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ERASMUS Lump Sum Grants

Enhancing knowledge and skills at WB HEIs in preparation for zero carbon maritime transport and logistics society

(101128747 — Zero C)

Deliverable 2.1: Skills needs (re)assessment for the MT&L sector in energy efficiency and decarbonization

LEAD BENEFICIARY: ALEKSANDËR MOISIU UNIVERSITY DURRËS (UAMD)

WP LEADER: UNIVERSITY OF MONTENEGRO (UOM)

TASK LEADER: ITS LOGISTICA PUGLIA (ITS)

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- Survey-

Questionnaire for Stakeholders

This survey is conducted by the project "Zero C - Enhancing knowledge and skills at WB HEIs in preparation for zero carbon maritime transport and logistics society" of the Erasmus + program CBHE. The project has been funded with support from the European Commission. The project coordinator is the University of "Aleksandër Moisiu" Durrës, Faculty of Professional Studies. The project has a three-year duration (01/11/2023 – 31/10/2026).

The project will address the following specific objectives:

- The Albanian and Montenegrin Maritime HEIs (Higher Education Institutions) increased human and technical capacities in providing state-of-the-art specific shipping industry-oriented knowledge and skills for students and professionals.
- Revised and modernized course catalogues of HND/BSc/MSc level programs for students as well as developing new LLL programs for the training of professionals, all by industry-needed knowledge and skills on decarbonization, energy efficiency and logistics optimization at the Albanian and Montenegrin Maritime HEIs.
- Increased awareness in the private sector on new and increased skills for decarbonization, energy efficiency, and logistics optimization in the shipping sector.

All information will be treated in the strictest confidence, and all will be used only for the purposes of this study.

The objective of the survey is to elaborate an analysis of the skills needed for a sound implementation of the policy framework for energy efficiency and decarbonization, in the shipping sector (including maritime transport, logistics and port activities). The survey's results will pose the basis for a Skills Matrix to encompass all strategic skills needed within the maritime transport, logistics and port activities sectors to adapt to the new EU and international standards.

The survey is divided into the following sections:

- General organizational/personal information (17 questions)
- General overview on Energy efficiency and Decarbonization strategy (9 questions)
- Decarbonization of the Maritime Transport sector (17 questions) [Measures of GHG strategy, IMO Greenhouse Gas *(GHG)* Strategy, IMO Emission Reduction Targets, Energy efficient ship design, emission reduction technologies, Digitalization to reduce GHG emissions, complex hybrid and zero-emission machinery, Ability to operate hydraulic components and pneumatic equipment]
- Decarbonization of the Port Logistics sector (20 questions) [Digitalization, Internet of Things, safety, new fuel technology, Vessel size growth, Policies of the IMO - MARPOL]

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Instructions

[Completing the following survey will take approximately 20 minutes.

There are no mandatory questions, and you can skip non-applicable questions. The survey is targeted based on the organization you belong to].

1. *What is your gender?*

M
F
Other

2. *How old are you?*

20-30
31-40
41-50
51-60
>61

3. *Please specify your education level:*

High school
HND degree
BSc degree
MSc degree
PhD degree

4. *What is your field of expertise?*

Humanities and Creative Arts
Engineering and Environmental Sciences
Marine engineering
Education and Human Society
Economics and Commerce
Mathematical, Information, and Computing Sciences
Biological and Biotechnological Sciences
Interdisciplinary sciences
*Other*_____

5. *How many years have you been working in the organization?*

<1
2-10
11-20
21-30
>31

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6. *What is your position in the organization?*

_____

7. *What is the structure of the business entity you are working at?*

Public institution
Private SME
Private Family business
NGO
*Other*_____

8. *Please specify the year of the organization's establishment:*

_____

9. *Please choose an appropriate classification of your organization activities:*

