Water & Light

Securing Humanity’s Access to Consumable Water

Arnaud Thiercelin - 2023

Problem: Fresh Water Scarcity

Today

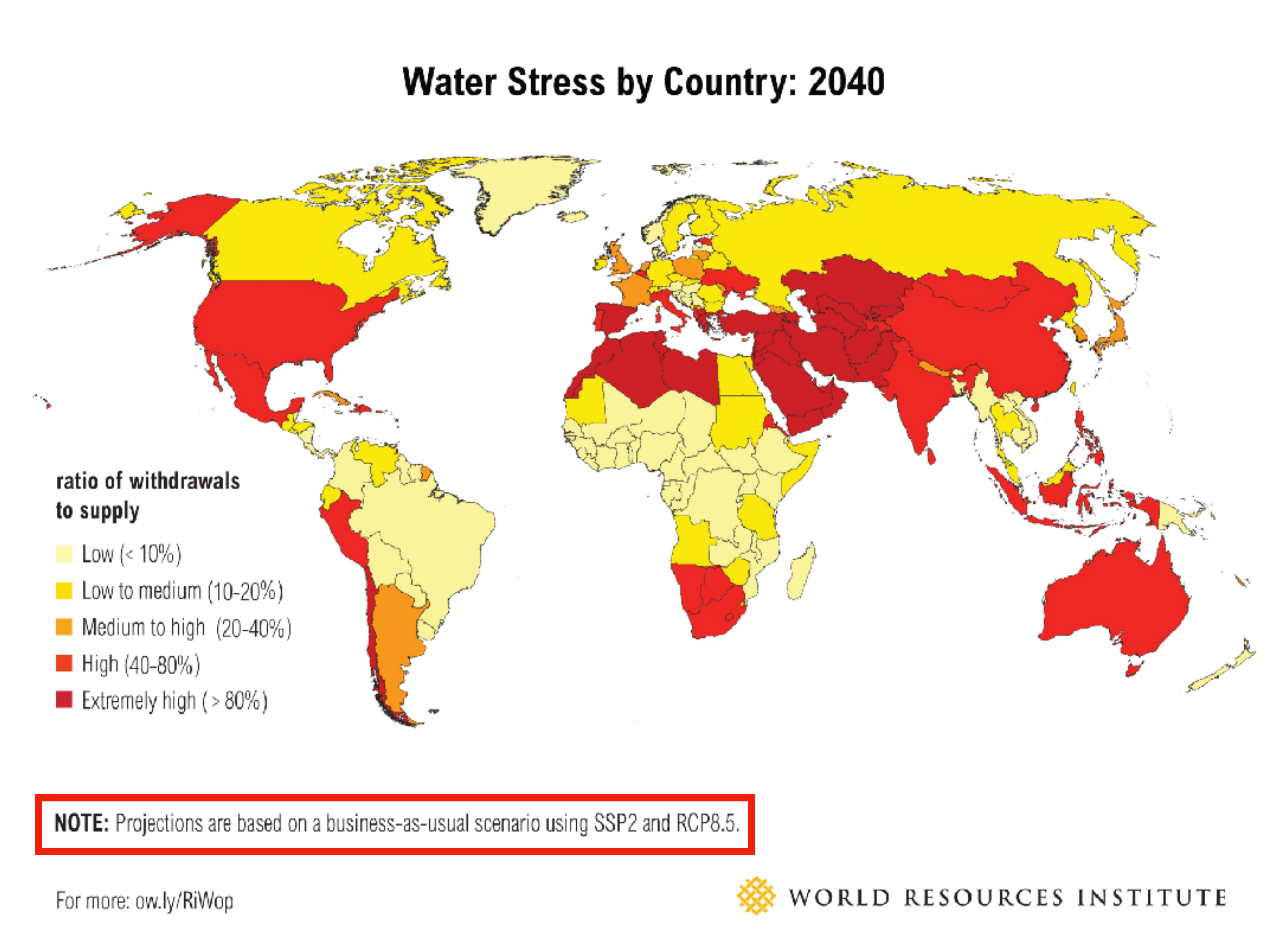
- 700M people impacted
- 43 countries

2025

- 1.8B people impacted

2030

- 50% of the planet



Current Solutions

Desalination & Water conservation

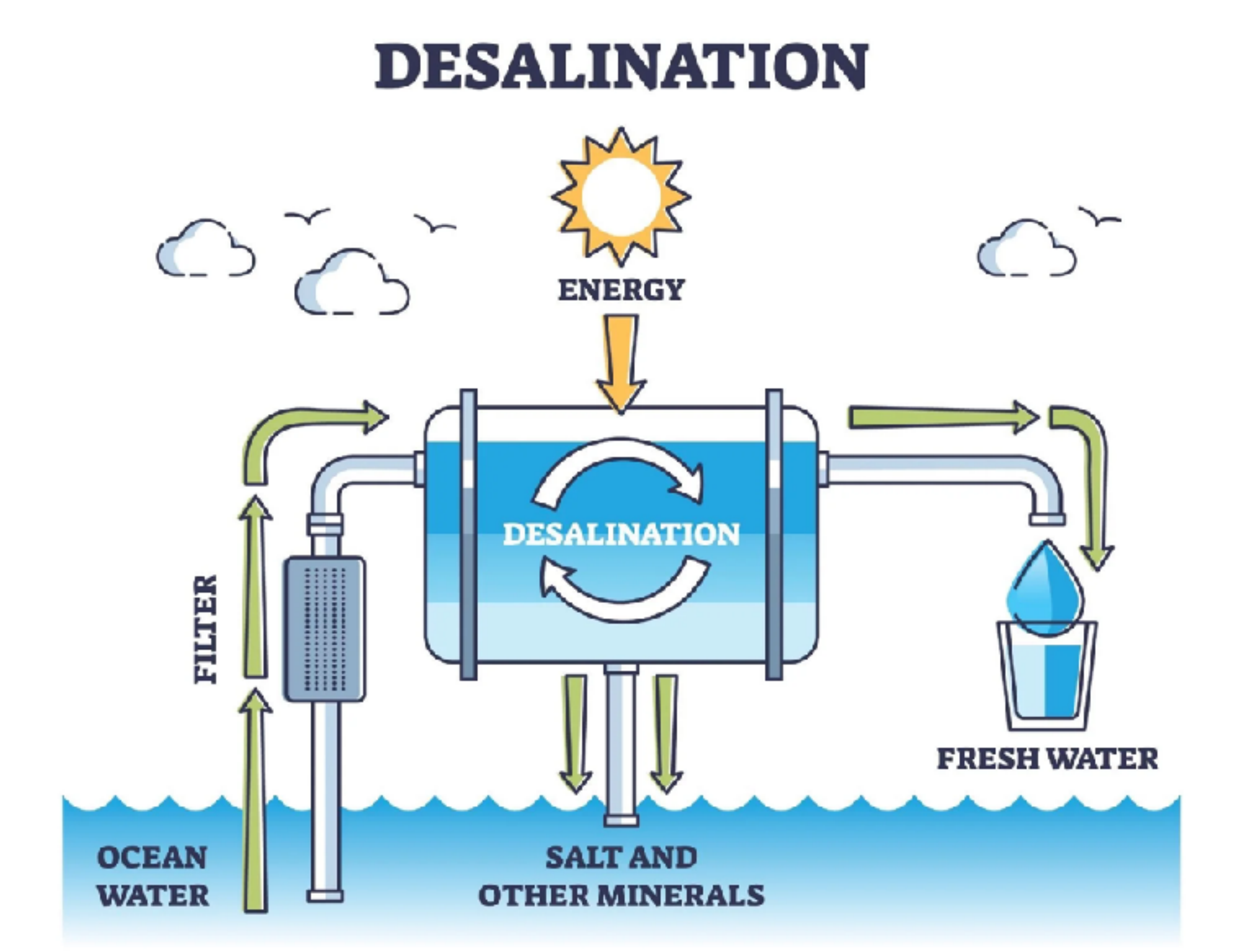
- Crash course: https://www.youtube.com/watch?v=bfr82RB72U8

- Huge Infrastructure/Maintenance Costs in a context where Infrastructure is already unmaintainable as a whole.

- Huge Energy Demand & Huge Carbon Footprint on a grid that isn't getting green enough, fast enough and will be overwhelmed with other greenification efforts.

- Huge Environmental impact with concentrated brine dump on an already over-stressed ecosystem on the brink of extinctions.

- Scalability problem (Large & specific land sites needed, long construction times)



