



conference

“Green and Smart Ports in the Adriatic-Ionian Region”

**Green and Smart ports development within the
European Strategy for the Adriatic-Ionian
Region (EUSAIR)**

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Pillar 2 Overall Goal



*To improve connectivity
within the Region and with
the rest of Europe in terms
of transport and energy
networks*

Transport Priority Actions

MARITIME TRANSPORT

- Improving and harmonising traffic monitoring and management
- Developing ports, optimising port interfaces, infrastructures and procedures/operations

INTERMODAL CONNECTIONS

- Developing the Western Balkans comprehensive network
- Developing motorways of the sea
- Cross-border facilitation



INFRASTRUCTURAL PROJECTS

- 1 Upgrading of Trieste Port (railway infrastructures)
- 2 Heavy vehicle road, connecting the TEN-T Port of Bari, Interporto (intermodal terminal) and the main road system
- 7 Hydro-technical and dredge excavation on critical sectors on the Sava river
- 9 Improving Motorways of the sea Venice Patras (MoS Venice-Patras)
- 10 Preparation of project documentation for construction of highway E-761 Pozega-Užice-Kotroman (Bosnia and Herzegovina Border)
- 11 Feasibility study for Adriatic-Ionian Highway/expressway
- 12 Reconstruction and modernization of railway line Beograd-Bar (E79)
- 13 Technical studies on railway missing link between Greece - Albania (section Florina -Pogradec)
- 14 Second Railway track Divača - Port of Koper
- 15 Upgrading of Rijeka Port
- 16 Reconstruction and upgrading of functional facilities in the Port of Brčko
- 17 Motorway section Križišće - Žuta Lokva 56 km
- 18 Lika and Dalmatian Railway
- 19 MOBILITY ON THE IONIAN COAST (COMOBILION)
- 20 MOBILITY ON THE IONIAN COAST + (COMOBILION+)
- 21 ADRIETA - Adriatic/Ionian Multimodal Corridor
- 24 Improvement of port capacity and port services for Cruise Shipping
- 25 Construction of new passenger terminals in the Port of Corfu
- 26 Upgrading of freight infrastructure and services at the Port of Patras
- 27 Completion of Igoumenitsa Freight Village infrastructure and services
- 28 Multimodal Northern Adriatic Corridor
- 29 Multimodal Central Adriatic Corridor
- 30 Upgrading Palermo - Catania - Messina railways on the ScanMed Corridor
- 31 Improvement of the connections between the Po River navigation network and the Adriatic Sea
- 37 Preparation of project documentation for construction of highway E-763 Pozega-Boljare (Montenegro Border) -Bar
- 38 Reconstruction and modernization of railway line Beograd-Zagreb
- 39 Construction of motorway Niš-Merdere-Priština
- 40 Port of Koper. Pier I - core network: accessibility and intermodality
- 41 Port of Koper. Basin III - MoS: accessibility and intermodality
- 42 Port of Koper. Basin II - core network: maritime accessibility

Project Labelling

SOFT MEASURES



- 3 ADRIPASS (Integrating multimodal connections in the Adriatic-Ionian region)
- 4 MultiAPPRO (Multidisciplinary approach and solutions to develop intermodal transport in the Region)
- 5 EUREKA - EUROpean nETworK of Maritime Administrations in the Adriatic-Ionian Region
- 6 LNG NET MED (connecting public and private operators for the deployment of LNG as sustainable alternative fuel for intermodal transport)
- 8 AWATRRAIN (Adriatic Water Train. Fluvio-maritime transport plan for the Northern Adriatic sea)
- 22 Adriatic/Ionian small ports network
- 23 Adriatic/Ionian port observatory
- 32 ADRIATIC-IONIAN Cycle Route (ADRIOCYRO)
- 33 CROSSMOBY - "Cross border sustainable mobility planning and passenger transport services based on intermodality"
- 34 DNA Link
- 35 Sea Lighthouse (Fari di Mare) "Sustainable Extension of Adriatic Sea-TRansports in hinterLand areas
- 36 ECO-ROUTES
- 43 SMA Vessel traffic monitoring centre upgrade



