

PoWER PLUS



FORESIGHT QUESTIONNAIRE

PoWER PLUS is a project funded by the Interreg V-B Adriatic-Ionian Cooperation Programme (ADRION) which involves 8 partners located in 6 different countries.

It aims at performing a foresight process in order to detect the main issues which may be affecting Adriatic-Ionian ports in the short- to mid-term in the light of the Covid19 outbreak and related economic crisis. The results of these processes will be used to update and, therefore, enhance the main results produced by the former PoWER project, i.e. The PoWER Methodology for building innovation supply Chain, The PoWER Strategy for evolving ports into Innovation Hubs, and the ICT Platform "[PoWERports](#)".

This questionnaire is the first step of the aforementioned foresight process, dedicated to the collection of experts' views on possible future scenarios related to the port areas involved in the project (Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, and Serbia) also in consideration of the wider situation and trends in the Adriatic-Ionian area.

The questionnaire has been developed with reference Next Generation EU and Agenda 2030 goals - which apply both to sea and river ports - and is articulated in 62 questions divided in four sections:

1. Towards smart ports: digital transition of services and processes in the port system;
2. The port in the territory: valorisation of the waterfront and new opportunities for regenerating the physical spaces in the port - city interface;
3. Ports in the Adriatic-Ionian area;
4. The port environment after the Covid19 pandemic outbreak.

Your precious contribution will help the PoWER PLUS team to grasp the complexity and the specificity of the port areas located on the sea and the rivers of the Adriatic - Ionian Region.

Your participation in the survey is on voluntary basis. Your contribution and those of the other experts involved will be consulted and processed by the PoWER PLUS team in order to draft a project document called "Factsheets on local scenarios". The original questionnaire you filled in will be annexed to the abovementioned Factsheets and made available on the PoWERports platform upon your authorisation.

Thank you very much for your time and cooperation. Your feedback is very important to us!

Disclaimer

This document has been produced with the financial assistance of the European Union. Its content is the sole responsibility of the PoWER PLUS project partners and can under no circumstances be regarded as reflecting the position of the European Union and/or ADRION programme authorities.

By filling in and sending back this document to your contact person you authorise the PoWER Plus team to consult it and process it in order to draft the project deliverable T1.1.2 “Factsheets on local scenarios”. This document will open-access and will be delivered, for prior validation, to the funding Programme’s authorities.

Moreover, the PoWER Plus team would like to annex a copy of this document, in its original version, to the abovementioned Factsheets and to make it available on the PoWERports platform.

If you wish, the filled-in questionnaire can be published in anonymous form.

I give my permission to the PoWER PLUS project team to annex a copy of the questionnaire I filled in to PoWER PLUS Project’s deliverable T1.1.2 “Factsheets on local scenarios”.

I give my permission to the PoWER PLUS project team to make available a copy of the questionnaire I filled on the PoWERports platform.

I wish my contribution is made available only in anonymous form.

Please, fill in the following table with your data. If you checked the box related to the anonymization of your contact data, they will be consulted only by the PoWER PLUS Project team and not diffused.

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Role	Expert in territorial and urban planning/Port System Regulatory Planning

1. TOWARDS SMART PORTS: DIGITAL TRANSITION OF SERVICES AND PROCESSES IN THE PORT SYSTEM

A tentative classification of port services in terms of Technological Readiness Level has been made considering 4 macro sectors characterised by a more advanced digital perspective:

- A) Vessel & Marine Navigation;
- B) e-Freight & (Intermodal) Logistics;
- C) Passenger Transport;
- D) Environmental sustainability.

This classification is showed in Tables 1, 2 and 3.

Table 1 Technological readiness - in standardisation

Technological readiness - in standardisation	
Service	Enabling functions
A.1 - Vessel Traffic Management	Accurate Vessel Positioning (terrestrial and satellite), Full information about cargo, Low-Rate Vessel-Port bi- directional communication
A.5 - Berth allocation and docking	Accurate Vessel Positioning (terrestrial and satellite), Accurate Bathymetric Data, Low-Rate Vessel-Port bi- directional communication
B.1 - Freight Management and Control	Containerized and General) cargo pervasive monitoring and control in port areas (docks, warehouses, stores).
B.3 - In-port Smart Navigation	Real-time communication Port-Terminals- Trucks

1. According to your experience and knowledge, do you think the table above (Table 1) should be updated? If so, please, propose your version in the table below.

