

# TURN YOUR IDEA INTO THE NEXT BIG OCEAN INNOVATION

[OCEANSTARTUPPROJECT.CA/IDEA-CHALLENGE](https://oceanstartupproject.ca/idea-challenge)

**OceanIDEA**  **Défi IDÉE**  
CHALLENGE POUR L'OCÉAN

## ABOUT THE OCEAN IDEA CHALLENGE

Ocean industries provide a livelihood for millions of people around the world. Our ocean is vital to our future, and creating more sustainable ocean industries is critical to solving important, global issues. The Ocean Idea Challenge is a market validation competition that encourages prospective entrepreneurs to explore and begin to validate their early stage, sustainable ocean idea. Successful teams that demonstrate proven market interest for their idea will be awarded up to \$7,000 towards eligible costs, and be introduced to local technology innovation hubs to continue building out their product/service, in addition to other resources and benefits.

During the program, participants will receive access to resources and will focus on beginning to validate their idea during a customer discovery sprint to gain a thorough understanding of their potential customers' situations, needs and pain points.

Teams and individuals are encouraged to participate if they are interested in exploring ideas around reducing the environmental impact industries have on the ocean; improving ocean health; or developing a new or enhanced method to do more with less ocean-based resources.

The Ocean Startup Project launched the Ocean Idea Challenge to support individuals and teams who are interested in exploring ocean sustainability problems and validating ideas that could solve the problems they have identified.

## COMPETITION OVERVIEW

The Ocean Idea Challenge is designed to inspire new ocean startup teams and entrepreneurs to kick start the idea validation process by encouraging participants to understand potential challenges customers face. The following are the steps to participate:

**Step one:** After completing the online registration form, you will be invited to meet with one of our Ocean Ecosystem Navigators to discuss your idea and the program requirements.

**Step two:** We'll offer sessions to help you explore ocean challenges in need of solutions, connect with potential teammates and partners, and learn best practices for validating ideas.

**Step three:** Up to 25 teams will be selected to receive up to \$7,000 each to support their validation efforts. Teams will be expected to commit to participating in programming, including a customer discovery sprint, and weekly meetings with their assigned Ocean Ecosystem Navigator. Funding will be unlocked based on a team's ability to complete previously agreed upon milestones set at the beginning of the program.

**Step four:** High performing teams will receive express entry to the next phase of the Ocean Challenge, where they will have the opportunity to receive up to \$15,000 in additional support along with access to an EIR and other resources.

## 04

## KEY DATES

- April 30: Registration opens
- April 30 to June 9: Registrant intro meetings with Navigators (ongoing throughout registration period)
- May 15, May 28: Information sessions
- May 31: Design Thinking workshop
- June 7: Customer Discovery workshop
- June 9: Registration deadline
- June 10 to 13: Participant selection
- June 17 to August 30: Customer discovery sprint + programming
- September 5: Selection of advancing startups

## ELIGIBILITY:

To participate, you must be either:

- An individual or a team without a registered business

**-OR-**

- A company that has been registered for a year or less and that has not yet launched a product in the market

This competition is primarily designed for solutions that are at a Technology Readiness Level (TRL) of 3 or lower, but this is considered on a case-by-case basis. If you have questions about your TRL and eligibility, please reach out to

**[admin@oceanstartupproject.com](mailto:admin@oceanstartupproject.com)**

## ELIGIBILITY CONTINUED

Whether you're a student with a vision, a professional seeking meaningful change, a researcher with groundbreaking ideas, a tech enthusiast, or simply someone with a burning desire to tackle ocean sustainability, the Ocean Idea Challenge is your platform to turn aspirations into action.

