



BLUE ECONOMY INCUBATOR HIGHLIGHTS REPORT



SIXTH EDITION
2025



Vision from BEI Leadership



Jason Giffen

Chief Sustainability &
Innovation Officer

As we near the 10-year anniversary of the Port of San Diego's Blue Economy Incubator, we are looking to the future with enthusiasm and wonder. The momentum behind ocean-positive innovation and blue technology is unmistakable. Around the globe, forward-thinking entrepreneurs, impact investors, research institutions and governments are embracing sustainable ocean-based solutions that not only protect, restore, and enhance marine ecosystems but also drive economic growth and help coastal communities thrive. This is more than innovation, it's a movement. The blue economy is redefining how we care for the ocean through advancements in coastal resiliency, shellfish and seaweed aquaculture, maritime decarbonization, ocean data, security, and more. The Port of San Diego is a recognized leader that is propelling this global shift and we take great pride in fostering ideas that can be scaled with our regional and international partners for a thriving and resilient, ocean-positive future.



Paula Sylvia

Director - Aquaculture &
Blue Technology/Blue
Economy Incubator

The world of blue technology and innovation is demanding our attention and applied expertise. At the Port of San Diego, we created the Blue Economy Incubator to unlock opportunity for startups ready to explore, test, and scale ocean-focused innovation. Whether you're developing sustainable aquaculture systems, clean maritime technologies, or nature-based climate solutions, we welcome bold thinkers with a passion for positive impact. Our program offers access to real-world environments, strategic support, and a collaborative community at the water's edge. The ocean economy needs fresh ideas and fearless innovators. If you're ready to shape the future of our blue planet, there's a place for you here at the Port of San Diego's Blue Tech Bay.

San Diego's Blue Economy

The Blue Economy encompasses ocean and water-dependent industries that sustainably use marine resources to drive economic growth, create jobs, and support healthy ecosystems. With its natural deep-water harbor, robust infrastructure, and thriving science and tech sectors, San Diego is solidifying its reputation as Blue Tech Bay.

The Port of San Diego plays a central role in uniting government, business, conservation, and academia to drive innovative solutions that support economic growth and environmental stewardship. As the state-legislated trustee of tidelands and submerged waters in and around San Diego Bay, the Port is a leader of the region's Blue Economy—fostering entrepreneurship and collaborating on research, innovation, and investment.

The Port's Blue Economy Incubator

A core element of the Port's commitment to promote the development of a sustainable ocean economy is the creation of its Blue Economy Incubator (BEI), which serves as a launch pad for Port-related sustainable aquaculture and blue technology ventures. Established in 2016, the BEI was designed to remove barriers to early-stage companies and provide pilot project facilitation services including funding, key assets, and permitting assistance. Through its BEI, the Port is building a portfolio of new businesses and partnerships that deliver multiple social, environmental, and economic co-benefits to the Port and the region.

The Port serves a diverse role as landlord, operator, and regulator, plus has extensive familiarity and expertise in the permitting and entitlements process for a variety of coastal and ocean uses. This unique position allows the Port to support innovative pilot project proposals and assist in the creation, development, and scaling of new blue economy business ventures in and around San Diego Bay.

Through pilot project facilitation, the BEI creates synergies with, and is informing, other Port environmental initiatives including coastal resilience and environmental protection and exploring opportunities for shellfish and seaweed aquaculture advancement for food production as well as a tool for bioremediation and ecological restoration.



The success of BEI projects is measured based on Key Performance Indicators (KPIs) which are specific to each pilot projects' goals. This report highlights the progress, recent achievements, and growth opportunities for continued work of companies within the BEI's portfolio.

Blue Economy Incubator Objective

Inherent to the Port of San Diego's mission is to utilize its various assets in leading and accelerating the Blue Economy in our region. The Port has proud tradition supporting blue economy industries and their sustainable future is critical to our region's long-term success. The Port is accepting proposals for new business plans from potential partners whose core purpose shares in this mission. Specifically, the Port has established a business incubator and investment program to assist in the creation, early development, and initial scaling of new business ventures targeted at sustainable ocean-positive technologies in support of a regenerative Blue Economy.



