

BOSS Kit Keep Fresh

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BOSS-CONCEPT

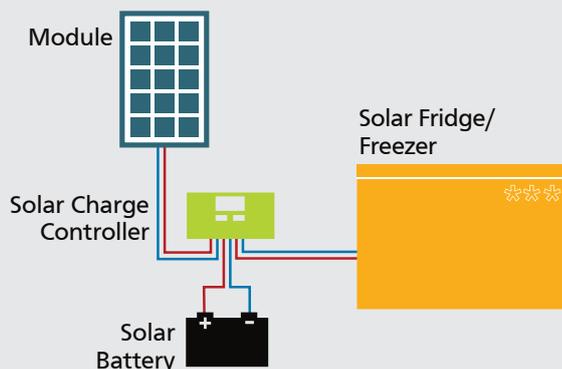
Off-Grid solar power systems can be an important factor to support rural development in areas that are not connected to the electricity grid. The Phaesun BOSS-solutions target specifically the commercial sector in non-electrified areas. BOSS stand for **Business Opportunities with Solar Systems**. The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

The BOSS Kit Keep Fresh are the best solution 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 ² , 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



Components	Art.Nr. 600162
Solar Fridge/Freezer Steca PF 166	1 x
Solar module	2 x 150 W
Battery	2 x 65 Ah
Charge controller	10 A
Cabling, mounting structure and accessories	1 x
Voltage	24 VDC

Generate income with BOSS solutions!

BOSS solutions specifically target the commercial sector in non-electrified areas. Local entrepreneurs use the power of the sun to offer services and generate a business out of this. BOSS-solutions have the potential to develop the commercial sector in rural areas in a

sustainable way as they provide income sources on a longterm basis. The following graphs show different business scenarios with the BOSS Kit Keep Fresh.

Assumptions for the business scenarios:

The scenarios assume a solar irradiation of 4 kWh/m²/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 \$

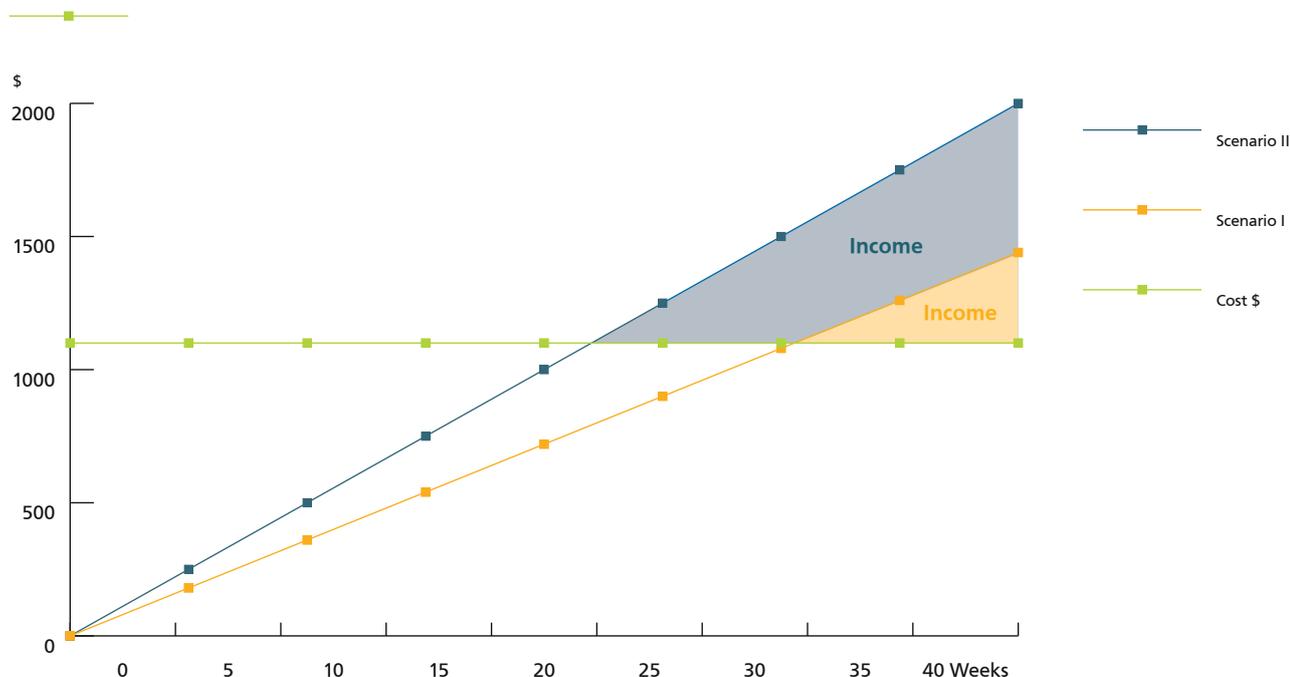
In average he sells 2kg of fish/meat and 15 water ice per day

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.