HIGHLIGHTS OF ZERO CAPEX SOLAR SOLUTION

for

SAMPLE PROJECT

Analysis and Presentation by

BRIGHTEN AFRICA
SOLAR ENERGY SOLUTION

March 2025

SAMPLE PROJECT

Executive Summary

FOLLOWING SLIDES ARE SNAPSHOTS OF A DETAILED QUANTITATIVE TECHNICAL AND FINANCIAL ANALYSIS ON SAMPLE FARM SITE WITH THE PURPOSE OF PROPOSING A ZERO CAPEX SOLAR SOLUTION TO MAXIMISE SAVINGS ON ELECTRICITY COSTS

- Electricity consumption data was received for 3 Eskom incomers all on Ruraflex Interval tariff

Farm Grid	1000 KVA capacity
Packhouse	500 KVA capacity
Hostel & Village	200 KVA capacity

- Features of the Ruraflex tariff : Time of Use based, with High Demand and Low Demand season tariffs. Notified Maximum Demand is charged on incomer KVA capacity regardless of usage / peak KVA.

- The Farm Grid and Packhouse electricity cost is projected in 2025 to be **R 3,903,342** ex VAT, and represents **91.5%** of the total Sample Project Site 1 electricity cost.

- As the Hostel & Village is > 3km away, and is only 8.5% of the total electricity cost, the recommendation is to design the solar system to target maximum savings from the Farm Grid and Packhouse, excluding the Hostel & Village. It is not cost effective to lay cables to supply the Hostel & Village. A small separate solar system may be considered in the future.

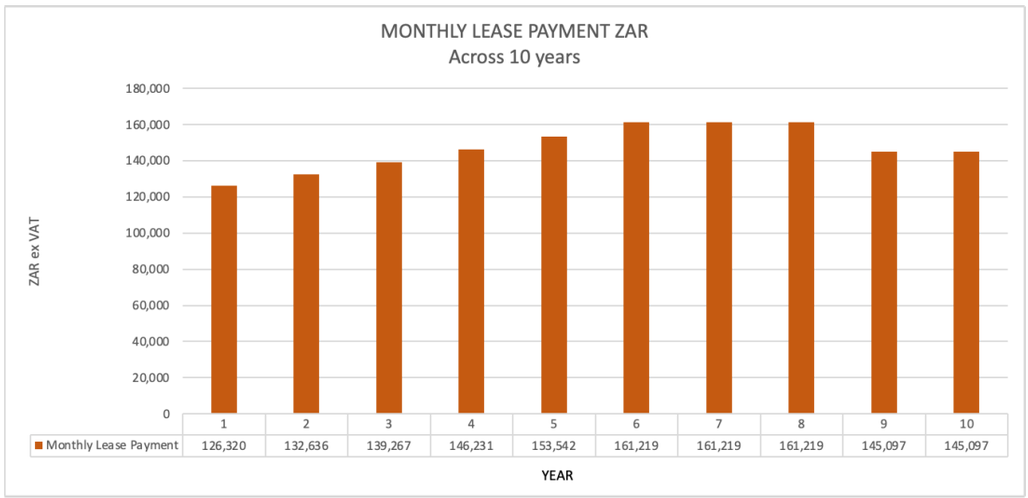
- The Packhouse structure has a saw tooth roof exceptionally suited to solar generation, with a ~ 5000 sq m angled roof facing almost North (5 degrees off).

SAMPLE PROJECT

Executive Summary

Continued...

- The study concludes that a roof mounted solar system on the Packhouse sized between 500 to 600 KWp is optimal. This is subject to the roof structure being strong enough to safely carry the weight of the solar plant.
- The proposed funding structure is a lease to own, over a 10 year term with early buyout options.
- Lease escalation is set at x%, for 5 years, followed by 2 years of no escalation and final 2 years with 10% discount on payments.
- The lease covers solar plant Operation and Maintenance cost, plant performance monitoring, management and reporting, manufacturer warranties and insurance over the lease term.



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Executive Summary

Continued...