BEI Value Proposition – Pilot Project Facilitation

- Funding
- Port-based testbed and pilot sites
- Pilot project facilitation services
- Regulatory and permitting assistance
- Subject matter expertise
- Access to global network of partners
- Public relations and media visibility
- Support to leverage grant opportunities

Innovation Opportunities

The BEI seeks to support various innovation opportunities within the blue economy, including:



Nature-Based Solutions



Environmental Protection & Remediation



Coastal Resiliency



Maritime Decarbonization



Shellfish & Seaweed Aquaculture



Ocean Data, Monitoring, Sensing, and Security

Our Impact in Numbers



11

innovative pilot projects launched through a port-wide collaboration process, with more in the pipeline

\$2.35M

in funding to support the launch of sustainable ocean-positive pilot projects

\$5.8M

additional research/development & grant funding leveraged by BEI companies



“[BEI] funding will help bridge the gap between brand-new concepts and real-world testing.”

- Bree Steffen, Spectrum News 1

Blue Economy Incubator in the Media

The Port of San Diego has a robust media relations team as a part of its operations. In coordination with this team we have been able to create individualized communications plans for each of the projects in our BEI. Our successful placement of our companies has resulted in increased exposure and brand recognition not just nationally but worldwide. In the past 12 months our BEI projects have generated over 80 mentions in local, national, and international media pieces, reaching millions of viewers, which totals an estimated \$3.3 million in advertising value. Some key media stories that have helped the BEI reach wider audiences include:

- [Spectrum News 1](#) - New funding will help entrepreneurs create technology to strengthen coasts
- [NBC7 San Diego](#) - Smart Buoys Will Be the Eyes and Ears of San Diego Bay
- [World Economic Forum](#) - How Ports can Catalyze Innovation the Blue Economy
- [CBS8 San Diego](#) - San Deigo Bay shows signs of improvement thanks to oyster shells



CBS8 San Diego's Neda Iranpour reports on the Port's oyster reef balls - one of many nature based solutions implemented in San Diego Bay



HyperKelp's sensor agnostic buoy was featured in an NBC7 San Diego story by reporter Greg Bledsoe on how "Smart buoys will be the eyes and ears of San Diego Bay"



In her Spectrum News 1 report, national correspondent Bree Steffen visited EConcrete to share how incubators help entrepreneurs create innovative technology to strengthen coasts

Our Impact in Numbers



132+ MILLION

Impressions from local, national and global media coverage around BEI innovation and investment



\$3.3 MILLION

In Advertising Value Equivalency (AVE) generated showcasing Port pilot projects and the Blue Economy Incubator Program

An International Reach Through Global Engagement

Creating ocean-positive impact within the global Blue Economy network

The Blue Economy Incubator helps us reach a global audience through strategic partnerships, community engagement, and relationship building across public, private, and academic sectors. By actively representing the Incubator on the global stage—through participation in international conferences, innovation forums, and diplomatic collaborations—we amplify our impact, showcase our commitment to sustainable maritime innovation, and create new business opportunities.

This year our team has presented on ocean-positive innovation at more than 25 speaking engagements, allowing us to create thousands of connections across the globe. This global presence enhances the visibility of our portfolio companies, positioning them for broader market access and investment. For companies that join the incubator, this networked approach creates opportunities for accelerated growth, international recognition, access to U.S. markets, and meaningful contributions to the global blue economy.



Our Impact in Numbers

375+

INQUIRIES

received from organizations seeking partnership and pilot project opportunities

35+

GLOBAL PARTNERSHIPS

within the Blue Economy ecosystem and our network continues to grow!

25+

SPEAKING ENGAGEMENTS

across the globe helping us reach an international audience of innovators

Partnerships and Program Development

Growing our global network of partnerships within the Blue Economy ecosystem

The Port maintains a global network of partnerships within the Blue Economy ecosystem and fosters relationships with academic institutions, technology clusters, accelerators, coalitions, governments (including US Navy and US Coast Guard), ports, foundations, and local communities. These relationships provide diverse pathways to harness and advance innovation which strengthens the region's collective impact on the Blue Economy.