Our Solution

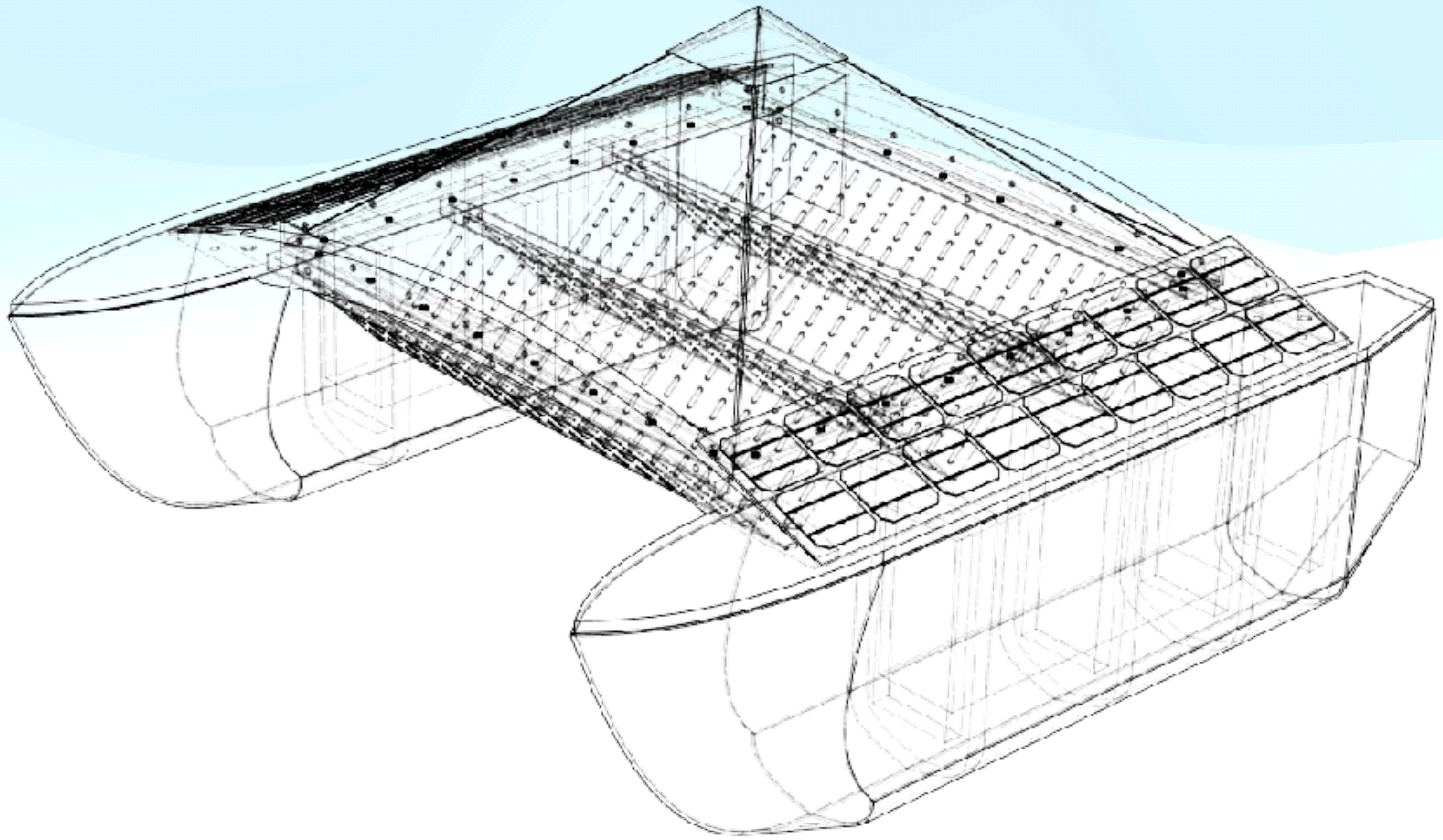
No Carbon, No Environment Impact Water Distillation through Dynamic Robotic Infrastructure

- No Carbon Impact: Energy source is 100% renewable (Solar, Photovoltaic and Wind)

- No Environment Impact: Brine produce is scattered over large area in the ocean allowing progressive reintroduction

- Scalable, Cost effective and Maintainable: The infrastructure is composed of robotic building blocks that (dis)assemble themselves autonomously. Each unit is produce at scale in factories.

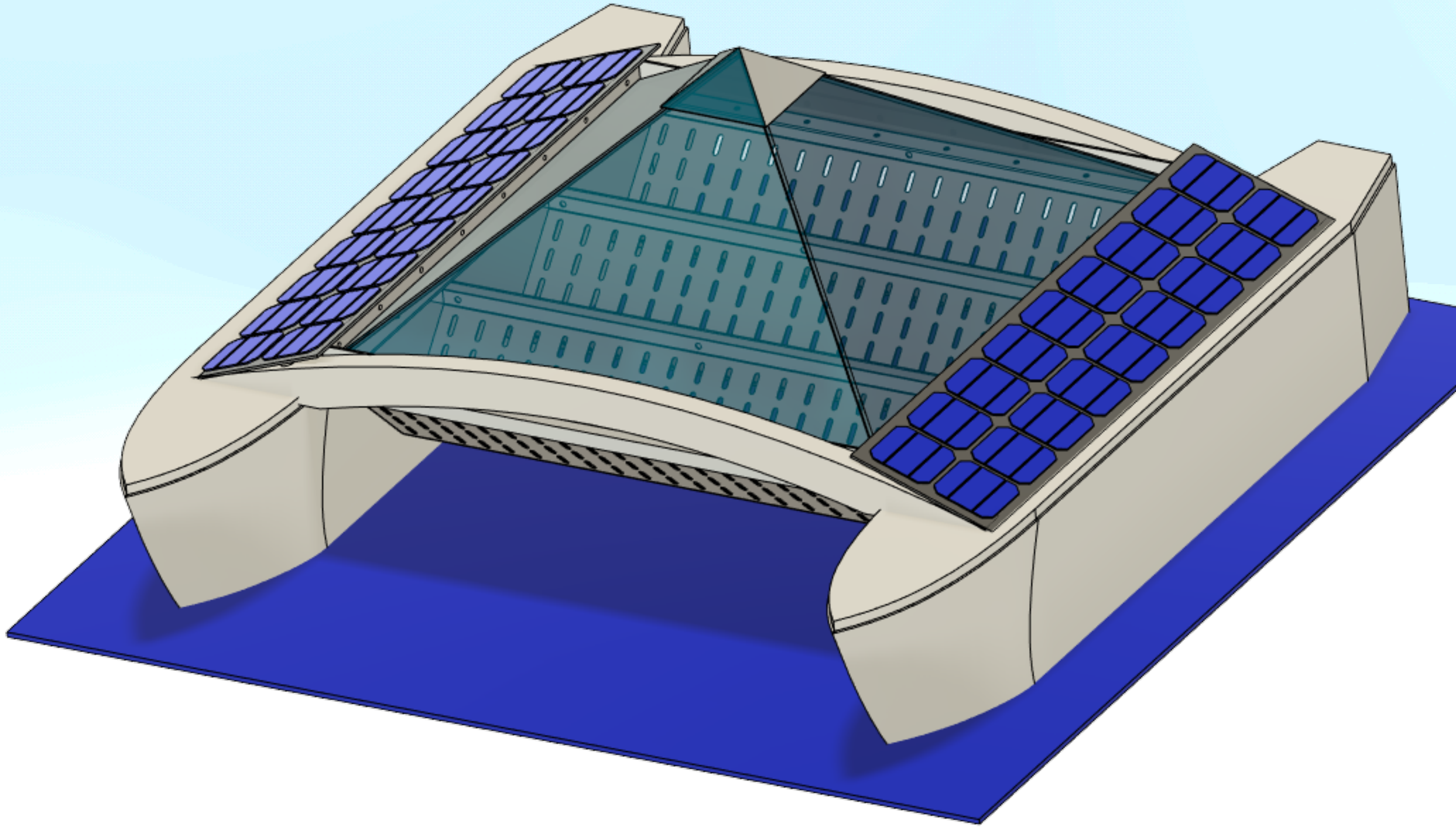
- Optimized to be low cost and low environmental impact VS high return at any and all costs



