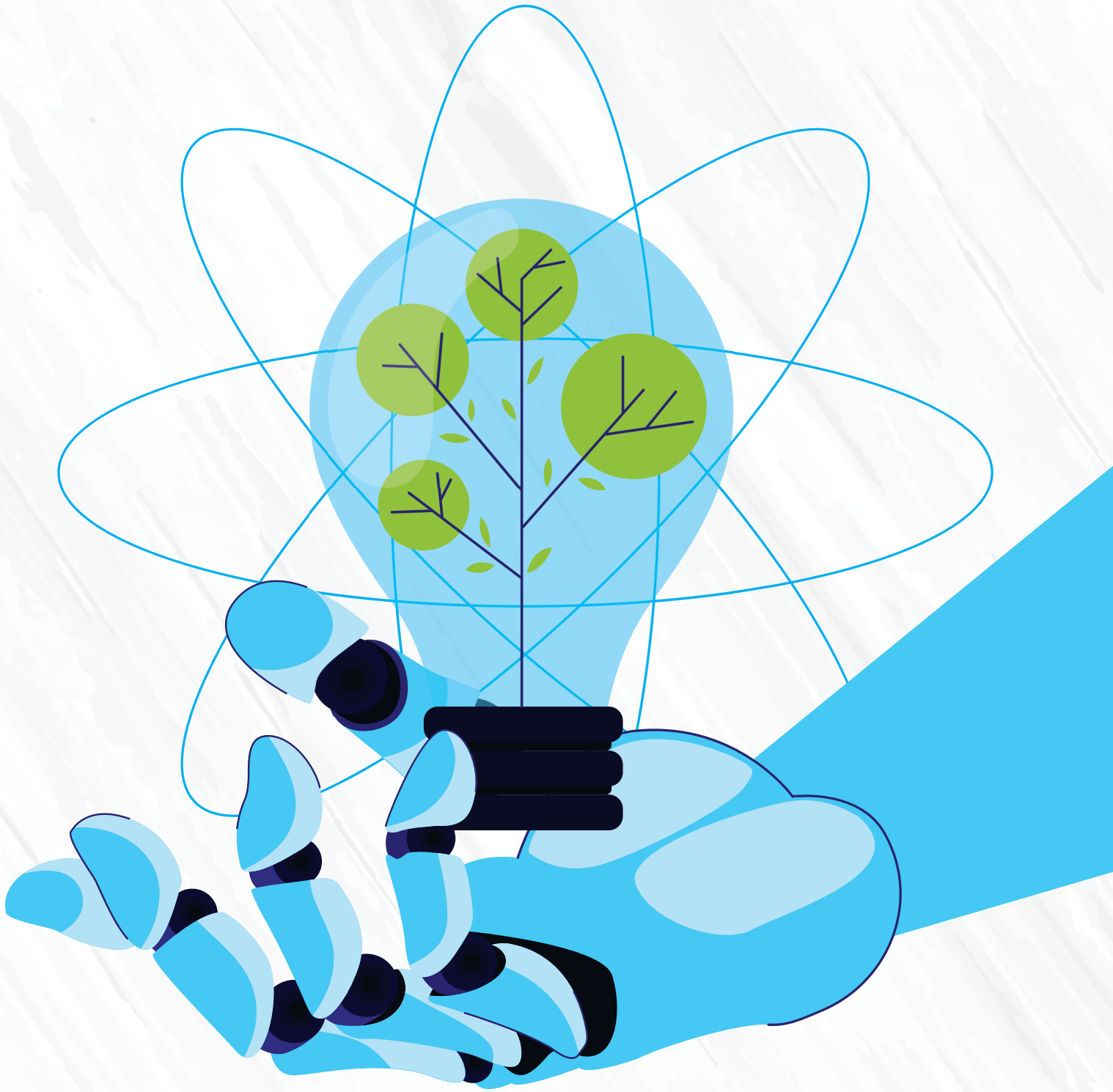




# Mumbai Port Authority Innovation Policy







## 1. Introduction

Innovation has a strong role to play in disrupting the old and ushering in the new. Mumbai Port Authority is in the midst of such a transformation, and the need is felt to tap into innovative practices across the board to achieve this.

**In the context of the Port and Maritime sector, innovation refers to the transformation of assets and ways of doing business to achieve better outcomes for customers, employees, stakeholders, industry, society and environment.**

The two key types of Innovation are:

1. Technology Innovation
2. Business Innovation

**Technology innovation** would involve transformation of hard infrastructure (Ships, tug boats, crafts, Berths, warehouses, railway lines, roads, office buildings, dry docks, cranes, other mechanical / electrical/electronic equipment, etc.) and soft infrastructure (Administrative softwares, Cloud systems, Cybersecurity systems, Databases, etc).