Maritime transport
Agriculture, forestry, and fishing
Mining and quarrying
Manufacturing
Electricity, gas, steam, and air conditioning supply
Water supply, sewerage, waste management, and remediation activities
Construction
Wholesale and retail trade; repair of motor vehicles and motorcycles
Transportation and storage
Accommodation and Food Service Activities
Information and communication
Financial and Insurance activities
Real estate activities
Professional, scientific, and technical activities
Administrative and support service activities
Public Administration and defense; Compulsory Social security
Education
Human health and social work activities
Arts, entertainment and recreation
Other service activities
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
Activities of extraterritorial organizations and bodies
*Other*_____

10. *Please categorize the size of your organization:*

Micro (< 10 employees)
Small (11-49 employees)
Medium (50-249 employees)

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Large (> 250 employees)

11. Please specify the target group your organization belongs to:

Maritime administration
Port administration
Shipping Company / Repairing and Maintenance Services
Port Operator
Sea Ferries
Logistic Company
Other_____

12. Has your organization cooperated with partner Universities (UAMD, UOM or UV)?

Yes
No

13. Your organization demonstrates active involvement in partnerships and relationships with various stakeholders.

Strongly Agree
Agree
Neutral
Disagree
Strongly disagree

14. Your organization provides opportunities for students to take part in different activities with business/the external environment.

Strongly Agree
Agree
Neutral
Disagree
Strongly disagree

15. Does your organization address some of the activities in Zero C?

Often
Sometimes
Rarely
Never
I do not know

16. If yes, please describe specific areas of the activities:

Passenger transport: sea, coastal and inland passenger water transport;
Freight transport: sea, coastal freight and inland freight water transport;

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Services for transport;
Cargo handling, warehousing and storage;
Construction of water projects and service activities incidental to water transportation;
Shipbuilding: building of floating structures; building of pleasure and sporting boats; repair and maintenance of ships and boats;
Equipment and machinery: manufacture of cordage, rope, twine and netting; manufacture of textiles other than apparel; manufacture of sport goods; manufacture of engines and turbines, and manufacture of instruments for measuring, testing, and navigation;
Research and Innovation;
Logistics
*Other*_____

17. *Suppose there is an HND/BSc/MSc degree or LLL program in the interdisciplinary field of Zero Carbon, adapted for professionals in companies. Should your colleagues enroll to gain more profound knowledge in this field?*

Definitely
Probably
Possibly
Probably Not
Definitely Not

GENERAL OVERVIEW

18. *What technical opportunities/ practices do you see for improving energy efficiency and /or decarbonization outcomes within the shipping sector?*

19. *Does your organization collaborate with technical experts, research institutions, or industry partners to address technical skill needs related to energy efficiency and /or decarbonization measures?*

Yes
No
If yes, please provide details of these collaborations.

20. *How would you rate your organization's current level of awareness regarding energy efficiency and decarbonization practices?*

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Very Low
Low
Moderate
High
Very High

21. *Has your organization implemented any energy efficiency and /or decarbonization measures in the past three years?*

Yes
No

22. *If yes, please specify the types of measures implemented (select all that apply):*

Upgrading machinery and equipment
Improving insulation and building efficiency
Implementing renewable energy sources
Optimizing production processes
Other (please specify)

23. *Are there specific barriers or challenges hindering your organization's adoption of energy efficiency and /or decarbonization measures? (select all that apply)*

Lack of financial resources
Lack of technical expertise
Regulatory barriers
Lack of awareness
Other (please specify)

24. *How important do you think it is for your organization to develop skills related to energy efficiency and /or decarbonization?*

Not Important
Somewhat Important
Moderately Important
Very Important
Extremely Important

25. *Does your organization have a training program in place to address skills related to energy efficiency and /or decarbonization measures?*

Yes
No

26. *If yes, how effective do you believe your current training program is?*

Not Effective
Somewhat Effective
Moderately Effective
Very Effective

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Extremely Effective

DECARBONIZATION OF THE MARITIME TRANSPORT

27. *How would you rate your organization's current level of awareness of the concept of decarbonization of maritime transport?*

Very Low
Low
Moderate
High
Very High

28. *Has your organization implemented any measures related to the decarbonization of maritime transport in the past three years?*

Yes
No

29. *If yes, please specify the types of measures implemented (select all that apply):*

