

# Business Opportunities with Solar Systems

## Be your own BOSS



## BOSS-CONCEPT

Off-Grid solar power systems can be an important factor to support rural development in areas that are not connected to the electricity grid. The Phaesun BOSS-solutions target specifically the commercial sector in non-electrified areas. BOSS stand for Business Opportunities with Solar Systems.

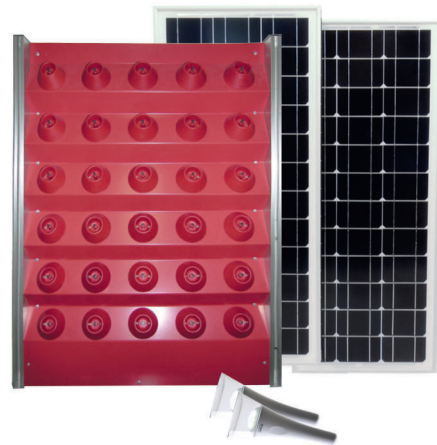
The Phaesun technical team develops innovative solutions together with component manufacturers and partners in the target countries. The systems are well adjusted to local needs, designed with high quality energy efficient loads which makes them robust with little maintenance needs.



# Services

In the service sector there are especially in rural areas numerous fields of applications for BOSS systems:

- Advertisement
- Charging
- Cooling
- Beauty (hair dresser, cosmetician)



# Production

To generate more income in rural areas it is useful to process products and thus create an added value. There are different sectors where this processing can be conceivable:

- Food processing
- Processing of raw materials



# Entertainment

Entertainment is a wide range for BOSS-solutions in rural areas:

- Cinema
- TV
- Radio
- Disco
- DJ
- Concerts



## Case Study: Loja de Energias in Mozambique

Together with local partners Phaesun opened several “Lojas de Energias” (solar shops) in Mozambique in 2012. These shops sell solar products to households in non-electrified areas. The product portfolio includes Ulitium Light Kits, T-lite Kits, Ulitium Lamps, T-lite lamps and corresponding accessories. Additionally the solar shops offer charging services for those customers, that cannot afford to buy a complete PicoPV system at once. The charging system includes the Sundaya Charging Station for Ulitium and T-lite lamps, as well as a Sundaya WallDock station to charge cell phones. All is served by a by a 120 Wp solar panel.

### Investment costs:

380 € for a complete solar charging system including one solar module

120 Wp, one Sundaya Charging Station for 30 lamps, one Sundaya WallDock to charge three JouleSticks at the same time, 6 Sundaya JouleSticks to charge cell phones.

Monthly income with the charging station  
(respectively a degree of capacity utilization of 40%):

12 LAMPS/DAY for charge fee of 0,15 €/lamp	<b>54€/month</b>
8 MOBILE PHONES/DAY with charge fee 0,08 €/phone	<b>19€/month</b>

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THEREFORE HER TOTAL INCOME IS	<b>73€/month</b>
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The investment of 380 € for the charging station is paid back within approximately half a year, if the solar shop is open every day and the expected degree of capacity can be reached.

Gilda Monjane, Mozambican shop owner reports:

“Every household has individual needs and its own financial opportunities. Some households can afford to buy complete solar kits instantly and benefit from their own electricity at home.

Others buy bit by bit. They buy the lamp first and use my charging services to charge their lamps and cell phones once or twice a week. Some weeks later they can afford the solar module for their lamp including a corresponding mobile phone charging cable, and do not need the charging services anymore.”



## Case Study: Cool Drinks in Somaliland

Phaesun closely works together with our partner Horn Renewables based in Somaliland. The electricity grid in Somaliland is poorly developed. Horn Renewables actively targets small businesses in rural areas and develops in cooperation with these customers specific solar systems to improve their service portfolio. One of their customers bought a refrigeration kit and a solar system for mobile phone charging for his shop to offer cold drinks and charging services.



**He calculates the business with the following numbers:**

Total investment made: 2.400 €

Income with the solar systems:

45 DRINKS/DAY + extra price of 0,12 € because it is cold	<b>162 €/month</b>
15 MOBILE PHONES/DAY with charge fee 0,12 €/phone	<b>54 €/month</b>

THEREFORE HIS TOTAL INCOME IS	<b>216 €/month</b>
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**With this additional income the investment for the solar system is paid back within less than one year.**

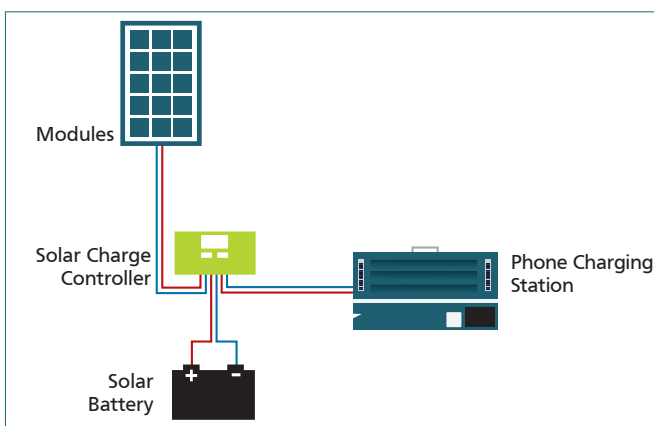
The owner has already invested another 320 € to upgrade the SHS system to power a table fan – an indication that he is already making money and investing more on solar.

# Services

## BOSS Kit Pro Fee

The BOSS Kit Pro Fee is a phone charging station that enables shop owners to recharge mobile phones for a fee in areas with unreliable or non-existent grid power. Eighteen 5 V USB plugs make it possible to charge eighteen mobile phones at the same time. Optionally, an inverter can be integrated to supply an AC-plug. This AC-plug can be extended with a multiple plug socket to charge older phones by means of an AC power supply plug. PV-modules will recharge a conventional system-battery to make business activities independent from daytime and weather. Plugs, electronics and battery are integrated into one enclosure. The station is mobile, so the system can be set-up downtown, as well as on market places and be taken back home later.

- The BOSS Kit Pro Fee is available with different options. The standard kit is serving 18 USB-outputs, including also adapter cables for phone charging
- The BOSS Kit Pro Fee Advanced is upgraded with limitations: bigger solar module, inverter and AC-plug socket.



Amount	Components
1	Phone Charging Station
1	Solar module

Technical Data	
<b>Pro Fee Basic</b>	Art. No. 600245
50 W solar module   Output 18 x USB, 5 VDC, 50 W   adapter cables for cellphone	
<b>Pro Fee Advanced</b>	Art. No. 600246
80 W solar module   Output 18 x USB, 5 VDC, 50 W   Output 230 VAC, 300 W   adapter cables for cellphone	

# Services

## BOSS Kit Pro Fee

### Assumptions for the business scenarios:

The phone charging station can serve 18 USB-loads at the same time.

The business scenarios rely on the following USB-loads:

- Mobile phone (0,5 A, 700 mAh, charging time approx 2 hours)
- Smart phone (1 A, 1500 mAh, charging time approx 2 hours)
- Tablet (2 A, 4500 mAh, charging time approx 3 hours)

The scenarios assume a solar irradiation of 4 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries. With a 60 W solar module, the system generates 240 Wh/day, which can serve at least 47 mobile phones/day or 23 smart phones or 8 tablets.