51 projects

Green and Smart Ports concept as **EUSAIR Flagship**

Specific objectives

- **Technology testing** in ports to identify the technical and operational challenges
- **Mapping of local and macro regional needs** and development of **network of ports** to be transformed in accordance with the developments of the Macroregional Transport Masterplan
- Supporting to **zero emission actions** as well as promotion of interoperability through the development of the required infrastructure among the ports of the Region through the digitalisation of the provided services and the **development of innovative ICT solutions** to support the supply chain
- Supporting **circular economy projects** in ports finding solutions in turning waste to products due to their ideal background (proximity to large cities, industries as well as by operating as hosts of ships' waste)
- Alignment of the **EUSAIR States regulatory framework** for the electrification of ports

The EUSAIR Pillar (Transport sub-group) study

*What is «Green & Smart»?
(in the AI Region)*

*What role for the European
Territorial Co-operation (ETC) ?*

Supporting:

- the MA operating in the AI Region in understating the needs in the sector
- Stakeholder in the AI Region to intercept the funding opportunities coming from ETC



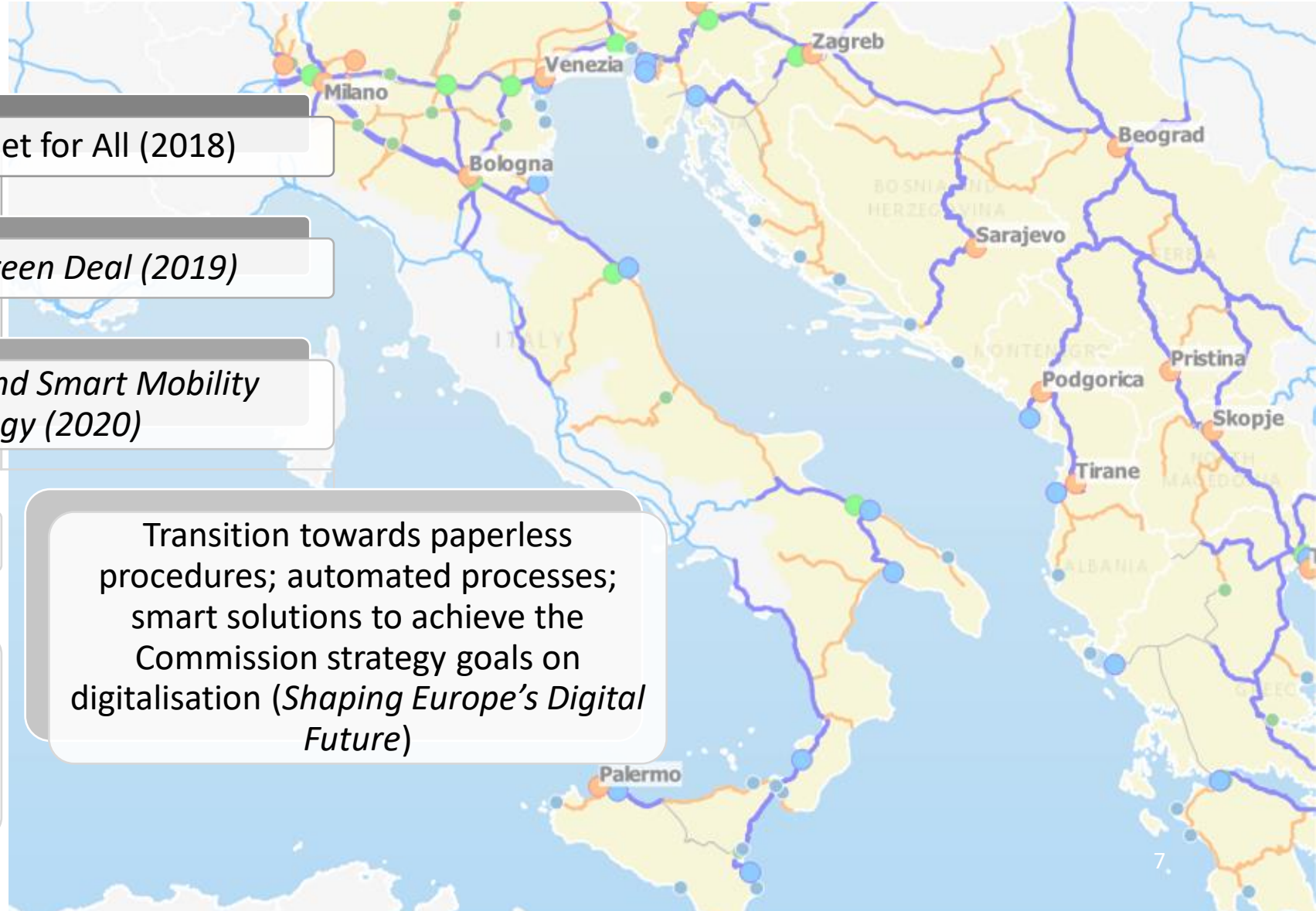


The EUSAIR Pillar (Transport sub-group) study: methodology

- The EU policy and legislative framework
- On-going initiatives and projects in the AI Region
- Indicative actions of the new Interreg Programmes operating in the Region

GREEN AND SMART PORTS

EU policy and legislative framework



A Clean Planet for All (2018)

European Green Deal (2019)

Sustainable and Smart Mobility Strategy (2020)

Fit for 55 package (2021)

FuelEU maritime regulation proposal
Proposal for the revision of the EU Emissions Trading System, including maritime transport

Transition towards paperless procedures; automated processes; smart solutions to achieve the Commission strategy goals on digitalisation (*Shaping Europe's Digital Future*)

What is «Green & Smart» ?

Scope	Theme