Technological readiness - in standardisation	
Service	Enabling functions
Dangerous goods management and control	Dedicated and possible isolated areas, pervasive monitoring, specialized personnel, controlled access

2. Please, provide a view on the current situation of the services listed in the table above according to your knowledge. You can address only the services you are familiar with.

Max 1500 characters, spaces included

Table 2 Technological readiness - not yet in standardization, facing technological challenges

Technological readiness - not yet in standardization, facing technological challenges	
Service	Enabling functions
A.3 - Water Incident	Accurate Vessel Positioning (terrestrial and satellite), IoT- based distributed network
A.4 - Suspicious Vessel / Maneuver	Accurate Vessel Positioning (terrestrial and satellite), Vessel-Port bi- directional communication
B.2 - Gate Automation	Accounting for users, vehicles and goods
B.4 - Freight Routing	Port-to-Port, Port-to-Road, Port-to-Railways communications
B.5 - Incident at Landside	Distributed monitoring network
C.1 - Info mobility and journey monitor	Journey planner and manager (booking, payment), JIT information delivery
C.2 - Integration with Traffic Control Centres (TCC)	Port-to-road full-fledged data exchange
C.3 - In-port Smart and Autonomous Mobility (including safety)	Real-time communication Port-Vehicles-Pedestrians
D.1 - Pollution Level (including CO _x and noise)	Distributed monitoring network
D.2 - Road Traffic Level	Distributed monitoring network

3. According to your experience and knowledge, do you think the table above (Table 2) should be updated? If so, please, propose your version in the table below.

Technological readiness - not yet in standardization, facing technological challenges	
Service	Enabling functions
Railway Traffic Level	Distributed monitoring network

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4. Please, provide a view on the current situation of the services listed in the table above according to your knowledge. You can address only the services you are familiar with.

Max 1500 characters, spaces included

Table 3 Technological readiness - beyond state of the art, not technologically consolidated

Technological readiness - beyond state of the art, not technologically consolidated	
Service	Enabling functions
A.2 - Vessel maneuvering in port waters	Accurate Vessel Positioning (terrestrial and satellite), Accurate Bathymetric Data, Real-Time meteo-marine monitoring, HD video sources on vessel & port.
D.3 - Dynamic pricing (all services) to Vessels, Terminals	Distributed monitoring network

5. According to your experience and knowledge, do you think the table above (Table 3) should be updated? If so, please, propose your version in the table below.

Technological readiness - beyond state of the art, not technologically consolidated	
Service	Enabling functions
A.2 - Vessel maneuvering in port waters	Accurate basin's swell data

6. Please, provide a view on the current situation of the services listed in the table above according to your knowledge. You can address only the services you are familiar with.

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7. In your opinion, which of the following sectors need innovation the most?
Please, put an "X" next to them; there is no limit to the number of sectors you can check.

ENERGY

- Efficiency of buildings X
- Efficiency of industrial processes
- Production of renewable energy X
- Port Grid

INNOVATION AND NEW TECHNOLOGIES IN ALL TRANSPORT MODES

- Deployment of alternative fuels infrastructure - Directive 2014/94 /EU - 22 October 2014 X
- LNG Retrofit (Realization of a network of points of refuelling for LNG (Liquefied Natural Gas))
- Electrification of port docks
- Construction of LNG-powered ships

SEA-RELATED SOURCES OF RENEWABLE ENERGY

- tidal and sea waves
- hydrogen X
- off-shore wind power X
- on-shore micro-wind power

ENERGY EFFICIENCY IN PORTS' ACTIVITIES

- more efficient processes X
- more efficient behaviours
- more efficient buildings
- more efficient infrastructures (e.g.: lighting)

ROBOTICS AND AUTOMATION FOR

- increasing efficiency X
- increasing safety X
- increasing comfortability
- monitoring and improving the flows of goods
- savings in time X
- savings in fuel
- savings in personnel

AUTONOMOUS VEHICLES (LAND, AIR, WATER)

- driverless trucks and vans for logistics X
- drone planes
- for cargo transport
- for parcel delivery services
- drone ships

INTERNET OF THINGS AND BIG DATA

SIMULATION AND VIRTUAL REALITY

CYBERSECURITY

8. If other, please, specify

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9. With reference to the sectors you indicated in question(s) 7 and 8, is their innovation hindered from a lack of infrastructure? Please, substantiate your answer.

