Water & Light
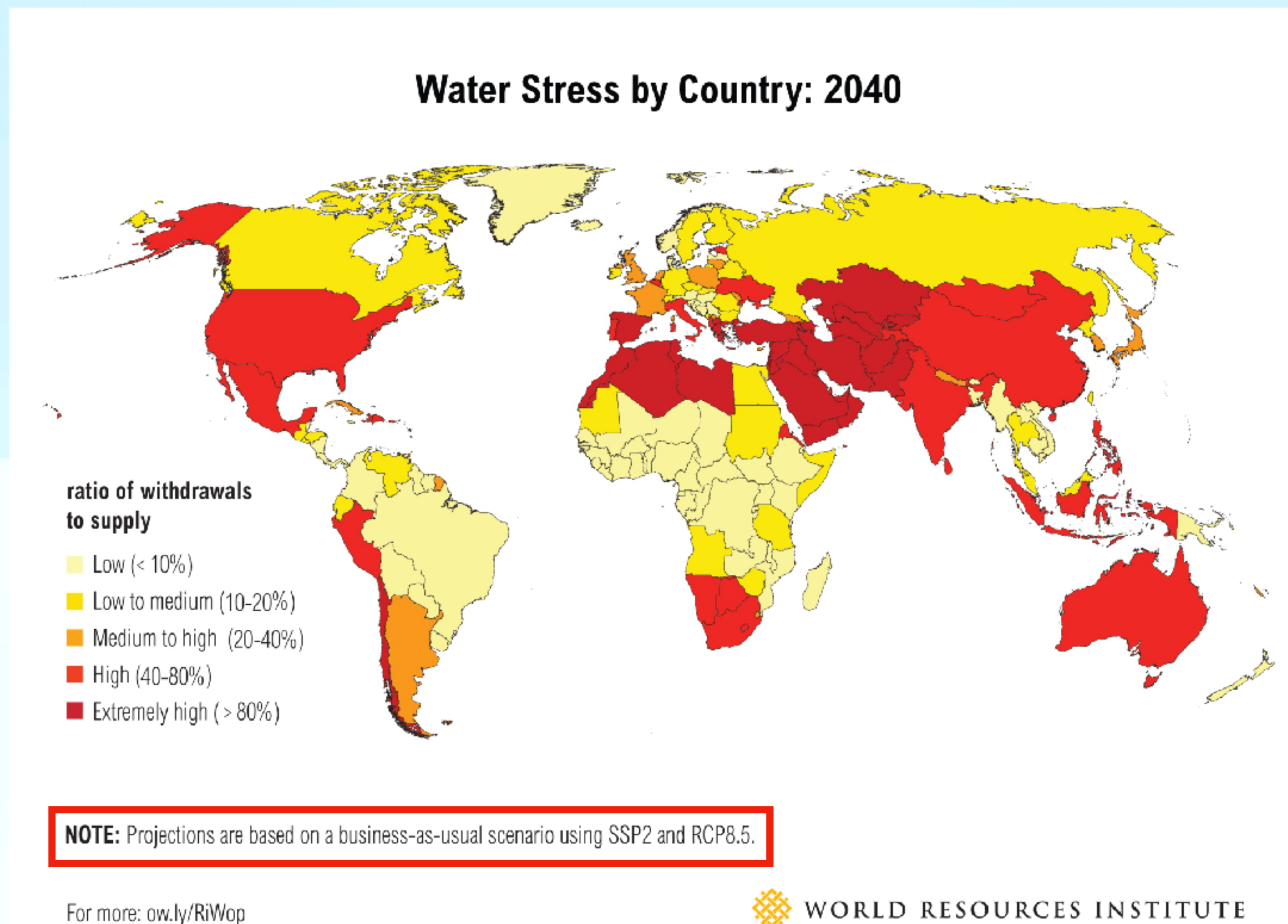
Securing Humanity's Access to Consumable Water

Arnaud Thiercelin - Jan 2023

Problem: Fresh Water Scarcity

Water Stress by Country: 2040

ratio of withdrawals to supply
- Low (< 10%)
- Low to medium (10-20%)
- Medium to high (20-40%)
- High (40-80%)
- Extremely high (> 80%)

NOTE: Projections are based on a business-as-usual scenario using SSP2 and RCP8.5.