IMPROVING SUSTAINABILITY IN MARITIME VESSELS OPERATIONS	<ul style="list-style-type: none">• Improvement of the energy efficiency and reduction of emissions of vessels• Creation of a comprehensive network of recharging and refuelling infrastructure• Deployment of renewable and low-carbon fuels and powering stationed vessels with renewable power
PORTS AS GREEN HUBS	<ul style="list-style-type: none">• Promotion of ports as new clean energy hubs for integrated electricity systems, <u>hydrogen</u> and other low-carbon fuels• Greening ground port services and operations• Promotion of ports as testbeds for waste reuse and the circular economy
SAFETY IN PORTS	<ul style="list-style-type: none">• Enhancing transport safety and security
DIGITALISATION IN PORTS	<ul style="list-style-type: none">• Development of efficient capacity allocation and traffic management systems• Diffusion of innovation, data and AI for smart mobility and cybersecurity



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EXAMPLES OF 2014-2020 INTERREG PROJECTS

ZERO EMISSIONS IN PORTS

	ADRION	IT-HR	IT-AL-ME
Alternative clean fuels, cold ironing and green accessibility to marinas (vessels, motorboats...)	SUPER-LNG	DEEP-SEA, METRO	SuMo

DIGITALISATION

	ADRION	IT-HR	IT-AL-ME	GR-IT	IT-SI
ICT/digital solutions to upgrade information and data management and support multimodal integration and land accessibility to ports	ADRIPASS	DIGLOGS, DIGSEA E-CHAIN, MIMOSA, PROMARES, STEP- UP, TRANSPOGOOD	EFINTIS, ISACC	INVEST -MENT	
ICT/digital solutions to improve sea traffic management, and safety and security of transport operations, including cybersecurity	ADRIPASS, EUREKA	CHARGE, DIGLOGS, INTESA			SECNE T
ICT/digital solutions to monitor the performance and impact of maritime transport operations at ports		ECOMOBILITY, GUTTA, TRANSPOGOOD			



EXAMPLES OF 2014-2020 INTERREG PROJECTS

CONNECTIVITY

	ADRION	IT-HR	IT-AL-ME	GR-IT
Promote integration and connectivity between different transport modes, including last mile and hinterland connections	ADRIPASS, ISTEN, INTER-PASS	ADRIGREEN, MIMOSA, MOSES, PROMARES		SWAN
Improve conditions and competitiveness of existing or new MoS and/or small cruises infrastructure and services	MULTI-APPRO		ALMONIT-MTC, PORTS	DOCK-BI, FRESH WAYS, THEMIS
Promoting accessibility of tourists to inland destinations by maritime transport integrated with green transport solutions		ICARUS, SUSTRA	PORTS	TRUST

CIRCULAR ECONOMY IN PORTS (0)