Implementation of carbon accounting/pricing systems
Adoption of market-based measures to decarbonize maritime transportation
Compliance with IMO regulations (e.g., MARPOL, IMO Greenhouse Gas (GHG) Strategy)
Adoption of regional/national laws, policies, and regulations related to decarbonization
Implementation of slow steaming practices
Exploration of maritime energy contracting options
Adoption of short/medium-term measures for operational efficiency (e.g., EEXI, CII)
Conversion to low-carbon and/or renewable, zero-emission fuels
Integration of energy-efficient ship design practices
Integration of energy-saving devices to improve fuel efficiency
Exploration and understanding of alternative fuels and propulsion systems (e.g., LNG, hydrogen, electric propulsion, wind-assisted propulsion)
Proficiency in operating and maintaining energy-efficient and low-emission engines and equipment (e.g., wind, LNG, biofuels, hydrogen, electric)
Knowledge and utilization of emission reduction technologies including exhaust gas cleaning systems (scrubbers), selective catalytic reduction (SCR), and ballast water treatment systems
Utilization of digitalization to reduce GHG emissions
Others (please, specify)

30. *How important do you think it is for your organization to develop skills specifically related to the decarbonization of maritime transport?*

Not Important

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Somewhat Important
Moderately Important
Very Important
Extremely Important

31. Has your organization developed a specific strategy for reducing greenhouse gas (GHG) emissions in maritime transport?

Yes
No

32. If yes, what measures or initiatives does your organization include in its GHG strategy? (select all that apply)

Fuel switching to low-sulfur fuels
Implementation of energy efficiency measures (e.g. installation of energy saving devices) on vessels
Adoption of alternative fuels (e.g., LNG, hydrogen)
Implementation of emission reduction technologies (e.g., exhaust gas cleaning systems)
Other (please specify)

33. How familiar is your organization with the greenhouse gas (GHG) strategy developed by the International Maritime Organization (IMO)?

Very familiar
Moderately familiar
Somewhat familiar
familiar at all

34. Has your organization taken any specific actions to align with or support the objectives of the IMO greenhouse gas (GHG)strategy?

Yes
No

35. If yes, please specify the actions taken to align with the IMO greenhouse gas (GHG) strategy. (select all that apply)

Setting emission reduction targets
Implementing measures to improve energy efficiency
Investing in research and development of low-emission technologies
Participating in industry collaborations or initiatives focused on GHG reduction
Other (please specify)

39. Has your organization set internal emission reduction targets aligned with those of the IMO?

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Yes
No

40. If yes, what measures or strategies has your organization implemented to achieve these emission reduction targets? (select all that apply)

Fleet optimization measures
Retrofitting existing vessels with emission-reduction technologies
Investment in new, low-emission vessel designs
Implementation of operational efficiency measures (e.g., slow steaming)
Other (please specify)

42. What specific energy-efficient design features does your organization consider or prioritize in vessel procurement or construction projects? (select all that apply)
Hull design optimization for reduced resistance
Advanced propulsion systems (e.g., LNG engines, hybrid systems)
Waste heat recovery systems d. Energy-efficient lighting and HVAC systems
Energy Power Limitation Devices (EPL)
Other (please specify)

43. Has your organization implemented any emission reduction technologies on its vessels?

Yes
No

44. To what extent has your organization utilized digitalization to reduce GHG emissions in maritime transport operations?

Not at all
To a limited extent
Moderately d. Extensively
Fully integrated

45. Which digitalization technologies or initiatives has your organization employed specifically to reduce GHG emissions? (select all that apply)

Advanced route optimization software
Real-time monitoring of fuel consumption and emissions
Remote vessel diagnostics and condition monitoring
Digital fleet management systems for optimizing operations
Other (please specify)

46. Is your organization exploring or investing in complex hybrid and zero-emission machinery for its vessels?

Yes
No

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47. If yes, what types of complex hybrid and zero-emission machinery is your organization considering or investing in? (select all that apply)

Hybrid propulsion systems
Fuel cell technology
Battery storage systems
Wind-assisted propulsion systems
Other (please specify)

DECARBONISATION OF THE PORT LOGISTICS

48. How would you rate your organization's current level of understanding of the concept of decarbonization of port logistics?