Partnership SPOTLIGHTS



Port Innovators Network (PIN)

The Port Innovators Network (PIN) is a global coalition of leading ports advancing sustainability, innovation, and operational excellence. As the first U.S. and Pacific Ocean based port to join, the Port of San Diego gains a platform for collaboration on blue technology, climate resilience, and community engagement. This partnership supports the Port's strategic vision to lead in sustainable maritime innovation, benefiting both the region and the global ocean economy.

"International partner ports in PIN will benefit from the BEI's deep expertise developing and deploying sustainable marine solutions."

- Michael Davie, Vice President of Operations, Sustainability, and Technology at the Port of Halifax



The Centre for Ocean Applied Sustainable Technologies (COAST) is Pacific Canada's hub for the sustainable blue economy. Through this partnership, the Port of San Diego is connecting with Canadian startups developing technologies in underwater noise monitoring, carbon capture, maritime decarbonization, and more. By participating in COAST-hosted events and innovation forums, the Port is strengthening our Blue Economy Incubator, advancing climate resiliency efforts, and identifying high-impact technologies for potential deployment in San Diego Bay.

"COAST is proud to collaborate with the Port of San Diego to further regional connectivity in service of building a strong, collaborative ecosystem that bolsters the Pacific blue economy."

- Jason Goldsworthy, COAST Executive Director



UC San Diego

Rady School of Management
Scripps Institution of Oceanography

StartBlue Ocean Enterprise Accelerator

NOAA awarded \$13.5 million to expand UC San Diego's StartBlue program into the StartBlue Ocean Enterprise Accelerator, strengthening support for ocean startups from early development through commercialization. Since its launch in 2021, the Port of San Diego has been a core partner—providing mentorship, pilot opportunities, and strategic guidance. Together, StartBlue and the Port are cultivating a vibrant community of ocean innovators in Southern California and beyond, helping position the region as a national hub for sustainable blue economy solutions.

"[Our] partnership has expanded and strengthened the San Diego Blue Economy Innovation Ecosystem by providing a coordinated continuum of support for startups from the lab to the market."

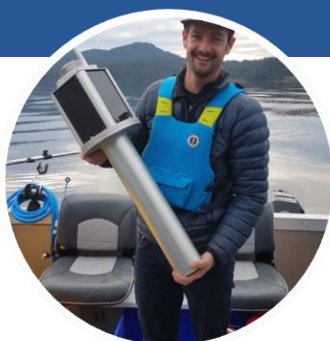
- Vanessa Scott, Director of StartBlue Ocean Enterprise Accelerator