## Business scenarios: BOSS Kit Pro Fee

**Scenario I:** Charging of 20 cell phones, 5 smart phones, 6 days a week.

**Prices:**

Cell phone charging: 0,10 \$

Smart phone charging: 0,20 \$

→ weekly income: 18,00 \$

The investment costs of 1.700 \$ are amortized after a period of 94 weeks = less than 2 years

**Scenario II:** Charging of 15 cell phones, 8 smart phones and 2 tablet per day, 6 days a week.

**Prices:**

Cell phone charging: 0,15 \$

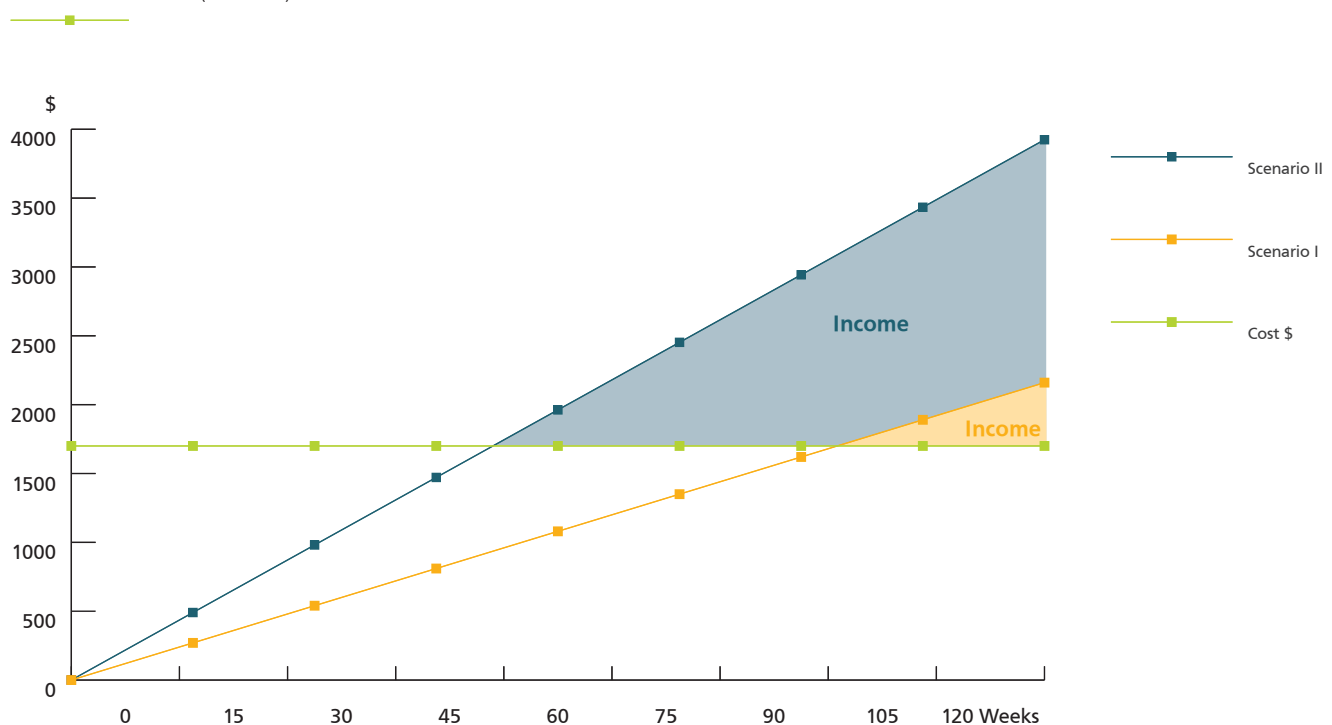
Smart phone charging: 0,30 \$

Tablet charging: 0,40 \$

→ weekly income: 32,70 \$

The investment costs of 1.700 \$ are amortized after a period of 52 weeks = 1 year

### Investment Costs (fix costs) BOSS Kit Pro Fee



### Please note:

These are assumed business scenarios with the standard BOSS Kit Pro Fee used in southern Africa. We are happy to assist you with the development of specific business scenarios adapted to other

irradiation groups, different price levels and modified phone charging stations. Please ask our sales team for the checklist to find the best phone charging solution for your individual needs.

# Services

## BOSS Kit Sundaya Charging Station

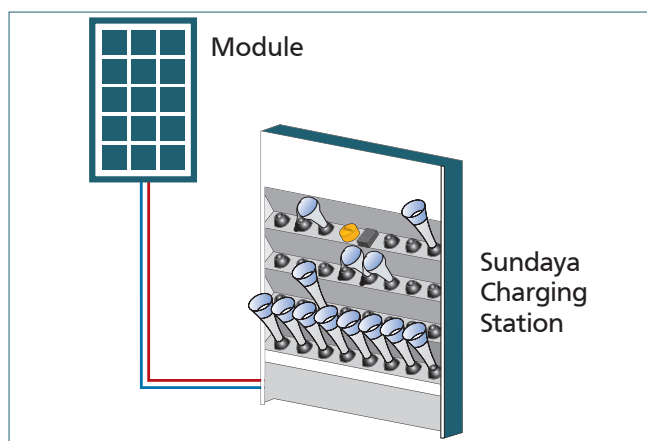
The Sundaya product range includes the innovative Ulitium and T-lite lamps. These LED-lamps with integrated Li-Ion batteries can lighten entire rooms and are therefore completely independent lighting solutions for Off-Grid areas. The lamps can be charged with small single solar modules, with an AC-adapter from the grid or by connecting them to the Sundaya Charging Station. The Sundaya Charging Station can charge 30 lamps of the Ulitium or T-lite series at the same time.

The Sundaya Charging Station can be served directly by the solar panel without the use of a battery.

### System sizing is according to the following data:

- Irradiation zone: 4 kWh/m<sup>2</sup>, day

In addition there is the possibility to combine the system with the BOSS Kit Port Able. That offers the possibility to charge lamps also at night or during bad weather periods.



Amount	Components
1	Sundaya Charging Station
1	Solar module 150 W
1	Cables and accessories
1	Support structure for solar module
<b>Art. No.</b>	<b>On request</b>

### Technical Data

Ulitium Charging Station Sundaya  
max Vmp 19 VDC | Plug-In for 30 T-lite or Ulitium lamps



# Services

## BOSS Kit Sundaya Charging Station

### Assumptions for the business scenarios:

The BOSS Charging Station can serve 30 Lamps at the same time. The scenarios assume a solar irradiation of 4 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries. With 2 x 85 W solar modules, the system generates 680 Wh/day

(which would serve more than 40 lamps). Therefore the system sizing includes a puffer for days with less sunshine.

## Business Scenarios: Lamp Charging Station

**Scenario I:** The clients had bought their own lamps. The business just takes in mind the fee for charging. The complete charging station has investment costs of 520,00 \$. 25 lamps are charged per day, 6 days a week.