The building block: Thalas

Autonomous Mobile Solar Still

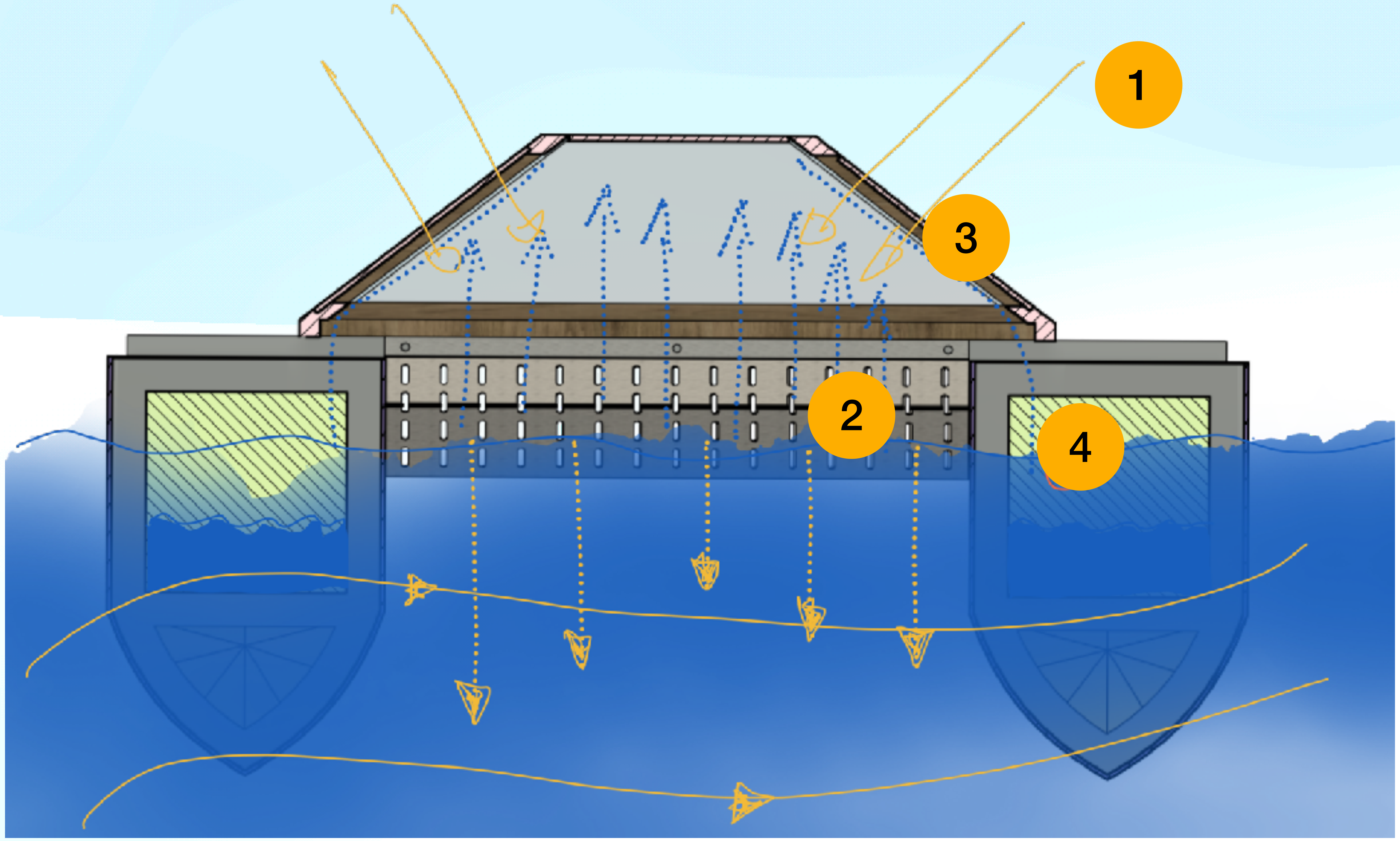
- Highly Efficient, Proven heat-based desalination.
- Low unit cost and highly optimizable through existing manufacturing technics
- Brine is redistributed over large areas and existing currents
- Infinitely scalable in configuration, shape, size and mobility
- Extendable to other application such as data collection and monitoring - including military applications