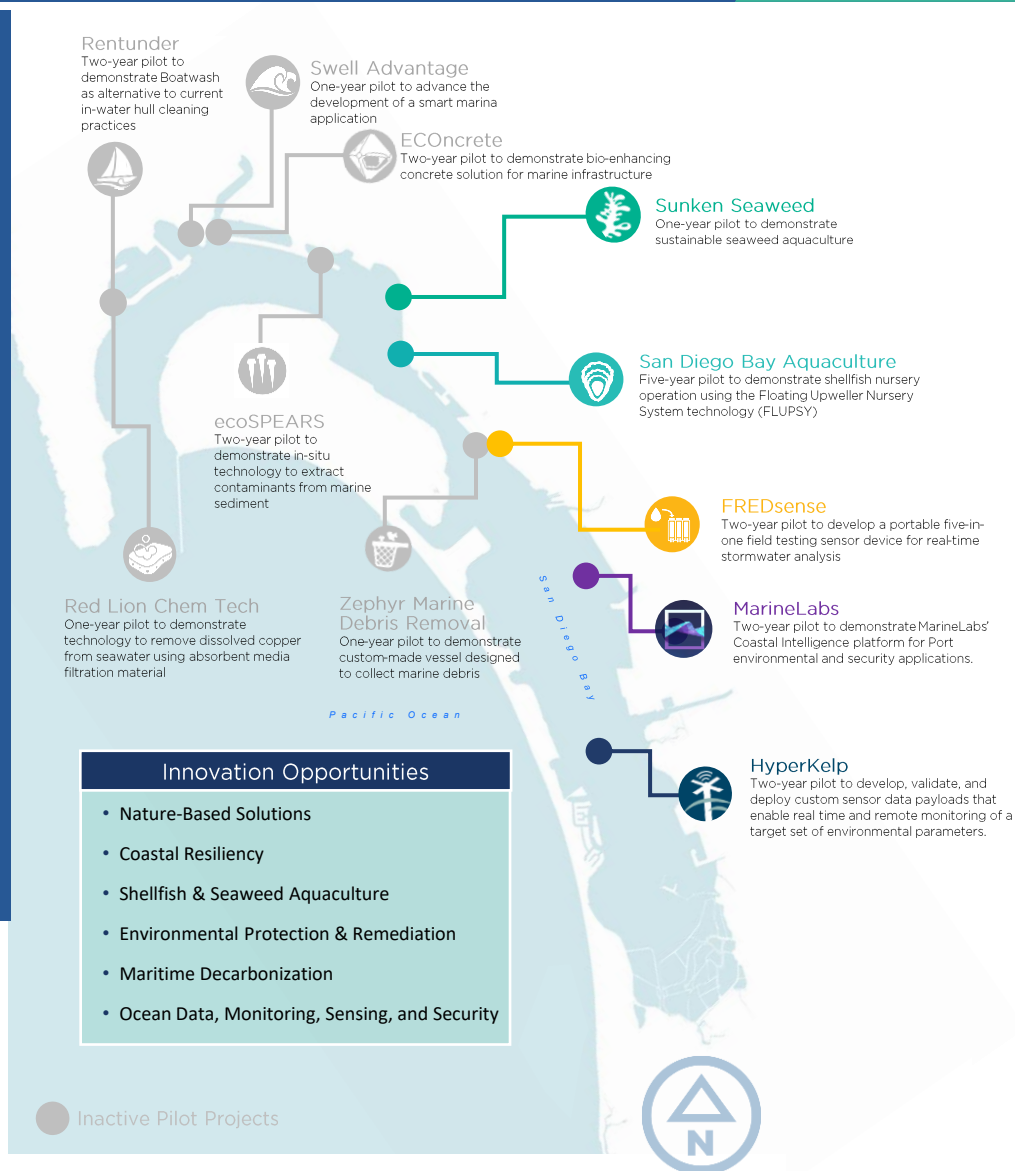
Company Updates

To date, the Port's Blue Economy Portfolio includes eleven pilot projects including resilient shoreline infrastructure, shellfish and seaweed aquaculture, smart buoy technologies, and water and sediment remediation technologies. Through its BEI, the Port seeks innovation opportunities that align with the Port Blue Economy priorities of coastal resiliency, environmental protection, decarbonization, and maritime domain awareness.

Read on to find updates on all active pilot projects and featured completed pilot projects. To learn about all 11 active and completed pilots, please visit www.portofsandiego.org/blue-economy



Scott Beaty, CEO of MarineLabs holding their sensor unit

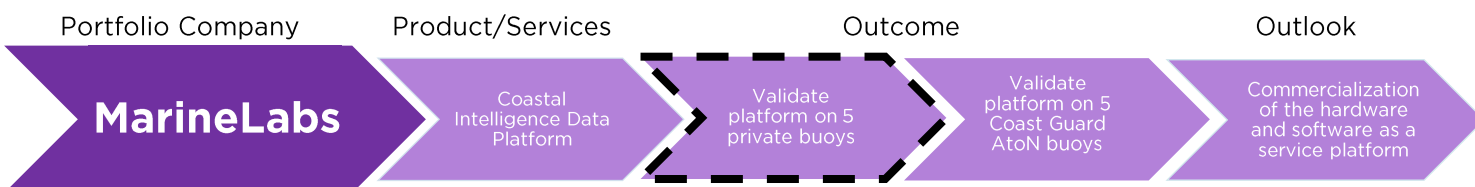


Pilot Project Updates

MarineLabs - Coastal Intelligence Platform

In May, 2025 the Port partnered with British Columbia based company MarineLabs Data Systems Inc. (MarineLabs), to support the Port's maritime domain awareness and coastal protection monitoring initiatives. MarineLabs is a coastal intelligence company specializing in providing real-time coastal domain awareness and climate resilience data from a robust network of sensor nodes. MarineLabs' technology will focus on providing continuous wave, wind, and wake data above the water's surface. MarineLabs will initially deploy five private buoys with its sensors for proof of concept (Phase-1) and then positioning five of its sensors on the US Coast Guard's AtoN (Aid to Navigation Buoys) pending successful deployment (Phase-2).