**Business innovation** would involve new or improved ways of doing business such as Business Process Re-engineering (BPR), Robotic Process Automation (RPA) or providing a decision-making support system such as data analytics setup, AI-based allocation of resources and operations, distributed ledger systems, digital twin, etc.

**This policy outlines the objectives, principles, and implementation guidelines for creating a culture of innovation within Mumbai Port Authority, as well as within the overall Indian Maritime Sector.**

### Objectives

- Identifying and Solving Problems or Pain points for efficiency, cost-effectiveness, sustainability & a seamless customer experience
- Promote a Culture of Innovation & Entrepreneurship within Mumbai Port as well as within the Maritime space
- Support the development of a Maritime innovation ecosystem

### The Five Principles

The following are the five principles based on which innovative ideas and projects will be prioritized:

- Unique
- Simple
- Cost-Effective
- Easy to Implement
- Future-oriented

### Governance Structure

Implementation of Innovation Policy shall be two pronged:

1. **Innovation Cell** within Mumbai Port Authority to drive innovation within the organization
2. **Aavishkaar** - Maritime Innovation Studio: A platform as a standalone entity to support individuals with research prototypes or entrepreneurial ideas to solve pain points of the maritime sector.
3. **Aahvan Committee**: A high-level committee which will oversee the implementation and amendment of the Mumbai Port Innovation Policy.



# Part I: Innovation Cell

## **The innovation cell will be housed within Mumbai Port Authority:**

### **1. Composition**

To ensure comprehensive representation and expertise, the Innovation Cell will include one officer from each department of Mumbai Port Authority.

Key responsibilities include Idea Generation and Evaluation, Project Allocation, Reporting and Feedback.

Experts may also be invited on case-to-case basis to provide advice to the Innovation Cell based on a minimum honorarium or pro bono basis.

The innovation cell may have a full-time manager and staff to handle day to day affairs of the cell.

The innovation cell may pursue collaborations with other organizations to implement best practices in innovation.

### **2. Employee Innovation Policy**

To foster a culture of innovation within Mumbai Port, the Innovation Cell will implement a structured system that allows employees to present their innovative ideas to the management.

#### **A. Submission Process**

##### **Idea Submission Portal**

- An online portal will be established for employees to submit their innovative ideas.
- The portal will be accessible via the internal network and will include a user-friendly interface for easy submission.

##### **Submission Requirements**

- **Idea Description:** Detailed description of the idea, including its objectives, potential impact, and alignment with the Center's focus areas.
- **Feasibility Analysis:** Initial assessment of the technical and financial feasibility of the idea.
- **Implementation Plan:** Proposed steps for implementing the idea, including a timeline and required resources.
- **Supporting Documents:** Any relevant documents, sketches, or data that support the idea.



## **B. Evaluation Process**

- Preliminary Review: Submitted ideas will undergo a preliminary review by an internal committee composed of representatives from various departments.
- Detailed Evaluation: Promising ideas will be evaluated in detail based on criteria as follows based on the five principles:
  - A. Unique / Innovative - 25 Marks
  - B. Simple - 10 Marks
  - C. Cost-Effective - 25 Marks
  - D. Easy to Implement - 25 Marks
  - E. Future-oriented - 15 Marks
- Employee Presentation: Employees with shortlisted ideas will be invited to present their proposals to the Aahvan Committee.

## **C. Feedback and Mentorship**

- Employees will receive constructive feedback on their submissions.
- Mentorship will be provided to help refine and develop ideas further.

## **D. Funding and Support**

- Selected ideas may receive funding and resources for development and implementation.
- Employees may be granted time and support to work on their innovative projects.

## **E. Incentives and Recognition**

### **Innovation Awards**

- Annual awards to recognize the most impactful and innovative ideas submitted by employees.
- Categories may include Best Innovation, Sustainability Champion, and Most Feasible Idea.

### **Monetary Incentives**

- Monetary rewards for employees whose ideas are selected for development and implementation
  - 1st Prize : INR 50,000/-
  - 2nd Prize : INR 35,000/-
  - 3rd Prize : INR 20,000/-
  - Consolation Prize : INR 5000/-

The above prize amounts are subject to change / increase as per Management decision.



## Part II: Aavishkaar - Maritime Innovation Studio

Aavishkar – Maritime Innovation Studio is envisaged as a standalone entity which will work with external innovators for implementation of novel technologies and methodologies.