Thalas

How it works

Catamaran design for stability
2.2m x 1.6m
Dual motors
Auto-piloted with main controller
dual GPS network
Satellite Link by Swarm (SpaceX) (not in model)
44 Galons capacity
Lights for visibility (not in model)
Solar panels (not in model)
(Optional) Heating element (10% of energy input)



1/ Evaporating chamber heats up the water on the rack and its membrane.

2/ Brine is progressively released to the current below.

3/ Water condensate on the chamber's roof and trickles to the collection gutters

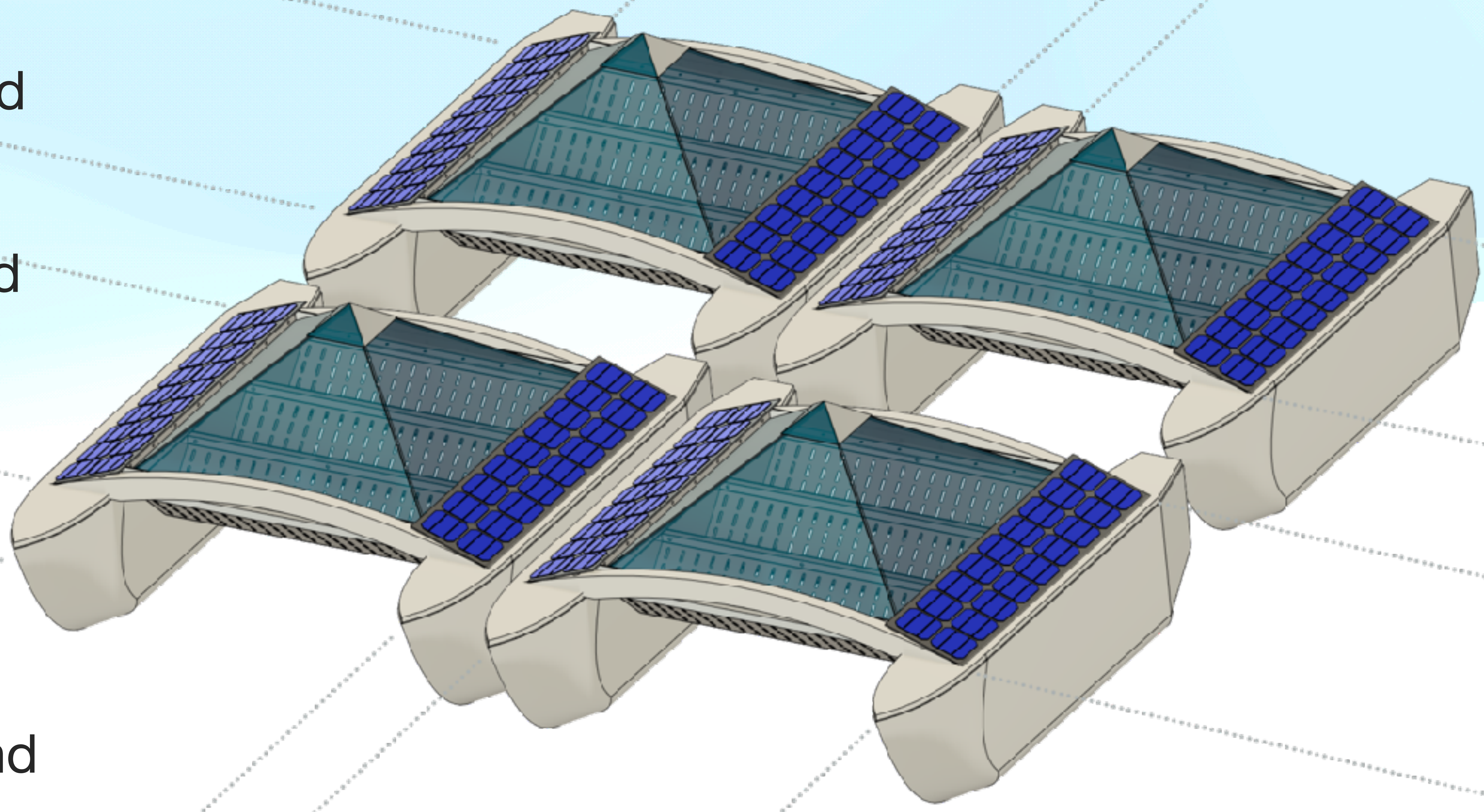
4/ Water Tanks in the hulls collect the fresh water - which will go through minor post processing