Tracking progress from pilot project to commercial success



Pilot Project Updates *cont'd*



*Buoy Deployment in Shelter Island.
Source: NBC News San Diego*

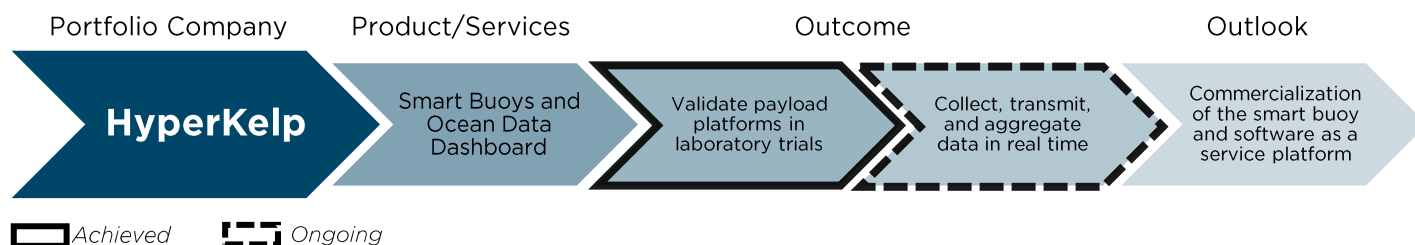
HyperKelp - Sensor Agnostic Smart Buoys

In 2023, the Port partnered with HyperKelp Inc. to pilot a sensor-agnostic “smart” buoy platform enabling real-time ocean data transmission to an online dashboard for monitoring and decision-making. HyperKelp is developing and validating hardware tailored to Port monitoring needs. So far, three of five smart buoys have been deployed in San Diego Bay, equipped with hydrophones and water quality sensors to measure water chemistry, CO₂ levels, and underwater noise. The data will support the Port’s environmental initiatives and Green Marine commitments.

“Working with the BEI [team], we installed a fleet of Kelp Smart Buoys in one of America’s most important commercial harbors. Hosting part of our data buoy fleet, the Port of San Diego is a close partner as HyperKelp brings AI to the high seas.”

- Costas Soler, CTO & Cofounder, HyperKelp

Tracking progress from pilot project to commercial success



Sunken Seaweed - Sustainable Seaweed Aquaculture

In 2018, Sunken Seaweed, led by two marine ecologists, joined the Port’s Blue Economy Incubator to pilot seaweed farming in San Diego Bay. With Port reinvestment in 2022, they expanded to Humboldt Bay, building shoreside facilities to reach market scale. Now vertically integrated from seed to sale, they grow, harvest, process, and package native California seaweed. In 2024, they shifted to focus dried, retail-focused products, allocating 80% of their inventory to drying, with the rest sold fresh to consumers, markets, and restaurants. This approach boosts pricing, reduces labor, and strengthens branding. They also launched Pacific Flake, a new brand producing small-batch, premium sea salt—triple filtered, fire evaporated, and hand harvested—to complement their seaweed line.



Torre Polizzi, co-founder Sunken Seaweed, showcasing his seaweed tumble culture operations

Tracking progress from pilot project to commercial success



Our Impact in Numbers

  **15**

smart buoys to be deployed in San Diego Bay by FY26, analyzing wind, wave, water quality, and underwater noise data in near real-time.

600+ 

pounds of edible seaweed produced weekly by Sunken Seaweed’s Humboldt shoreside tumble culture farm.