Projection of Eskom electricity costs at Sample Project for Farm Grid + Packhouse

based on 8% annual escalation, no solar power, and only includes variable costs (for Ruraflex that is only kWh costs)

ORIGINAL ANNUAL ENERGY COST TABLE
NO PV NO BATTERY

LOAD SHEDDING STAGE 0

Tariff : ESKOM RURAFLEX INTERVAL

WIT 2

YEAR	UTILITY COST	PEAK DEMAND COST	DIESEL COST	TOTAL COST ZAR	CUMULATIVE ZAR
	278,103,284	0	0	278,103,284	
				LOAD SHEDDING STAGE 0	
1	3,903,342	0	0	3,903,342	3,903,342
2	4,096,510	0	0	4,096,510	7,999,852
3	4,392,825	0	0	4,392,825	12,392,677
4	4,746,094	0	0	4,746,094	17,138,771
5	5,132,823	0	0	5,132,823	22,271,595
6	5,597,895	0	0	5,597,895	27,869,490
7	6,087,807	0	0	6,087,807	33,957,297
8	6,473,390	0	0	6,473,390	40,430,687
9	6,988,519	0	0	6,988,519	47,419,206
10	7,550,758	0	0	7,550,758	54,969,964
11	8,163,276	0	0	8,163,276	63,133,240
12	8,951,310	0	0	8,951,310	72,084,551
13	9,557,806	0	0	9,557,806	81,642,357
14	10,284,293	0	0	10,284,293	91,926,650
15	11,114,628	0	0	11,114,628	103,041,278
16	12,010,725	0	0	12,010,725	115,052,003
17	13,105,538	0	0	13,105,538	128,157,542
18	14,252,489	0	0	14,252,489	142,410,030
19	15,200,763	0	0	15,200,763	157,610,793
20	16,361,256	0	0	16,361,256	173,972,049
21	17,677,491	0	0	17,677,491	
22	19,111,475	0	0	19,111,475	
23	20,843,089	0	0	20,843,089	
24	22,422,050	0	0	22,422,050	
25	24,077,130	0	0	24,077,130	278,103,284

~55 million Rands ESKOM cost in 10 years !

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Executive Summary

Continued…

- Taking into account the lease cost over 10 years, the savings were projected over 10 - 15 - 20 and 25 years. The useful life of the solar system is over 25 years. The savings increase sharply after year 10, when there are no further lease payments. The projections considered the following parameters

  - Lease escalation : which is set at x% for 5 years, followed by 2 years of no escalation and final 2 years with 10% discount on payments
  - Eskom tariff escalation: average 8% annually
  - Solar generation degradation : 0.7% average annually
  - Conservative solar generation profile of ~ 10% less than the Helioscope simulation which is based on historical meteorological data.

- Below is a summary of the annual savings (ZAR ex VAT)

RANGE	CUMULATIVE SAVINGS NET OF SOLAR LEASE
10 YEARS	9,929,584
15 YEARS	33,636,479
20 YEARS	68,055,244
25 YEARS	117,760,009

WIT 3

SAMPLE PROJECT

Executive Summary

Continued...

IMPACT OF PROPOSED SOLAR PLANT ON Sample Project's ELECTRICITY COST

RANGE	ORIGINAL ESKOM COST*	CUMULATIVE SAVINGS NET OF SOLAR LEASE	SAVING %
10 YEARS	54,969,964	9,929,584	**18.1%**
15 YEARS	103,041,278	33,636,479	**32.6%**
20 YEARS	173,972,049	68,055,244	**39.1%**
25 YEARS	278,103,284	117,760,009	**42.3%**

All amounts in ZAR ex VAT

* Variable kWh based cost for Farm Grid and Packhouse only

SAMPLE PROJECT

LEASE TO OWN DETAILS

SOLAR PLANT For Packhouse and Farm Grid

A lease option for a PV system with capacity of xxx kWp and yyy KW 3 phase inverters is presented below for consideration:

Table 1: 10-Year Lease Agreement

Year	Monthly Lease at % p.a for Years 2-6	Annual Lease
	(R) Excl. VAT	(R) Excl. VAT
1	126,320	1,515,834
2	132,636	1,591,626
3	139,267	1,671,207
4	146,231	1,754,768
5	153,542	1,842,506
6	161,219	1,934,631
7	161,219	1,934,631
8	161,219	1,934,631
9	145,097	1,741,168
10	145,097	1,741,168