#### Prices:

Lamp charging: 0,10 \$  
 → weekly income: 15,00 \$

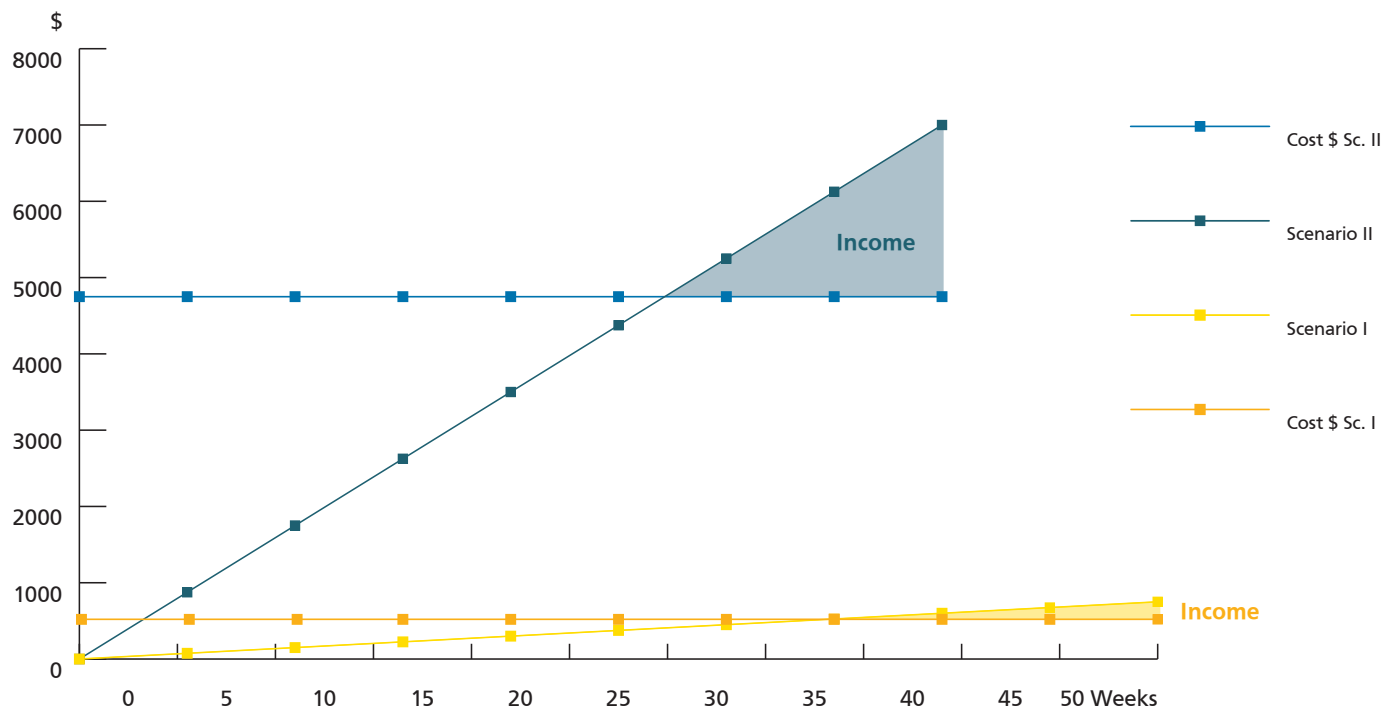
The investment costs of 520,00 \$ are amortized after a period of 34 weeks = less than 1 years

**Scenario II:** The solar shop owner rents the fully charged lamps, but he keeps the ownership of the lamps. Therefore his investment costs include 100 lamps (50 T-Lite and 50 Ulitium) and the charging station with total investment costs of 4.750,00 \$. During one week every lamp is rented once.

#### Prices:

Rent of fully charged Ulitium: 2,00\$  
 Rent of fully charged T-Lite: 1,50\$  
 → weekly income: 175,00 \$

The investment costs of 4.750,00 \$ are amortized after a period of 27 weeks = 1/2 year



### Please note:

These are assumed business scenarios with the lamp charging station used in southern Africa. We are happy to assist you with the development of specific business

scenarios adapted to other irradiation groups, different price levels and modified charging stations. Please ask our sales team for the checklist to find the best charging solution for your individual needs.

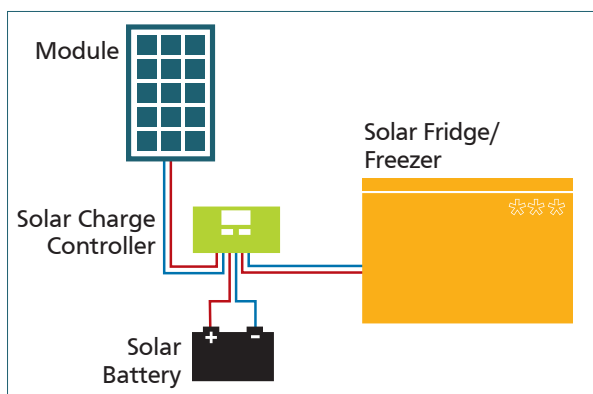
# Production

## BOSS Kit Keep Fresh

The BOSS Kit Keep Fresh are the best solutions for reliable cooling and freezing needs far from the electricity grid. These kits include the solar fridge Steca PF 166, that can be used for cooling or freezing, all equipment for charging and installation material. The kits are best suitable for the use in grocery stores, restaurant, bars, health posts etc. By offering cool drinks or frozen products the service quality of restaurants and shops can be improved and the sales can be increased. Food can be preserved longer and stays fresh.

Depending on the irradiation zone, the system works according to the data in the following table:

Irradiation Group	Irradiance [kWh/m <sup>2</sup> ,day]	Ambient temperature [°C]	Ice [ltrs]	Drinks [ltrs]
1	6	35	5,0	22,8
2	5	30	4,4	23,7
3	4	28	3,2	20,5
4	3	25	2,2	18,0



Amount	Components
1 x	Solar Fridge/Freezer Steca PF 166
2 x 150 W	Solar module
2 x 65 Ah	Battery
10 A	Charge controller
1 x	Cabling, mounting structure and accessories
24 VDC	Voltage
Art. No. 600162	

# Production

## BOSS Kit Keep Fresh

### Assumptions for the business scenarios:

The scenarios assume a solar irradiation of 4 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries.

With a 120 W solar module, the system generates 480 Wh/day.

Assuming an outside temperature of 35 °C the fridge/freezer can cool:

- 70 x 0,33 l cans of soft drink, beer or water down to a temperature of 15 °C per day.
- or freeze 4kg of water per day.

## Business scenarios: BOSS Kit Keep Fresh

**Scenario I:** A kiosk sells 60 cans (soft drinks, beer, water) a day to his customers. He can charge 0,10 \$ extra for the drinks because they are cool.

**Extra income:**

Surcharge for cool drinks: 0,10 \$

Working days: 6 days /week

→ weekly income: 36,00 \$

The investment costs of 1.100 \$ are amortized after a period of 31 weeks = less than one year

**Scenario II:** A grocery store uses the refrigeration kit to freeze meat, fish as well as fruit juices for water ice.

**Extra income:**

Surcharge for frozen meat and fish: 3,00 \$/kg

Income for water ice: 0,15 \$

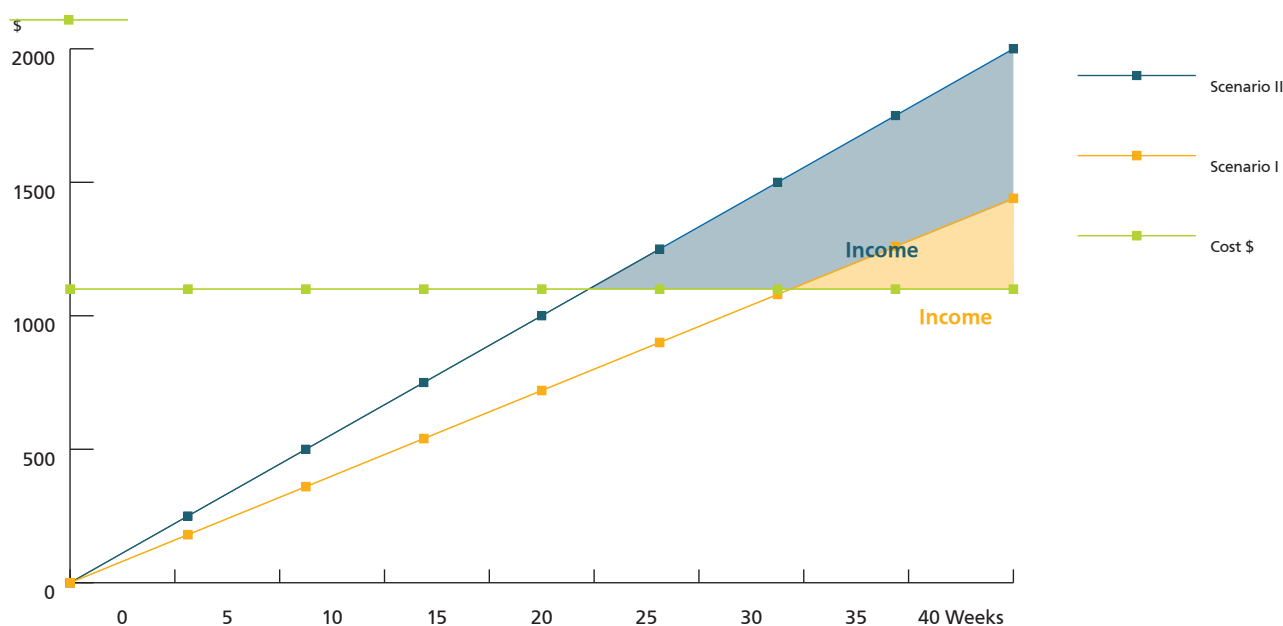
In average he sells 2kg of fish/meat and 15 water ice per day

