

NATHAL ENERGY

Participating institutions:

University of Applied Sciences Jena,
University of Jena, Gulf University for
Science and Technology Kuwait, ANSOLE
e.V., and others

**Multi-purpose supply
container developed
by Nathal Energy®**

Immediately applicable



Operation principle

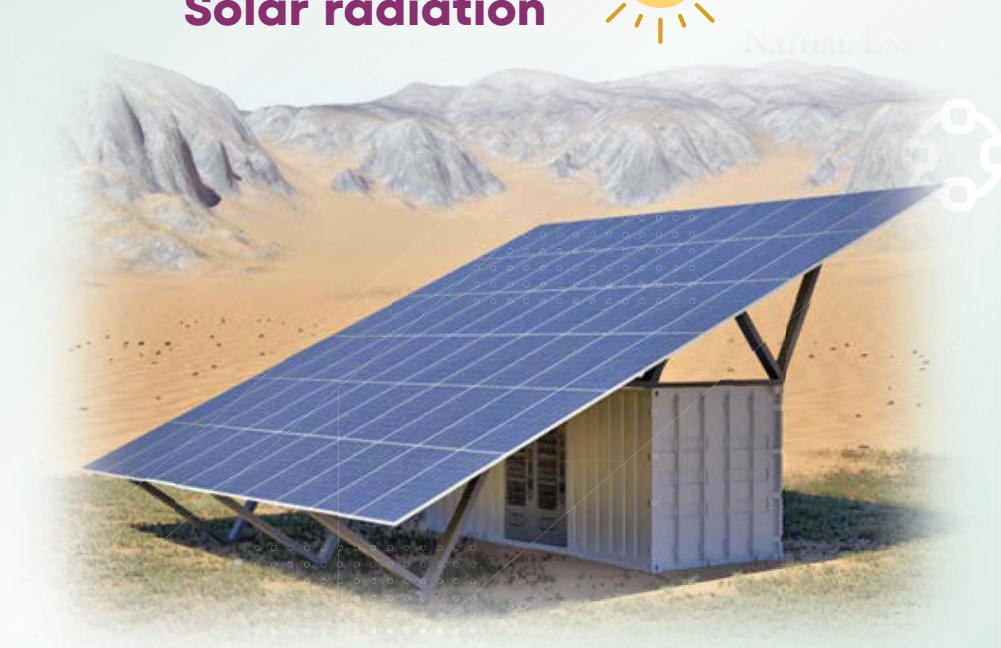
Input
Solar radiation



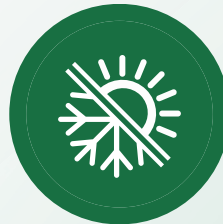
Natural Energy



Output
Power production
with photovoltaic cells



Output
Water production
through desalination (of
sea, brackish, ground
water) or from
atmospheric moisture



Output
Heat & Cold
production and
storage with heat
pump

SELECTED APPLICATIONS

Sanitation

Chemical Toilets & Showers

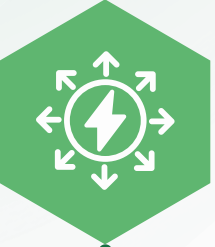


Irrigation

for Agriculture, Reforestation, Desert Greening

Electricity supply

Lighting & Heating



Medical supply

First Aid Modules
Medical refrigerator
Food storage

Drinking water

production of drinking water



Accomodation & Air conditioning

for Schools, Slums, Refugee Camps

Electricity

Dakar, Senegal
66 - 85 kWh/day
year-round supply of
≥ 22 households*

Mombasa, Kenya
55 - 78 kWh/day
≥ 18 households*

Cape Town, South Africa
39 - 93 kWh/day
year-round supply of
≥ 13 households*

*assuming year-round supply with
3kWh/day for refrigerator, fans, lightbulbs,
TV, radio, phone (Defining energy access:
2020 methodology - Analysis - IEA)



Dakar, Senegal
14,400-21,300 liters/day
sufficient for 960 people*

Mombasa, Kenya
13,800-19,500 liters/day
sufficient for 920 people*

**Desalinated Water
for Drinking, Sanitation
Agriculture etc.**

Cape Town, South Africa
9,600-23,300 liters/day
sufficient for 640 people*

*assuming 15 liters/person according to:
The Sphere Handbook - Humanitarian
Charter and Minimum Standards in
Humanitarian Response, 2018