For more: ow.ly/RiWop

WORLD RESOURCES INSTITUTE

Current Solutions
Desalination & Water conservation

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

- Huge Infrastructure cost

- Huge Energy demand

- Huge (under-estimated) Environmental impact of the brine by-product

- Huge carbon footprint

- Scalability problem (Large & specific land sites needed, long construction times)
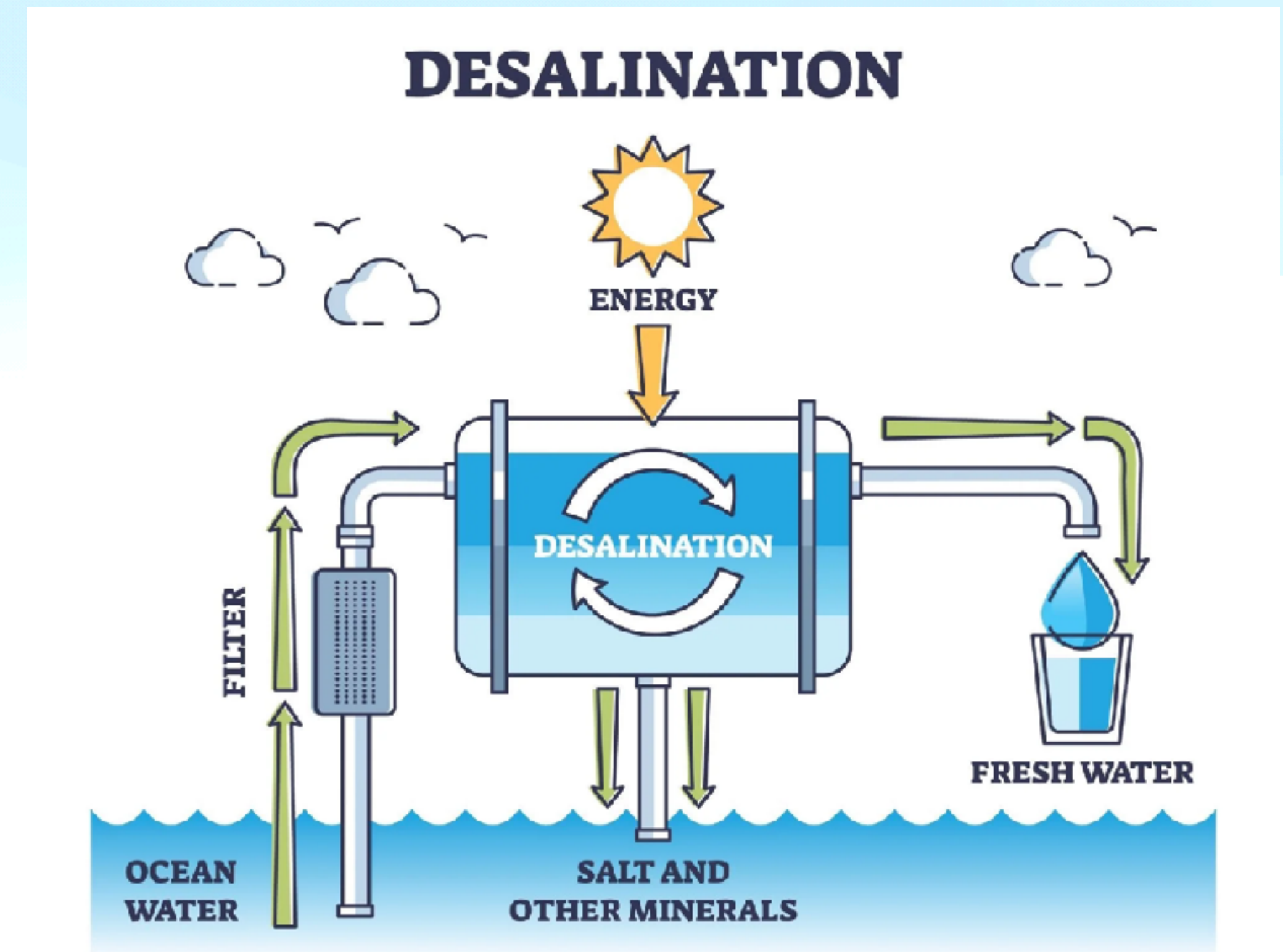
Thalas
Autonomous Mobile Solar Still