The vehicle controls send it to the ocean/ water body when empty and come back to base when at capacity

Thalas at Work

The force in numbers

- Robots deployed in numbers scale collection and adapt to all site shapes.
- Robotic dock allow for the quick deployment and collection of robots and their water payload
- Solar panel, low mobility activity and sat connection make the platform fully power independent.
- Transportable in standard containers, a system can be deployed anywhere in the world easily and - as needed - temporarily
- -> **Millions** of these units to be deployed



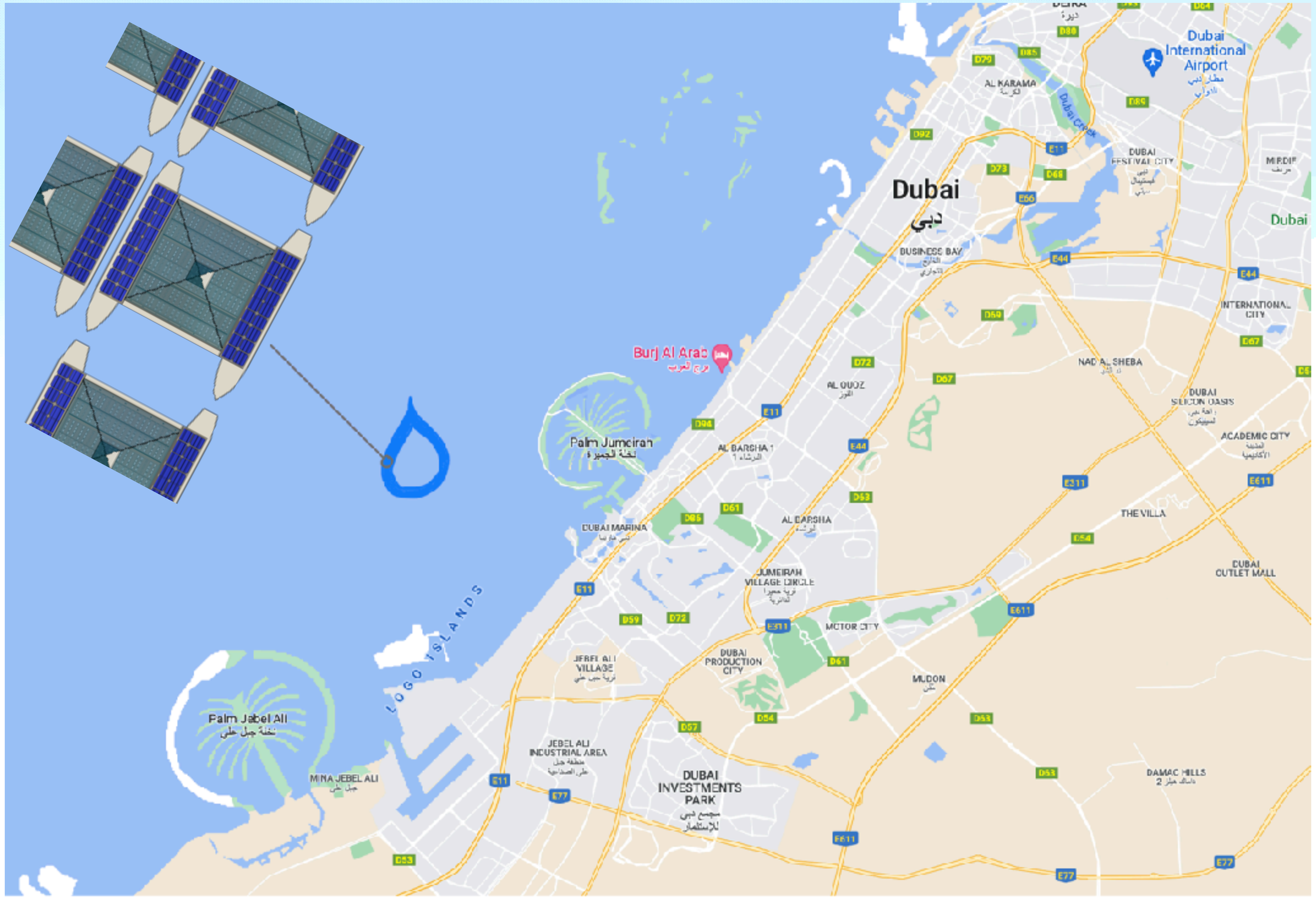
Perspective

The power of numbers and agility

- Scenario 1: A massive permanent system is installed off the coast of Dubai in the shape of a water drop (or other). It provides clean water to the city while being art **visible from space**.