Lease Features

- Price escalates by x% in Year 2 to Year 6,
- 0% escalation in Year 7 and 8,
- A further 10% reduction in Year 9 and 10.
- After Year 10, the client keeps and runs the system until end of life (i.e. 25+ years).
- Early termination before 6-year anniversary will be on a pro-rata equal to yy% of the remaining value of the contract, calculated based on the projected energy lease over the remaining term to the cumulative annual lease.
- Early termination after 6-year anniversary will be on a pro-rata equal to zz% of the remaining value of the contract, calculated based on the projected energy lease over the remaining term to the cumulative annual lease

SAMPLE PROJECT

LEASE TO OWN DETAILS

SOLAR PLANT For Packhouse and Farm Grid

2. BENEFITS OF OUR LEASE OPTION

A solar plant lease option can be a practical and financially sound choice especially based on a high electricity consumption at Sample Project and seasonality of the business. Below are some of the benefits for your consideration:-

2.1 **No Upfront Costs:** No need for Sample Project to make an initial capital investment, as the solar system will be installed by the appointed EPC and owned by IPP; Sample Project is able to use its capital for highest returns instead locking in a solar plant / fixed asset.

2.2 **Predictable Energy Costs:** The commercial offer presented allows for a fixed or predictable pricing, which will enhance the Sample Project's ability to budget for energy expenses more effectively;

2.3 **Cost Savings**: The proposed commercial offer will immediately secure electricity at a lower rate compared to the current Eskom utility price, resulting in significant cost savings from month 1;

2.4 **Flexible Terms:** We offer flexible contractual terms, including early termination / buy-out and are open to engage with Sample Project to meet the specific needs and goals; and provide a more customised solution;

2.5 **Improved Sustainability Image:** By participating in our lease option, Sample Project can enhance their ESG/ corporate social responsibility profile and appeal to environmentally conscious stakeholders;

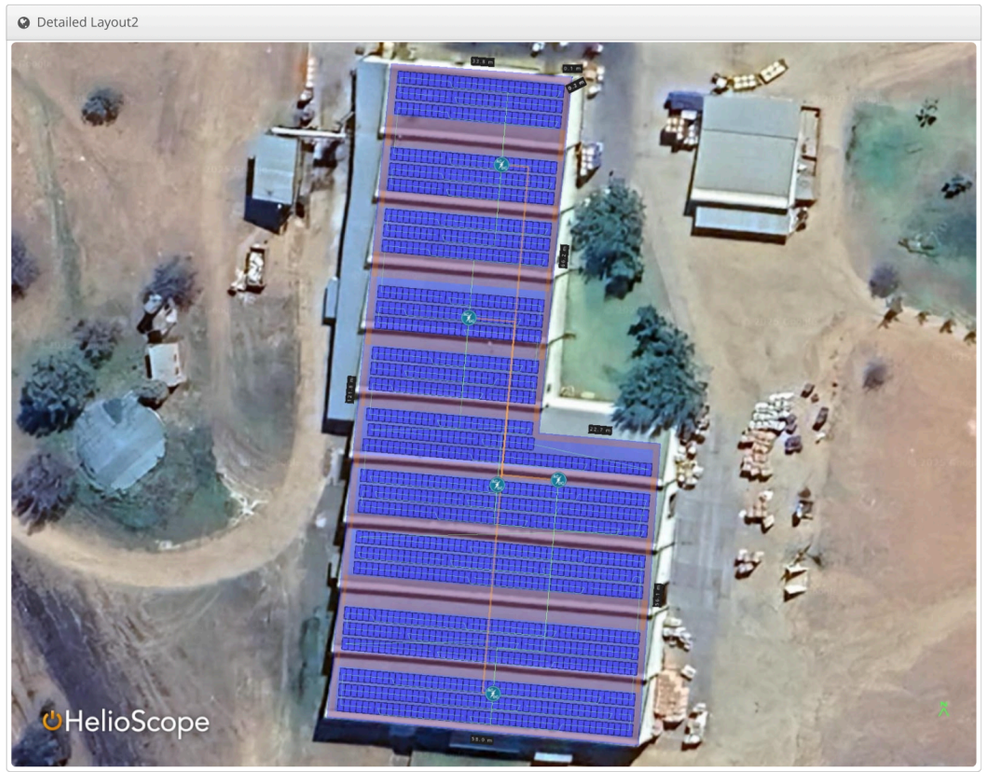
2.6 **Risk Mitigation:** IPP assumes the risks associated with system performance and maintenance, reducing Sample Project's operational risk.