- 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
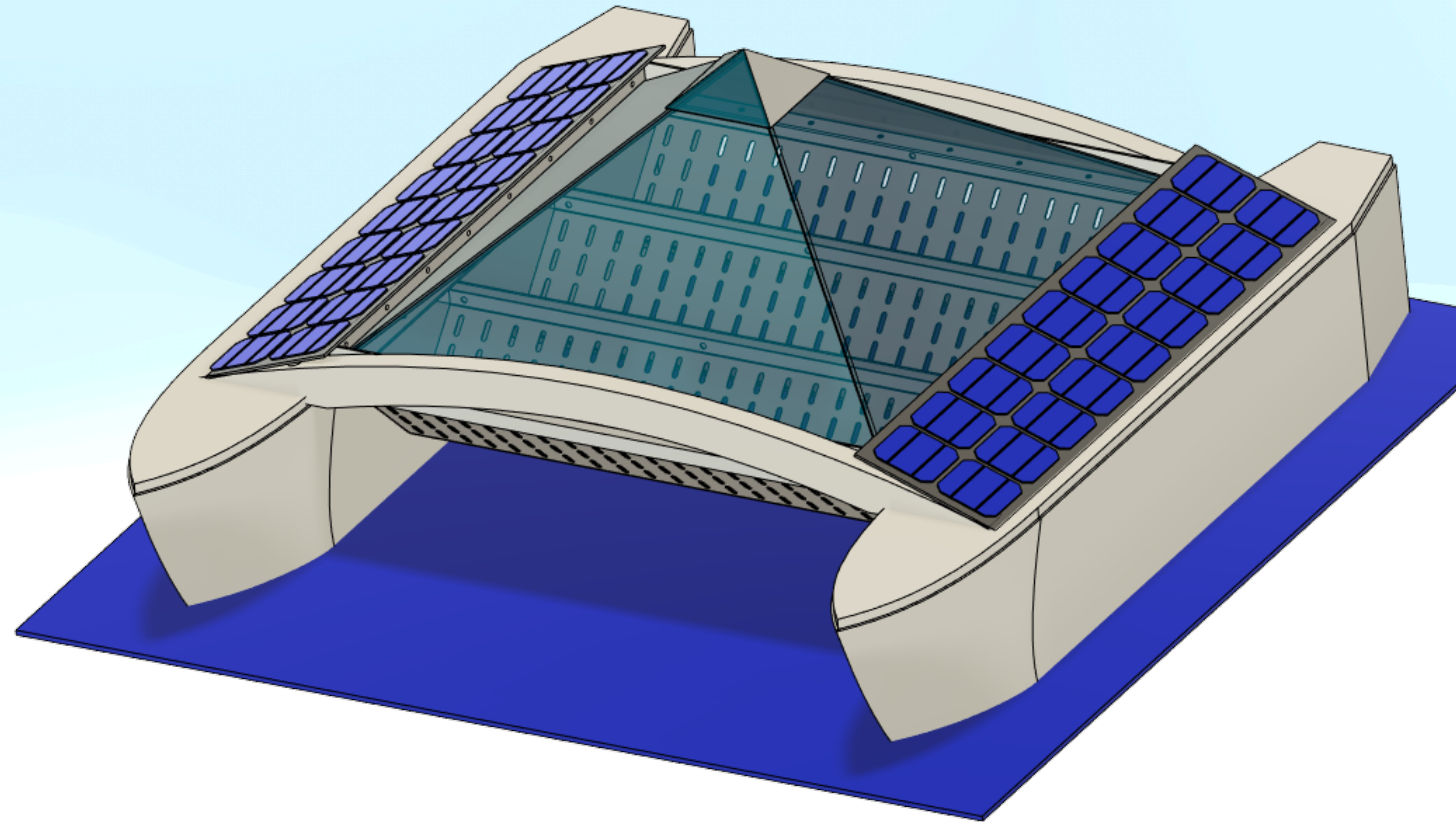
Thalas
How it works