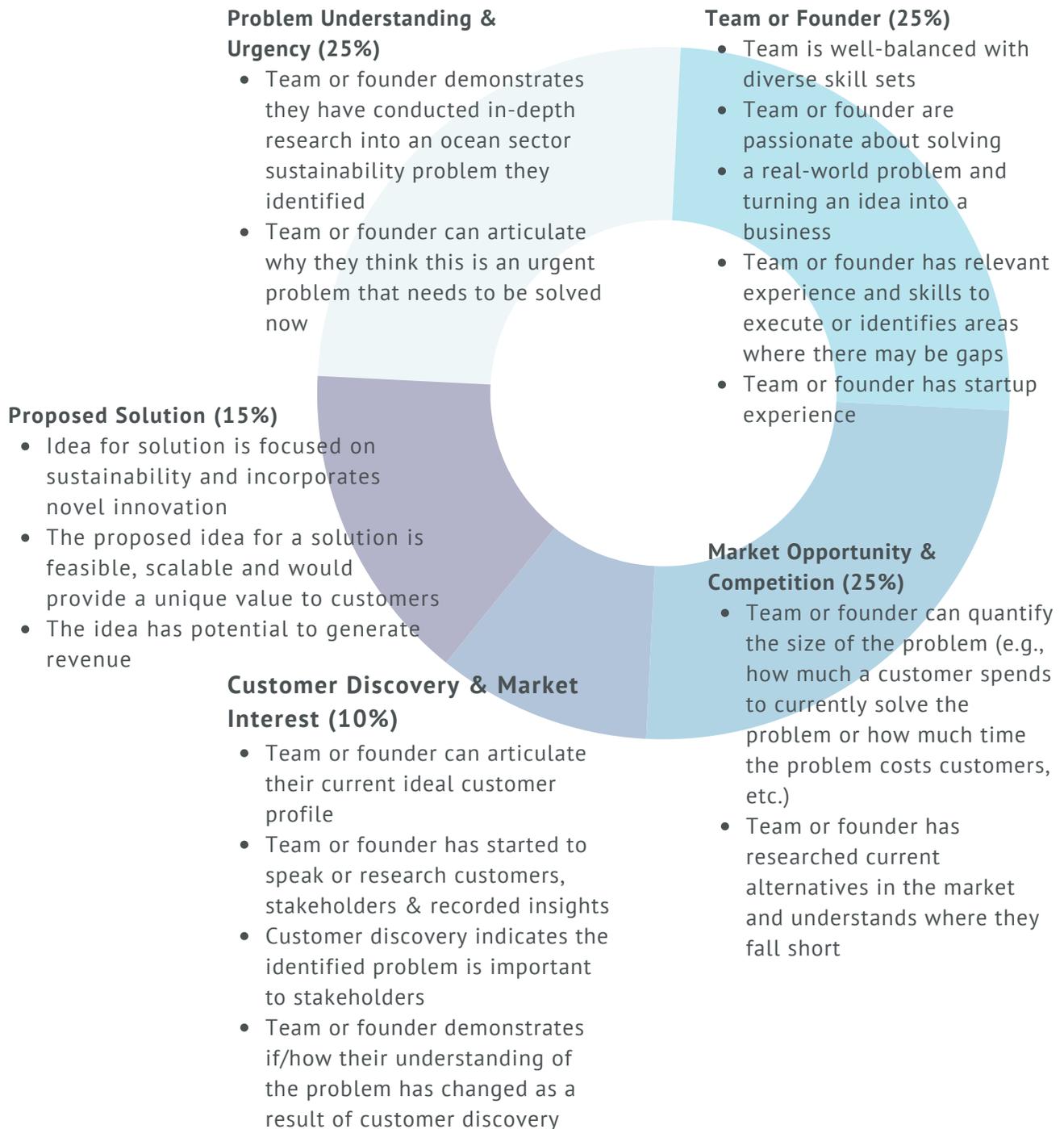
- **Students:** If you're a student passionate about ocean sustainability and innovation, this challenge is an ideal platform for you.
- **Mid-Career Professionals:** Professionals looking to pivot the career or contribute their skills to sustainability efforts are encouraged to join.
- **Researchers:** Academic or independent researchers with a focus on ocean sustainability, eager to translate their findings into practical solutions, are welcome.
- **Developers and Technical Talents:** If you have technical skills and are interested in applying them to sustainability, this challenge needs you.
- **Aspiring Entrepreneurs:** Individuals interested in learning how to validate and grow a business idea, especially in ocean sustainability, are perfect candidates.

You must be at least 18 years old and located in Canada.

**Additional Notes:** Focus on Technology-Enabled Solutions: While all ocean sustainability-related ideas are welcome, this competition is particularly geared towards those with novel technology-enabled solutions.

Diverse Teams: We highly value and encourage the formation of diverse teams, bringing together varied experiences and perspectives to address ocean sustainability challenges.

## EVALUATION CRITERIA



## PROGRAMMING

Teams that win in the Ocean Idea Challenge will participate in the program from June 17 to August 30, 2024. Each team will be assigned an Ocean Ecosystem Navigator, who will serve as a point of contact and supportive resource to help teams identify and prepare for other programs and funding available to them. Teams will also work with Navigators to determine milestones and track progress throughout the program.