### **Objective:**

The objectives of the Aavishkaar – Maritime Innovation Studio are as follows:

- Provide individuals having research prototypes or entrepreneurial ideas with access to resources, mentorship, and support services to implement their ideas.
- Facilitate collaboration, partnerships, and knowledge exchange
- Ensure inclusivity, diversity, accountability, and transparency in the selection process
- Craft Maritime ventures through a tailored approach suited to each individual innovator.
- Continuously learn, adapt, and improve best practices at the Studio
- Measure the impact and success of the Studio based on key performance indicators (KPIs) related to economic, social, and environmental outcomes.

### **Key Focus Areas**

#### **1. Sustainable Shipping and Logistics**

- **Green Shipping Technologies:** Development of technologies aimed at reducing emissions and improving energy efficiency in shipping.
- **Alternative Fuels:** Exploration and implementation of alternative, cleaner fuels such as LNG, hydrogen, and biofuels.
- **Smart Port Logistics:** Solutions for optimizing logistics and supply chain management using AI, IoT, and blockchain.

#### **2. Renewable Energy Integration**

- **Offshore Wind Energy:** Innovations in harnessing offshore wind energy and integrating it into port operations.
- **Solar Power:** Deployment of solar power solutions in port areas and for maritime vessels.
- **Energy Storage Solutions:** Development of efficient energy storage systems to support renewable energy adoption.



### **3. Circular Economy and Waste Management**

- Recycling and Upcycling: Technologies for recycling ship waste and port waste into valuable products.
- Zero Waste Initiatives: Strategies and technologies aimed at achieving zero waste in port operations.
- Waste-to-Energy: Converting maritime and port waste into energy through innovative processes.

### **4. Digitalization and Smart Ports**

- Port Automation: Development of automated systems for cargo handling, vessel management, and port operations.
- Digital Twins: Creating digital replicas of port infrastructure to optimize maintenance and operations.
- Data Analytics: Utilizing big data and analytics to improve port efficiency and decision-making.

### **5. Marine Biodiversity and Ecosystem Protection**

- Habitat Restoration: Projects focused on restoring and protecting marine habitats and biodiversity in port areas.
- Pollution Control: Technologies for monitoring and reducing pollution in marine and coastal environments.
- Sustainable Fisheries: Innovations supporting sustainable fishing practices and aquaculture.

### **6. Safety and Security**

- Cybersecurity: Solutions to protect port and maritime operations from cyber threats.
- Maritime Safety: Technologies enhancing safety protocols and emergency response in port and maritime operations.
- Surveillance and Monitoring: Advanced surveillance systems for monitoring port activities and ensuring security.

### **7. Advanced Manufacturing and Shipbuilding**

- 3D Printing: Use of 3D printing for shipbuilding and repair, reducing material waste and costs.
- Smart Materials: Development of new materials that enhance the durability and efficiency of maritime structures and vessels.
- Robotics: Integration of robotics in shipbuilding and maintenance to improve precision and safety.



## 8. Human Resources and Workforce Development

- Training and Education: Programs to upskill the maritime workforce in new technologies and sustainable practices.
- Health and Wellbeing: Innovations focused on improving the health and wellbeing of maritime workers.
- Inclusivity and Diversity: Initiatives promoting inclusivity and diversity in the maritime sector.

## 3. Admission Criteria

Individuals seeking admission to the Studio must meet the following criteria:

- Demonstrate innovative solutions or technologies relevant to the maritime and port industries.
- Align with the port's sustainability goals, focusing on environmental and social impact.
- Show readiness to engage with the Studio's programs, resources, and support services.
- Comply with all legal and regulatory requirements for operating within the port jurisdiction.
- The individual must have a research prototype / entrepreneurial idea to develop a product or a service with a market fit, viable commercialization, and scope of scaling.

## 4. Support Services

The Studio shall provide the following support services to admitted innovators:

- Access to co-working space and office facilities
- Access to Prototyping Labs through partner incubators
- Access to Project sites in Mumbai Port or partnering Major Ports.
- Mentorship, coaching, and advisory services from industry experts, mentors, and entrepreneurs
- Networking events, workshops, seminars, and training programs to enhance entrepreneurial skills and knowledge.
- Funding opportunities, including seed funding, grants, and access to investment networks
- Legal, accounting, and administrative support for business registration, intellectual property protection, and compliance.
- Collaboration opportunities with corporate partners, research institutions, government agencies, and international organizations.
- Access to market insights, customer feedback, and pilot testing opportunities within the port ecosystem.