Very Low
Low
Moderate
High
Very High

49. Has your organization implemented any measures related to the decarbonization of port logistics in the past three years (i.e. digitalization, safety, automation, sustainability, etc.)?

Yes
No

50. If yes, please specify the types of measures implemented (select all that apply):

Integration of digitalization technologies to optimize port operations
Utilization of Internet of Things (IoT) devices for real-time monitoring and management of port activities
Implementation of safety measures to reduce emissions and improve environmental sustainability in port operations
Adoption of new fuel technologies to reduce carbon footprint in port logistics
Other (please specify)

51. How important do you think it is for your organization to develop skills specifically related to the decarbonization of port logistics?

Not Important
Somewhat Important
Moderately Important
Very Important
Extremely Important

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52. Does your organization have a training program in place to address skills related to the decarbonization of port logistics?

Yes
No

53. If yes, how effective do you believe your current training program is?

Not Effective
Somewhat Effective
Moderately Effective
Very Effective
Extremely Effective

54. How extensively has your organization integrated digitalization technologies into its port logistics operations?

Not at all
To a limited extent
Moderately
Extensively
Fully integrated

55. Which specific digitalization technologies has your organization implemented or explored for optimizing port logistics operations? (select all that apply)

Automated container handling systems
Real-time data analytics for predictive maintenance
Electronic data interchange (EDI) for supply chain management
Blockchain for secure and transparent transactions
Digital twins for simulating and optimizing port processes
Other (please specify)

56. To what extent does your organization utilize IoT devices for monitoring and managing port logistics activities?

Not at all
Rarely
Occasionally
Frequently
Continuously

57. Which IoT devices are currently deployed or being considered for use in your organization's port logistics operations? (select all that apply)

RFID tags for tracking cargo and equipment
Sensors for environmental monitoring (e.g., air quality, noise levels)
Smart meters for energy consumption monitoring
GPS trackers for tracking vessel movements

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Automated inventory management systems
Other (please specify)

58. How prioritized is safety in your organization's port logistics operations?

Low priority
Moderate priority
High priority
Top priority

59. What specific safety measures or protocols has your organization implemented to reduce emissions and improve environmental sustainability in port logistics operations? (select all that apply)

Use of low-emission equipment and machinery
Implementation of emission control technologies (e.g., scrubbers)
Regular safety training for employees
Implementation of emergency response plans for environmental incidents
Other (please specify)

60. How receptive is your organization to adopting new fuel technologies for reducing carbon footprint in port logistics?

Not receptive at all
Somewhat receptive
Moderately receptive
Very receptive
Extremely receptive

61. Which new fuel technologies is your organization currently exploring or considering for use in port logistics operations? (select all that apply)

Liquefied natural gas (LNG)
Hydrogen fuel cells
Biofuels
Electric power
Other (please specify)
None

62. How has the growth in vessel sizes impacted your port operations, if at all?

Increased efficiency
Increased capacity constraints
Increased infrastructure investment requirements
Other (please specify)

63. What measures has your organization taken to accommodate larger vessels and optimize port operations in response to vessel size growth? (select all that apply)

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Deepening of navigation channels
Expansion of berth facilities
Installation of larger cranes and handling equipment
Implementation of advanced scheduling and logistics software
Other (please specify)

64. Has your organization implemented measures to comply with IMO and MARPOL regulations regarding emissions and pollution prevention?

Yes
No

65. If yes, please specify the measures implemented to comply with IMO and MARPOL regulations. (select all that apply)

Installation of exhaust gas cleaning systems (scrubbers)
Adoption of low sulfur fuels
Implementation of ballast water treatment systems
Compliance with emission reduction targets
Other (please specify)

66. What challenges, if any, has your organization encountered in implementing measures to comply with IMO and MARPOL regulations?

Technological limitations
Cost implications
Regulatory complexity
Other (please specify)

67. Questions or remarks?

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