Working days: 6 days/week

→ weekly income: 50,00 \$

The investment costs of 1.100\$ are amortized after a period of 30 weeks = less than one year

Investment Costs (fix costs) BOSS Kit Keep Fresh



**Please note:**

These are assumed business scenarios with the BOSS Kit Keep Fresh used in southern Africa.

We are happy to assist you with the development of specific business

scenarios adapted to other irradiation groups, different price levels and modified refrigerations kits. Please ask our sales team for the checklist to find the best solution for your individual needs.

# Production

## BOSS Kit Milky Way

The BOSS Milky Way is based on the utilization of milk-cans with removable insulation and the use of ice as a medium of refrigeration and storage of the milk. The ice is daily produced by a smart solar ice-maker that works independent from the electrical grid.

By placing 6 kg ice into the ice-compartment after the milk-can has been filled, the milk is safe for the next 6 hours at any weather conditions. Additionally 20 liters of your evening milk can be stored overnight with 8 kg ice in the same milk-can.

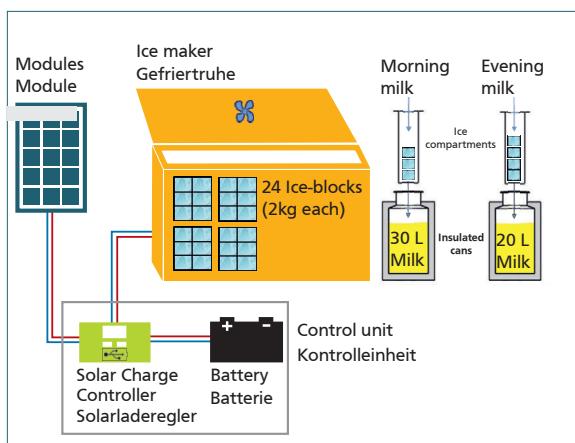
The milk cooling is insured during the different seasons. The removable insulation is to be used under warm weather conditions.

### Technical data:

- Morning milk is safe under 20°C for 6 hours during transportation
- Evening milk can be stored under 10°C over the whole night
- Increase your productivity by regular milking times and no production losses anymore
- High quality milk gives access to premium price and additional markets
- Variable compressor speed for maximising ice production
- Integrated fan to increase freezing rate
- Energy saving mode during night and cloudy days
- Use of batteries to increase daily ice production up to 30%.
- Storage of 50 kg ice blocks to assure a autonomy of 5 days

### Daily Ice production

Irradiation Group	Irradiance	Ambient temp. 30°C	Ambient temp. 40 °C
1	6 kWh/m <sup>2</sup> , day	12,7 kg	6,7 kg
2	5 kWh/m <sup>2</sup> , day	11,4 kg	4,8 kg
3	4 kWh/m <sup>2</sup> , day	8,2 kg	2,2 kg



Amount	Components
1	Freezer 166 ltr.
4	Solar module 150W
1	Control unit
2	Battery AGM 65 Ah / 12VDC
1	Installation material, cables and connectors
3	Module support structure
1	Isolated milk can 40 ltr.
25	Plastic cups for 2 kg ice each
1	Blow up LED lamp
Art. No.	600324

# Production

## BOSS Kit Milky Way

### Description of the „Milky way“



Milking



Transport



Collecting center



Fast cooling



One day storage



Transport to dairy plant

## Business scenarios: BOSS Milky Way

### Assumptions for the business scenario

- Milk cooling cost around 0.06 €/ltr. for a payback period of 3 years
- If milk price is 0,30 €/ltr. the cooling system will increase the price by 20%

### Compensation

- Better price due to higher milk quality
- Increasing of milk production due regular milking times
- Storage of evening milk reduce logistic to only one collection per day
- Less rejection because germ growth is not destroying milk

### Profit

- In the first 3 years costs are compensated by higher productivity and better price
- After 3 years income increase by 20%

# Production

## BOSS Kit Pro Press

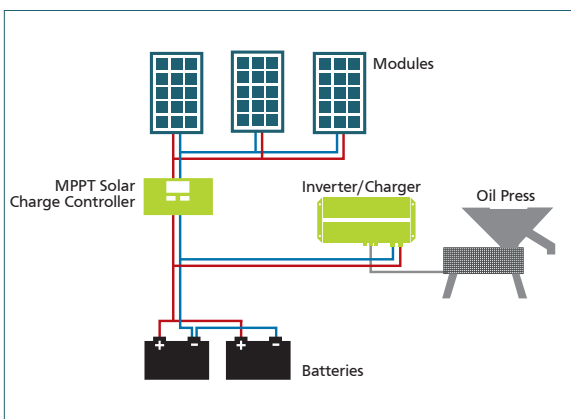
The Phaesun Pro Press solar oil press is ideal for the pressing of different crops. The solar oil press with its speed regulation achieves excellent pressing results due to the very efficient engine. The solar oil press is available as complete kit with high quality components for a reliable and professional usage day by day.

### Technical data:

- Oil press with speed control
- Power consumption 380 - 810 W
- 3 strings solar module, combiner box, support structure

- Maintenance-free VLRA batteries with rack
- MPPT solar charge controller
- Inverter/charger
- Output: 300- 500g/ minute (depending on seeds)
- Stainless steel
- Total weight approx. 1130kg

Irradiation Group	Irradiance	Autonomy days	Daily oil production	Daily operation
1	6 kWh/m <sup>2</sup> , day	2,8 d	208 kg	10,4 h
2	5 kWh/m <sup>2</sup> , day	3,4 d	172 kg	8,6 h
3	4 kWh/m <sup>2</sup> , day	4 d	138 kg	6,9 h



Amount	Components
1	Oil press
9	Solar module 260Wp, poly, 60 cells
1	MPPT solar charge controller 1500W/24V
1	Inverter/charger 3000W/24V
12	Battery 1000Ah/2V
1	Installation material, cables and connectors
3	Module support structure
Art.No.	600253

# Production

## BOSS Kit Pro Press

### Assumptions for the business scenarios:

The oil press can produce 300-500g per minute up to 10 hours/day.

The scenarios assume a solar irradiation of 5 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries.

