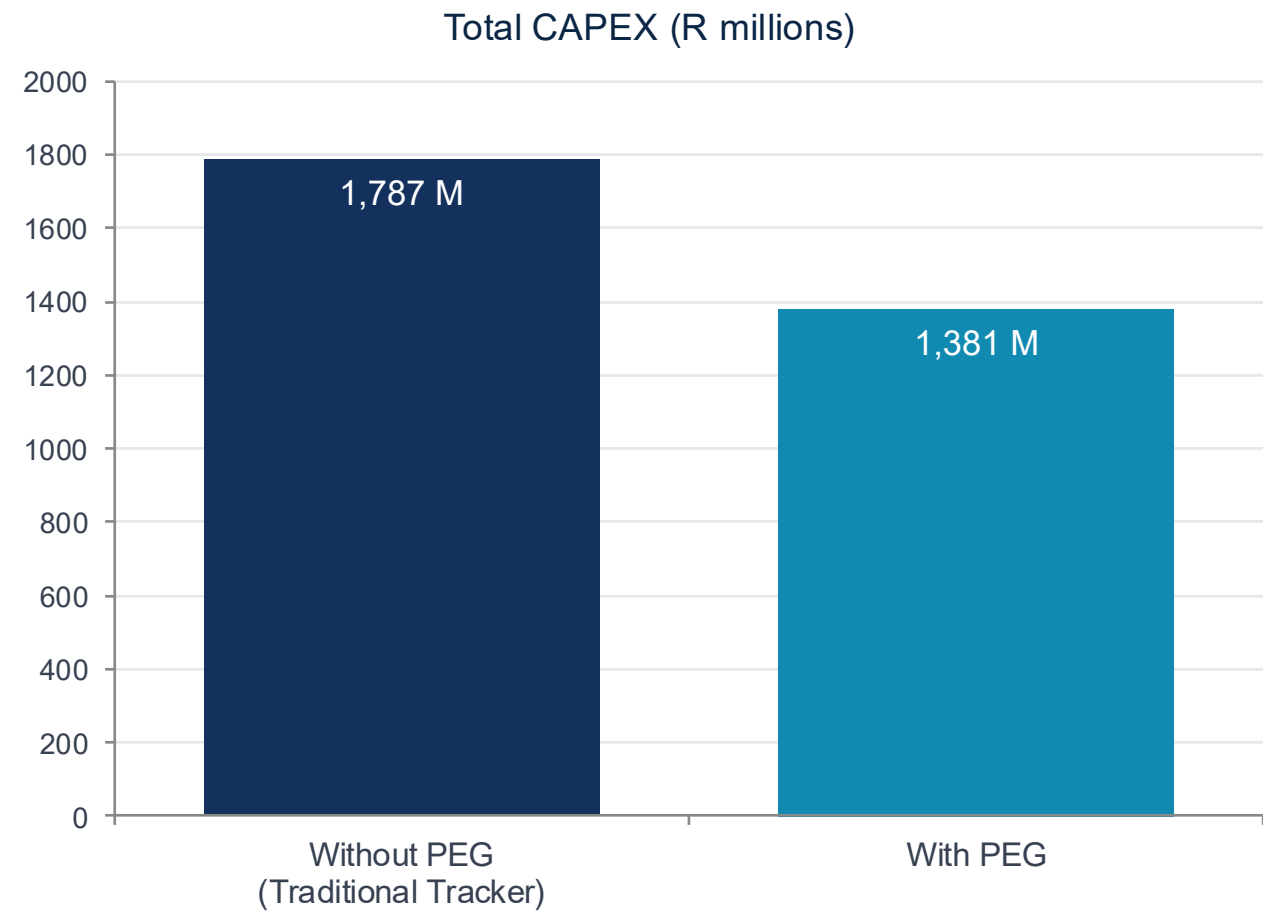
Positive ↑

Lower CAPEX + lower OPEX + faster install directly lift equity and project IRR

PEG's savings are led by faster, lower-labour installation and a simplified mounting structure — not a compromise on module count, warranty, or design life (10-year warranty, 25-year design life, SANS-verified structural & corrosion calculations).

