

SEANERGY

the Sustainability EducationAI programme
for greeNER fuels and enerGY on ports



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Course number and title: Module 7: Port as an integrated entity



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Learning objectives of the course



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On completion of this course, the participants will be able to:

- (i) Map the key components of the high-level master plan and adapt them in different port cases
- (ii) Identify and analyze key stakeholder engagement strategies and policy coordination techniques relevant to port adaptation
- (iii) Analyze port operations to identify areas with the greatest potential for improvement and innovation
- (iv) Identify the key criteria for choosing suitable technologies



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Introduction



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The course aims to

- introduce the key components of the High-Level Masterplan
- support the adaptation of the key components to the unique characteristics and operational needs of different ports
- provide use cases of successful implementation of the key components



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High-Level Masterplan



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- Strategic framework to transform European ports into sustainable, green energy hubs
- Focuses on providing a comprehensive guide with customized and adaptable strategies
- Foster the standardization of sustainability practices across ports and enable effective implementation of smart energy transition strategies, enhancing stakeholder engagement, and promoting continuous improvement and adaptation



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High-Level Masterplan

- High-Level Vision
- Master Plan
- Review: Focused

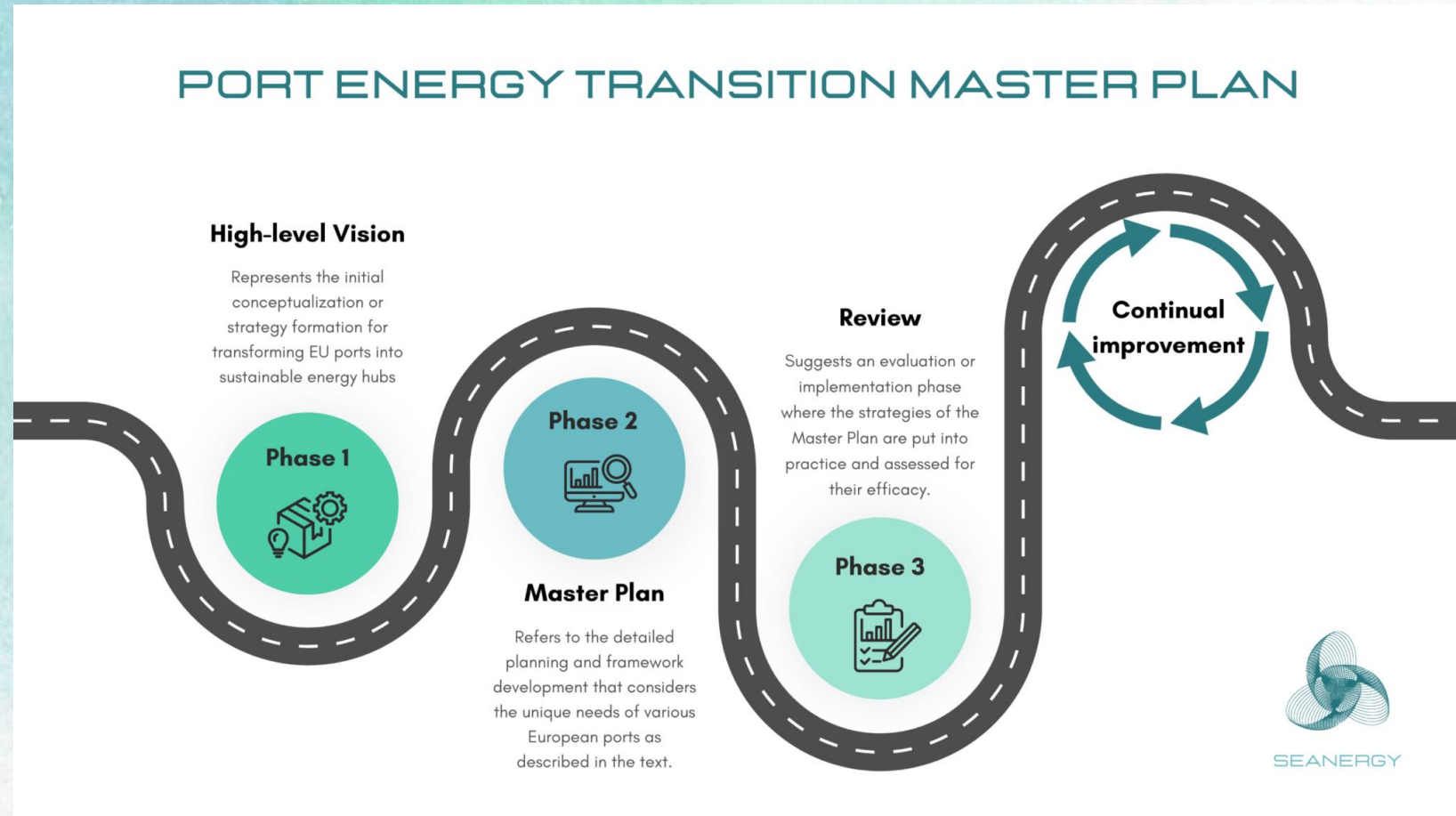


Fig.: Port Energy-Transition Master Plan , the roadmap



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Vision, mission, and boundaries



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- Define a clear, sustainable vision for the ports, encompassing energy efficiency, use of renewables, and carbon neutrality.
- Craft a mission statement that embodies the transition to green energy and sustainable practices.
- Establish boundaries that outline the scope, including technological, operational, and geographical limits.



