Efficient and Trouble-Free
Solar Power 24/7
Powered by Azelio
PONTUS RYSTEDT – Hi3 AB
pontus@hi3.biz

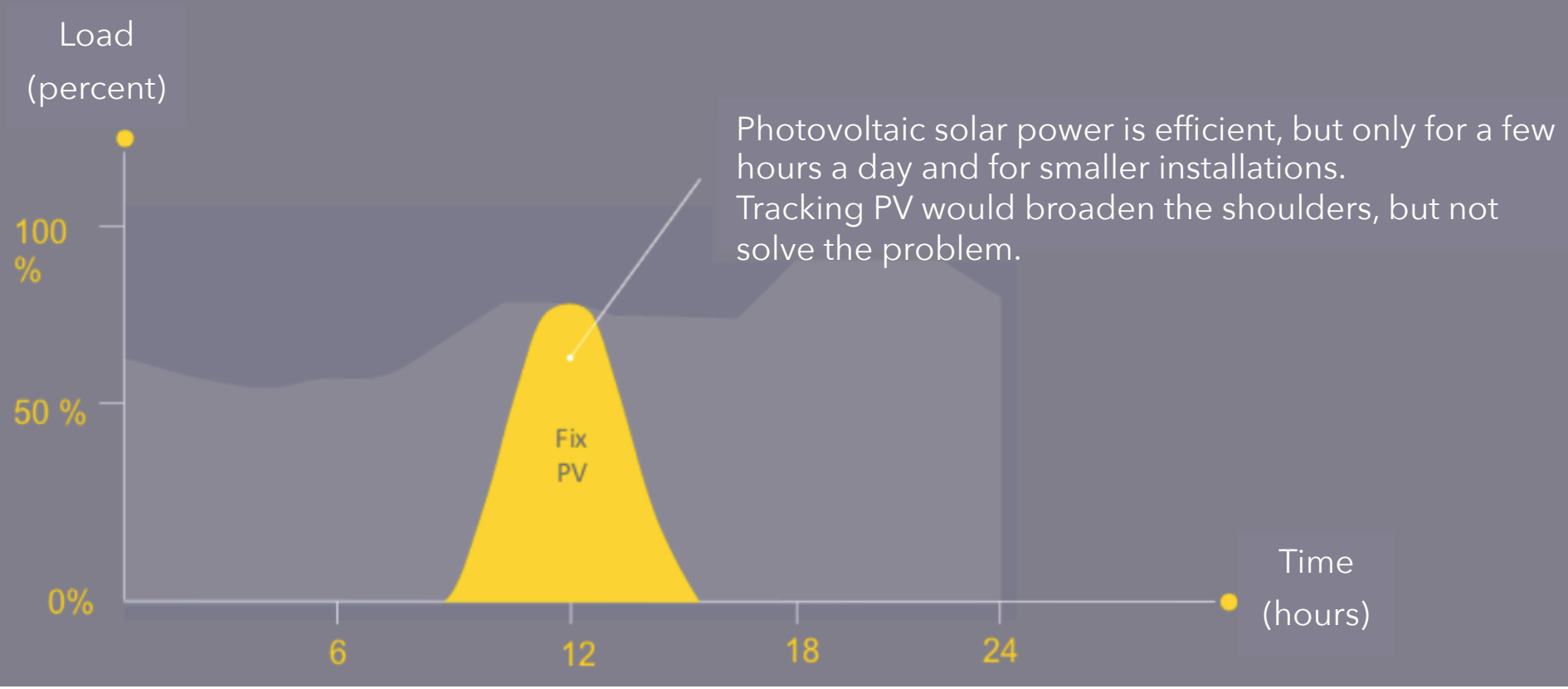
Azelio

- Founded in 2008 (under the name of Cleanergy)
- Invested capital > 100 MUSD
- Unique technology, able to efficiently offer modular and distributed production and storage of energy

The Need addressed by Azelio

Solar energy can give all needed energy. The problem is to control:

Electricity consumption pattern



Photovoltaic solar power is efficient, but only for a few hours a day and for smaller installations.
Tracking PV would broaden the shoulders, but not solve the problem.