2.7 **Off Balance Sheet:** Unlike a loan / asset finance, a lease will not have any balance sheet impact.

SAMPLE PROJECT

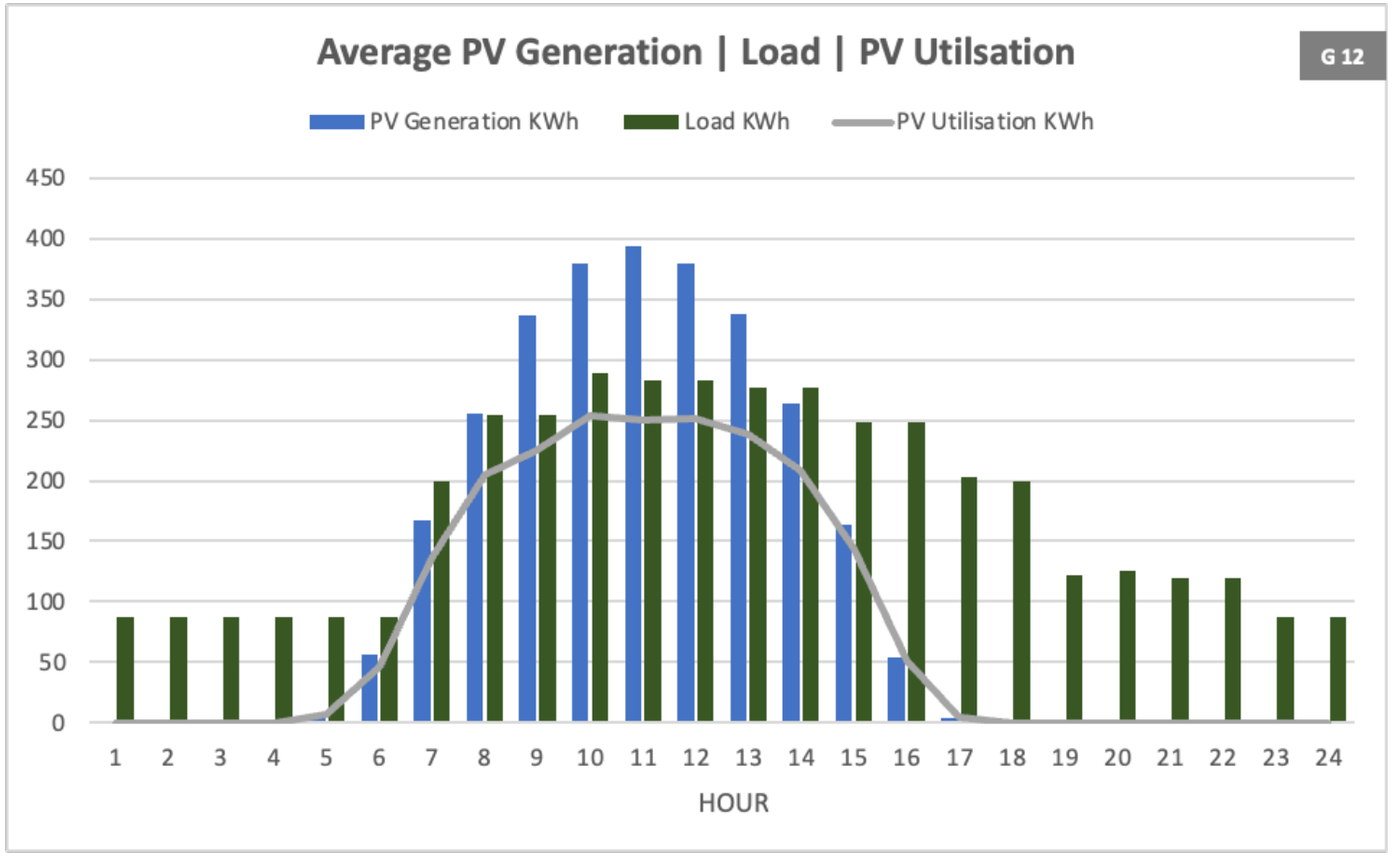
TECHNICAL SECTION

THE FOLLOWING SLIDES PROVIDE FURTHER INSIGHTS INTO SAMPLE PROJECT'S ELECTRICITY USAGE AND THE PROPOSED SOLAR SOLUTION EXTRACTED FROM THE HOURLY MODEL AND HELIOSCOPE SIMULATION