EXAMPLES OF 2014-2020 INTERREG PROJECTS

ZERO EMISSIONS, DIGITALISATION AND CONNECTIVITY

	ADRION	IT-HR	IT-AL-ME	IT-SI
Governance of planning, implementation and monitoring of projects/set up of transnational strategies and action plans	ADRIPASS, INTER-CONNECT, MULTIAPPRO, SUPAIR, NEWBRAIN	FRAMESPORT, PROMARES, SUSPORT	SAGOV, PORTS 4.0, ISACC	CLEAN BERTH
Knowledge sharing and cooperation support	SUPAIR		TRADAM, ECSYT, PORTS 4.0	
Capacity building			PORTS, ISACC	
Resilience and risk management of transport operations			CRISIS	
Support the preparation of projects to improve their maturity for funding and financing	NEWBRAIN			

Initiatives and projects by Theme (1/3)

	Number of projects in the ports in:					
	Albania	Croatia	Greece	Italy	Montenegro	Slovenia
A. Improvement of the energy efficiency and reduction of emissions of vessels		x	x	x		x
A.1 Deployment of Liquid Natural Gas (LNG) fuelled vessels.		1	3	4		1
A.2 Test and deployment of full electric vessels and tugs.			2			
B. Creation of a comprehensive network of recharging and refuelling infrastructure		x	x	x		x
B.1 Construction of LNG depots and facilities.		1	4	3		1
B.2 Deployment of LNG bunkering vessels.		1	3	3		1
C. Deployment of renewable and low-carbon fuels and powering stationed vessels with renewable power			x	x		x
C.1 Electrification of quays and deployment of onshore power supply systems (cold ironing).			4	6		1

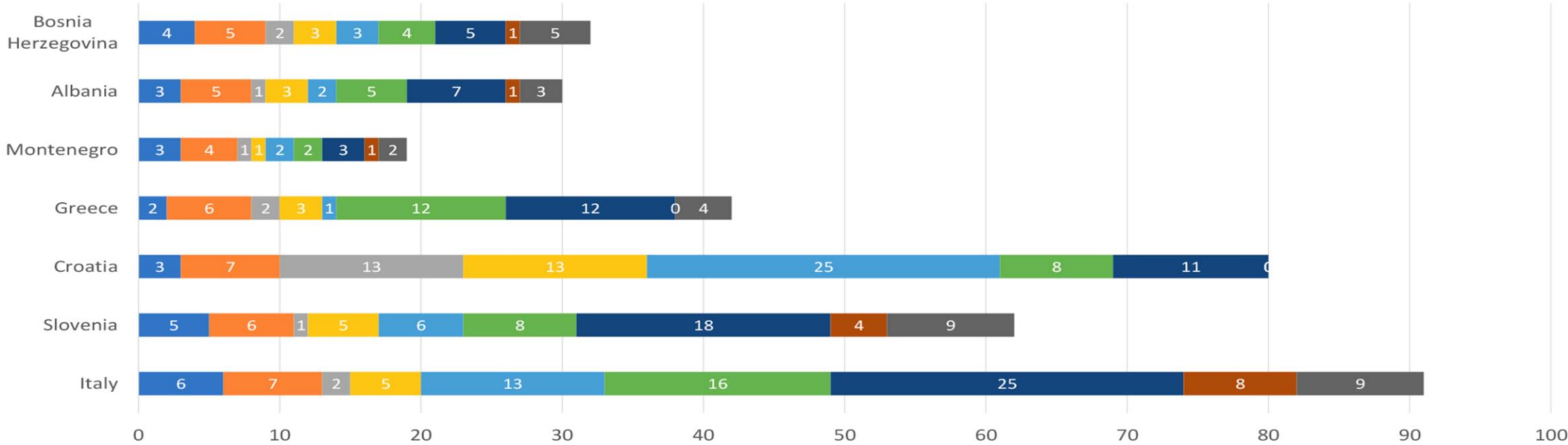
Initiatives and projects by Theme (2/3)

	Number of projects in the ports in:					
	Albania	Croatia	Greece	Italy	Montenegro	Slovenia
D. Promotion of ports as new clean energy hubs for integrated electricity systems, hydrogen and other low-carbon fuels		x	x	x	x	x
D.1 Creation of green hydrogen sites for production and distribution of hydrogen power.						
D.2 Deployment of public charging points for electric vehicles.			1	2	1	
D.3 Use of renewable energy sources, deployment of new more efficient lighting system, creation of power management system.		2	4	36	3	4
E. Greening ground port services and operations		x	x	x	x	
E.1 Greening port spaces.		1	4	21	2	
E.2 Greening port operations.		2	5	15	4	
F. Promotion of ports as testbeds for waste reuse and the circular economy				x		
F.1 Use of secondary material in production and construction, deployment of waste-to-energy facilities.				2		
F.2 Conversion of industrial and port areas.				4		