Pilot Project Updates *cont'd*

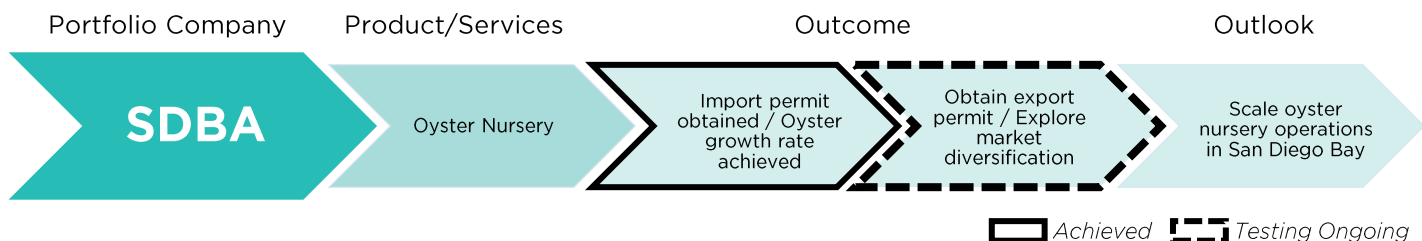


Oyster genetics research project in collaboration with USDA & OSU

San Diego Bay Aquaculture - [Shellfish Nursery](#)

Since 2017, San Diego Bay Aquaculture has tested whether a FLUPSY (Floating Upweller System) can help address a coast-wide shellfish seed shortage. This floating barge circulates water through bins to grow oysters from the size of a red pepper flake to a quarter, when they're ready for grow-out. Thanks to San Diego Bay's mild weather and nutrient-rich waters, the FLUPSY can reduce seed-to-harvest time by up to a year compared to northern sites. It also serves as a research platform for oysters, abalone, scallops, and seaweeds. Current projects include collaborations with USDA and Oregon State University on oyster genetics; San Diego State University and Southwest Wetlands Interpretive Association on oyster biosensor microtechnology; Scripps Institution of Oceanography on seaweed packaging and co-culture; and Biospherical Instruments on novel anti-corrosion technologies.

Tracking progress from pilot project to commercial success

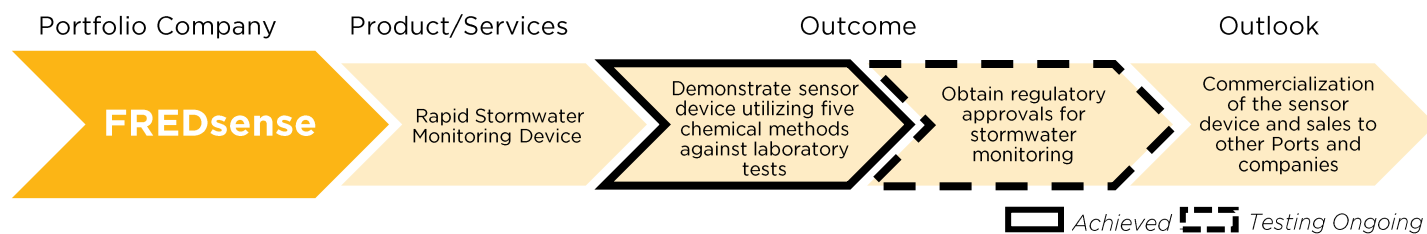


FREDsense's portable and rapid PFAS testing kit

FREDsense - [Stormwater Monitoring Device](#)

In 2021, the Port approved FREDsense Technologies for a pilot to develop a portable five-in-one sensor for near real-time metals analysis in stormwater monitoring. The prototype tested aluminum, copper, lead, zinc, and nickel—key for compliance—and delivered results much faster than traditional lab methods, enabling quicker stormwater management adjustments. In 2024, FREDsense began exploring PFAS detection integration, aligning with evolving industry and regulatory priorities. The team will continue evaluating PFAS detection potential in maritime environments.

Tracking progress from pilot project to commercial success



COASTALOCK Units on Harbor Island

ECONcrete - [Bio-enhancing Shoreline Armoring](#) (Completed)

ECONcrete joined the Port's Blue Economy Incubator in 2020 to pilot its Coastlock tidepool armoring technology. Over 40 months, the units supported more than 60 species and outperformed traditional riprap in biodiversity, biomass, and water quality. A 2024 study confirmed these ecological benefits. In 2025, ECONcrete joined the Navy's Coastal Trident ANTX program to advance nature-based shoreline protection, and was recognized with the NAEP Environmental Excellence Award.

"Being part of the Port of San Diego's BEI has been instrumental in advancing ECONcrete's mission to scale nature-inclusive coastal infrastructure."