SAMPLE PROJECT

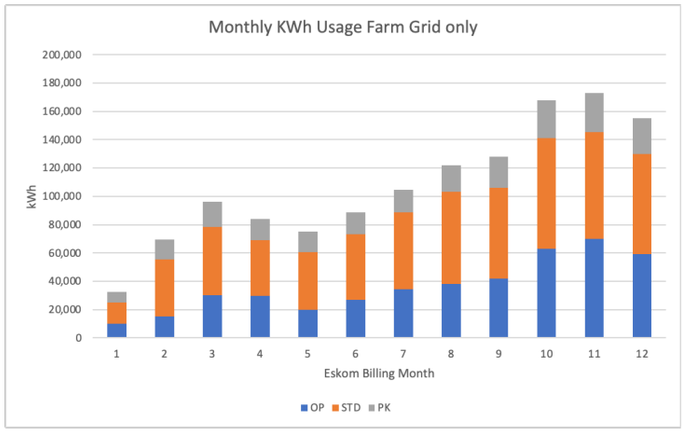
HOURLY AVERAGES



SAMPLE PROJECT

Analysis of Power Consumption

For Packhouse and Farm Grid



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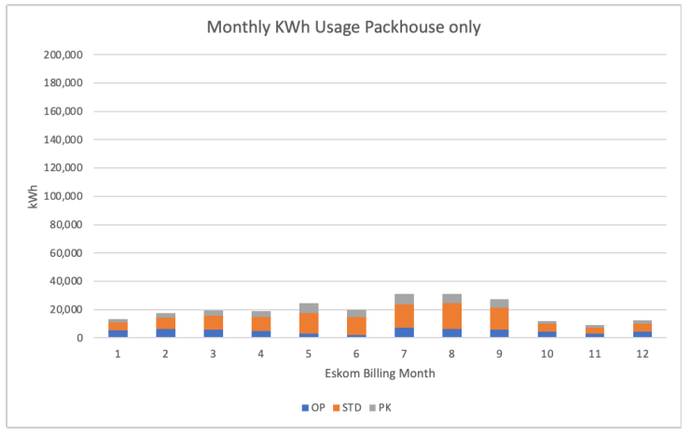

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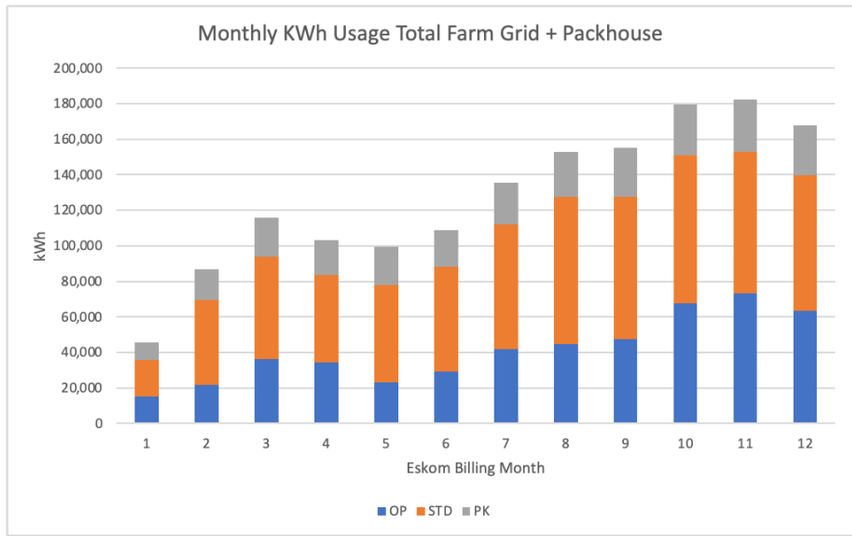