Initiatives and projects by Theme (3/3)

	Number of projects in the ports in:					
	Albania	Croatia	Greece	Italy	Montenegro	Slovenia
G. Enhancing transport safety and security				x		
G.1 Improvement of infrastructure resilience and deployment of measures to contain the impact of extreme weather events.				4		
G.2 Planning and implementation of measures to reduce the impact of pandemics and other sanitary emergencies						
H. Development of efficient capacity allocation and traffic management systems	x	x	x	x	x	
H.1 Further deployment of Vessel Traffic Monitoring and Information Systems (VTMIS).				4	1	
H.2 Deployment of solutions for enabling multimodal travel planning.	1	2	2	26	7	
H.3 Safe deployment of automated and autonomous maritime operations.		2	1	12	1	
I. Diffusion of innovation, data and AI for smart mobility	x	x	x	x	x	
I.1 Diffusion and integration of Port Community Systems at the port, port cluster, and national levels		1	1	6	1	
I.2 Diffusion of Maritime Single Window solutions and deployment of automated and paperless procedures and solutions				3		
I.3 Other IT solutions (rail traffic management, lot, Blockchain, port operation)	2	4	4	9	4	

Initiative and projects by Country



- Improvement of the energy efficiency and reduction of emissions of vessels
- Creation of a comprehensive network of recharging and refuelling infrastructure
- Deployment of renewable and low-carbon fuels and powering stationed vessels with renewable power
- Promotion of ports as new clean energy hubs for integrated electricity systems, hydrogen and other low-carbon fuels
- Greening ground port services and operations
- Promotion of ports as testbeds for waste reuse and the circular economy
- Enhancing transport safety and security
- Development of efficient capacity allocation and traffic management systems
- Diffusion of innovation, data and AI for smart mobility

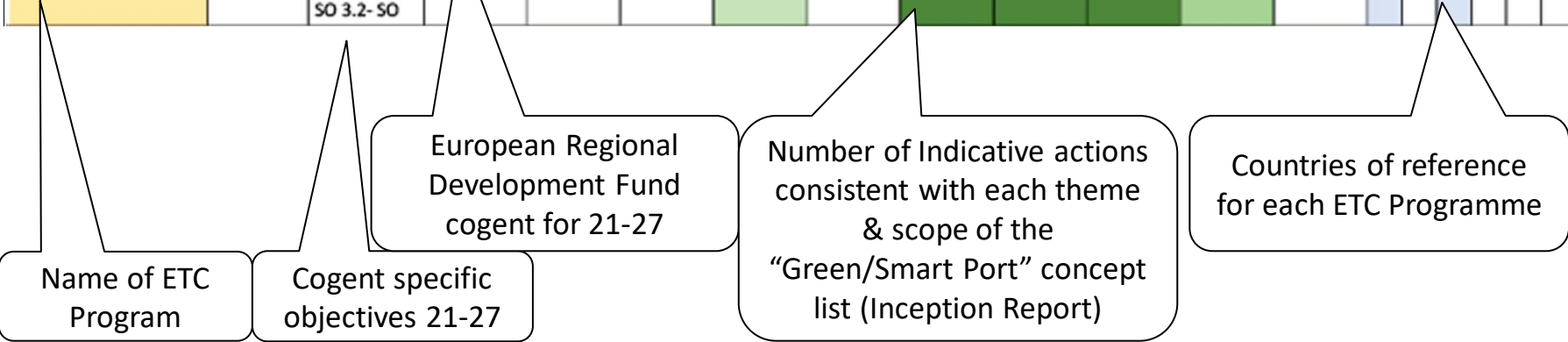


The EUSAIR Pillar (Transport sub-group) study: methodology

- The EU policy and legislative framework
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- **Indicative actions of the new Interreg Programmes operating in the Region**

Indicative actions of the 2021-2027 Interreg Programmes in the Region, classified by themes