- Danielle Weerth, Business Development Manager, North America

In order to be considered as a partner in The Port's Blue Economy Incubator, we have established the following application process and business plan submission requirements. We encourage any new or early-stage venture that aligns with our objective to submit an application to our incubator.

APPLICATION PROCESS

Blue Economy entrepreneurs interested in working within the Port of San Diego are invited to connect with Blue Economy Incubator (BEI) program staff at incubator@portofsandiego.org. This contact may spark a live or virtual meeting to briefly introduce the pilot project proposal, assess alignment of the project intent with Port goals, explain the processes to submit an application and approval, and answer general questions. If the project proponent decides to apply to the Port's Blue Economy Incubator, they should complete the following stages:

Four stages to potential approval

1. Receipt and Initial Screening

- Applicant submits a "Pitch Deck", requirements of which can be found below or at www.portofsandiego.org/waterfront-development/blue-economy.
- During this phase, BEI staff will work with the applicant to ensure the application is complete and begin assessing if the project intent fits within the BEI core objectives. A Non-Disclosure Agreement (NDA) will be initiated during this stage, if deemed appropriate. At the end of this phase, the applicant will receive either an invitation to proceed to stage two or a notification that the Port is not interested in pursuing the proposal further.

2. Deep Dive Review

- The applicant will be invited to participate in a meeting (in person or virtually) with the BEI Committee (consisting of Port leadership and Subject Matter Area Experts) who will carefully analyze the financials, business plan, and logistical elements of the proposal (i.e., possible location, asset needs, potential interactions with other Port activities and programs, etc.) and additional considerations.
- This phase will allow for mutual information gathering and project refinement in preparation for the next step in the process.
- Port leadership and Subject Matter Experts will review the pitch and proposal. Follow-up meetings may be required to clarify or refine the Statement of Work (SOW) and pilot. If alignment is achieved, staff will initiate Step 3.

3. Executive Review

- Proposals which have been approved by the BEI Committee will be presented to the Port's CEO. Applicants will not be required to participate in this meeting.
- The CEO will offer a corporate perspective review, considering the value of partnership, resources needed from the Port, and how the proposal integrates with current port businesses.
- If the CEO deems the proposal to be qualified to proceed, staff will initiate step four.

4. Board Review and Consideration of Approval

- The Port's Board of Commissioners will receive the proposal for final review and consideration of approval and funding.
 - The proposal will be presented with a staff recommendation.
 - Port Staff, in conjunction with the applicant, may present the proposal to the Board at a regularly scheduled monthly Board meeting.
- If the Board approves the action, there will likely be a few more logistical requirements prior to receiving funding and other BEI services.

Blue Economy Incubator companies that want to renew partnership with the Port will follow the same process as above.

Proposal, or “Pitch Deck”, requirements

An initial proposal “Pitch Deck” will be presented in PowerPoint format and will be no more than 20 slides in length. Additional, relevant details may be included in an appendix, with no more than 20 additional slides. Key content must include:

Company Info

- Company name & address
- Entrepreneur name
- Email address, phone number
- Company website
- Industry/sector (defined area of Aquaculture or Blue Technology)
- How did you hear about Port Aquaculture & Blue Technology
- Date company founded

Employees

- Number of employees
- Names/title/Linked IN profile
- Resumes of owners
- % ownership by employee

Business Plan Presentation

- Executive summary
- Market sizing & source of business
 - Competitive landscape
- Product/strategy
 - Customer description (how many/who/stage of development)
 - Product description
 - Value proposition
 - Intellectual property opportunities and/or barriers to entry
 - Go to market strategy
 - Permits required/obtained
 - Length to obtain
 - Key hurdles to obtain permits
- 5-year financial forecast
 - Previous year and next 5 years
 - P&L
 - Cash flow forecast
- Cash
 - Monthly burn
 - Current balances
- Funding
 - Previous funding amounts
 - Cash invested by owners
 - Partnership proposal: funding request & term sheet
- Exit strategy



For more information on the
Aquaculture & Blue Technology Program go to:
portofsandiego.org/blue-economy

Or contact our Blue Economy Incubator program staff at:
incubator@portofsandiego.org