The non-uniformity in research and development is hampering the progress in the integration of new technologies more than the lack of infrastructure

10. With reference to the sectors you indicated in question(s) 7 and 8, which are the main developments and improvements you consider relevant? Please, substantiate your answer.

The use of hydrogen fuel, in vessels, instead as traditional fuel especially in inland ports will have an enormous impact on the CO2 emission reduction. Also, off-shore wind farms will provide a very efficient source of renewable energy.

11. With reference to the sectors indicated in question(s) 7 and 8, which are the Key Enabling Technologies (KET)¹ scientific research should focus on? Which KET could bring the most disruptive innovation? Please, substantiate your answer.

Hydrogen propelled engines.

12. Which are the innovative interventions you consider most urgent and relevant according to you? Which results you expect they would have?

Production of renewable energies to reduce CO2 emissions and local air pollution, the world needs to rapidly shift towards low-carbon sources of energy -renewable technologies.

13. A digital twin (DT) is a realistic digital model simulating or “twinning” the life of a physical asset; each digital twin is linked to its physical twin allowing to establish a bijective relationship between the DT and its physical twin; a DT follows the lifecycle of its physical twin to monitor, control, and optimize its processes and functions and to predict future statuses.
How can the digital twin and other technologies be useful for making ports smart?

¹ The Commission defines KETs as “knowledge intensive and associated with high R&D intensity, rapid innovation cycles, high capital expenditure and highly skilled employment. They enable process, goods and service innovation throughout the economy and are of systemic relevance. They are multidisciplinary, cutting across many technology areas with a trend towards convergence and integration. KETs can assist technology leaders in other fields to capitalise on their research efforts”
<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0341:FIN:EN:PDF>

Resolve a failure before it occurs; improve the operations of the entire production cycle; increase the efficiency and quality of the product. Develop a low-cost trial.

14. If you have additional comments, please write them here.

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15. If your previous contributions are referred to a specific port or area, please, let us know.

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16. Briefly describe a FUTURE SCENARIO (25-30 years) related to ports as Innovation Hubs, also in the light of the topics addressed in the previous questions.

With “scenario” we mean a narrative story describing how the situation should be in the future also including your hopes and fears.

You can either refer to a specific port area or, more in general, to Adriatic-Ionian Ports.

For the entire European Union, the match for the next two decades will be played in the Mediterranean: a quarter of the world's maritime traffic transits the Mare Nostrum. The next step should consider not only national actions by individual member states, but also cross-cutting interventions by different nations on strategic issues of common interest. That no one has thought of building a consolidation and development plan for the Adriatic-Ionian Range is a symptom of a serious strategic weakness in community thinking.

17. Which are the main forces that could drive to the scenario you described? Which would be the main actors involved? Which actions should be taken to realize the future scenario you described?

The hinterland connections (road, railways), in addition to infrastructures, play an absolute leading role in international trade policy, because they determine exchange opportunities that can also modify the map of international relations on which the competitive confrontation between the large economic blocs depends.

18. What are the main obstacles and risks to the scenario you described? (within 1500 characters, spaces included)

The clear vision of a complete strategic plan for the entire port system, and the lack of geopolitical and geo-economic vision.

2. THE PORT IN THE TERRITORY: VALORISATION OF THE WATERFRONT AND NEW OPPORTUNITIES FOR REGENERATING THE PHYSICAL SPACES IN THE PORT-CITY INTERFACE

1. Which is your opinion on the relationship between a city and its port?
If you are referring to a specific city/port please let us know.

Concentrating attention on city port, they are consider strategic knots especially in a scenario where in ports, as the Port of Durres, 90% of the volumes of exchanges occurs.

2. Which is your opinion on waterfront enhancement as an opportunity to reconnect cities with their ports?

Promote and encourage the preservation, consolidation and revitalization of the local economic and social fabric not only during the summer season, but over a longer period of time, relaunching the concept of a waterfront experienced and perceived throughout the year

3. Is a territorial waterfront with an integrated transport system consisting of the three-track coastal light rail (tramway), cycling and pedestrian roads, and coastal navigation a good solution for transport and mobility along the territorial waterfront? Please, substantiate your answer.