## 5. Selection Procedure

- **Application Submission:**  
Interested applicants should submit their applications through an online portal or to the official email of the Studio.
- **Eligibility Screening:**  
The applications will undergo an initial eligibility screening process to ensure they meet basic criteria of the Studio.
- **Evaluation by Aahvan Committee:**  
Eligible applications will be reviewed by the Aahvan Committee. They will evaluate each applicant's potential based on innovation, market potential, scalability, and team expertise.
- **Pitch Presentation:**  
Shortlisted applicants will present their ideas before the Aahvan Committee. They will highlight their value proposition, market opportunity, and growth strategy during this pitch session.
- **In-depth Assessment:**  
After the pitch presentation, the expert panel will thoroughly evaluate each idea, focusing on the business model's strength, competitive edge, technical feasibility, and potential impact on the maritime industry.
- **Selection Decision:**  
The Aahvan Committee will select the most promising applicants based on their evaluation and assessment. Chosen applicants will be notified of their acceptance to join the Maritime Innovation Studio.
- **Onboarding and Orientation:**  
Accepted applicants will go through onboarding and orientation, learning about the resources, support services, and programs. They'll also meet key stakeholders, mentors, and partners.
- **Training Programs:**  
Once onboarded, the selected applicants will join tailored programs that support their growth through mentorship, coaching, workshops, networking events, funding opportunities, and access to prototyping facilities.
- **Progress Monitoring and Support:**  
Selected applicants will get continuous support, advice, and mentorship to help them overcome challenges, seize opportunities, and reach their goals. Progress will be checked regularly, and extra help will be given if needed.



- Graduation and Exit:

Selected applicants that make significant progress can graduate from the Maritime Innovation Studio and grow independently. Graduates will join the Studio alumni network and may be invited to mentor next generation of innovators.

## 5.2 Selection Criteria

| S.No         | Criteria                               | Details  | Weightage   |
|--------------|--|--|-------------|
| 1.           | Innovation and Uniqueness              | Unique value proposition, technological advancement, intellectual property potential.          | 20%         |
| 2.           | Market Potential                       | Market demand, competitive landscape, scalability and revenue potential.                       | 10%         |
| 3.           | Alignment with Sustainability Goals    | Environmental impact, contribution to reducing carbon footprint                                | 20%         |
| 4.           | Business Model and Financial Viability | Clear and sustainable business model, realistic financial projections, profitability potential | 10%         |
| 5.           | Technical Feasibility                  | Development stage of the technology, technical challenges, implementation roadmap.             | 20%         |
| 6.           | Social Impact                          | Job creation, community benefits, social equity and inclusivity.                               | 10%         |
| <b>Total</b> |  |  | <b>100%</b> |

The above selection criteria is indicative and may be tailored depending on the innovation under consideration.

## 6. Exit Criteria

Innovators may exit the Studio under the following circumstances:

- Graduation: Innovators that have achieved significant milestones, such as product-market fit, revenue generation, or external funding, may graduate from the Center and continue their growth trajectory independently.
- Termination: Innovators failing to meet program requirements, demonstrating lack of progress, or violating Center policies may be terminated from the program.
- Voluntary Withdrawal: Innovators may voluntarily withdraw from the program due to strategic pivots, mergers, acquisitions, or other business decisions.



## 7. Governance and Oversight

To ensure effective governance and oversight, the Studio may operate under a separate SPV, with support from relevant stakeholders, advisory boards, and governing committees. Key responsibilities may include:

- Setting strategic direction and priorities for the Studio.
- Overseeing the implementation of programs and initiatives.
- Monitoring performance, impact, and outcomes.
- Providing guidance and support to innovators.
- Ensuring compliance with all relevant policies, regulations, and standards.
- The Aahvan Committee will provide overall guidance and approval for the Center's investment and grant decisions. This committee will be responsible for monitoring and periodically reviewing the Studio's portfolio and performance.
- The Aahvan Committee will include representatives from diverse backgrounds, including industry experts, investors, and government officials, to ensure balanced and informed oversight of the Studio's activities.
- The Aahvan Committee will consist of at least three experts from Mumbai Port.

### **Funding:**

The Maritime Innovation Studio may fund a selected project for implementation with a maximum cap of INR 25 lakhs per project.

## 8. Monitoring and Evaluation

Inspired by the impact-driven approach of leading maritime accelerators, the Studio will establish mechanisms for monitoring and evaluating the performance, impact, and outcomes of supported applicants, as well as the overall effectiveness of its programs and initiatives. Key performance indicators (KPIs) may include:

- Technology adoption and innovation outcomes.
- Revenue generation and economic value-added.
- Job creation and employment generation.
- Environmental and social impact metrics.
- Success stories, case studies, and testimonials.

