

EUSAIR COUNTRIES			ITALY																								
EUSAIR REGIONS with maritime strategies			Sicily				Calab- ria	Puglia		Marche		Emilia Rom.	Veneto	Friuli Venezia Giulia		Lombardia		Autonomous province of Bolzano		Aut. province of Trento							
n°	TECHNOLOGIES AND NEW MATERIALS RELEVANT IN THE FIELD OF GREEN SHIPBUILDING	EUSAIR	Fishing & aquaculture - Fishing boats/ships design and construction	Technologies and tools for the marine environmental monitoring and purification of sea water	Innovative design and energy efficiency for the nautical, vessels and refits.	Safety and security in ports and interportual (Ports vs cities and highways)	Trans-shipment and inter-modality logistics: 1. Transporting & storage 2. Water transport & related activities	Sustainable manufacturing, intelligent factory, aerospace, mechatronics.	Human and environment health: people welfare, green and blue economy, agribusiness, tourism.	Mechatronics - Manufacturing & industry	Home Automation	Sustainable and smart manufacturing	Mechatronics - 1. Manufacturing & industry 2. Machinery & equipment n.e.c.	Smart Manufacturing - Manufacturing & industry	Creative Industries - Creative, cultural arts & entertainment	Methodologies of design and development of new products, processes and services.	Green Technologies for energy efficiency	Technologies for safety	Sustainable mobility - 1. Transporting & storage - 2. Road transport & related services	Advanced Manufacturing - 1. Manufacturing & industry - 2. Nanotechnology & engineering	Eco-Industry - 1. Energy production & distribution 2. Power generation/renewable sources	Energy and environment: 1. Energy production & distribution 2. Power generation/renewable sources	Open data, GIS, e-learning, Cloud computing, e-tourism, smart mobility systems.	Creative industry - design, advertising, publishing, software and videogames: Creative, cultural arts & entertainment and activities	Mechatronics: 1. Manufacturing & industry 2. Machinery & equipment n.e.c.	Green & Clean energy: 1. Energy production & distribution 2. Power generation/renewable sources	
I TECHNOLOGIES FOR THE INCREASING OF SHIP'S EFFICIENCY																											
1	Appendages for the optimization of the propeller flow	V	O		O			O								V	V										
2	Air lubrication systems for the hull's friction reduction	V			O											V	V										
3	Paints designed to reducing the friction of the wetted surfaces	V	O		V					V				V		V	V			O		O					O
4	Systems for active trim and speed optimization, finalized to minimization of consumption	V			V				O	V							V										
5	Systems for dimensioning and efficient management of on-board energy systems	V			O											V	V				O	O					O
6	Systems for local management of lightning and air-conditioning	O			O				O		O					O	O				O	O					O
7	Diffusion of hybrid propulsion and on-board electric balance management systems	V	V		V				O				O				O					O					O
8	Lightweight and high performance materials applied in shipbuilding and ship fitting	V			V			O		O			V	V		V	V			V							O
9	Additive manufacturing for light components construction and design	V						O		O			O			V				V							O
10	Study the off-design behavior of the ship	V	V		V					V			V	V		V	V			V							
II TECHNOLOGIES FOR THE REDUCTION OF HAZARDOUS EMISSIONS IN THE ATMOSPHERE																											
11	Increase use of natural gas in the propulsion and for energy production on-board	V	O		V		O			V			O	V		V	V		O		O	O					O
12	Installation of washing system for ship's engines exhaust emissions "Scrubber"	V			V					V			O	V		V	V		O		O	O					O
13	Renewable energy sources on-board	V	V		V				V		O					O	O		O		O	O					O
14	Motor-sailing propulsion	V			V				O				V	V		V	V		V								
15	Shore connection	V			V	V	O		O							V	V	V	O		O	O					O
16	Underwater robot for cleaning of wetted surfaces of operating ship	O			O				O	O			O			O	O		O								O
17	Materials, processes and innovative components for boat construction and repair	V			O							V				O			V								

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III TECHNOLOGIES FOR THE CONTAINMENT OF THE ENVIRONMENTAL IMPACT																											
18	Design for dismantling and disassembling	O	O		O			O	O			V		O		O			O		O					O	
19	Ship waste management	V		V	V				O						V				O								
20	Reduction of vibro-acoustic emissions of ships propulsion systems	V	V		V				O	V				V		V											
21	Use of recyclable / recycled materials for boats construction / vessels equipping	V			V				O			V	O	O	V	V				O	V				O	O	
22	Use of bio-fuels	V			V		V		V	V			V	V		V			V			V					V
23	Closing the life cycle of pleasure boats	O			O			O	O			V						O			O						
24	Ballast Water Management	V		V					V						V												
IV TECHNOLOGIES FOR OFFSHORE																											
25	Floating liquefied natural gas FLNG	O										O		O		O	O				O						
26	Systems for electric energy production through renewal sources in marine environment	V			V				O						V	V					O	O					V
27	Recycling of wind turbine blades	O							O			O									O	O					O

Colours explanation

- = Blue born strategies
- = Green shipbuilding trajectories
- V = Verified
- O = Prospective

EUSAIR COUNTRIES		SLOVENIA	CROATIA	BOSNIA AND HERZEGOVINA	SERBIA	MONTE NE GRO	ALBA NIA	GREECE																		
EUSAIR REGIONS with maritime strategies								Anatoliki Makedo	Attiki	Dytiki Ellada			Kentriki Makedonia													
n°	TECHNOLOGIES AND NEW MATERIALS RELEVANT IN THE FIELD OF GREEN SHIPBUILDING	EUSAIR	Factories of the Future	Mobility	Transport and mobility	Energy and sustainable environment	Metal sector (aluminium, steel)	Wood	Plastic components	Environmental protection & countering climate change	New materials & nanosciences	Metal industry	ICT	New materials - Manufacturing and Industry	Materials - Manufacturing & Industry	Manufacturing technologies	Solid & liquid waste management	Port & logistics	Transporting & storage	Water supply, sewerage, waste management & remediation activities	Hydrogen fuel cells	Green energy	Electronics, electrical appliances and ICT.	Metallurgy, metal products, machinery and equipment	Manufacturing of chemicals and energy	
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22	Use of bio-fuels	V		O	O	O				O								O					O		O	
23	Closing the life cycle of pleasure boats	O								O	O			O	O		O								O	
24	Ballast Water Management	V		V	V		V			V				V	V		O	O	O	O					O	
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