### Business scenarios: BOSS Oil Press

**Scenario I:** Production of 18 kg oil/hour, 8 hours/day, 5 days/week.

=> weekly oil production: 720 kg

**Income:**

Processing of 10 kg oil: 2,1 \$

→ weekly income: 151,00 \$

The investment costs of 14.000 \$ are amortized after a period of 93 weeks = 1 year and 10 months

**Scenario II:** Production of 30kg oil/hour, 8 hours/day, 5 days/week.

=> weekly oil production: 1200 kg

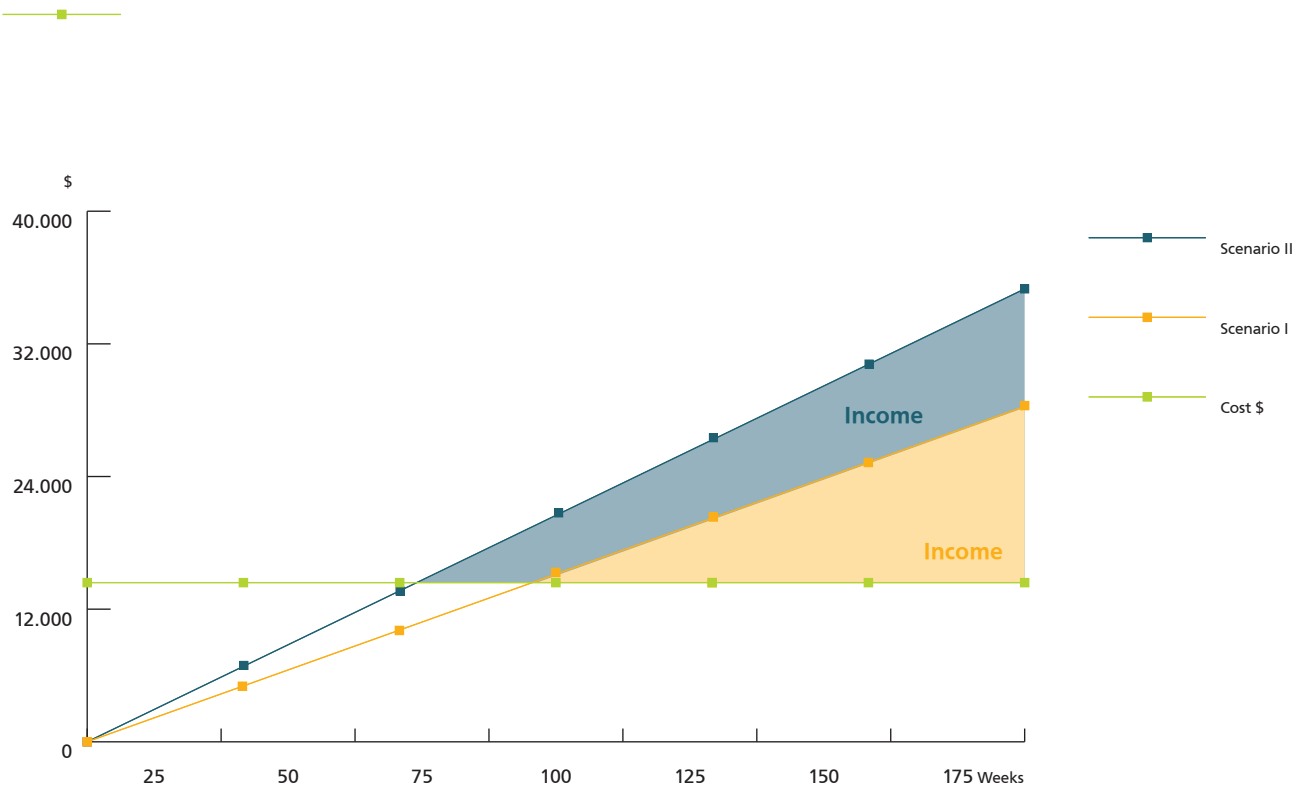
**Income:**

Processing of 10 kg oil: 1,60 \$

→ weekly income: 192,00 \$

The investment costs of 14.000 \$ are amortized after a period of 73 weeks = approx 1 1/2 years

### Investment Costs (fix costs) BOSS oil press



**Please note:** These are assumed business scenarios with the standard BOSS Kit Pro Press used in southern Africa. We are happy to assist you with the development of specific business

scenarios adapted to other irradiation groups, different price levels and modified grainmilling systems. Please ask our sales team for the checklist to find the best grain mill for your individual needs.

# Production

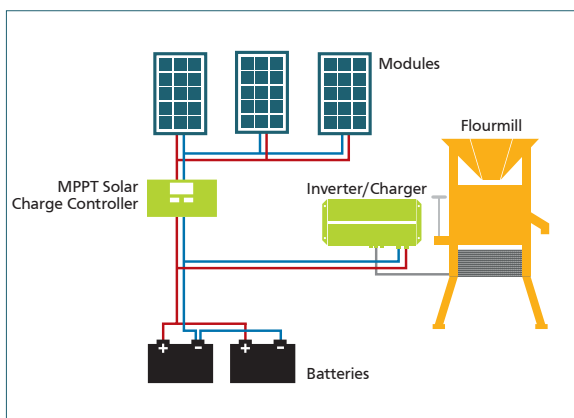
## BOSS Kit Pro Mill

The BOSS grain mill guarantees the possibility to obtain flour from different kinds of most common cereals (maize, wheat, barley, teff, millet, rice etc), spices and nuts from the sun energy! It is ideal for smallholder farms, rural communities, cooperatives or projects in places where no electricity grid is available. The efficient engine is run by an adapted Off-Grid solar system with high efficient solar modules and electronics and a battery storage to have power available at any time. The wooden mill is installed on a stable structure with an aperture to easily fill a flour wagon or flour sacks. The mill funnel can be filled with up to 25 kg of cereals.

### Technical data:

- Grain mill with bag filling and 25 kg filling funnel
- Mill motor 1000 W, 230 VAC
- 3 strings solar module, combiner box, support structure
- Maintenance-free VLRA batteries with rack
- MPPT solar charge controller, IP54
- Inverter/charger, IP54, external fan
- Output: 500- 800g/ minute (depending on cereal type and desired fineness level)
- Wooden cave: European larch
- Total weight approx. 1100kg

Irradiation Group	Irradiance	Autonomy	Daily flour production	Daily operation
1	6 kWh/m <sup>2</sup> , day	2,1 d	255 kg	8,5 h
2	5 kWh/m <sup>2</sup> , day	2,5 d	216 kg	7,2 h
3	4 kWh/m <sup>2</sup> , day	3,0 d	174 kg	5,8 h



Amount	Components
1	Grain mill
9	Solar module 260Wp, poly, 60 cells
1	MPPT solar charge controller 1500W/24V
1	Inverter/charger 1200W/24V
12	Battery 1000Ah/2V
1	Installation material, cables and connectors
3	Module support structure
Art.No.	600293



# Production

## BOSS Kit Pro Mill

### Assumptions for the business scenarios:

The grain mill can mill 30–50 kg per hour up to 8 hours/day:

- Wheat: 50 kg/hour
- Maize: 30 kg/hour
- Barley: 30-50 kg/hour
- Sorghum: 30 kg/hour

