

UTILITY SCALE WAVE POWERED DESALINATION



Oneka - Ocean Supercluster Project Opportunity.

Oneka Technologies is a leading manufacturer of wave-powered desalination systems providing fresh water from the ocean with no GHG emissions or electricity.



OPPORTUNITY

Ocean Supercluster (OSC) is a Canadian project funding agency mandated with investing in the commercial demonstration of ocean-based technologies among other things. It can fund up to 50% of projects costs' embedding new technologies and collaboration. Oneka's technology coupled with OSC will allow potential adopters and partners to:

- ✓ Reduce operating costs;
- ✓ Reduce carbon emissions;
- ✓ Develop new knowledge and operating competencies;
- ✓ Develop a Canadian manufacturing capabilities

ONEKA IS SEEKING TO PARTNER WITH TWO EARLY ADOPTERS:

Phase 1: a small Canadian community seeking to secure a new source of fresh water

Phase 2: a canadian organization with international operations

SITE & LOCATION REQUIREMENTS:

1

Have a requirement for at least 2000 m³/d (370 gpm, 600 ac-ft/yr, 530 kGal/d)

2

Located in a coastal area with an average offshore wave height > 1 m

3

Target applications: Water utilities, fisheries, industrial applications, agriculture

(no minimum water requirement for Phase 1)

[Learn more](#)

CANADA'S OCEAN SUPERCLUSTER

\$ 185M for collaborative projects related to oceans, new tech, demos, studies etc.

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HOW ONEKA'S TECHNOLOGY WORKS:

Oneka's surface buoys are tethered to its anchor on the ocean floor where depths are 30-50 meters.

The oscillating motion of the waves is harnessed to actuate a cylinder-shaped water pump to pressurize seawater ahead of a process plant in which water is filtered, desalinated and from which energy is recovered before discharging it back to the sea.

Buoys can be configured with:

- a process plant on each buoy,
- a larger process plant on one of the buoys
- or with a process plant onshore with an electric backup pump

It depends on the client's needs.

Water is piped to shore in a submerged anchored pipeline using wave's energy.

Instrumentation and telemetry are powered from a solar/battery pack

THE PRODUCT CLASSES:



SNOWFLAKE – 1.5 m³ /day
Emergency relief applications



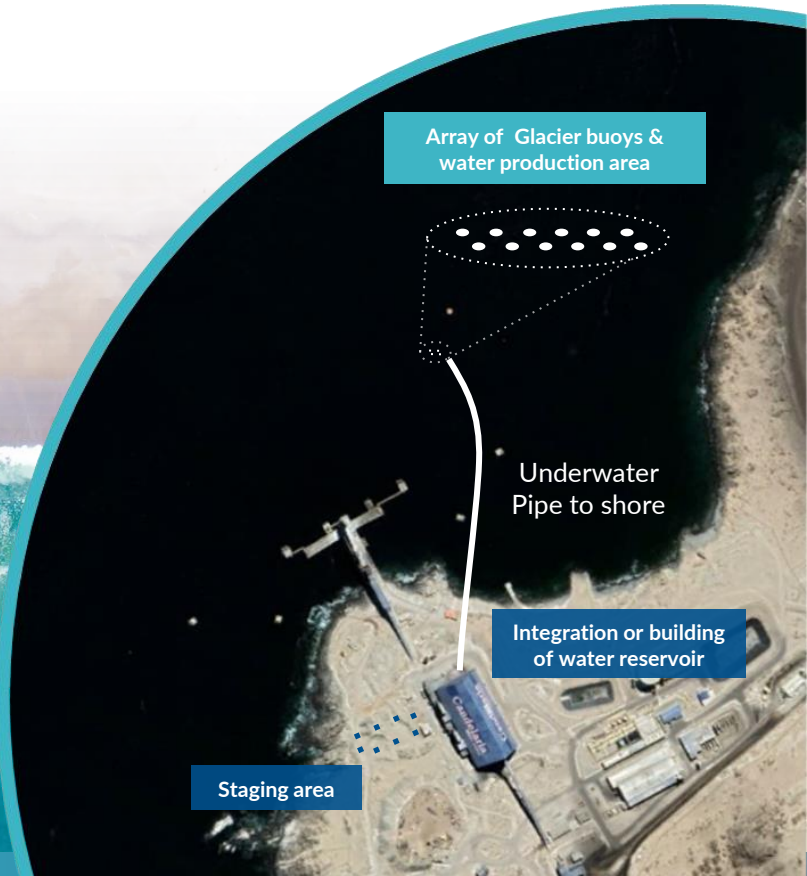
ICEBERG – 60 m³ /day
For small communities, industries and islands, especially off-grid. It will be used for projects generally of up to 1000 m³ /day



GLACIER – 500 m³ /day
Oneka's utility scale **Glacier** class buoy, available in 2023 with the support of the OSC, is planned to be 12 meters in diameter with an expected production capacity of 500 m³/day per Glacier in 1.5 meter seas.



Iceberg Class buoy (2021)



Getting involved

Canadian demonstrator - Small scale community



Benefits

Why participate?

● For the partner

- Water-resilience: Access a stable and sustainable source of fresh water at a lower cost compared to other mitigation solutions
- Limit negative impacts of droughts on your community
- Take a leadership position in supporting the next generation sustainable water solution

● For fishing community & marine life

- The Glacier serves as an artificial reef and past experiences have shown us that marine life around the units flourish after a few months or more. A local Impact & sustainability study will help measure those effects.
- Platform available for various applications:
 - Weather station - collect data for navigation and weather can be broadcasted to the community.
 - Sensor integration for other applications for research, ocean monitoring or fishing
 - Integration of auxiliary systems on the buoy or anchor.
- An optional offshore fresh water supply right in the ocean can be integrated.

How to collaborate?

Possible ways to contribute for the community

● Project preparation period (now-Q1 2022) :

- Help identifying the best exact location for the installation of the Glacier units
- Gather information on water requirements and challenges (quantification, distribution etc.)
- Participate in the elaboration of the project scope and definition and contract review specific to this portion of the project related to the partner.
- Help identifying synergies/collaborations with the local population & fishing community

● Project execution period (Starting Q2 2022) :

- Provide a staging area for works on the project
- Support or provide infrastructure and civil works engineering (water pipe from the beach to the water reservoir and distribution thereafter)
- Give access to Infrastructure (dock and water access) and share equipments (crane, hauling trucks, boats)
- Facilitate the permitting process
- If relevant for the community, facilitate the involvement of local residents in the operations and monitoring of the units and deployment
- Project communication and promotion
- Other potential activities related to the project that may be of interest (tourist tours for example)

● Financial implications:

The proposal is to offer our solution at a lower cost than current alternatives like water trucking, drilling numerous wells or other special measures. Costs to be discussed based on partner's site detailed information.

The partner would participate to seek grant or subsidies from organizations like ACOA or Green Municipal Fund.

INTERESTED PARTNERS SHOULD
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