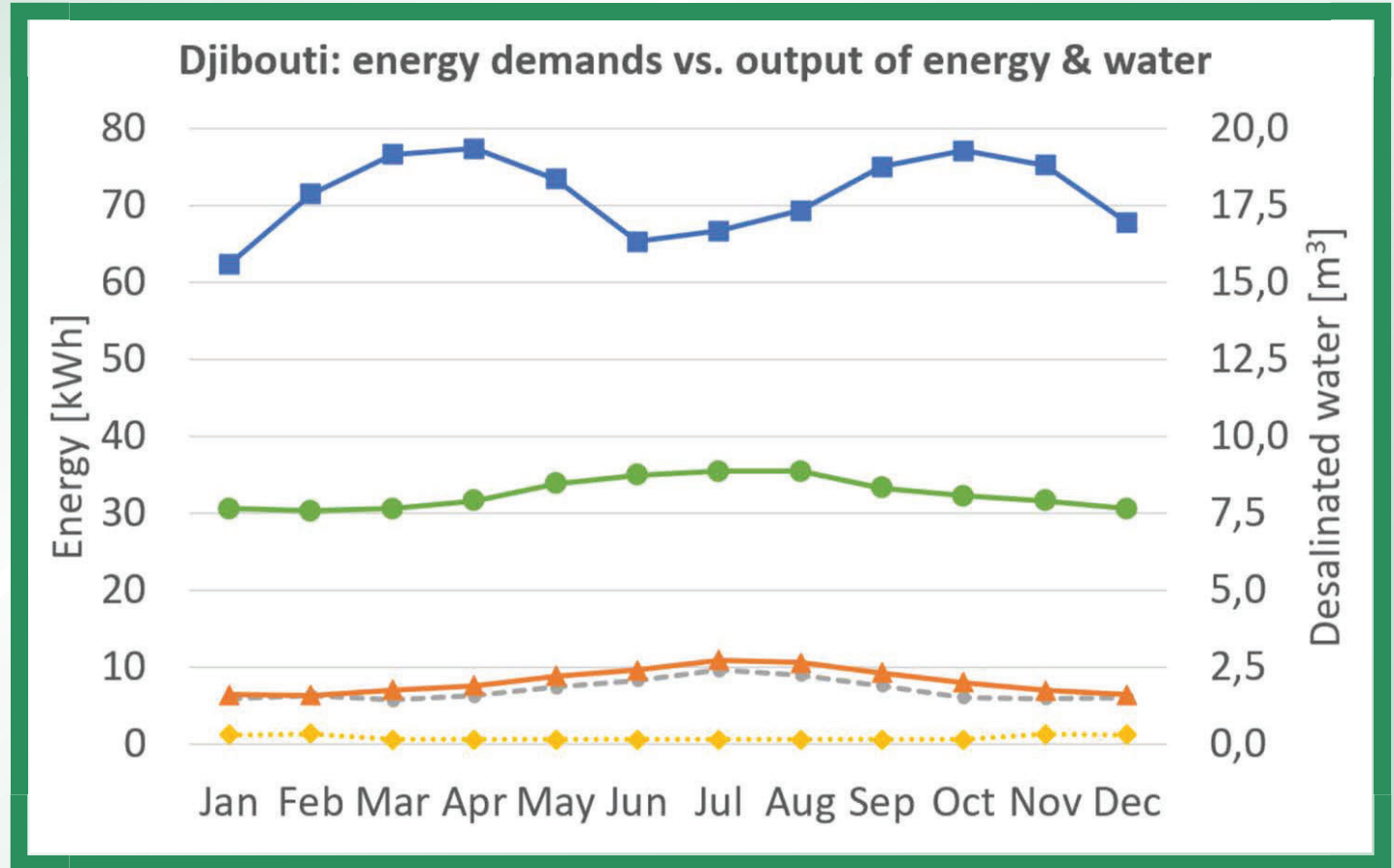


Heat / Cold

Open Access | Free Full-Text | Performance Analysis of a Solar-Powered Multi-Purpose Supply Container | HTML (mdpi.com)

Legend

- Daily OUTPUT of energy/water
- Thermal DEMAND of container for**
- Freezing to -40°C
- Refrigeration to 10°C
- First aid module (22°C)
- Shower module (22°C)



climate friendly & self-sufficient



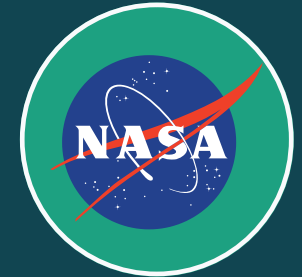
compact format contains everything necessary for basic supply



uses all available natural energy sources: sun, wind, water, geothermal energy and all available resources for water: desalination of sea water, purification of brackish water & groundwater, water from the air



satellite-controlled & thanks to a collaboration with NASA, has all the weather data in the world, which allows us to determine price of liter of water for any country at any time of year



easily transportable by truck, plane, helicopter, ship



for all places on earth where infrastructure is missing, e.g. due to natural disasters, after wars, in slums and favelas, refugee camps etc.



ideal for combating the spread of deserts & greatly facilitating reforestation & agricultural production of fruits & vegetables

Advantages

| www.nathal-energy.com

Thank You

Scientific publication

[Sustainability | Free Full-Text | Performance Analysis of a Solar-Powered Multi-Purpose Supply Container \(mdpi.com\)](#)

International press commentary

[Presenting a Solar-Powered Service Module with Multiple Uses](#)

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