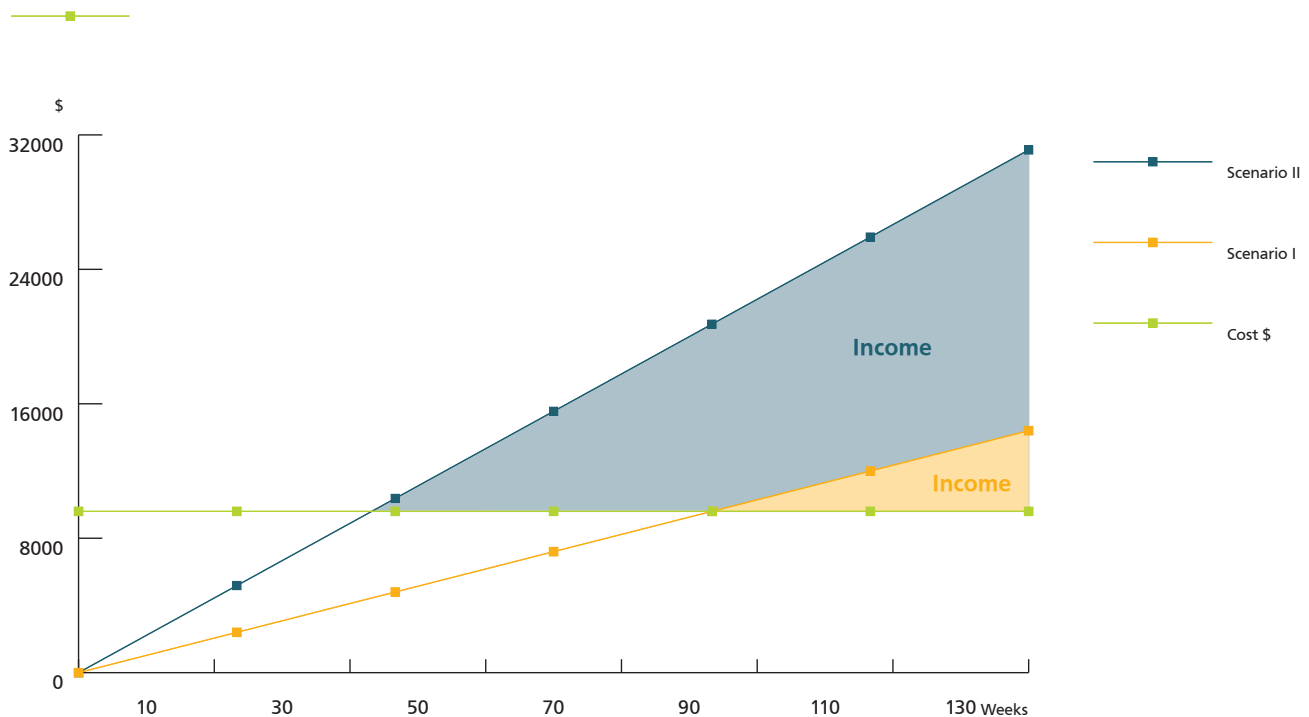
The scenarios assume a solar irradiation of 4 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries.

### Business scenarios: BOSS Grain Mill

**Scenario I:** Milling of 50 kg wheat/hour, 8 hours/day, 5 days/week.  
**Prices:**  
 Milling of 10 kg: 0,50 \$  
 → weekly income: 100,00 \$  
 The investment costs of 9.000 \$ are amortized after a period of 90 weeks = 1 year and 10 months

**Scenario II:** Milling of 30 kg maize/hour, 8 hours/day, 6 days/week.  
**Prices:**  
 Milling of 10 kg: 1,50 \$  
 → weekly income: 216,00 \$  
 The investment costs of 9.000 \$ are amortized after a period of 41 weeks = less than one year

Investment Costs (fix costs) BOSS grain mill



**Please note:** These are assumed business scenarios with the standard BOSS Kit Pro Mill used in southern Africa. We are happy to assist you with the development of specific business

scenarios adapted to other irradiation groups, different price levels and modified grainmilling systems. Please ask our sales team for the checklist to find the best grain mill for your individual needs.

# Production

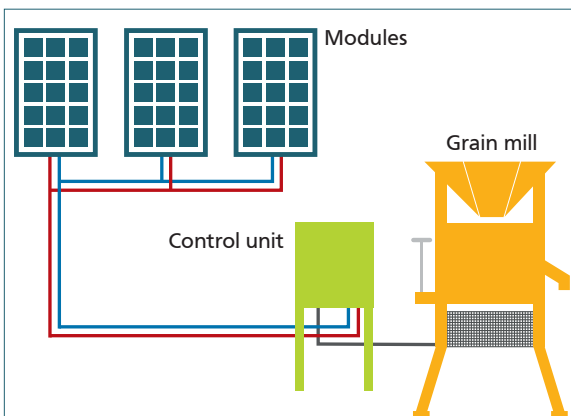
## BOSS Kit Pro Farina

The BOSS Kit Pro Farina guarantees the possibility to obtain flour from different kinds of most common cereals (maize, wheat, barley, teff, millet, rice etc) directly from the sun energy! This grain mill kit is ideal for smallholder farms, rural communities, cooperatives or projects in places where there is no electricity grid. The thin film solar modules directly serve an high efficient three-phase AC motor via a specific control unit. No batteries are needed which keeps system costs and maintainance needs low.

### Technical data grain mill Pro Farina:

- Stone mill driven by 750 W, 50 Hz, 3 x 230/400 VAC motor
- 900 W thin film solar generator

- Horizontal stones, pure natural granite, 500 mm diameter
- Auto-stop device for hopper empty with security switch
- Epoxy class paint approved for food contact.
- Hourly output: 45 kg –260 kg (depending on cereal type and desired fineness level)
- Motor can be served with external power supply 3-phase 3 x 230 VAC (e.g. at night)
- Dimensions: l = 1000 mm, w = 670 mm, h = 1230 mm
- Weight: 185 kg



Amount	Components
1	Grain mill
1	Solar generator
1	Control unit
1	Installation material
1	Module support structure
Art. No.	380100

# Production

## BOSS Kit Pro Farina

### Assumptions for the business scenarios:

The grain mill can mill 45–260 kg per hour up to 6 hours/day:

- Wheat: 55–260 kg/hour
- Millet: 45 kg/hour
- Maize: 40–110 kg/hour
- Teff: 45 kg/hour
- Barley: 40–110 kg/hour
- Sorghum: 45 kg/hour

The scenarios assume a solar irradiation of 4 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries.

### Business scenarios: BOSS Kit Pro Farina

**Scenario I:** Milling of 100 kg wheat/hour, 4 hours/day, 5 days/week.

**Prices:**

Milling of 10 kg: 0,50 \$

→ weekly income: 100,00 \$

The investment costs of 6.000 \$ are amortized after a period of 60 weeks = 1 year and 2 months