- A permanent water line connects the site to the land

- In case of maintenance, the system disassembles partially or fully to return to the docking station for repairs



Perspective

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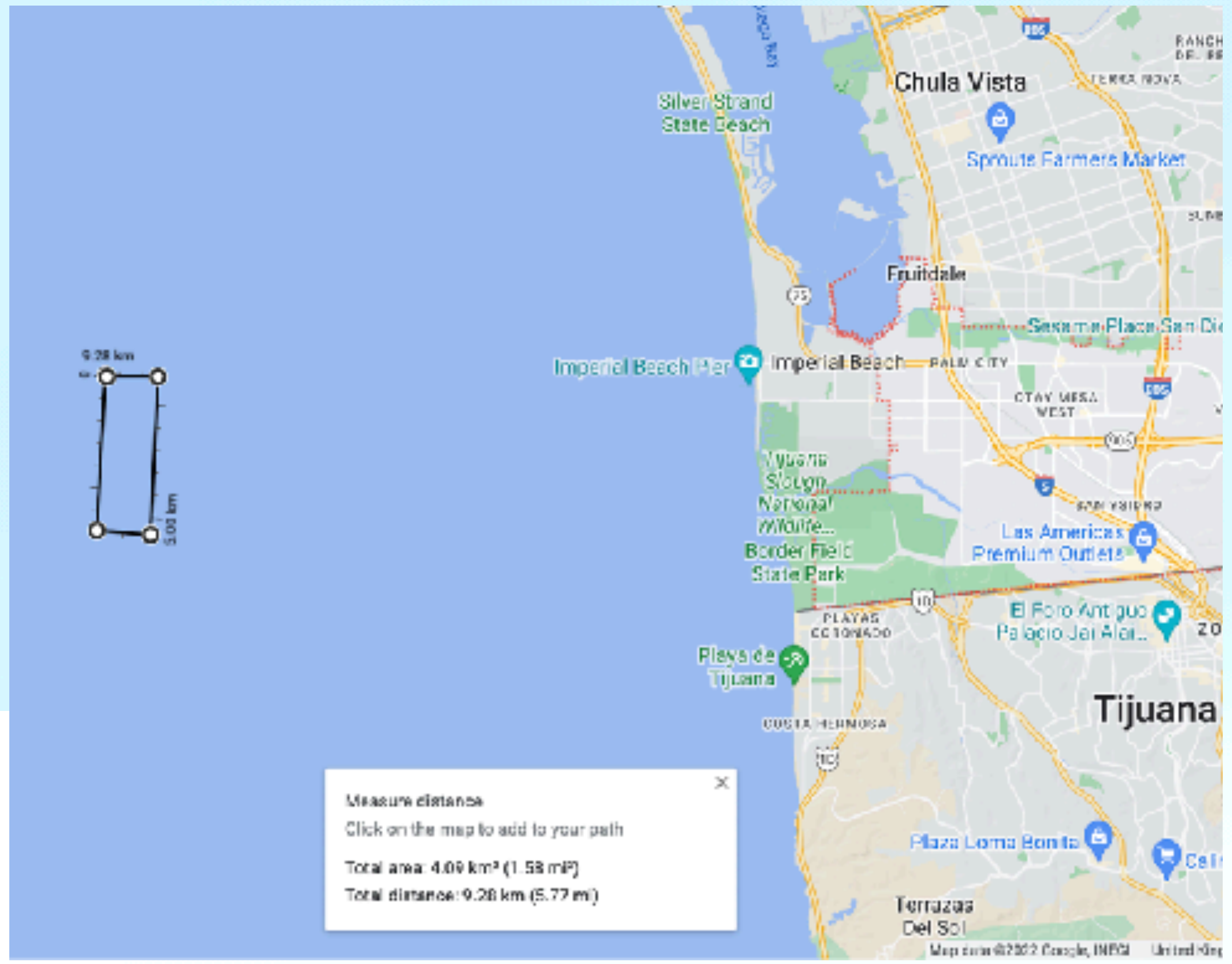
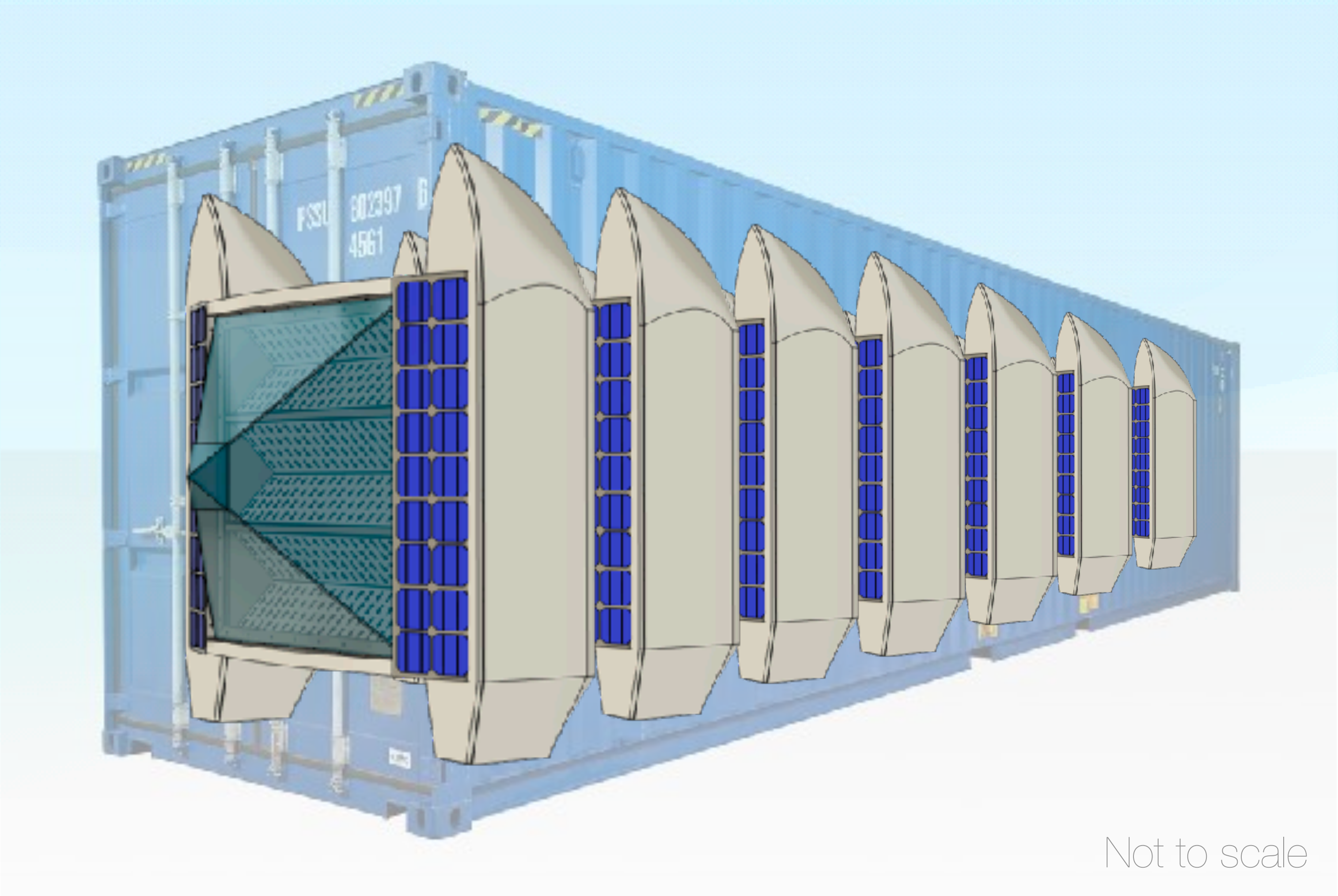