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Defining a clear, sustainable vision



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- Energy efficiency: Streamlining energy utilization in all port operations should be given top priority in the vision
- Use of renewables: Increasing the proportion of renewable energy sources in the port's energy mix should be a goal of a sustainable vision
- Carbon neutrality: Reaching carbon neutrality entails cutting emissions, funding carbon offset initiatives and implementing strategies to offset any leftover emissions.



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Developing a Mission Statement



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- Dedicated to sustainability: The port's dedication to sustainable growth should be evident in the mission statement.
- Guiding concepts: The mission statement should incorporate fundamental values such as openness, involvement of the community, and ongoing enhancement.
- Collaboration with Stakeholders: The value of working together with local communities, businesses, and governmental organizations should be pointed out.



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Setting limits that define the purpose



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- Technological boundaries: Specify which technologies will be used in the energy transition and to what extent.
- Operational boundaries: Specify the criteria that will govern the energy transition. This includes all the impacted activities, including administrative tasks, port transit, and cargo handling.
- Geographical boundaries: Indicate where the port's energy transition initiatives are limited geographically.



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Setting limits that define the purpose



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- Strategic alignment: Once there is a clear vision, mission, and boundaries, all stakeholders will agree with the port's sustainability goals.
- Focused Implementation: Ports may plan and carry out their energy transition programs more successfully by setting clear objectives and constraints.
- Enhanced credibility and support: The port can get support from the local population, investors, and governing authorities

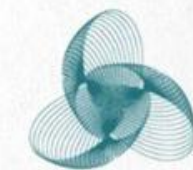


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Case study

Port of Barcelona, Spain

- The 4th Strategic Plan of the Port of Barcelona (2021-2025)



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Mission, the reason for being

Our mission is to generate prosperity in the community, increasing the competitiveness of our clients through the efficient and sustainable provision of logistics and transportation services.

Vision, the image of the future

To develop our mission, we have set ourselves the goal of being the SMARTest logistics hub in the Mediterranean: "The SMARTest logistic hub in the MED". The SMART initials are equivalent to the five attributes that we want to consolidate to achieve our vision, that is, what we plan to be in the near future as a port: (S)ustainable, (M)ultimodal, (A)gile, (R)esilient and (T)ransparent.

Values we believe in

The Barcelona Port Authority is an organisation that respects the following values: . Valuation and commitment of people. . Ethical and professional management. . Customer orientation. . Social responsibility. . Innovation.



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Case study

Ports of Balearic islands, Spain



- Guarantee the supply and maritime connectivity of the Balearic Islands

Our Mission

What we do?

To guarantee the supply and maritime connectivity of the Balearic Islands in the most efficient and safe conditions, and to facilitate the socio-economic activities that contribute to their development, in terms of economic and environmental sustainability and integration.

Our Values

We understand our values in a very practical way: they are the tools that will allow us to manage and achieve our vision. They must be present in everything we do and guide our relationships with all our stakeholders, and namely:

- Service-minded attitude
- Innovation
- Transparency
- Recognition
- Collaboration
- Responsibility (Environmental, social and technological)
- Continuous improvement-will to succeed

Our Vision

Where we are heading?

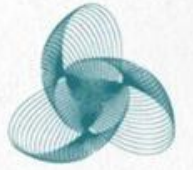
To be ports that are international benchmarks in service excellence for maritime transport and recreational boating and its industry, as well as in sustainability, respect and integration with cities and their socio-economic environment, all through technological innovation.



Tools and Guides

To establish boundaries

- The GHG Protocol provides guidelines to ports to measure and report their greenhouse gas emissions in ways that support their missions and goals.
- The ISO 14064 standard that indicates the methodology to assess the system boundaries, considering operational, financial and geographical limits.



