

# SINETECH CALCULATION EXAMPLE FOR SOLAR SYSTEMS



Estimated costing for a  
Standard non Grid Solar Systems

DATE : 20/07/2010  
VER : 05

SYSTEM MODEL	Component	Qty	Single Cost Price	Total Cost Price	Energy saved in KW/hr
<b>SINE 160-12</b>	<b>Maximum system output per day</b>			<b>880 WATTS</b>	

Recommended maximum average hourly usable energy for ~ 4 Hr per Day  
160 Watts x 4 = 640 W/hr

Solar Panel / 20 Year Performance Warranty  
Charge controller 10.10  
Sinewave Inverter  
Deep Cycle Batteries  
Combiner Box Sine 048/04/LP00/CB

Estimated Installation/Miscellaneous  
(includes all hardware components for the installation)

Price excl. VAT	R 12 946.00
14% VAT	R 1 812.44
<b>TOTAL PRICE</b>	<b>R 14 758.44</b>

Energy saved in KW/hr
Per Day 0.88
Per Month 29.84
Per Year 322

SYSTEM MODEL	Component	Qty	Single Cost Price	Total Cost Price	Energy saved in KW/hr
<b>SINE 320-24</b>	<b>Maximum system output per day</b>			<b>1760 WATTS</b>	

Recommended maximum average hourly usable energy for ~ 6 Hr per Day  
200 Watts x 6 = 1200 Watts

Solar Panel / 20 Year Performance Warranty  
Charge controller  
Sinewave Inverter  
Deep Cycle Batteries  
Combiner Box Sine 048/04/LP00/CB

Estimated Installation/Miscellaneous  
(includes all hardware components for the installation)

Price excl. VAT	R 22 085.00
14% VAT	R 3 091.90
<b>TOTAL PRICE</b>	<b>R 25 176.90</b>

Energy saved in KW/hr
Per Day 1.76
Per Month 53.68
Per Year 644.16

SYSTEM MODEL	Component	Qty	Single Cost Price	Total Cost Price	Energy saved in KW/hr
<b>SINE 640-24</b>	<b>Maximum system output per day</b>			<b>3520 WATTS</b>	

Recommended maximum average hourly usable energy for ~ 8 Hr per Day  
300 Watts x 8 = 2400 W/hr

Solar Panel / 20 Year Performance Warranty  
Charge controller  
Sinewave Inverter  
Deep Cycle Batteries  
Combiner Box Sine 048/04/LP00/CB

Estimated Installation/Miscellaneous  
(includes all hardware components for the installation)

Price excl. VAT	R 38 351.00
14% VAT	R 5 369.14
<b>TOTAL PRICE</b>	<b>R 43 720.14</b>

Energy saved in KW/hr
Per Day 3.52
Per Month 107.36
Per Year 1288.32

SYSTEM MODEL	Component	Qty	Single Cost Price	Total Cost Price	Energy saved in KW/hr
<b>SINE 960-24</b>	<b>Maximum system output per day</b>			<b>5280 WATTS</b>	

Recommended maximum average hourly usable energy for ~ 8 Hr per Day  
450 Watts x 8 = 3600 W/hr

Solar Panel / 20 Year Performance Warranty  
Charge controller  
Sinewave Inverter  
Deep Cycle Batteries  
Combiner Box Sine 048/04/LP00/CB

Estimated Installation/Miscellaneous  
(includes all hardware components for the installation)

Price excl. VAT	R 54 616.00
14% VAT	R 7 646.24
<b>TOTAL PRICE</b>	<b>R 62 262.24</b>

Energy saved in KW/hr
Per Day 5.28
Per Month 161.04
Per Year 1932.48

EXAMPLE No 1		Example of a load you could use on SINE160-12			
Item Qty	Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day
2	Energy saver lights	14	28	4	112
1	80cm TV & Decoder	80	80	4	320
1	Radio / HI-FI	30	30	4	120
1	Ceiling Fan	80	80	2	160
				<b>Total watt/hrs used per Day or KW/hrs</b>	<b>712</b>

EXAMPLE No 2		Example of load you could use on SINE 320-24			
Item Qty	Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day
2	Energy saver lights	14	28	6	168
1	80cm TV & Decoder	80	80	6	480
1	Radio / HI-FI	30	30	6	180
1	Ceiling Fan	80	80	6	480
				<b>Total watt/hrs used per Day or KW/hrs</b>	<b>1308</b>

EXAMPLE No 3		Example of load you could use on SINE 640-24			
Item Qty	Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day
6	Energy saver lights	14	84	6	504
1	80cm TV & Decoder	80	80	6	480
1	Radio / HI-FI	30	30	8	240
2	Ceiling Fan	80	160	6	960
1	Computer & 17" LCD	200	200	2	400
				<b>Total watt/hrs used per Day or KW/hrs</b>	<b>2584</b>

EXAMPLE No 4		Example of load you could use on SINE 960-24			
Item Qty	Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day
6	Energy saver lights	14	84	8	672
1	80cm TV & Decoder	80	80	8	640
1	Radio / HI-FI	30	30	8	240
2	Ceiling Fan	80	160	6	960
1	Computer & 17" LCD	200	200	4	800
				<b>Total watt/hrs used per Day or KW/hrs</b>	<b>3312</b>

SYSTEM MODEL	Component	Qty	Single Cost Price	Total Cost Price
<b>SINE 1280-24</b>	<b>Maximum system output per day</b>			<b>7040 WATTS</b>

Recommended maximum average hourly usable energy for ~ 8 Hr per Day 600 Watts x 8 = 4800 W/hr