The Azelio Approach

Concentration of solar radiation

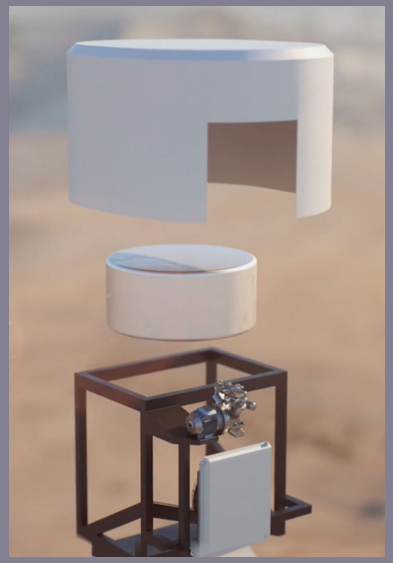
Thermal Energy Storage

Electricity Generation

The Azelio Approach

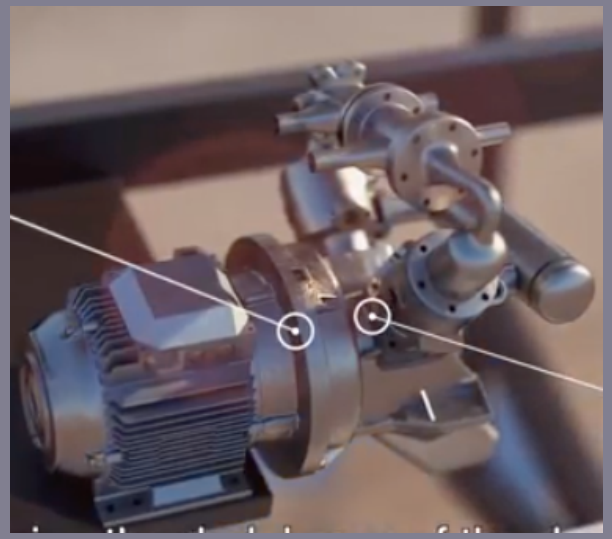
Set of Controlled Mirrors

Phase Change Material (PCM) Liquefied in Container

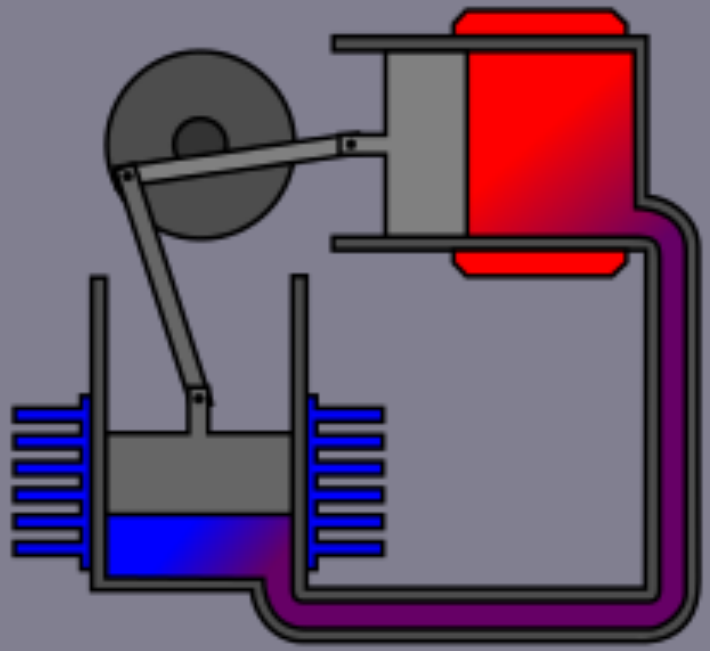


Heat Transfer Fluid

Stirling Engine



The Stirling Engine



Source: Wikipedia

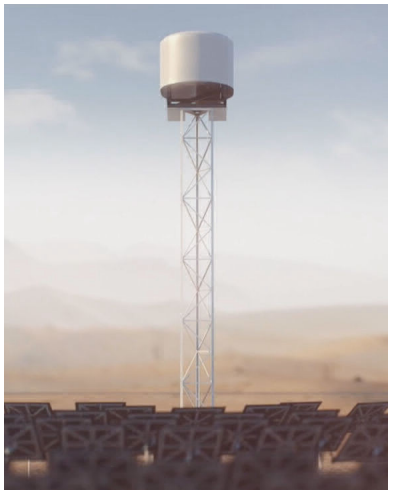
AZELIO

Efficient solution

- Highly efficient production and distribution of solar energy 24/7
- Mainly Mechanical Solution
  - Minimal of electronics
  - No chemicals
  - Low Maintenance
  - Long Life Expectancy
- No need for process water
- Standard modules of 13 kW
- Enables off-grid solutions