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Load Tariff Split and Energy Cost

Projected variable (load dependent) costs ZAR - YEAR 2025

KWh from Bills

"Month"	OP	STD	PK	Total
1	15,240	20,640	9,656	45,536
2	21,653	47,824	17,445	86,922
3	36,110	57,916	21,612	115,638
4	34,277	49,336	19,498	103,111
5	23,162	54,979	21,324	99,465
6	29,341	58,642	20,939	108,922
7	41,700	70,288	23,451	135,439
8	44,459	83,183	25,112	152,753
9	47,430	79,943	27,904	155,277
10	67,562	83,507	28,438	179,507
11	73,114	79,592	29,534	182,240
12	63,589	76,138	28,056	167,783
Total	497,637	761,988	272,968	1,532,593

ZAR	TOTAL OF BILLS 2 3 COMBINED	~~Acc: (Hostel/village)~~	Acc: (Farm Grid)	Acc: (Packhouse)	
"Month"	OP	STD	PK	Total Charge for Kwh	
1	21,955	40,574	25,264	**87,793**	2.25%
2	31,193	94,013	45,644	**170,850**	4.38%
3	52,020	113,851	56,549	**222,420**	5.70%
4	53,641	105,355	55,420	**214,416**	5.49%
5	37,618	121,848	62,903	**222,368**	5.69%
6	72,628	195,800	162,894	**431,322**	11.05%
7	103,221	234,686	182,436	**520,342**	13.33%
8	110,050	277,739	195,358	**583,147**	14.93%
9	77,033	177,174	82,312	**336,518**	8.62%
10	109,730	185,072	83,886	**378,688**	9.70%
11	118,747	176,395	87,121	**382,263**	9.79%
12	103,277	168,739	82,762	**354,778**	9.09%
	891,113	**1,891,245**	**1,122,549**	**3,904,907**	100.00%
	22.8%	48.4%	28.7%	100.0%	