- Scenario 2: System is deployed at mass scale off the coast of San Diego producing the equivalent output of Carlsbad station.

- System disassembles itself and returns to base as needed for weather, maintenance and water offload.



- Scenario 3: System is packed and shipped using standard cargo container to different location around the globe, between seasons, allowing to provide missing water when it’s most needed, while leveraging smaller fleet.

- Scenario 4: System is equipped with additional sensors for data collection in scientific applications

Challenges

- Educating the market on the difference of this approach (low carbon, low impact, mobile & modular infrastructure) will be difficult.
- Unit economics need validation.
    - Cost of water is going to dramatically increase so there is a lot of room to grow here
- Modeling of water returns per UV index (or other better weather metric) to be validated.
    - Output is expected to never hit 0 and there is no operating cost to leave the platform floating, but this is a critical planning information
- Docking station will be necessary for large scale operations.

Revenue

The paths are multiple

- 1/ We offer our low carbon water to beverage companies who can afford a higher cost water and need the PR

- 2/ We offer the solution to areas which are severally impacted by drought. This can be deployable seasonally

- 3/ We partner with existing water company to provide a low carbon extra capacity to existing systems

- 4/ We sell water directly to the end-user

End Game

The 8th wonder of the engineering world

Production & Storage	Transportation	Consumption
Water Table Pumping	Municipal Pipeline	Residential
Desalination	Nationwide Pipeline	Commercial
Fog Capturing		Industrial

- Multi-Trillions Dollars; Multi-National powerhouse owning the green production and treatment of water
- Complete lineup of green water production and treatment solutions
- Owning Nationwide transport infrastructure
- Providing consumption systems for industrial/ heavy commercial customers.

Team & Investment

Team

Arnaud Thiercelin

15+ years experience building high tech products - including hardware - as a founder and in leading robotics companies such as DJI and Auterion.

Investment

GBP 3M (~3.75M USD) Seed for ~35%

-> Build advanced prototypes (3 units)

-> First engineering hires

-> Patents (3 in the pipeline)

-> Validate unit economics

-> Validate operations

-> Prep GTM