The Ocean Startup Project will also host a number of workshops, networking events and discussions to help teams learn about resources available to them, develop fundamental skills, and connect with industry experts.

## FUNDING

Funding amounts for each selected company will depend on submitted budgets for proposed activities/milestones. Companies will be eligible to have up to \$7,000 CAD in eligible expenses covered by OSP. Total award amounts will be incrementally available based on the completion of pre-determined milestones/activities.

## FUNDING CONTINUED

The following provides an example of how funding can be unlocked:

Activity/Milestone	Funding Amount Available
Acceptance into the program	Up to \$1,500 available
Milestone #1	Up to an additional \$1,500
Milestone #2	Up to an additional \$2,000
Milestone #3	Up to an additional \$2,000

Selected teams will work with the OSP to set milestones focused on customer development, intellectual property strategy, initial prototype design, business/company formation and structure. Teams will be required to submit milestones and budgets to the OSP for final approval.

### ELIGIBLE COSTS

Eligible costs include only incremental costs deemed essential for the implementation of the activities. Incremental costs are those that are new or additional, or costs that would not have otherwise been incurred if not for the implementation of the activities. Eligible costs include only those costs that are reasonable.

The award recipient will not be given cash. Nor will the award recipient be reimbursed for expenses incurred. Instead, the Ocean Startup Project will purchase eligible expenses on the award recipient's behalf. OSP must be invoiced directly for these expenses to be eligible. In the event that the total award amount only covers a portion of the proposed expense, the vendor/supplier will need to divide the invoice into the portion OSP is covering, and the startup will be responsible for covering the remaining portion of the expense.

Eligible cost categories include: equipment, materials, subcontracting, and travel. OSP will inform the awarded startups which of the expenses from their submitted milestones and budget have been approved for funding, with these terms outlined in an award letter. After accepting the terms, the startup may submit a vendor purchase request to OSP.

Requirements:

- Only one vendor can be used per request.
- Each purchase must be \$500 or higher in eligible expenses (before HST / GST).
- Multiple items totaling \$500 or higher are permitted.
- However, any given single item must cost no less than \$50. (ex. an order that includes ten \$5 cables or two \$40 cables would not be permitted.)

The purpose of these constraints is (a) to reduce the amount of administration; and (b) to get the startups to focus on large, consequential purchases that will enable them to meet their objectives.

# SUPPORT FOR PARTICIPANTS

## **INFORMATION SESSION**

An online information session will be held on May 15 (English) and May 28 (French). For more information and to register the info session, visit the Ocean Startup Project's Eventbrite page.

## **ONLINE COMMUNITY**

Participants will be invited to an online community space where they can ask questions, share resources with each other and receive feedback from peers and Challenge organizers. A link to the online community will be sent out after you register for the Challenge.

## **ADDITIONAL INFORMATION**

By registering to participate in the Ocean Idea Challenge, you agree to receive emails from the Ocean Startup Project and its partners.

If you have questions about the competition or registration form, please contact the OSP team at [admin@oceanstartupproject.ca](mailto:admin@oceanstartupproject.ca).

## CHALLENGE STATEMENTS

Unsure of what ocean challenge you want to solve? We've compiled a list of Challenge Statements and Innovation Spotlights from industry to give passionate entrepreneurial people an idea of what opportunities exist in the ocean sector.



### RENEWABLE OCEAN ENERGY

Canada's extensive coastlines and marine resources offer a vast, untapped potential for renewable energy generation, including wave, tidal, and offshore wind energy. Embracing these resources can significantly contribute to Canada's energy mix, reducing dependence on fossil fuels and lowering greenhouse gas emissions. This shift towards renewable ocean energy is aligned with Canada's commitment to the Paris Agreement and its goal of achieving net-zero emissions by 2050. Innovating in this domain can position Canada as a global leader in sustainable energy technologies, fostering economic growth, and creating new job opportunities.

### INNOVATION OPPORTUNITIES:

- Develop a marine life monitoring system for the offshore renewable energy industry that could be used, for example, to monitor disruptions to marine habitats, to enable aquaculture farming around offshore wind platforms, and to decrease fish and marine life mortality by employing predictive analytics
- Design a data analytics and AI-enhanced platform that optimizes the performance of marine renewable energy systems
- Develop an embeddable sensor to monitor the performance of offshore renewable energy assets

## 12

**SUSTAINABLE SEAFOOD**

The fishing and aquaculture industries are cornerstones of the Canadian economy, especially in coastal and rural communities. Advancements in sustainable practices are imperative to ensure the long-term viability of fish stocks, minimise environmental impacts, and adhere to increasingly stringent international sustainability standards. Canada's leadership in sustainable fishing and aquaculture practices can enhance its global market share, particularly in premium markets that value sustainability, and offers significant commercial opportunity for innovative startups.