**Scenario II:** Milling of 60 kg maize/hour, 4 hours/day, 6 days/week.

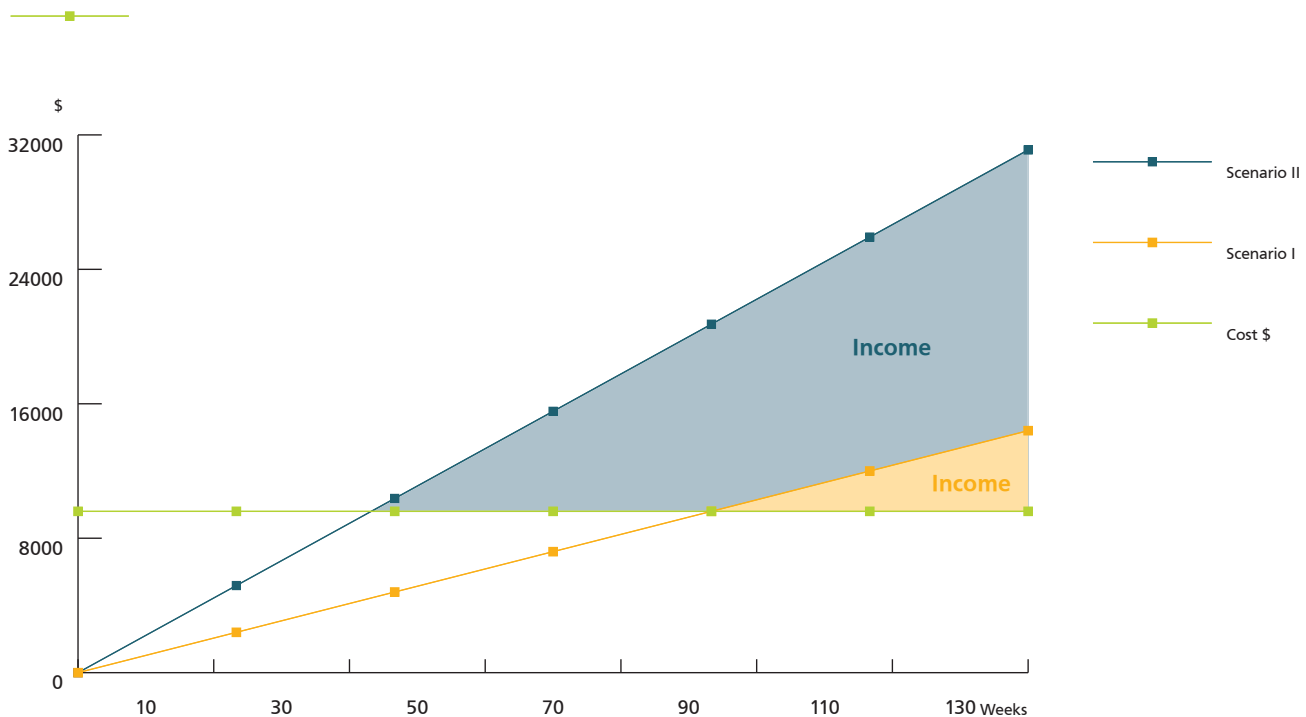
**Prices:**

Milling of 10 kg: 1,50 \$

→ weekly income: 216,00 \$

The investment costs of 6.000 \$ are amortized after a period of 27 weeks = less than a half year

### Investment Costs (fix costs) BOSS Kit Pro Farina



**Please note:** These are assumed business scenarios with the standard BOSS Kit Pro Farina used in southern Africa. We are happy to assist you with the development of specific business

scenarios adapted to other irradiation groups, different price levels and modified grainmilling systems. Please ask our sales team for the checklist to find the best grain mill for your individual needs.

# Entertainment

## BOSS Kit Pro Jector

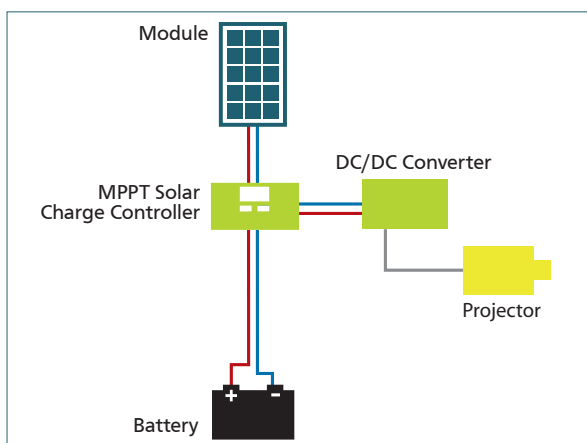
The BOSS Projector Kit is the ideal solution to show movies, sports matches, educational videos, powerpoint presentations etc. to a big audience completely independent from any electricity supply. It can be used in bars and restaurants, open-air cinemas, schools and training centers and due to the light weight components it is possible to use it as a portable solution.

The kit includes an LED projector, a foldable robust solar module, an AGM battery and electronics and cabling. The LED projector convinces due to its bright illumination and low energy consumption. Therefore the presentation time with a fully charged battery exceeds 3 hours. The projector has an integrated fileviewer, which enables to show videos etc. directly from a USB memory stick. Alternatively a laptop can be connected. The battery serves the projector via a DC/DC converter. The system can be extended by a sound system.

### Technical data:

- Portable screening plug&play system
- Light-weight, energy-efficient video projector
- AGM battery storage
- Foldable, light-weight solar module
- Charge controller
- DC/DC converter with USB-outlet
- Presentation time 3 hours
- Total weight approx. 22 kg

Irradiation Group	Irradiance	Daily operation
1	6 kWh/m <sup>2</sup> , day	3,7 h
2	5 kWh/m <sup>2</sup> , day	3,7 h
3	4 kWh/m <sup>2</sup> , day	3,2 h



Amount	Components
1	1x video LED projector 80 W, 1000 lm, 19 VDC
1	AGM battery 35 Ah, 12 VDC
1	Foldable solar module 105 Wp, 12 VDC
1	Charge controller 6 A
1	DC/DC converter 90 W, in 12 VDC, out 19 VDC, out 5 VDC USB
1	Cables and connectors
Art. No.	600294

# Entertainment

## BOSS Kit Pro Jector

### Assumptions for the business scenario:

An owner of a bar organizes cinema evenings and charges an extra entrance fee.

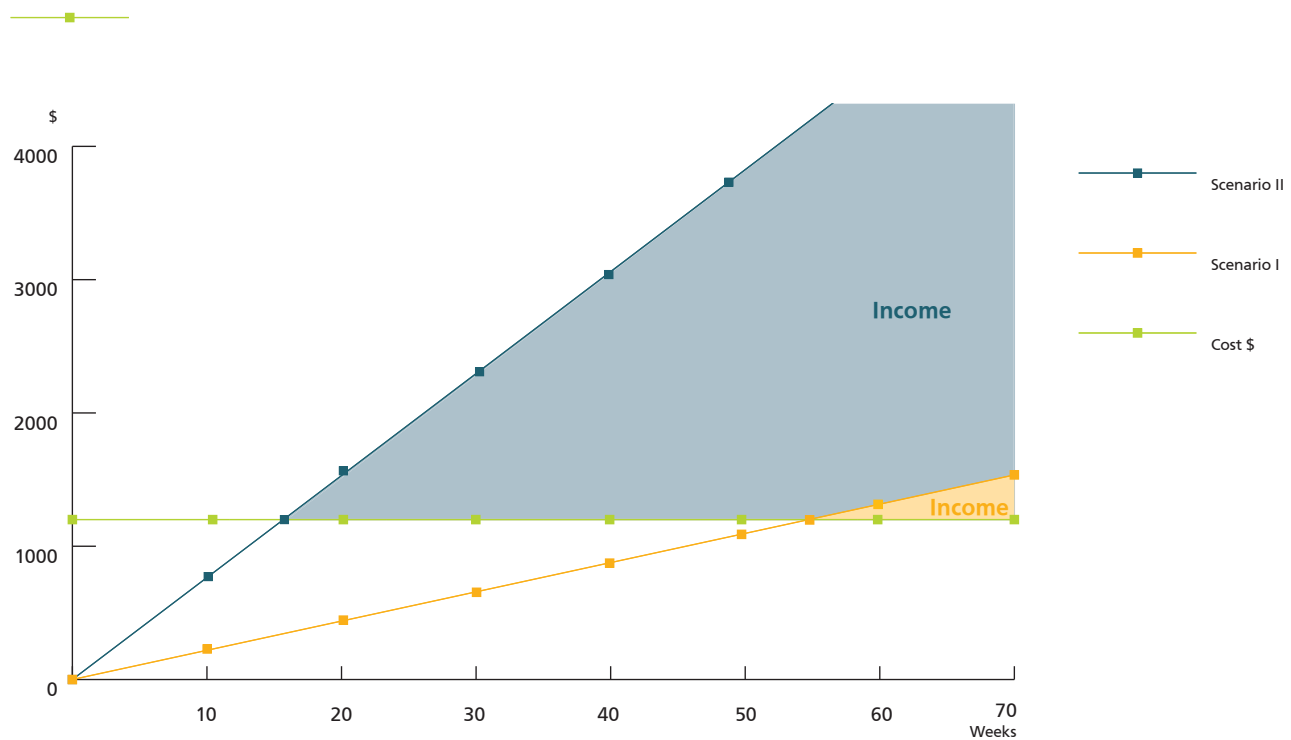
The scenarios assume a solar irradiation of 4 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries.