Solar Panel / 20Years Performance Warranty  
Charge controller  
Sinewave Inverter  
Deep Cycle Batteries  
Combiner Box Sine 048/08/LP00/CB

Energy saved in KW/hr
Per Day
7.04
Per Month
214.72
Per Year
2576.64

Estimated Installation/Miscellaneous (includes all hardware components for the installation)  
Price excl. VAT R 100 967.00  
14% VAT R 14 135.38  
TOTAL PRICE R 115 102.38

<b>SINE 1760-48</b>	<b>Maximum system output per day</b>			<b>9680 WATTS</b>
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Recommended maximum average hourly usable energy for ~ 8 Hr per Day 850 Watts x 8 = 6800 W/hr

Solar Panel / 25 Year Performance Warranty  
Charge controller  
Sinewave Inverter Outback  
Deep Cycle Batteries  
Combiner Box Sine 048/04/LP00/CB

Energy saved in KW/hr
Per Day
14.08
Per Month
422.40
Per Year
5153.28

Estimated Installation/Miscellaneous (includes all hardware components for the installation)  
Price excl. VAT R 162 402.00  
14% VAT R 22 736.28  
TOTAL PRICE R 185 138.28

**This system includes a large integrated battery charger and can be backed up with a 6KVA Diesel Generator or Eskom**

<b>SINE 2620-48</b>	<b>Maximum system output per day</b>			<b>14080 WATTS</b>
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Recommended maximum average hourly usable energy for ~ 8 Hr per Day 1360 Watts x 8 = 10880 W/hr

Solar Panel / 25 Year Performance Warranty  
Charge controller  
Sinewave Inverter Outback  
Deep Cycle Batteries  
Combiner Box Sine 048/08/LP00/CB

Energy saved in KW/hr
Per Day
14.08
Per Month
422.40
Per Year
5153.28

Estimated Installation/Miscellaneous (includes all hardware components for the installation)  
Price excl. VAT R 212 486.00  
14% VAT R 29 748.04  
TOTAL PRICE R 242 234.04

**This system includes a large integrated battery charger and can be backed up with a 6KVA Diesel Generator or Eskom**

<b>SINE 3960-48</b>	<b>Maximum system output per day</b>			<b>21780 WATTS</b>
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Recommended maximum average hourly usable energy for ~ 8 Hr per Day 2040 Watts x 8 = 19200 W/hr

Solar Panel / 25 Year Performance Warranty  
Charge controller  
Sinewave Inverter Outback  
Deep Cycle Batteries  
Combiner Box Sine 048/08/LP00/CB

Energy saved in KW/hr
Per Day
21.78
Per Month
664.00
Per Year
7971.48

Estimated Installation/Miscellaneous (includes all hardware components for the installation)  
Price excl. VAT R 283 380.00  
14% VAT R 39 673.20  
TOTAL PRICE R 323 053.20

**This system includes a large integrated battery charger and can be backed up with a 6KVA Diesel Generator or Eskom**

EXAMPLE No 5 Example of load you could use on SINE 1280-24						
Item Qty	Item Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day	
6	Energy saver lights	14	84	6	504	
1	80cm TV & Decoder	80	80	6	480	
1	Radio / HI-FI	30	30	8	240	
2	Ceiling Fan	80	160	6	960	
1	Computer & 17" LCD	200	200	2	400	
1	Standard Fridge	150	150	12	1800	
1	Standard Freezer	150	150	12	1800	
Fridge & Freezer on 50% Duty cycle					Total watt/hrs used per Day or KW/hrs	6184

EXAMPLE No 6 Example of load you could use on SINE 1760-48						
Item Qty	Item Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day	
10	Energy saver lights	14	140	6	840	
1	42" LCD TV & Decoder	160	160	6	960	
1	Radio / HI-FI	30	30	6	180	
2	Ceiling Fan	80	160	6	960	
1	Computer & 17" LCD	200	200	2	400	
1	Fridge	150	150	12	1800	
1	Freezer	150	150	12	1800	
1	Micro Wave	1500	1500	0.5	750	
1	Hair Dryer	1800	1800	0.5	900	
Fridge & Freezer on 50% Duty cycle					Total watt/hrs used per Day or KW/hrs	8590

EXAMPLE No 7 Example of load you could use on SINE 2620-48						
Item Qty	Item Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day	
10	Energy saver lights	14	140	6	840	
1	42" LCD TV & Decoder	160	160	8	1280	
1	Radio / HI-FI	30	30	8	240	
2	Ceiling Fan	80	160	8	1280	
1	Computer & 17" LCD	200	200	4	800	
1	Fridge	150	150	12	1800	
1	Freezer	150	150	12	1800	
1	Micro Wave	1500	1500	0.5	750	
1	Hair Dryer	1800	1800	0.5	900	
Fridge & Freezer on 50% Duty cycle					Total watt/hrs used per Day or KW/hrs	9690

EXAMPLE No 8 Example of load you could use on SINE 3960-48						
Item Qty	Item Description	Watts per Item	Total Watts used	Hours used per day	Total W/hr per day	
15	Energy saver lights	20	300	6	1800	
2	46" LCD TV & Decoder	200	400	6	2400	
1	Radio / HI-FI	30	30	8	240	
2	Ceiling Fan	80	160	8	1280	
1	Computer & 22" LCD	250	250	4	1000	
1	Medium Fridge	250	250	12	3000	
1	Medium Freezer	250	250	12	3000	
1	Micro Wave	1600	1600	1	1600	
1	Hair Dryer	1800	1800	1	1800	
Fridge & Freezer on 50% Duty cycle					Total watt/hrs used per Day or KW/hrs	16120

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