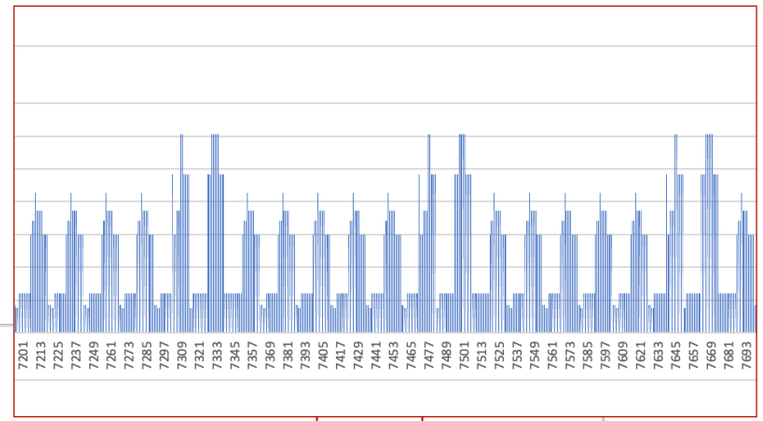
SAMPLE PROJECT

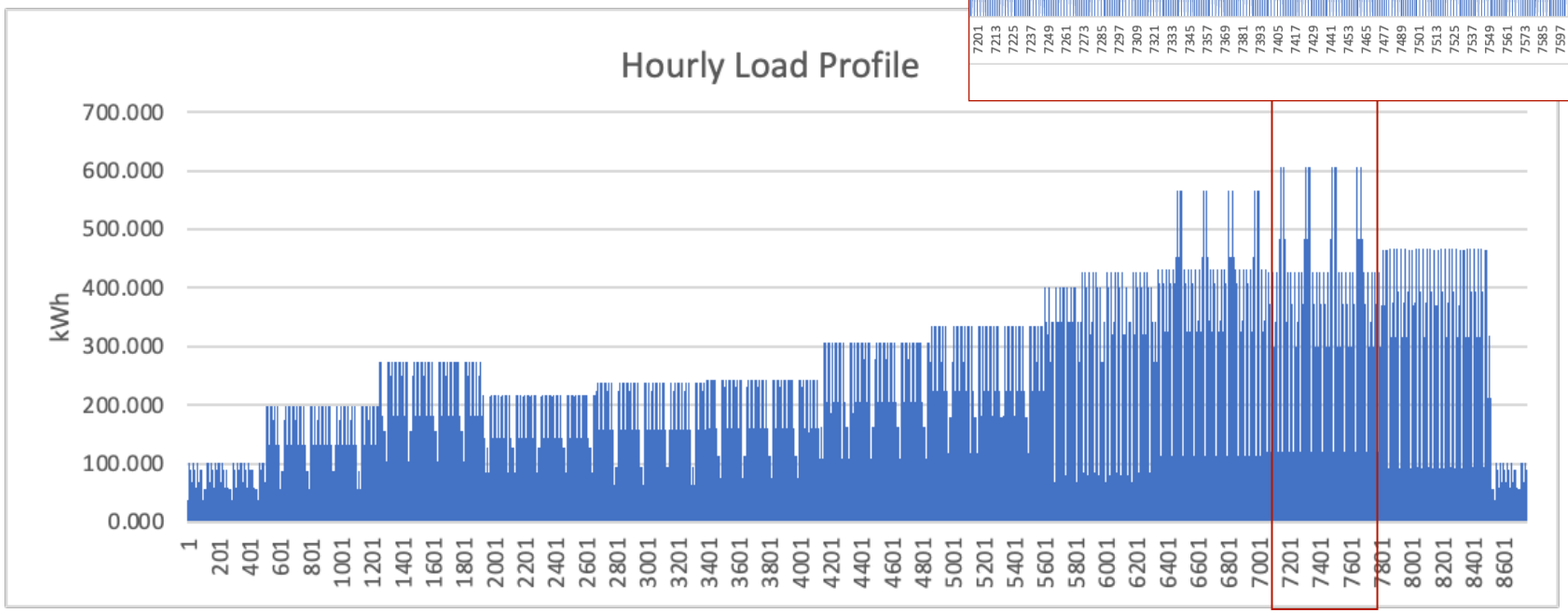
Hourly Load Profile - Full Year

Reconstructed from Electricity Bills

Crucial to an accurate financial projection of the impact of solar is an hourly based model which matches solar generation (sunlight dependent) to hourly load.

Hourly load profile for a full year (8760 hours) was reconstructed from electricity bills and information received about operating hours / seasons.