1

3

2

4
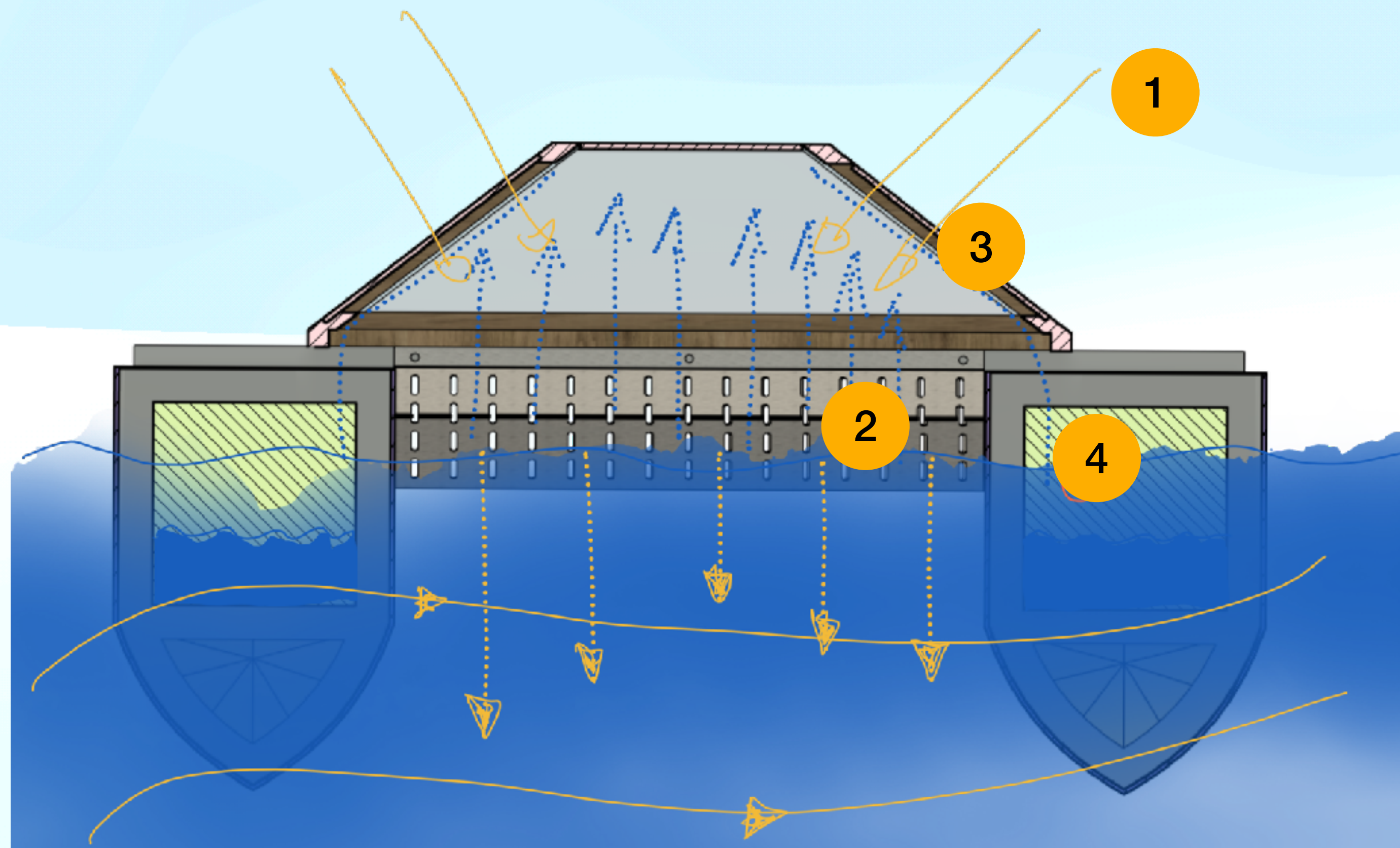
1/ Evaporating chamber heats up the water on the rack and its membrane.