**INNOVATION OPPORTUNITIES:**

- Design cost-effective water treatment and management systems for aquaculture farms that support responsible and viable growth of the sector, particularly as it relates to land-based and recirculating aquaculture systems (RAS)
- Develop a system to measure the effectiveness of bioremediation impacts of shellfish and other aquaculture on the health of aquatic ecosystems
- Develop an innovative machine or process that targets high-value seaweed species to increase their harvest potential, reduce labour demands, and maintain the seaweed's integrity
- Develop a data analytics platform to support management decisions related to rearing and production, and to respond to the environmental challenges in the aquaculture industry



### **DECARBONIZED SHIPPING AND MARINE TRANSPORTATION**

Canada's maritime sector, integral to its economy and global trade, stands at the forefront of environmental challenges and opportunities. Factually, the maritime industry is a notable contributor to global greenhouse gas emissions, with shipping accounting for approximately 2.89% of global CO<sub>2</sub> emissions, as per the International Maritime Organization (IMO). This reality, coupled with Canada's commitment to the Paris Agreement and national emissions reduction targets, underscores the urgent need for innovation in decarbonized shipping and marine transportation. Pioneering new technologies in this sector is not only vital for environmental sustainability but also for maintaining economic competitiveness. Canada's potential lies in embracing advancements in alternative fuels, energy-efficient ship designs, and sustainable port operations. These innovations are essential for reducing the maritime sector's carbon footprint and aligning with global efforts towards a low-carbon future.

#### **INNOVATION OPPORTUNITIES:**

- Develop a solution to improve fuel, propulsion, and/or bunkering technology to make ships more efficient and safer for the environment
- Create a solution for clean fuel storage and distribution at ports
- Create a real-time monitoring system for biofouling that helps increase the efficiency of marine vessels



## **MARINE BIORESOURCES AND BIOTECHNOLOGY**

Marine bioresource companies create new value from resources within the marine environment and support additional value creation for operators in fisheries and aquaculture. Businesses and consumers are quickly realizing that there are many valuable products that can be derived or manufactured from marine resources, such as high-quality additives for food, cosmetics, pharmaceuticals, coatings, and even pet treats. There are additional opportunities to create a circular economy by utilizing the byproducts of fisheries and aquaculture processing (fish and shellfish waste) to create higher-value products. Sustainable aquaculture of fish and seafood can help feed the world's growing population. For that to happen, new, safe and effective tools and technologies are needed to address animal health, nutrition and production. More effective prevention and treatment methods as well as diagnostics and monitoring tools are required to detect, prevent or treat bacterial, viral and parasitic diseases. Increased aquaculture production also equates to a growing demand for raw material feedstocks and a desire for novel, sustainable, and locally sourced feed ingredients.

### **INNOVATION OPPORTUNITIES:**

- Develop a new product and/or service that leverages or enhances the co-benefit values of macroalgae
- Develop a method to repurpose shellfish waste into, for example, biomass production or fish processing waste into value-added products
- Discover a new therapeutic that incorporates natural marine and marine life products, with selective activity against virus strains and that is non-toxic to mammalian cell lines

## 15

**CLIMATE RESILIENCE**

Coastal cities cover roughly 356,000km of global coastline, and around 40% of earth's population live within 40 kilometres of a coast. As an ocean nation, Canada is at risk of experiencing increasingly severe impacts of climate events disrupting people and communities, and massive economic loss. But Canada is also a country with great potential to foster new ideas and innovations to mitigate climate change and support coastal communities with climate adaptation.

**INNOVATION OPPORTUNITIES:**

- Develop a low-cost and easy-to-deploy sea level and sea state monitoring system that provides real-time data and decision-making analytics for remote, northern or coastal communities
- Develop an innovative AI/machine learning-driven solution to accurately monitor and forecast risks and impacts (loss and damage) of climate change, such as sea level rise, flooding, and natural disasters like hurricanes or tsunamis.