An easy access, by various means, and a fully integrated waterfront to the daily life activities, can guaranty a better perception of the city life.

4. In case you are involved in a port development process, please, describe your experience in relation to Blue Economy development.

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5. A renewed development of port economy, that considers the city with the port in the same system, would be able to drive overall competitive economic development in the current global economic challenge. What is your opinion?

Max 1500 characters, spaces included

6. Did you experience Integrated Logistics Areas (ILA) or Special Economic Zones (SEZ)? Do you think that ILA and SEZ can be considered as complementary to the port systems? Please, substantiate your answer.

Max 1500 characters, spaces included

7. Do you believe that the Special Economic Zones ("SEZ") can represent an opportunity for the development of the territories of the less developed regions? Please, substantiate your answer.

Max 1500 characters, spaces included

8. Do you think that the Special Economic Zones ("SEZ") could be rethought in an ecological key? Please, substantiate your answer.

Max 1500 characters, spaces included

9. Which subjects should primarily participate in the decarbonisation effort of the Port-City System? Please, substantiate your answer.

Max 1500 characters, spaces included

10. What and how much is currently being done for the depollution and decontamination of the Port areas?

Max 1500 characters, spaces included

11. Is the economic and social development of traditional relations with neighbouring countries via the Adriatic-Ionian ports feasible? Please, substantiate your answer.

Max 1500 characters, spaces included

12. Do you think that the seas and rivers of the Adriatic-Ionian area could be main players in the Mediterranean geopolitics? Please, substantiate your answer.

Max 1500 characters, spaces included

13. In your opinion, which of the following sectors need innovation the most? Please, put an "X" next to them; there is no limit to the number of sectors you can check.

SOCIAL SCIENCES

- Social innovation
- Social inclusion and discrimination
- Gender studies
- Inclusive or participation processes
- Facilitation for innovation

- On field researches X
- Surveys and data analytics

PUBLIC ADMINISTRATION

- Economic development strategies X
- Public procurement: works
- Public procurement: services

ENTREPRENEURIAL INNOVATION

- Start-ups X
- Internationalization X
- Digitalization (e.g., additive manufacturing)
- Industrial design
- Service design
- Internal organization

BUSINESS

- Investing and trading
- Commerce
- Crafts
- Small and Medium industries X
- Large industries
- Services (logistics, software, consultancies, etc.)
- Restoration
- Tourism and Leisure

EMPLOYMENT DECREASE

NEW SUITES OF SKILLS

SEA-RELATED SOURCES OF RENEWABLE ENERGY

- tidal and sea waves
- hydrogen X
- off-shore wind power X
- on-shore micro-wind power

BLUE GROWTH

- Fishery and aquaculture
- Green shipping X
- Exploitation of marine resources
- Innovation in tourism
- New solutions for environmental resilience X

DE-CARBONIZATION OF PRODUCTS AND PROCESSES

SCIENTIFIC RESEARCH

- Theoretic or base research
- Applied research X

- Private R&D investments X

CULTURAL PRODUCTION

- Digital sector
- Traditional sectors (e.g. theatre or cinema)
- Heritage preservation X
- Design professions X
- Journalism, books and essay writers

SUSTAINABILITY

- Circular economy
- Innovative products
- Waste management and recycling X
- Intelligent mobility X
- Disposal of ballast water sediments in the port area - art. 5 of the Ballast Water convention, in progress ratification)

14. If other, please, specify

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15. With reference to the sectors indicated in questions 13 and 14, which are the main obstacles to their development?

Max 1500 characters, spaces included

16. With reference to the sectors indicated in questions 13 and 14, which are the Key Enabling Technologies (KET) scientific research should focus on? Which KET could bring the most disruptive innovation? Please, substantiate your answer.

Max 1500 characters, spaces included

17. With reference to the sectors indicated in questions 13 and 14, which results would the adoption of the disruptive technologies described in the question above (n. 16) lead to?

Max 1500 characters, spaces included

18. Briefly describe a FUTURE SCENARIO (25-30 years) related to ports and their cities/ territories, also in the light of the topics addressed in the previous questions.
With “scenario” we mean a narrative story describing how the situation should be in the future also including your hopes and fears.
You can either refer to a specific port area or, more in general, to Adriatic-Ionian Ports.

