



CP SOLAR

RESOURCES

L I M I T E D

A POWERFUL SOLUTION FOR YOUR POWER NEEDS

Case Study:

KAPA OIL REFINERIES LTD

1.5 MEGAWATT INSTALLATION

KAPA SOLAR SYSTEM FEATURES

- **Grid Tied 1.5MW Solar PV System**
- **Light-weight Aluminium mounting structure**
- **Real – Time Remote monitoring system**
- **Grid back feed power limiting meters**
- **Conduit on all DC Power cables for extra protection (UV rated Double sheathed)**

RETURN ON INVESTMENT (ROI)

ITEM	COST	UNIT
Capital Investment Cost of system	160,000,000	KES
Tax Savings on Investment Deduction	72,000,000	KES
Balance of Cost	88,000,000	KES
Expected Savings Per Year	30,000,000	KES
Payback Period	3	Years

Grid-Connected System: Main results

Project : Kapa Oil Kenya
Simulation variant : SunPower P19-395-COM

Main system parameters

Near Shadings

PV Field Orientation

PV modules

PV Array

Inverter

Inverter pack

User's needs

System type

Linear shadings

2 orientations

Model

Nb. of modules

Model

Nb. of units

Unlimited load (grid)

Building system

Tilt/Azimuth = 6°/140° and 6°/-40°

Model SPR-P19-395-COM Rev 02 Pnom 395 Wp

Pnom total **1504 kWp**

Model Sunny Tripower_Core1_CEC 50.0 kW ac

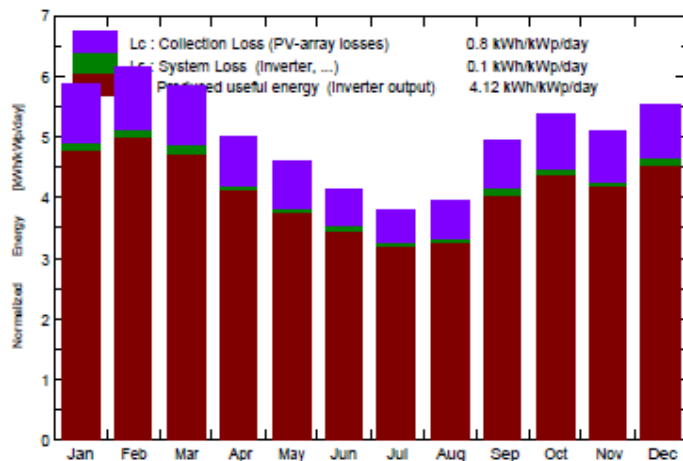
Pnom total **1400 kW ac**

Main simulation results

System Production

Produced Energy 2259 MWh/year Specific prod. 1502 kWh/kWp/year
Performance Ratio PR 82.14 %

Normalized productions (per installed kWp): Nominal power 1504 kWp



Performance Ratio PR

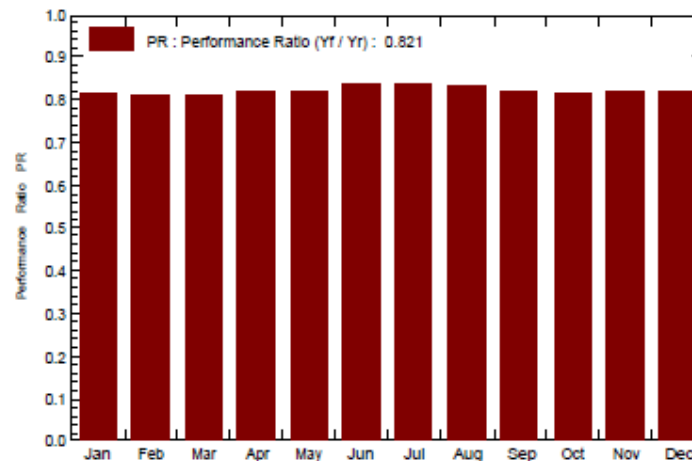
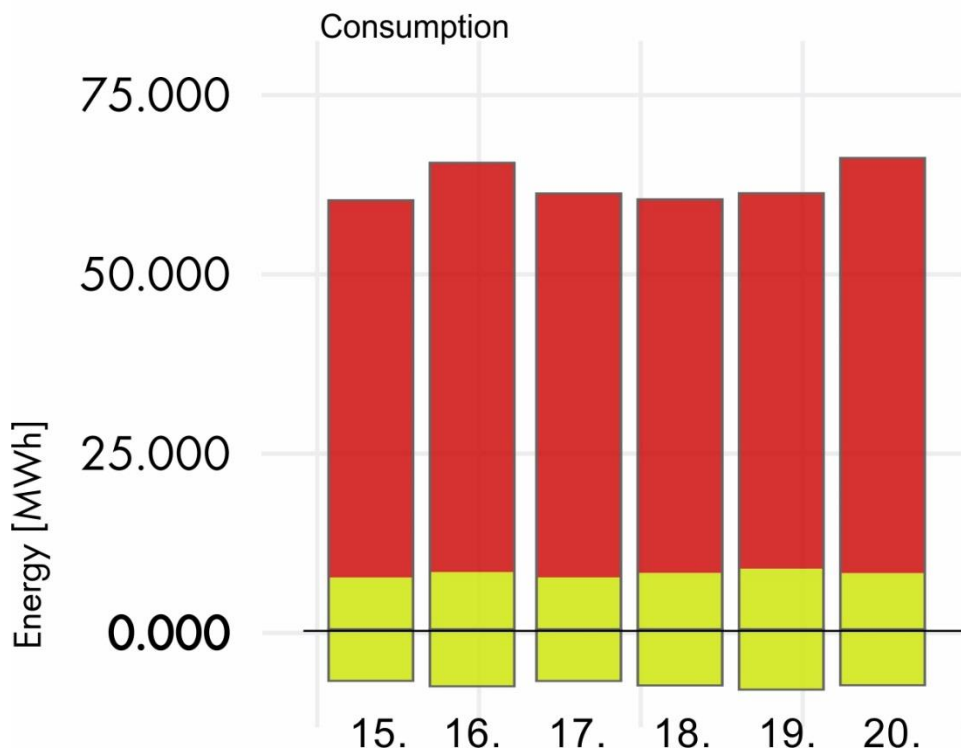


CHART OF ACTUAL GENERATION VS VARIANCE FROM ESTIMATES

KAPA IND. LTD

< 15 - 20 December 2019 >



Grid supplied power	317,241KWh
Solar supplied power	45,302KWh
Total supplied power	362,543KWh

Daily Saving: 7,550kWh x KSh.15
= KSh.113,250

	15-Dec-19	16-Dec-19	17-Dec-19	18-Dec-19	19-Dec-19	20-Dec-19
	SUN	MON	TUE	WED	THU	FRI
SUNPOWER ESTIMATE (kWh) :	6,750	6,750.00	6,750.00	6,750.00	6,750.00	6,750.00
ACTUAL GENERATION (kWh) :	7,027	7,761.00	7,042.00	7,644.00	8,213.00	7,615.00
GRID CONSUMED (kWh) :	51,258	55,613	52,168	50,766	51,027	56,409

AVERAGE YIELD FOR THE DAYS SHOWN: 7,550kWh EXPECTED YIELD: 6,750kWh

Refiner ies Ltd.



End Of Case Study