CAPEX Comparison

Total installed cost — Without PEG vs With PEG (Cullinan Ph1 + Ph2 combined)

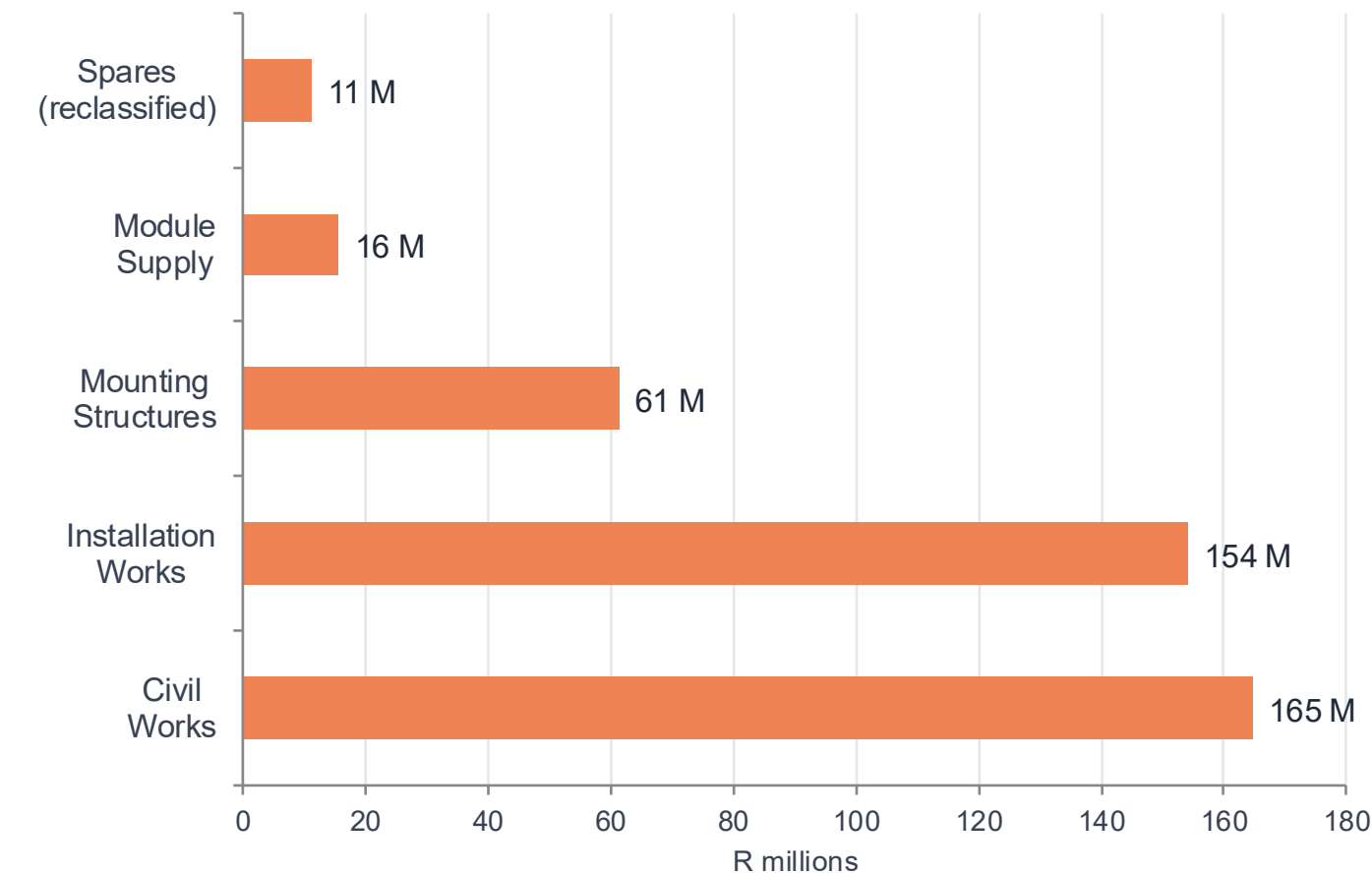


	Without PEG	With PEG
Total CAPEX (ZAR)	R 1,787.4M	R 1,380.6M
Total CAPEX (USD)	\$96.6M	\$74.6M
Saving (ZAR)	—	R 406.8M
Saving (USD)	—	\$22.0M
% of Total Project	—	22.76%