ETC Programme	Pillar	Specific Objective	ERDF in Mio €	TOPICS included in the "green/smart port" concept									EUSAIR Countries						
				Improving sustainability in maritime vessels operations			Ports as green hubs			Safety in ports	Digitalisation in ports		Italy	Slovenia	Croatia	Grecia	Montenegro	Albania	Bosnia
				Improvement of the energy efficiency and reduction of emissions of vessels	Creation of a comprehensive network of recharging and refuelling infrastructure	Deployment of renewable and low-carbon fuels and powering stationed vessels with renewable power	Promotion of ports as new clean energy hubs for integrated electricity systems, hydrogen and other low-carbon fuels	Greening ground port services and operations	Promotion of ports as testbeds for waste reuse and the circular economy	Enhancing transport safety and security	Development of efficient capacity allocation and traffic management systems	Diffusion of innovation, data and AI for smart mobility							
Italy-Croatia	Pillar 2 (5) Pillar 3 (2) Pillar 4 (2) Pillar 1 (1)	SO 1.4- SO 2.4 SO 2.4- SO 2.7 SO 3.2- SO	145,10	0	0	1	0	6	5	7	3	0	X	X					

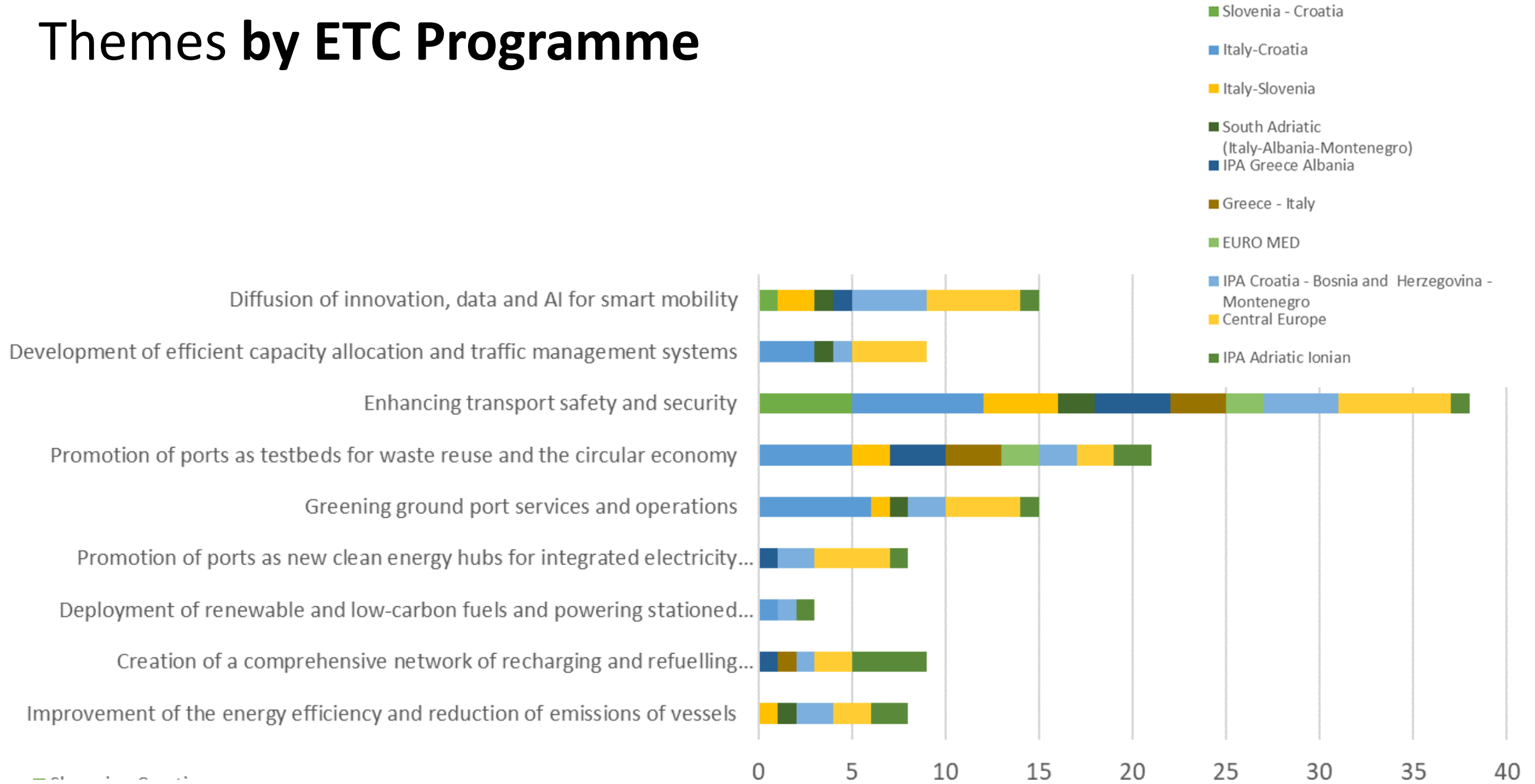


Themes by ETC Programme

9 'themes' included in "green/smart port concept"

ETC Programme	Pillar	Specific Objective	ERDF in Mio €	TOPICS included in the "green/smart port" concept									EUSAIR Countries							
				Improving sustainability in maritime vessels operations			Ports as green hubs			Safety in ports	Digitalisation in ports			Italy	Slovenia	Croatia	Greece	Montenegro	Albania	Bosnia
				Improvement of the energy efficiency and reduction of emissions of vessels	Creation of a comprehensive network of recharging and refuelling infrastructure	Deployment of renewable and low-carbon fuels and powering stationed vessels with renewable power	Promotion of ports as new clean energy