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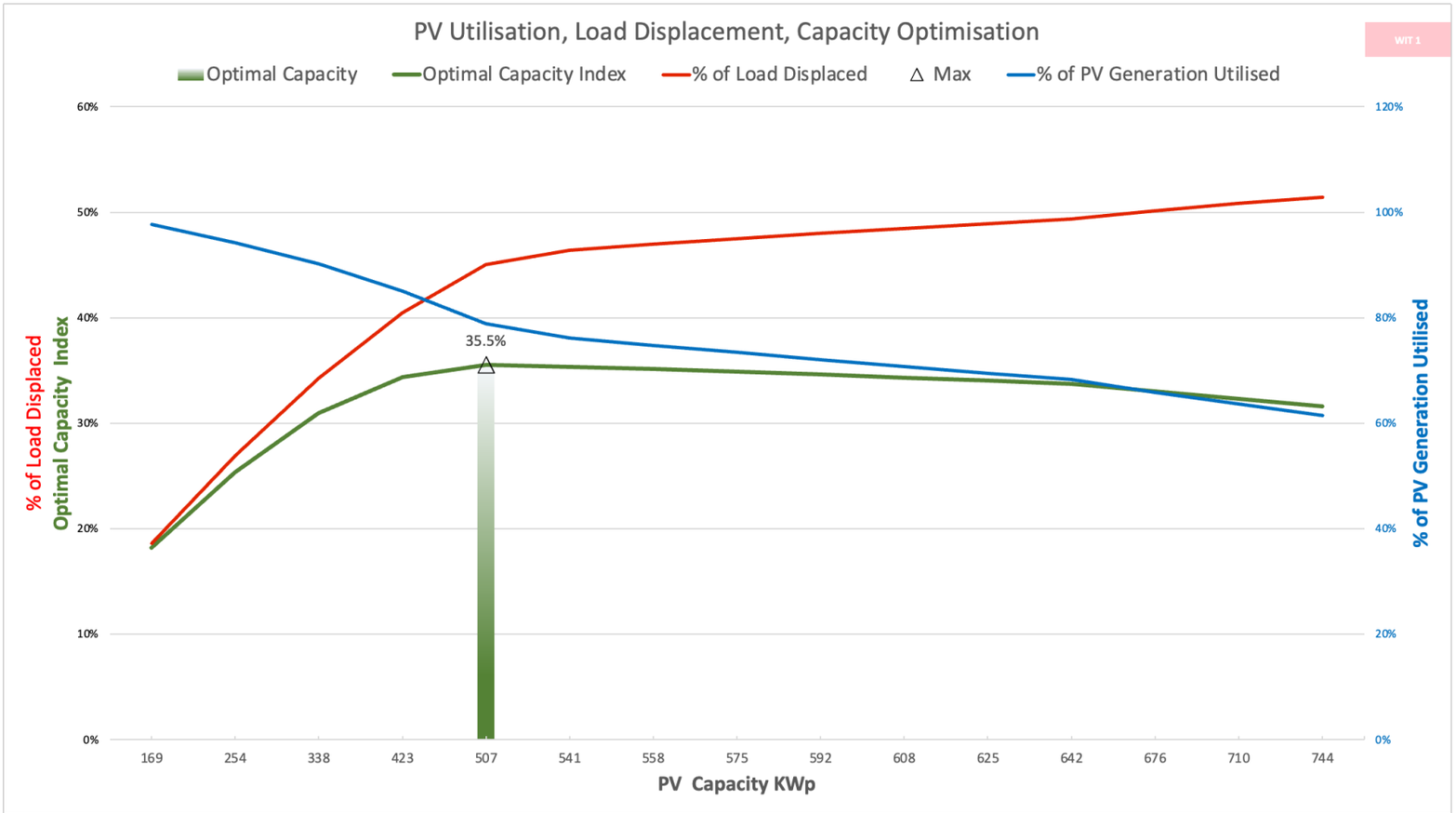
Solar Capacity Optimisation



SAMPLE PROJECT

Important Notes

1. The proposed solution and accompanying lease are preliminary, based on information received.

2. It is recommended to perform a load logging to obtain accurate hourly load profile prior to finalising a design and project scope

3. The full model built for Sample Project will enable us to recalculate any aspect of the figures based on changes in scope or additional data

4. The peak load at the packhouse was 173 - 185 KVA and occurred in the March to September billing period.

5. The peak load at the Farm Grid was 665 KVA and occurred in the November billing period ending 21/11.

6. Month to month peak KVA even if the peaks aligned to the same half hour, the total load did not exceed 787 KVA. After the impact of solar, those peaks will be greatly reduced if they happen to be during daylight hours (highly likely). This presents the possibility of combining the loads of the Farm Grid and Packhouse under the same 1000 KVA incomer and doing away with the 500 KV incomer which will save all the fixed costs ~R 27,000 monthly = R 324,000 in the 12 months starting 2025-04-01. Taking into account the average annual escalations from Eskom (~8% in this study), this adds up to a significant saving of ~R 4.7 million in 10 years. Combing the loads will also allow them to feed off the same solar plant - much better than splitting.

7. It is worth considering electrical power factor correction equipment which is relatively inexpensive and will improve the electrical load and reduce stress on inverters and general electrical supply health, as well as saving money. The load logging exercise referred to above will reveal the current power factor and necessary correction.

8. Considering the load after solar displacement, there is a residual load in the late afternoon outside peak solar hours. There may be a case for a battery energy storage solution as battery prices continue to drop. The battery may perform a valuable tariff arbitrage function by storing excess solar energy and releasing it when there's still a load specially at peak tariff times.

9. Sample Project may engage us to provide a final detailed design and proposal for the solar, as well as acting as energy consultants with critical analysis and value added as in the examples above.