Source: ACES Renewables Cullinan pricing model (Tumelo Lekalakala, 6 Aug 2026), with PEG pricing substituted by CatalystGrid/Jurchen using ACES's own module & FX pricing (R18.50/USD).

Where the CAPEX Saving Comes From

R406.8M total saving, broken down by cost line (Ph1 + Ph2 combined)



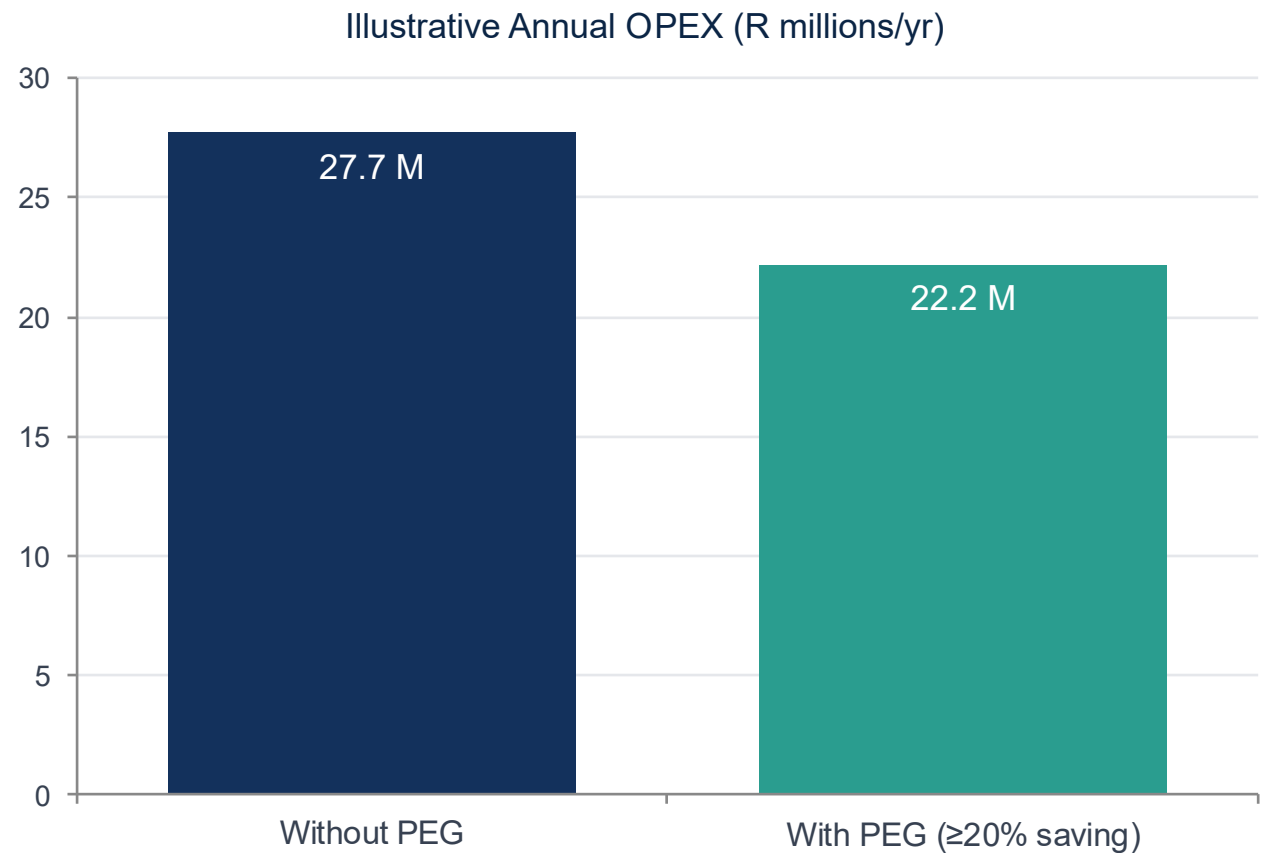
Cost Line	Saving (R)	% of Saving
Civil Works	R164.6M	40.5%
Installation Works	R154.1M	37.9%
Mounting Structures	R61.3M	15.1%
Module Supply	R15.6M	3.8%
Spares (reclassified*)	R11.2M	2.7%
Total	R406.8M	100%