Max 4000 characters, spaces included

19. Which are the main forces that could drive to the scenario you described? Which would be the main actors involved? Which actions should be taken to realize the future scenario you described?

Max 1500 characters, spaces included

20. What are the main obstacles and risks preventing the realisation of the scenario described?

Max 1500 characters, spaces included

21. If you have additional comments, please write them here.

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3. PORTS IN THE ADRIATIC-IONIAN AREA

1. In your opinion, what is the untapped potential for enhancing energy efficiency in Adriatic-Ionian ports?

It is an effective and efficient tool for the integrated management of sectoral policies with strong territorial roots such as, for example, transport, economic development, environment, culture etc.

2. Which are the main drivers towards that enhancement increasing energy efficiency? Which the main obstacles?

Climate change is at the base point of the development of new renewable energies sources. The non-predisposition of countries not to reduce the production of industrial gases is the main obstacle.

3. With reference to the two previous answers, which are, in your opinion, the main challenges ports, free zones and the global shipping industry will have to face? What should be done to mitigate their negative impacts?

Common policies that facilitate the use of renewable energies.

4. How does the development of ports affect the local community? Please, refer both to the city- and the wider region-level.

Port and city interact constantly, but it is inevitable that this dialogue needs to be strengthened, with the help of the measures that could be adopted with a precise line of policy making for the development of the port area.

5. Do you think that in the Adriatic-Ionian area water transport is underdeveloped as compared to other types of transport? What if compared to other geographical areas?

A port that is able to handle triple-E container vessels will be of significant importance in the region.

6. Climate change is requiring a quick and resolute transformation in all sectors (e.g. industry, society, organization, urbanization, etc.). How could Adriatic-Ionian ports and their cities contribute?

Common policies that facilitate the use of renewable energies.

7. If you have additional comments, please write them here.

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8. Briefly describe a FUTURE SCENARIO (25-30 years) related to Adriatic-Ionian port areas, also in the light of the topics addressed in the previous questions.

With “scenario” we mean a narrative story describing how the situation should be in the future also including your hopes and fears.

You can either refer to a specific port area or, more in general, to Adriatic-Ionian Ports.

Promoting sustainable economic and social prosperity in the region through growth and job creation and improving its attractiveness, competitiveness and connectivity, while preserving the environment and ensuring that coastal and marine ecosystems remain healthy and balanced. The non fully cooperation between parties can be the bottle neck for better future development.

9. Which are the main forces that could drive to the scenario you described? Which would be the main actors involved? Which actions should be taken to realize the future scenario you described?

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10. What are the main obstacles and risks preventing the realisation of the scenario described?

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11. If you have additional comments, please write them here.

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4. THE PORT ENVIRONMENT AFTER THE COVID19 PANDEMIC OUTBREAK

1. According to your knowledge, which are the main challenges that affected ports and port cities after the Covid19 pandemic outbreak?

Max 1500 characters, spaces included

2. What impact had/have lockdown actions on vessel traffic??

Max 1500 characters, spaces included

3. What role can port authorities play in managing the emergency? Has their role changed only temporarily or will it be changed for good? Please, substantiate your answer.

Max 1500 characters, spaces included

4. How are the relations between port and city changing?

Max 1500 characters, spaces included

5. How the port-urban landscape is changing?

Max 1500 characters, spaces included

6. What are the previously existing problems, limitations or needs which the pandemic has emphasized?

Max 1500 characters, spaces included

7. How could the Covid19-related emergency become an opportunity to grow for port areas?

Max 1500 characters, spaces included

8. Is the ecological footprint of port cities going to decrease? Please, substantiate your answer.

Max 1500 characters, spaces included

9. Briefly describe a FUTURE SCENARIO (25-30 years) related to port areas' post-pandemic situation, also in the light of the topics addressed in the previous questions.
With "scenario" we mean a narrative story describing how the situation should be in the future also including your hopes and fears.
You can either refer to a specific port area or, more in general, to Adriatic-Ionian Ports.

Max 4000 characters, spaces included

10. Which are the main forces that could drive to the scenario you described? Which would be the main actors involved? Which actions should be taken to realize the future scenario you described?

Max 1500 characters, spaces included

11. What are the main obstacles and risks preventing the realisation of the scenario described?

Max 1500 characters, spaces included

12. If you have additional comments, please write them here.

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