## 9. Review and Revision

The Studio's policy will be reviewed periodically to ensure its alignment with evolving needs, priorities, and best practices. Revisions will be made as necessary to enhance its effectiveness and relevance in nurturing a vibrant maritime ecosystem.



## Part III: Promoting Innovation

To drive innovation effectively, **Aavishkar - Maritime Innovation Studio** along with the **Innovation Cell under Mumbai Port Authority** will focus on the following key pillars of innovation: Technology Creation, **Technology Diffusion**, and **Knowledge Depository**. Below are detailed strategies and ideas for promoting innovation within these pillars.

### 1. Technology Creation

#### A. Innovation Challenges and Hackathons

- Organize regular innovation challenges and hackathons focused on solving specific maritime and port-related problems.
- Encourage participation from employees, startups, and external innovators.
- Offer grants, resources, and mentorship to winning teams to develop their ideas further.

#### B. Prototyping and Testing Facilities

- Set up state-of-the-art prototyping and testing facilities for innovators to develop and test their solutions.
- Provide access to equipment, software, and technical support.
- Facilitate real-world testing of innovative solutions within Mumbai Port's operations.

#### C. Intellectual Property (IP) Support

- Offer support for IP protection, including patent filing, trademark registration, and IP management.
- Partner with legal firms and IP consultants to provide guidance and assistance to innovators.
- Create an IP policy to ensure fair and transparent handling of intellectual property
- Partner on IP rights to bring revenues for the Studio if the IP is commercialized.

### 2. Technology Diffusion

#### A. Innovation commercialization Office

- Identify potential market opportunities and partners for Innovation commercialization.
- Provide support for company registration, licensing agreements, joint ventures, and technology spin-offs.

#### B. Innovation Showcases and Demo Days

Organize regular showcases and demo days where innovators can present their technologies to potential investors, industry partners, and customers.



- Promote successful innovations through media, trade shows, and industry events.
- Create a platform for ongoing interaction and collaboration between innovators and industry stakeholders.

### **C. Training and Capacity Building Programs**

- Offer training programs, workshops, and seminars on new technologies and innovation management.
- Collaborate with educational institutions to provide courses and certifications on maritime innovation and technology.
- Develop internal training modules to upskill employees in new technologies and innovative practices.

### **D. Strategic Partnerships and Alliances**

- Form strategic partnerships with leading technology companies, research institutions, and industry associations.
- Participate in national and international innovation networks and clusters.
- Engage in collaborative research projects and technology development initiatives.

## **3. Knowledge Repository**

### **A. Digital Knowledge Repository**

- Develop a digital knowledge repository to store and share research papers, case studies, best practices, and other knowledge resources.
- Make the repository accessible to individuals, startups, researchers, and industry partners.
- Regularly update the repository with the latest information and insights on maritime innovation.

### **B. Knowledge Sharing Platforms**

- Create online platforms and forums for knowledge sharing and collaboration among innovators, researchers, and industry experts.
- Organize webinars, virtual conferences, and discussion panels on key topics in maritime innovation.
- Encourage active participation and knowledge exchange through these platforms.

### **C. Innovation Mentorship Network**

- Establish a mentorship network comprising industry veterans, successful entrepreneurs, and academic experts.
- Connect innovators with mentors who can provide guidance, advice, and support.
- Facilitate regular mentorship sessions, both online and in-person.



#### **D. Innovation Journals and Publications**

- Launch an innovation journal or magazine to publish articles, research findings, and success stories related to maritime innovation.
- Encourage contributions from employees, startups, researchers, and industry professionals.
- Distribute the publication widely to promote knowledge dissemination and thought leadership.

#### **Additional Strategies for Promoting Innovation**

##### **A. Innovation Incentive Programs**

- Introduce incentive programs to reward employees, startups, and partners for their innovative contributions.
- Offer financial rewards, recognition, and career advancement opportunities for successful innovations.

##### **B. Collaborative Innovation Spaces**

- Develop co-working spaces and innovation hubs where innovators, researchers, and industry professionals can work together.
- Provide a conducive environment for brainstorming, collaboration, and networking.

##### **C. Sustainability and Impact Focus**

- Ensure that innovation initiatives align with sustainability goals and contribute to environmental, social, and economic impact.
- Track and measure the impact of innovations on sustainability metrics and goals.

## **Conclusion**

The Mumbai Port Innovation policy aims to create a conducive environment for fostering innovation within employees as well as external innovators to innovate, grow, and thrive, contributing to the sustainable development of the maritime ecosystem.





# Mumbai Port Authority

[www.mumbaiport.gov.in](http://www.mumbaiport.gov.in)