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
The force of 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
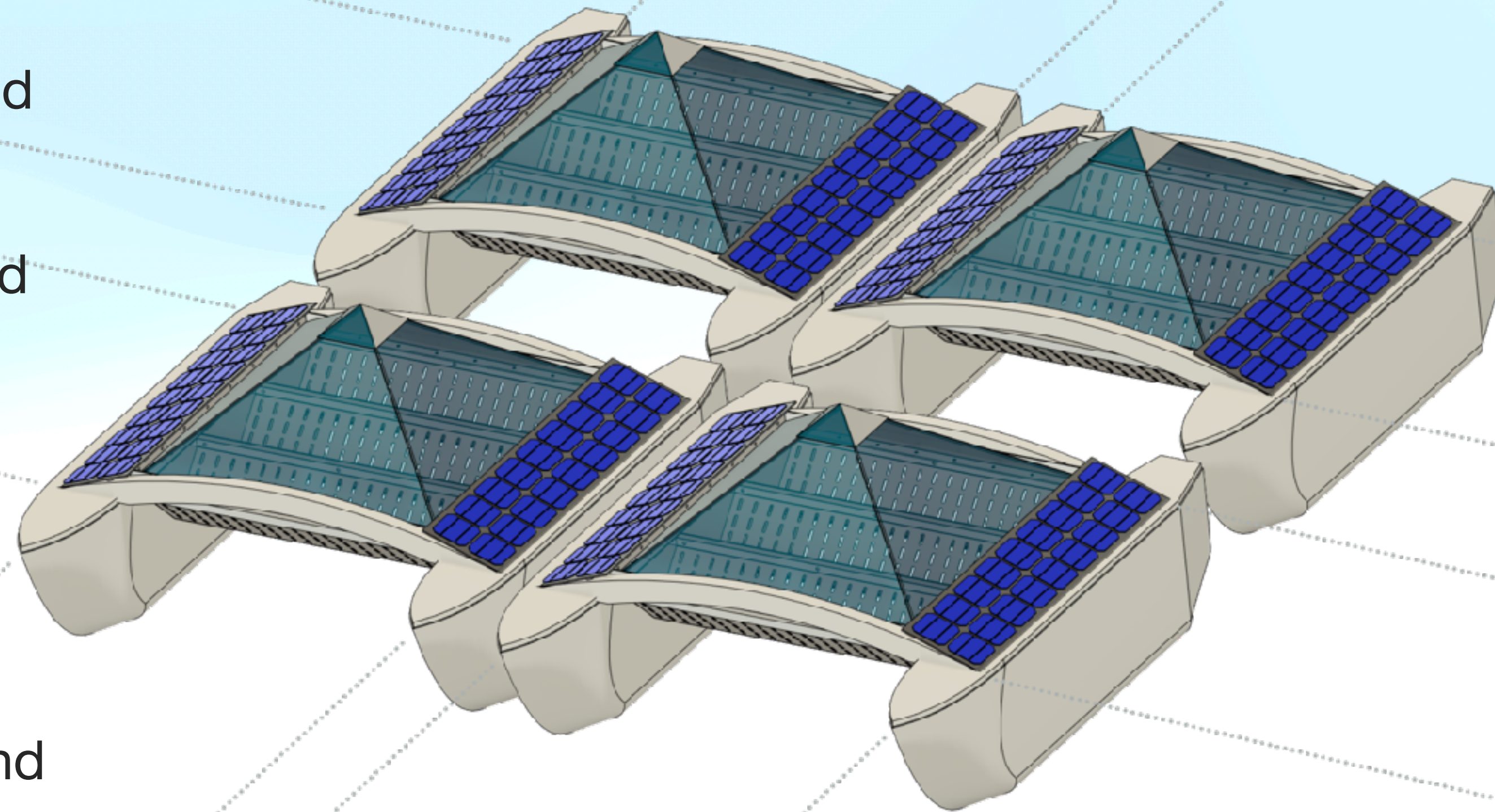
Perspective
The power of numbers and agility