### Business scenarios: BOSS Pro Jector

**Scenario I:** Cinema evenings per week: 2  
Entrance fee: 0,50 \$  
Number of guests: 20  
→ weekly income: 20,00\$  
The investment costs of 1.100 \$ are amortized after a period of 55 weeks = 1 year

**Scenario II:** Cinema evenings per week: 3  
Entrance fee: 1,00 \$  
Number of guests: 25  
→ weekly income: 75,00\$  
The investment costs of 1.100 \$ are amortized after a period of 15 weeks = 4 months

### Investment Costs (fix costs) BOSS Pro Jector



**Please note:** These are assumed business scenarios with the standard BOSS Kit Pro Jector used in southern Africa. We are happy to assist you with the development of specific business

scenarios adapted to other irradiation groups, different price levels and modified systems. Please ask our sales team for the checklist to find the best kit for your individual needs.

# Entertainment

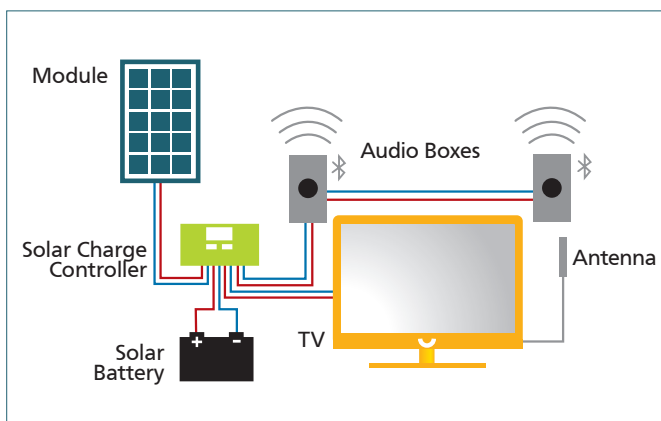
## BOSS Kit Pro Fit

This complete kit offers Off-Grid entertainment! The TV-audio kit is served by a specific solar system with battery. It can be used for video shows, live broadcast of sports events or karaoke shows in restaurants and bars or at private places.

The DC-television of Alphatronic's R-Line convinces due to its high quality of audio and images, the big 24"-LED-screen with full HD and lots of integrated functions such as the DVD-player and an USB-connection. At the same time power consumption is extremely low! The kit includes an independent bluetooth sound system, an extra DVB-T antenna, solar module, battery, charge controller and all accessories for installation.

**System sizing is according to the following data:**

- 6 hours/day television
- Irradiation zone: 6 kWh/m<sup>2</sup>, day
- Autonomy days: 2 days



Amount	Components
1	Solar TV Alphatronics R-24eWDSB
1	Solar module 85 W
1	Charge controller
1	Battery 65 Ah
1	DVB-T antenna
1	Audio boxes with Bluetooth
1	Cables, module support structure, accessories
Art. No.	600157

# Entertainment

## BOSS Kit Pro Fit

### Assumptions for the business scenarios:

The BOSS Kit Pro Fit is sized to be used 6 hours a day. The following business scenarios take into account public bars or other public places that use the BOSS Kit Pro Fit to show sports events or video shows and charge an entrance fee for this service. In addition to the entrance fee they can generate more business due to higher sales of drinks

and food etc. This additional income is not regarded in the business scenarios.

The scenarios assume a solar irradiation of 4 kWh/m<sup>2</sup>/day, which refers to the minimum irradiation in most African countries.

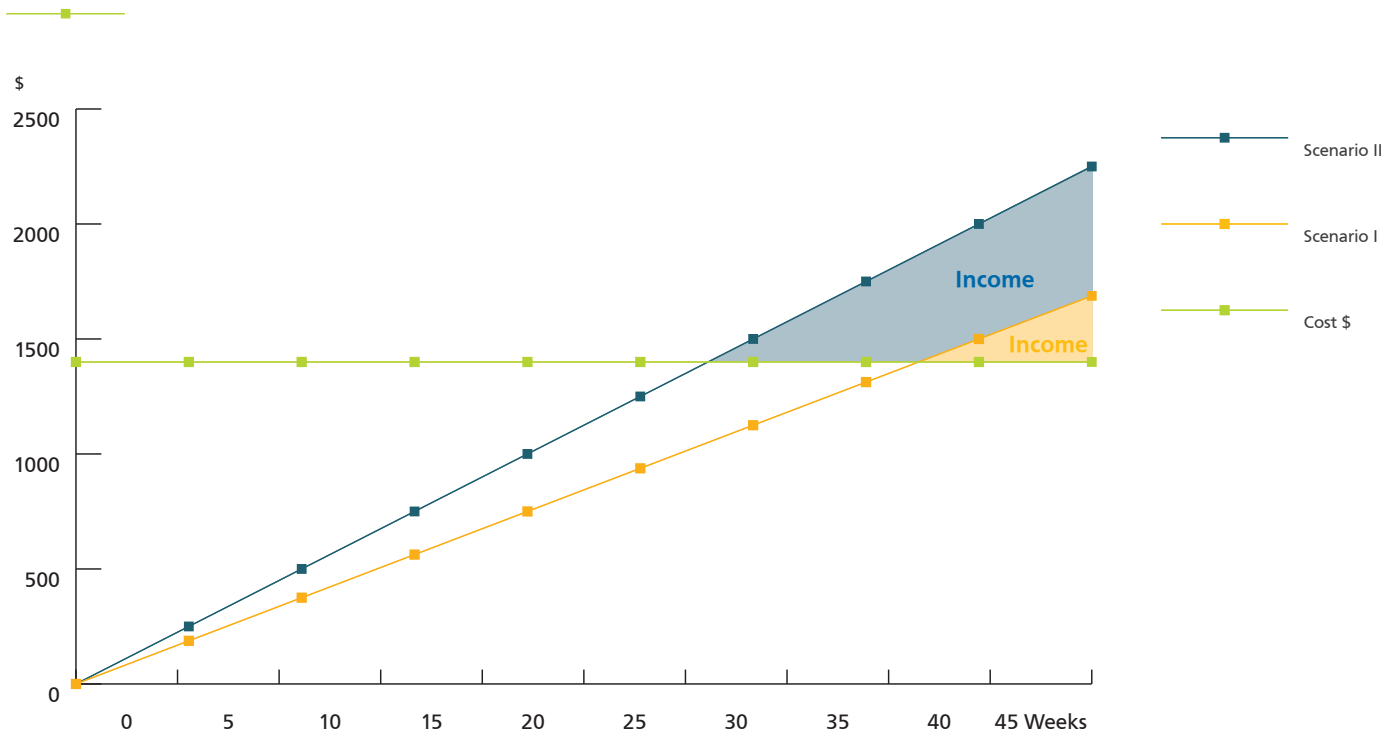
With a 120 W solar module, the system generates 480 Wh/day.

### Business scenarios: BOSS Kit Pro Fit

**Scenario I:** Viewing soccer matches in a sports bar  
**Entrance fee: 0,50 \$**  
 Average number of visitors: 25 persons/day  
 Opening days: 3 days/week  
 → weekly income: 37,50 \$  
 The investment costs of 1.400 \$ are amortized after a period of 37 weeks = less than one year!

**Scenario II:** Village cinema for video watching  
**Entrance fee: 1,00 \$**  
 Average number of visitors: 10 persons/ day  
 Opening days: 5 days/week  
 → weekly income: 50,00 \$  
 The investment costs of 1.400 \$ are amortized after a period of 28 weeks = approx. 1/2 year

### Investment Costs (fix costs) BOSS Kit Pro Fit



### Please note:

These are assumed business scenarios with the standard BOSS Kit Pro Fit used in southern Africa. We are happy to assist you with the development of specific business scenarios adapted to other

irradiation groups, different price levels and modified Pro Fit kits. Please ask our sales team for the checklist to find the best solution for your individual needs.



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