Sustainable production

- No Rare-Earth Metals
- Easy to use recycled Aluminum
- Easy to dispose / recycle



Case Comparison

Babcock Ranch, FL (2016)

440 acres of land

343,000 PV panels

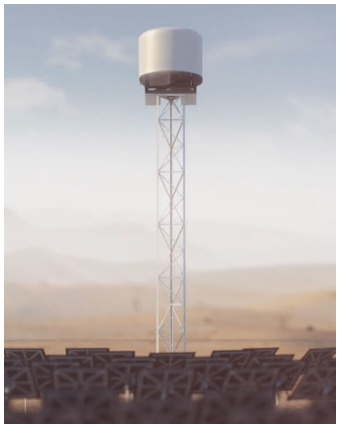
Nominal: 74.5 MW

Estimated energy per day (6h):
447 MWh

Energy Storage:
40 MWh

Source: https://www.babcockranch.com/about-us/solar/

Azelio



440 acres of land

2,850 modules

Nominal 37.0 MW

Estimated energy per day (23h):
852 MWh

Energy Storage:
480 MWh

NOTE: Azelio currently targets 0.5MW – 20MW

Larger installations later

Case Comparison

Crescent Dunes, NV (2015)

Site area: 1670 acres

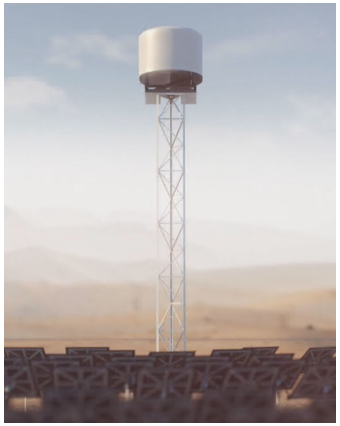
10,347 heliostats

110 MW

Energy Storage
1.1 GW (10 h)