- 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
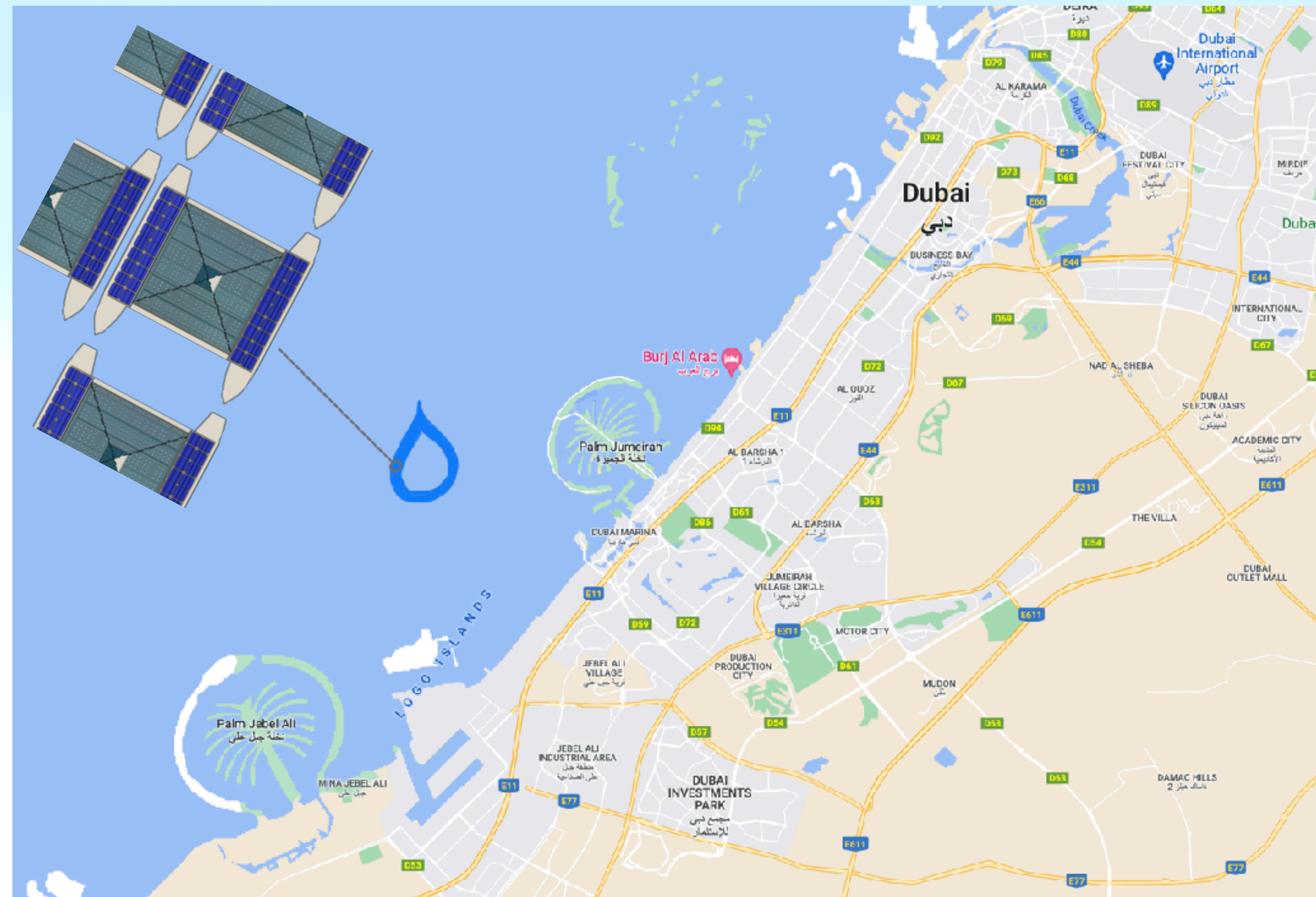
Perspective
The power of numbers and agility
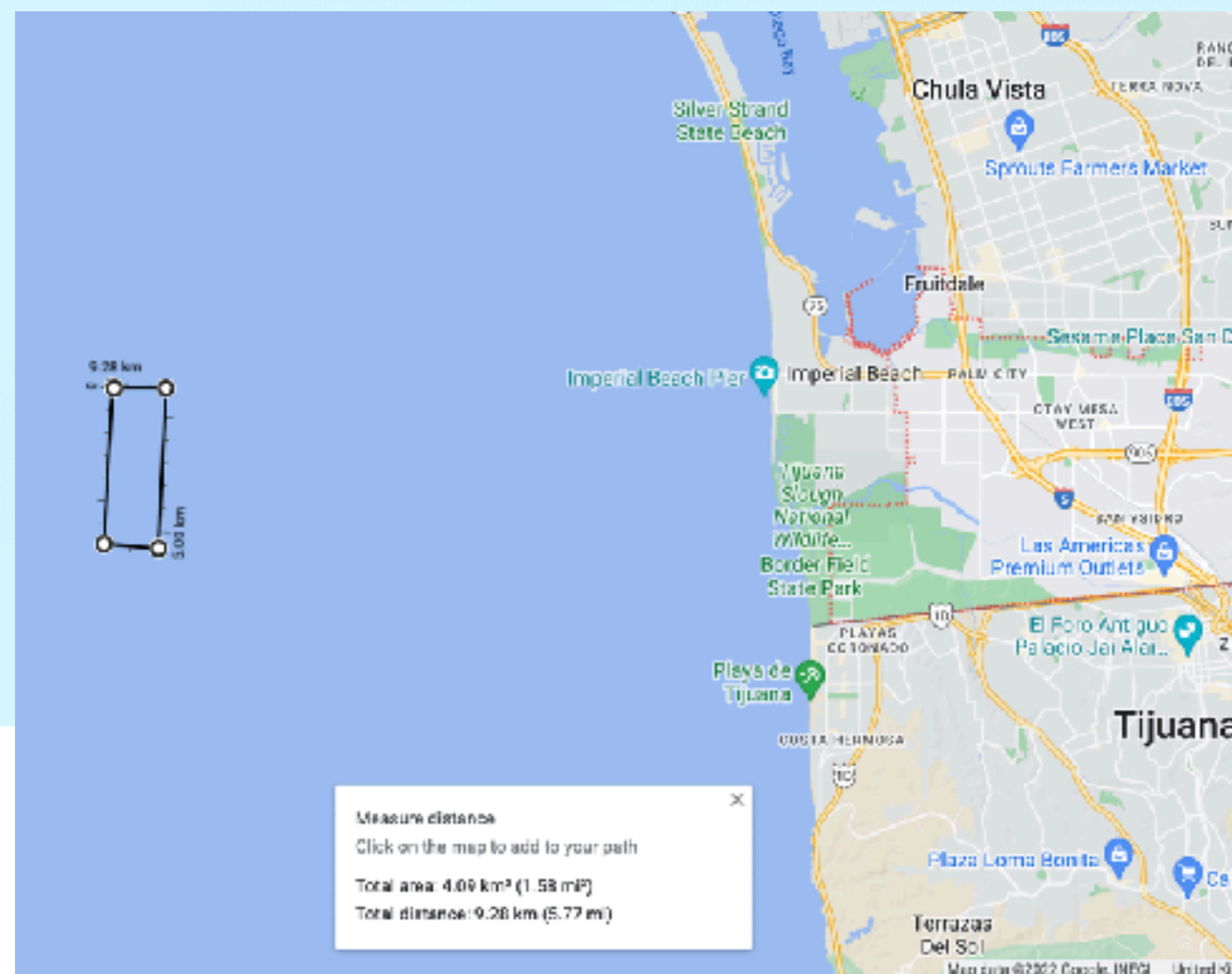
- Scenario 1: System is deployed at mass scale off the coast of San Diego producing the equivalent output of Carlsbad station.

- Scenario 2: 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 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.