

## Multi-Purpose-Supply Container

There are still major deficiencies in the basic supply of electricity and water worldwide. The number and intensity of natural catastrophes, such as volcanic eruptions, earthquakes with tsunamis, flooding and typhons are clearly increasing. The necessary need for immediate basic care with medicines, drinking water and heat or cold is considerable.



NATHAL ENERGY has designed and patented an energy-efficient, multi-purpose supply container for electricity, heat, cold and water on a regenerative basis. The multifunctionality of the innovative product increases the application possibilities, so that a universal usability results. The system is designed as a 20-foot ISO container transport-compatible and for transport all required components are stowed inside.

The water generation is offered as an atmospheric generation module or as a (sea)water desalination rack. In addition to energy and water generators, the container-design offers a flexibly usable air-conditioned space reserve. It can be used for refrigeration and warehouses, product sales, medical or other services that require cooling and water. Via mobile radio, remote maintenance and diagnostics are possible. Additional modules for telemedicine can be integrated.

## Applications



For Desert Greening, Reforestation and Irrigation in agriculture via atmospheric water generation or water desalination.



For reconstruction after natural disasters and conflicts in humanitarian and government fast track projects to establish basic local services.



For autarkic supply of electricity, drinking water, chilled food/medicines or hot air for camps, slums and remote areas.



For boarder protection and special operations offering communication services and supply of water, electricity, heat and cold for deep field operations.



## Advantages



Easy to transport and relocate using standardized ISO-containers



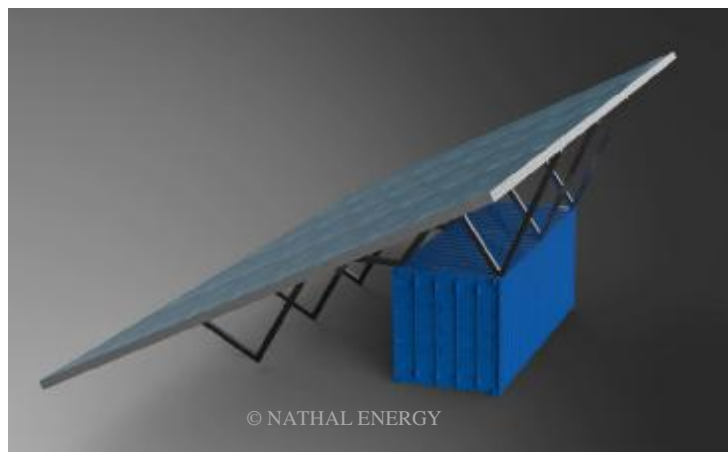
Eco-efficient due to the use of solar power and heat pump



Self sufficient and independent security of supply without fuels and logistical efforts



Fast start-up and low maintenance effort due to tried and tested components



Lower product cost due to cold/warm water storage instead of large battery systems \*

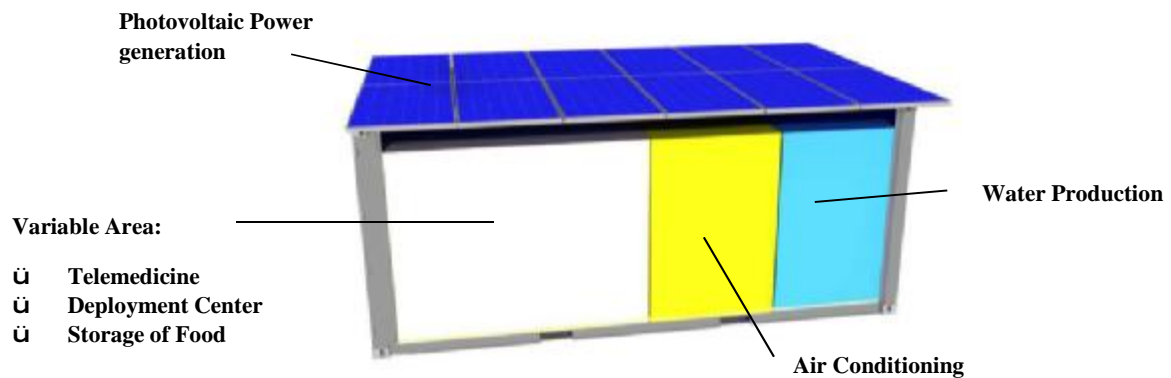
\*if heat/cold is required, boiler storage is cheaper than battery systems



Lower life cycle cost due to integrated battery cooling system \*\*

\*\* if ambient temperature is above 30°C battery life span decreases dramatically

## Technical Data Sheet



### Dimensions 20 ft Container:

L x W x H = 6m x 2,4m x 2,4m

### Heat pump:

Heating Power 4-10kW

Cooling capacity 4-9kW

### Water desalination:

6 m<sup>3</sup> / h at 10 g / l Salt Content

2 m<sup>3</sup> / h at 45 g / l Salt Content

### Photovoltaic System:

85m<sup>2</sup> with 13kWp

### Water from air:

100 liters/d at 30°C/80% rel. humidity

Shown ratings are for the basic version! Tailormade products can be easily offered due to its modular design. Variable ratings can be realized for all storage capabilities (power, heat, chill) by extending one container and by combining several containers.

## **Nathal Energy**

Nathal Energy is a start-up in the field of sustainable, environmentally-friendly care for people with vital necessities (energy, water, food, medicines) combined with environmentally friendly disposal of waste. Nathal Energy focuses on technology development and technology transfer. For the realization of products, Nathal Energy cooperates with industrial partner and technology licensees worldwide.

Nathal Energy developed an autarkic supply container offering multigeneration of electricity, heat, cold and water, based on regenerative solar power. The technology makes use of existing HVAC-components, a patent is pending. A demonstration project will be realized in Africa in 2018.

A process for cellulosic biogas generation has been developed as a future extension of the supply-container and as a redundancy for solar power. The process is running as a pilot plant at the Carinthian University of Applied Sciences and will be upscaled onto 20-foot-container-scale in 2018.

Nathal Energy is an Austrian Start-up located in Villach/Carinthia. The team is supported by the governmental incubator program “build!”, the KWF (Carinthia Center for Economic development), the AWS (Austrian federal promotional services) and the Carinthian University of applied sciences.

## **The founders**



**Philippe Lathan** has over 40 years of experience in R&D consulting for companies and corporations. He will be advising on Nathal Energy’s daily business operations, by drawing on his many years of expertise as the founder and leader of the Nathal-Institute. With his accurate analysis, he makes significant contributions to the company's longer-term goals and contributes concrete proposals for the implementation of everyday business decisions.



**Georg Stimpfl** has 18 years of experience in project management and project management for biotech and chemical plant engineering, together with expertise for complex technical questions. Through his long-term role as lead engineer, he has the skills to lead teams in challenging projects with cost and term impression. He will focus on the operational management.

# NATHAL ENERGY



Source: UNHCR

## HEALTH, WATER, ENERGY FOR ALL

NATHAL ENERGY  
Brucknerweg 3  
A-9500 Villach

mob: 0043 (0)664 255 6391  
info@nathal-energy.com  
www.nathal-energy.com