**Jurchen includes 1% spares within its module & mounting supply pricing rather than as a separate line — the R11.2M is a reclassification, not a scope reduction.*

Civil Works and Installation Works together account for over three-quarters of the saving — PEG's foundation-free design (no pile-driving or concrete foundations) removes most civil works cost, while its simplified structure enables rapid deployment using scalable unskilled-labour teams rather than specialist tracker crews.

OPEX Impact

Illustrative annual O&M cost — based on ACES's own OPEX benchmark and Jurchen's written saving undertaking



How this is calculated

- ACES's own benchmark: traditional-system OPEX runs at ~1.5–1.6% of CAPEX per year (per Dave Kruger, 3 Aug 2026 call).
- Applied to the R1,787.4M traditional CAPEX at the 1.55% midpoint: ≈ R27.7M/yr illustrative baseline OPEX.
- Jurchen's written undertaking: minimum 20% OPEX saving vs traditional tracker/fixed-tilt systems.
- Applying the 20% minimum: ≈ R22.2M/yr with PEG — an annual saving of ≈ R5.5M, or ≈ R138M undiscounted over a 25-year design life.
- *This is an illustrative figure, not a substitute for a full O&M cost model — shown to size the directional benefit only.*

IRR Impact

How CAPEX, OPEX and schedule savings flow through to equity and project IRR

↓ CAPEX

22.76% lower CAPEX

Smaller equity cheque and/or smaller debt facility for the same contracted capacity

↓ OPEX

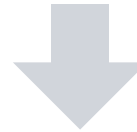
≥20% lower OPEX

Higher net cash flow to equity and debt service across the operating life

↓ Schedule

Faster installation

Earlier COD and earlier revenue — protects against FC delay and COD penalties



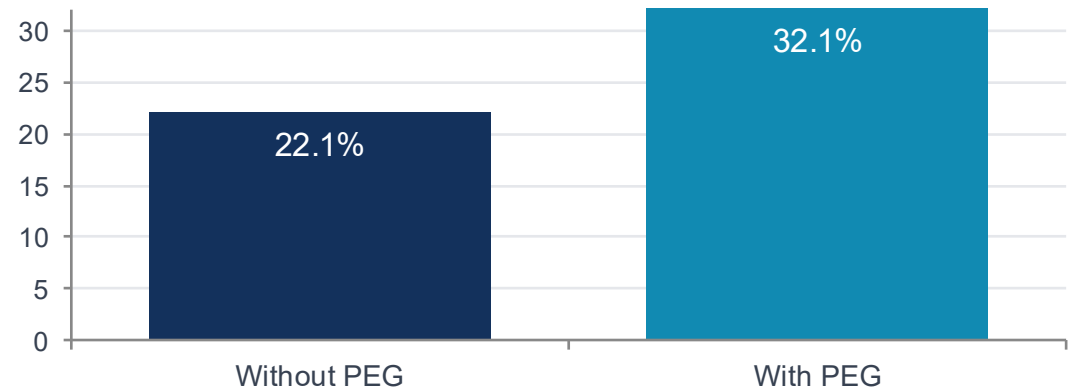
Net effect: higher equity IRR and project IRR than the traditional tracker case, at the same contracted capacity and PPA revenue

For context: full PVsyst + IRR/NPV modelling on the comparable Kareeboom 450 MWac project (same PEG vs. tracker comparison, run with iX Engineers) showed a 53–89% NPV advantage for PEG on identical land. An illustrative Cullinan-specific IRR/NPV run using this updated pricing follows on the next page — full lender-ready numbers still require ACES's actual PPA, debt and tax assumptions.