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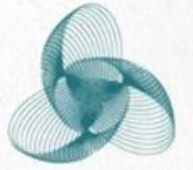
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Port energy-related stakeholder identification



- Identify all the related stakeholders, including port authorities, local government, investors, suppliers, and community
- Analyze stakeholder needs and interests to ensure their concerns are addressed in the master plan





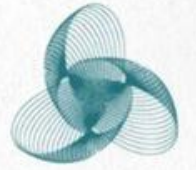
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Stakeholder identification

- Port authorities: As the main port managers, they play a critical role in carrying out and supervising the energy transition.
- Local government: In terms of financing, policy support, and regulatory compliance, local government entities are essential.
- Investors: Funders are critical to the completion of renewable energy and infrastructure improvement projects.
- Suppliers: Suppliers of technology, equipment, and services are essential partners.



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Stakeholder identification

- Community: The energy shift and port operations have a direct impact on local businesses and communities.
- Employees: Port employees and personnel play a vital role in day-to-day operations, and their engagement is essential to a successful outcome.
- Environmental groups: Environmentally conscious businesses can offer insightful advice and strong backing for sustainable projects.

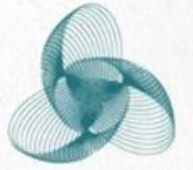


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Stakeholder interests and needs

- Port authorities: Requirements include sustaining profitability, complying with regulations, and operating efficiently.
- Local government: Public welfare, environmental preservation, and economic development are the main priorities of local government.
- Investors: Look for a guarantee of project feasibility and a return on investment.
- Suppliers: Stable partnerships and well-defined project requirements.





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Stakeholder interests and needs

- Community: It is interested in improved local amenities, job generation, and less pollution.
- Employees: Demand training, safe working conditions, and job security. A good work environment and professional growth are what they are interested in.
- Environmental Groups: Emphasize minimizing effects on the environment and encouraging sustainable behaviors.



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Port energy-related stakeholder identification



- Cargo Ports:

Stakeholders: Shipping companies, cargo owners, logistics providers, port operators, customs authorities, local government, community organizations, environmental groups

Interests: Efficient cargo handling, security, environmental impact, infrastructure development, local employment, and economic growth



Port energy-related stakeholder identification



- Passenger Ports:

Stakeholders: Cruise lines, passengers, tourism boards, local businesses, port authorities, security agencies, local government, community groups

Interests : Passenger safety, service quality, environmental impact, tourism development, local economic benefits, and community well-being



Port energy-related stakeholder identification



Analyzing the needs and interests of stakeholders can involve

- Stakeholder interviews and surveys
- Focus group discussions
- Stakeholder workshops
- Data analysis



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Port energy-transition governance framework



- Define the governance structure, including roles, responsibilities, and decision-making processes
- Set up a steering committee with representatives from key stakeholder groups



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Port energy-transition governance framework



- Smaller ports, in Europe and America, often receive a degree of autonomy within a public management framework due to their focus on local and regional transportation and economic development.
- Governance structures frequently involve multi-tier systems, as seen in the UK, Sweden, Greece, and Canada, where major ports may be privatized while smaller ones remain public.

(Notteboom et al., 2022)



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Strategic objective formulation



- Set strategic objectives that align with the vision and mission
- Ensure that the objectives are specific, measurable, achievable, relevant, and time-bound (SMART)
- ✓ Setting strategic goals that are in line with the overarching vision and mission of attaining a sustainable energy transition and resilience against climate impacts is crucial for high-level strategic planning for ports



Strategic objective formulation



- Measurable objectives ensure accountability and transparency by allowing the tracking of progress through quantifiable indicators.
- Relevant goals handle the port's most pressing sustainability issues and are in line with its overarching vision.

For example

- ✓ Port of Bilbao, Spain, utilizes ISO 50001 certification to set energy efficiency objectives
- ✓ Maritime & Port Authority of Singapore (MPA) develops SMART objectives for a smarter and greener port



Stakeholder engagement strategy



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- Develop a stakeholder engagement plan, including communication strategies and feedback mechanisms
- Establish forums for stakeholder dialogue and participation
- Securing the support of all key parties, promoting collaboration, and developing trust all depend on having a clearly defined stakeholder engagement plan. Feedback systems that enable stakeholders to actively engage in the decision-making process should also be included.



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Stakeholder engagement strategy



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- Ports can set up forums specifically designed for stakeholder participation and discussion, like frequent gatherings, workshops, and open consultations.
- These discussion boards offer venues for deep communication between participants, allowing them to exchange knowledge, experiences, and perspectives.
- These forums actively involve port officials, local governments, suppliers, investors, and the community



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Stakeholder engagement strategy



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- Regular use of certificates guarantees that the ports continue to be adaptable to changing stakeholder requirements and new difficulties, strengthening the resilience and sustainability of their operations.