hubs for integrated electricity systems, hydrogen and other low-carbon fuels	Greening ground port services and operations	Promotion of ports as testbeds for waste reuse and the circular economy	Enhancing transport safety and security	Development of efficient capacity allocation and traffic management systems	Diffusion of innovation, data and AI for smart mobility								
Italy-Croatia	Pillar 2 (5) Pillar 3 (2) Pillar 4 (2) Pillar 1 (1)	SO 1.4 - SO 2.4 SO 2.4 - SO 2.7 SO 3.2 - SO	145,10	0	0	1	0	6	5	7	3	0	X	X						
Italy-Slovenia	Pillar 2 (2) Pillar 3 (1)	SO 2.4 - SO 2.6 SO 4.6 ISO 1 - 6.2	48,13	1	0	0	0	1	2	4	0	2	X	X						
Central Europe	Pillar 2 (7) Pillar 4 (3) Pillar 3 (1) Pillar 1 (1)	SO 1.1 - SO 2.1 SO 2.4 - SO 2.6 SO 2.8	150,73	2	2	0	4	4	2	6	4	5	X	X	X					
EURO MED	Pillar 3 (1) Pillar 2 (1) Pillar 4 (1)	SO 2.4 SO 2.8	106,90	0	0	0	0	0	2	2	0	0	X	X	X	X				
Greece - Italy	Pillar 2 (1) Pillar 1 (1)	SO 1.1 - SO 2.6 SO 4.5	22,57	0	1	0	0	0	3	3	0	0	X		X					
South Adriatic (ItalyAlbania-Montenegro)	Pillar 2 (7) Pillar 4 (2) Pillar 1 (1)	SO 2.1 - SO 3.2 SO 4.8	22,16	1	0	0	0	1	0	2	1	1	X			X	X			
IPA Adriatic Ionian	Pillar 2 (6) Pillar 3 (6) Pillar 4 (3) Pillar 1 (2)	SO 1.1 - SO 2.4 SO 2.6 - SO 2.7 SO 2.8 - SO	107,08	2	4	1	1	1	2	1	0	1	X	X	X	X	X	X	X	
Slovenia - Croatia	Pillar 2 (1) Pillar 3 (5) Pillar 4 (2)	SO 2.4 - SO 2.7 SO 4.6 ISO 1 - 6.2	39,92	0	0	0	0	0	0	5	0	1		X	X					
IPA Greece Albania	Pillar 2 (6) Pillar 3 (1) Pillar 4 (1)	SO 2.4 - SO 2.6 SO 3.2 - SO 4.6 SO 4.5	17,96	0	1	0	2	0	3	4	0	1			X		X			
IPA Croatia - Bosnia and Herzegovina - Montenegro	Pillar 2 (4) Pillar 3 (1) Pillar 1 (2) Pillar 4 (9)	SO 1.1 - SO 1.3 SO 2.1 - SO 2.4 SO 2.6 - SO	106,97	2	1	1	2	2	2	4	1	4			X				X	
Greece-North Macedonia	Pillar 2 (5) Pillar 1 (1) Pillar 3 (2) Pillar 4 (2)	SO 2.7 - SO 2.6 SO 3.2 - SO 4.5 ISO 1 - 6.6	18,01	0	0	1	0	0	2	2	0	2			X					