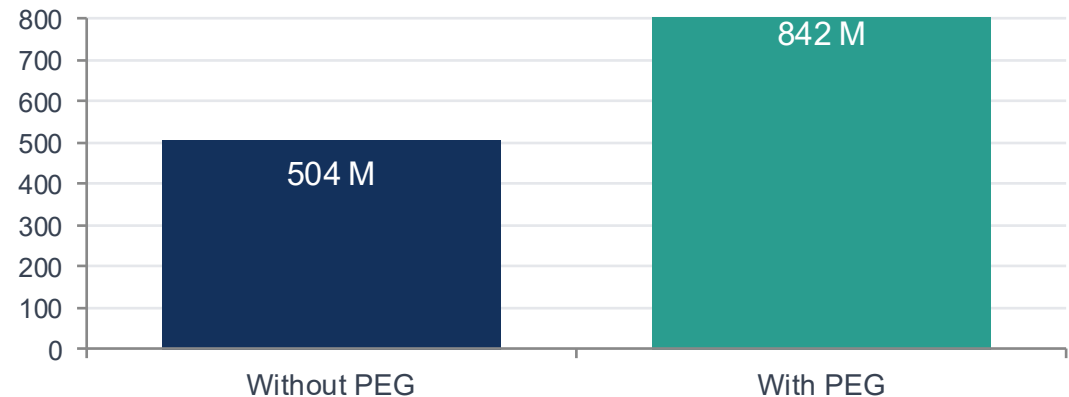
Cullinan-Specific IRR/NPV Model

Illustrative equity returns using this updated CAPEX & OPEX pricing for Cullinan Ph1 + Ph2 135.30MWac177.23MWp(dc) combined

Equity IRR (%)



Equity NPV @ 14% (R millions)



Metric	Without PEG	With PEG	Impact
Total CAPEX	R1,787.4M	R1,380.6M	▼22.76%
Debt (70% gearing)	R1,251.2M	R966.4M	▼ R284.8M
Equity (30% gearing)	R536.2M	R414.2M	▼ R122.0M
Year-1 Revenue	R286.4M	R286.4M	Unchanged
Year-1 OPEX	R27.7M	R22.2M	▼20%
Equity IRR	22.1%	32.1%	▲ +10.0pp
Equity NPV @ 14%	R504.0M	R841.8M	▲ +67.0%

Assumptions (illustrative — not a lender financial-close model):
P50 energy 301.46 GWh/yr (Jurchen PVsyst, Cullinan combined at 130MWac grid cap), degrading 0.55%/yr; PPA tariff R0.95/kWh escalating 5.5%/yr; 70/30 debt/equity gearing; 12% cost of debt, 15-yr amortizing tenor; 27% tax; 20-yr straight-line depreciation; 25-yr project life; 14% equity discount rate for NPV. CAPEX/OPEX per ACES pricing model and Jurchen's written OPEX undertaking. Tariff, debt terms and tax structuring to be confirmed by ACES/lenders.

Summary & Next Steps

Cullinan Ph1 + Ph2 — PEG case at a glance

Metric	Without PEG	With PEG	Impact
Total CAPEX	R1,787.4M / \$96.6M	R1,380.6M / \$74.6M	▼ 22.76%
Annual OPEX (illustrative)	≈R27.7M/yr	≈R22.2M/yr	▼ ≥20%
Design Life / Warranty	25yr life / 10yr warranty	25yr life / 10yr warranty (extendable to 25yr)	= / ▲
Installation Programme	Specialist tracker crews	Scalable unskilled-labour teams — compressible	▲ Faster
Equity IRR (illustrative model)	22.1%	32.1%	▲ +10.0pp