## INNOVATION SPOTLIGHTS

### PRESENTED BY MERINOV:

#### **Ghost Fishing Gear**

Abandoned, lost, or otherwise discarded fishing gear, often called "ghost gear," is a significant source of marine pollution. It continues to catch fish and marine animals indiscriminately, leading to severe ecological consequences and economic losses. Addressing this issue requires collaboration across various sectors involved in marine activities.

- Develop an AI-based application to connect the various players in the value chain for the identification and recycling of ghost fishing gear.

#### **Restoring Marine Ecosystems**

Marine ecosystems are vital for global biodiversity and human livelihoods but are under threat from pollution, overfishing, and climate change. Restoring these ecosystems can enhance biodiversity, boost ecosystem services, and stabilize climate regulation processes.

- Develop methods for measuring the benefits derived from the restoration of marine ecosystems, such as monitoring the carbon sequestration of seaweed beds.

#### **Marine Mammals Preservation**

Marine mammals often face threats from human activities like fishing, where they can become entangled in fishing gear or be disturbed by vessel noise. Mitigating these interactions is crucial for the conservation of these species.

- Develop an automated acoustic and thermal detection system to prevent interaction between marine mammals and fishing activities.

### **Sustainable Aquaculture**

As the demand for seafood continues to rise, aquaculture has become a critical component of global fish supplies. Innovating aquaculture to be more sustainable and less impactful on the environment is a key challenge.

- Develop multi-species aquaculture systems that promote ecological balance and reduce dependency on wild fish stocks.

### **Alternative Baits**

The fishing industry often relies on specific types of bait, which can be limited due to overfishing or seasonal shortages.

Finding sustainable alternatives is essential to ensure the industry's sustainability.

- Develop alternative baits to meet the shortage of traditional baits, focusing on sustainability and efficiency.

### **Intelligent Trawls**

Bycatch—the capture of unintended species during fishing—is a major issue in fisheries management. It affects biodiversity and the sustainability of fishing practices.

- Design trawls using AI to identify species (e.g., redfish) and avoid bycatch, thus enhancing the selectivity of fishing operations.

### **Seafood Traceability**

With increasing concerns about the sustainability and safety of seafood, traceability has become a crucial aspect of the seafood industry. It helps in verifying the authenticity and ethical sourcing of seafood products.

- Develop a seafood traceability application that integrates different traceability systems encompassing the whole value chain, from catch to consumer.

## INNOVATION SPOTLIGHTS

### PRESENTED BY ECONEXT:

#### **Off-Shore Energy**

Canada's oceans present a new challenge for offshore wind developments: icebergs. To realize the region's full economic potential, new technologies and procedures are needed to mitigate the risks that icebergs may present to offshore wind farms.

- Develop a solution to predict the flow and/or mitigate the risks of icebergs on offshore wind farms and infrastructure.

#### **Fuel switching for marine transportation**

Ships and boats are long-term investments; while future vessels may incorporate renewable technologies in their designs, fossil fuels dependent vessels will still be on our waters for many years. Given the size of Canada's ocean sectors and the important role that marine transportation plays, economical approaches to fuel switching for marine transportation are required if Canada is to meet its net zero by 2050 commitments.

- Develop economical and scalable solutions for retrofitting existing marine vessels to utilize alternative, low-emission fuels such as hydrogen, ammonia, or biofuels, ensuring compatibility with current infrastructure and operational demands.

### **Storm surge modeling**

Climate change is causing more intense storm activity more often in Canada. Storm surges have proven to have the capacity to inflict a great deal of damage to our communities, and this is true in many places of the world. Better storm surge modeling may prove to have important benefits from the perspective of infrastructure planning, emergency preparedness, etc.

- Develop advanced modeling tools that can predict the impact of storm surges with greater accuracy and provide real-time data integration. These tools should be designed to assist in urban planning, emergency response strategies, and the development of infrastructure capable of withstanding severe weather events.

### **Wastewater**

Regions across Canada have a significant wastewater problem. The discharge of sewage to the ocean environment in the form of treated or untreated wastewater can have serious impacts on life. The investment, installation, monitoring, and maintenance related to most technologies is a burden that most small communities find extremely difficult to bear. New approaches and solutions are required to help Canada to discontinue this environmentally unsustainable practice.

- Develop cost-effective, low-maintenance wastewater treatment solutions tailored for small communities in Canada. These solutions should minimize environmental impact, be easy to implement and maintain, and effectively reduce or eliminate the discharge of harmful contaminants into the marine environment.