Themes by ETC Programme



Conclusions

- **Opportunities from Interreg programmes**
- **Possible actions to be prioritized**

Conclusions : opportunities from Interreg programmes

Programmes	Scope/theme most matching with indicative actions
Italy-Croatia	Ports as green hubs: greening ground port services and operation
Adrion; Central Europe; Croatia-Bosnia and Herzegovina-Montenegro; Greece-Albania; Greece-Italy; Greece-North Macedonia; Italy-Croatia	Ports as green hubs: promotion of ports as testbeds for waste reuse and the circular economy
Adrion; Croatia-Bosnia and Herzegovina-Montenegro; Greece-Italy	Improving sustainability in maritime vessels operations: creation of a comprehensive network of recharging and refuelling infrastructure

Conclusions : opportunities from Interreg programmes

Programmes	Theme most matching with indicative actions
Adrion	Improving sustainability in maritime vessels operations: improvement of the energy efficiency and reduction of emissions of vessels
Central Europe; Greece-North Macedonia	Digitalization in ports: diffusion of innovation, data and AI for smart mobility
Central Europe; Croatia-Bosnia and Herzegovina-Montenegro; Euro Med; Greece-Italy; Greece-North Macedonia; Italy-Albania-Montenegro; Italy-Slovenia; Slovenia-Croatia	Safety in ports: enhancing transport safety and security
Greece-Albania; Croatia-Bosnia and Herzegovina-Montenegro	Ports as green hubs: promotion of ports as new clean energy hubs for integrated electricity systems, hydrogen and other low-carbon fuels



CONCLUSIONS: POSSIBLE ACTIONS

SCOPE

ACTION

Improving sustainability
in maritime vessels
operations

Construction of new vehicles prototypes, retrofitting of vessels

Procurement of green vessels, greening of ports' fleets and terminal cargo equipment/facilities

Ports as green hubs

Electrification of berths and small scale investments for deposits of LNG (interim transitional fuel), hydrogen, e-ammonia and e-methane...

Develop harmonised guidelines for construction and operation of storage/fueling equipment and vehicles

Support the development of low carbon multimodal transport chains

Use of secondary materials in production and construction (e.g. dredging sand in cement production -- Aalborg Portland)

Waste-to-energy facilities (transform hydrocarbon waste into carbon-neutral fuels to be used for integrated electricity systems)

Reconversion of industrial and port areas into eco-districts, exploring possibilities to set up ship decommissioning operations

Provide platform for start-ups and pilot projects for further development



CONCLUSIONS : POSSIBLE ACTIONS

SCOPE

ACTION

Digitalisation in ports /
Safety in ports

Installation of new technologies such as 5G/6G, digitalisation of public administration

Virtualisation (digital twin), Internet of Things, Artificial Intelligence, Automated/unmanned terminal operations and blockchain

Measures to develop standardised digital data sharing to support coordinated and synchronised operations

Solutions to set up automated and paperless procedures and speed up processes at nodes and throughout the logistics chain (incl. custom, security, phytosanitary checks etc.)

Just in time sea traffic management to improve safety, environmental performance and efficiency of maritime transport

Real time information systems to users for traffic management and multimodal travel planner solutions

Enhance cyber security

Tools and actions to improve measurement and management of waste collection and treatment, land degradation, light and visual intrusion, soil and water contamination, noise and vibration impacts, loss of biodiversity and coastal erosion



CONCLUSIONS: POSSIBLE ACTIONS

SCOPE

ACTION

Other (connectivity,
human resources, R&D)

Enhancing connectivity to islands from mainland and between islands

Integrate Short Sea Shipping routes and Motorways of the Sea with road, rail and IWW networks

Develop/improve hinterland accessibility to freight nodes and touristic sites

Training activities for the improvement of human skills and competences accompanying technological evolution, ecologic, energy and digital transition

Support the participation of ports to research and development activities to test and deploy innovative solutions, attract innovative businesses and services and qualified skills

conference

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Thanks for your attention!

Pierluigi Coppola

EUSAIR Pillar 2 Coordinator

Trieste, 21 June 2023