For example

- ✓ Port of Helsinki, uses the Clean Shipping Index (CSI) to engage with shipping companies on environmental performance, leading to a broad stakeholder involvement



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Stakeholder engagement strategy



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- Ports act as hubs for companies and economic activities, benefiting from significant scale and scope advantages
- Cluster formation occurs at two levels: ports clustering around a maritime range and activities clustering around a port.
- By understanding the clustering dynamics, stakeholders (e.g., port authorities, shipping companies, and local governments) can better coordinate efforts



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Stakeholder engagement strategy



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- Stakeholder mapping: To understand the concerns, sway, and areas of interest of each stakeholder, create an extensive map of them
- Feedback mechanisms: Establish protocols for receiving and reacting to stakeholder input. This could be accomplished by open consultations, focus groups, or surveys.
- Collaborative projects: Engage stakeholders in joint ventures addressing shared concerns or goals, such as sustainability initiatives or efficiency improvements.



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Stakeholder engagement strategy



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- Conflict resolution: Create protocols for resolving possible disagreements or conflicts.
- Training and capacity building: Train stakeholders and port staff to promote improved coordination and communication.
- Regular updates: Provide interested parties with information on changes, advancements, and outcomes.
- Community involvement: Include local communities in decision-making procedures, especially when it comes to matters that directly impact them.



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Case Study



Port of Los Angeles, USA

- Engagement Approach: The port has developed an environmental management system that incorporates correspondence with regional authorities, environmental groups, and local communities.
- Outcome: By employing this tactic, the port's carbon footprint has been reduced and air quality has greatly improved, demonstrating how effective participation may lead to better environmental outcomes.



Case Study



Port of Singapore, USA

- Engagement Approach: The Port Authority employs an engagement approach that prioritizes efficiency and innovation. It achieves this by including stakeholders in frequent forums and collaborative projects.
- Outcome: The port is competitive and at the forefront of technology while still maintaining strong relationships with all its numerous stakeholder groups.



Initiation documentation



- Document all initiation activities, decisions, and plans to maintain a clear record
- Ensure transparency and traceability of the initiation phase to support future audits and reviews

For example

- ✓ ISO 9001 Quality Management System helps organizations of all sizes and sectors to improve their performance by detailed documentation and to demonstrate ports' commitment to quality and transparency



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Developing an adapted Masterplan



- Updating Plans for Infrastructure

Revise plans for adding to or changing the infrastructure considering present requirements and anticipated future growth.

- Improving Strategies for Operation

To increase operational effectiveness, use new technology and procedures. Create performance measurements to identify how well operational adjustments are working.



Developing an adapted Masterplan



- Updating environmental and sustainability practices

Modify environmental management procedures to conform to the most recent rules and guidelines. Use cutting-edge technologies and sustainable methods.

- Modifying Financial plans

Make changes to financial plans considering revised cost projections and available financing. Use cost-benefit analysis to determine modifications impact.



Developing an adapted Masterplan



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Implementation and Monitoring

- Implementation Plan: Create a thorough plan that outlines the roles, deadlines, and distribution of resources for carrying out the modified master plan.
- Monitoring and evaluation: Set up systems to keep an eye on developments, evaluate how well the modifications are working, and make more changes, as necessary.



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Conclusions and take home message



- Effective mapping and adaptation of a high-level master plan are crucial for ensuring that a port can meet its long-term goals while responding to changing conditions and stakeholder needs.
- Testing is essential. apply the concepts and techniques from the module to real-world scenarios or your own port projects to get familiar with the process.



References



- The SEANERGY project(2024) Pori Energy Transition Masterplan.
<https://seanergyproject.eu/master-plan/>
- Theo Notteboom, Athanasios Pallis and Jean-Paul Rodrigue (2022)
Port Economics, Management and Policy, New York: Routledge,
690 pages / 218 illustrations. ISBN 9780367331559



Additional reading materials

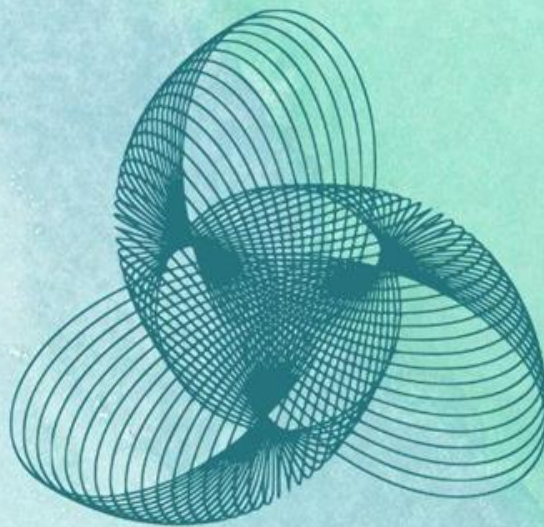


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- ESPO GREEN GUIDE 2021: A Manual For European Ports Towards A Green Future
- ESPO's Roadmap to implement the European Green Deal objectives in ports
- Strategic Planning For Port Authorities, Report by the UNCT AD Secretariat



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