Source: Wikipedia

Azelio



- Site area: 1670 acres
- 10,813 modules

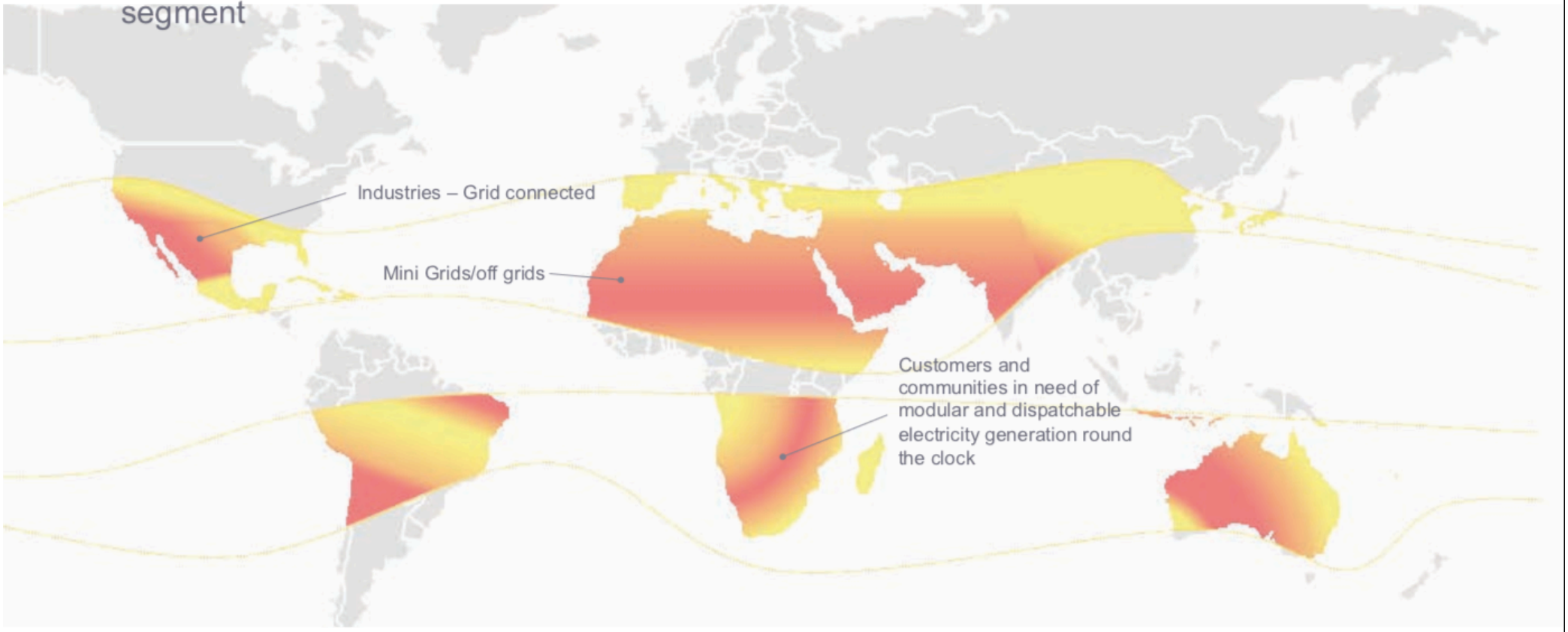
- **140 MW**
- Energy Storage
  1.8 GW (13 h)

NOTE: Azelio currently targets 0.5MW – 20MW

Larger installations later

Azelio Market

Azelio targets an untapped market segment



Pilot and Research Installations

Dubai, UAE

In cooperation with Dubai Water and Energy Authority - DEWA

Ouarzazate, Morocco

In cooperation with Moroccan Agency for Sustainable Energy - Masen

Inner Mongolia, China

In cooperation with an industrial partner

Research installations

Sweden, Spain and Portugal

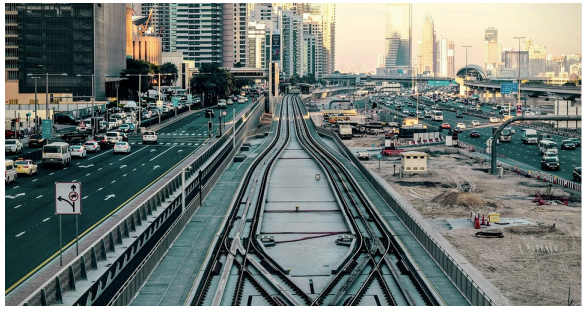
Demonstrator with Termal Energy Storage - TES

Sweden

Applications

Remote communities

Urban transport



Modern living

Remote industries

24/7 industries

Renewable Fuel Production

Production Strategy

The production strategy is based on the following guiding principles:

- Secured possibility for fast ramp up
- Benefit of volume
- Production/installation highly flexible in volume
- Final assembly and installation on site by third party
- Prepared for high volume assembly

Site of Azelio's production facilities
– former site of Volvo Cars in Uddevalla, Sweden

Ecosystem & Business Model

System

AZELIO

Technology
&
Ecosystem

Project

Bank

System Integrator
Constructor

Service

Operator
Utility

Customer

Industry/Community

Business Model

One time: Project fee
Recurring: Fixed + Variable

PONTUS RYSTEDT, pontus@hi3.biz