

Act. 2.4 Public events

D 4.2.1 Results and achievements of the project

WP2: Communication Activities

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1. VIRTUAL MID-TERM CONFERENCE

Data: 3rd February 2021

Venues: Virtual Mid-term conference – Public Event via Zoom

Minute – taker: ARIES and University of Split supported by A LOT

Number of participants: 54 (67 registered)

Drive folder link of presentations:

<https://drive.google.com/drive/folders/1D8oQCtH6LXU7zwwZaBOnxUxyaeu0gOeD?usp=sharing>

Table 1: event agenda

Time	Description
9:00 – 9:30	<p>Welcome University of Split Hosting Partner (Katatina ROgulj)</p> <p>ARIES Venezia Giulia LP of DEEPSEA Project (Paolo Marchese)</p> <p>Introduction to the public event (Guido Piccoli – ARIES Venezia Giulia Moderator)</p>
9:30 – 10:45	<p>Expert plenary presentation</p> <p>Session 1) Sustainable mobility: solutions, models, policies for energy sustainability on coastal areas mobility</p> <ul style="list-style-type: none"> E-Mobility: Past, Present, Future (Ms. Michela Longo Politecnico di Milano) Sustainable and Smart Mobility Strategy – the island of Krk (Mr. Vedran Kirinčić University of Rijeka) Nautical platforms % apps: how smart apps collect swarm intelligence and help to establish a sustainable nautical tourism (Mr. Axel Düllberg MySea) <p>Session 2) Nautical tourism: new pattern of individual behaviors, future trends and prospects</p> <ul style="list-style-type: none"> Current situation and trends in the field of nautical tourism in the Republic of Croatia (Ms. Bozena Krce Miočić University of Zadar) Current situation and trends in the field of nautical tourism in Split – Dalmatia County (Mr. Luka Vukić University of Split) Nautical tourism: gateway to the territory (Mr. Marino Masiero Assonautica / Marian di Rodi Garganico) Nautical tourism and marinas: hospitality tool to discover the territories (Mr. Antonio Bufalari Assonautica Romana / Porto Turistico di Vieste) E-Boat sharing for an innovative nautical tourism (Mr. Favio Sola Barcheletteriche Srl)

	<p>Session 3) Yachting and shipyard: the uptake of new technologies and market response</p> <ul style="list-style-type: none"> • Sustainable mobility: trends in boatyard production (Ms. Martina Rossi Mare FVG Technology Cluster) • Sustainable mobility in Short Sea Shipping: trends and decarbonization need, Application of Alternative Fuels and Legislation demands in short sea shipping with overview to marine technologies available in Croatia (Mr. Sandro Vidas Croatian Shipping Association Mare Nostrum) • Salona Group (Mr. Marin Donadini Salona Ltd in Split) • Solar and electric vessels (Mr. Tomislav Uroda iCat d.o.o.)
10:45 – 11:00	Comfort Break and transfer of participants to the selected chatrooms
11:00 – 12:00	<p>Parallel Chatrooms</p> <p>CR1) Sustainable mobility (Guido Piccoli ALOT)</p> <p>CR2) Nautical Tourism (Moderator Katarina Rogulj FGAG)</p> <p>CR3) Yachting and Shipyard (Paolo Marchese ARIES)</p> <p>Discussion on the presentations' topics and definition of a thematic paper</p>
12:00 – 12:45	<p>Back to plenary:</p> <p>Presentation of the Paper framework and outcomes</p> <p>Questions and answers</p>
12:45 – 13:00	Wrap-up and Conclusions

1.1. Introduction

Ms. Katarina Rogulj, Mr. Paolo Marchese and Mr. Guido Piccoli opened the event, introducing the project of “DEEP SEA – Development of Energy Efficiency Mobility services for the Adriatic Marinas”, the main general topic of the event “Diffusion of alternative fuel technologies and sustainable mobility solutions among yachting industry and Marinas of Adriatic” and the agenda of the day, characterized by the presence of an expert plenary presentation (9:30 – 10:45) with 12 interventions, and 3 parallel chatrooms (11:00 – 12:00) with the discussions on the presentations' topics and the definitions of a thematic paper.

1.2. DEEP SEA. Development of Energy Efficiency Mobility for the Adriatic Areas

(please refer to PDF named “00_Marchese_DEEP_SEA. Project introduction”)

Mr. Marchese briefly explained the project, the objectives and the partnerships of DEEP SEA. DEEP SEA is a project that aims to improve the quality, safety and environmental sustainability of marine and coastal transport services and nodes by promoting multimodality in the programme area.

It has started the 01.01-2019 and will end the 30.06.2022, with a total budget of € 2.511.567,50.

DEEP SEA aims to tackle the problems of predominant single-modality land transport (cars), highly polluting maritime transports (motorboats with endothermic engines) and limited integration of mobility services offered in the sector. The project, through the development of a model, wants to support marinas operators (MOs) and PAs in planning and implementing sustainable mobility. Planning will increase the offer of energy efficient mobility services, mainly e-mobility and shared mobility, and will lead marinas to tackle the increasing demand of ECS for e-boats.

The project, that involves 4 areas (Venezia Giulia, Krk Island, Province of Foggia, Solta Island) and 11 specific locations, involved partners from four main sectors:

- Universities: University of Rijeka (Faculty of Maritime Studies); University of Split (Faculty of Civil Engineering, Architecture and Geodes); University of Trieste (Department of Engineering and Architecture).
- Public Administrations: Municipalities of Malinska - Dubašnica (Krk Isl); Province of Foggia; RERA S.D. development Agency of Split-Dalmatia County.
- Chambers of Commerce: Aries – Chamber of Commerce Venezia Giulia; Chamber of Commerce of Foggia.
- Marinas and Public Utility: H.L. Dvorac (Solta isl.); Ponikve Eco Island (Krk isl.).

1.3. DEEP SEA. Development of Energy Efficiency Mobility service for the Adriatic Areas. Diffusion of alternative fuel technologies and sustainable mobility solutions among yachting industry and Marinas of Adriatic

(please refer to PDF named “00_Piccoli_DEEP SEA. Development of Energy Efficiency Mobility services for the Adriatic Marinas”)

Mr. Piccoli introduced the element of HUB as strategic concept on which reflect into the environment of Marinas and Nautical Tourism. Hub as a network/environment between inland and sea, between onshore and offshore mobility and between mobility and energy. A concept that involves the entire Adriatic Sea in North-South and East-West connections, as a journey between new technologies (Sharing and E-bikes, micro-grid, E-boats, Sharing and E-cars) along a common culture and a nature to be preserved.

1.4. Expert plenary presentation

The 12 plenary presentations followed the structure of the 3 main topics of the chatrooms:

- Session 1) 3 presentations on “Sustainable mobility: solutions, models, policies for energy sustainability on coastal areas mobility”;
- Session 2) 5 presentations on “Nautical tourism: new pattern of individual behaviors, future trends and prospects”;
- Session 3) 4 presentations on “Yachting and shipyard: the uptake of new technologies and market response”.

1.4.1. E-Mobility: Past, Present, Future

(please refer to PDF named “01_Longo_E Mobility. Past, Present, Future)

Speaker: Michela Longo: Politecnico di Milano

Ms. Longo intervention focused on the historical process of the E-mobility:

- Past: first electric vehicles appeared in the first half of 19th Century, even before the endothermic engines;
- Present: underlying the role of E-mobility into the larger system of Smart Cities and the needs for its implementation: a concrete planning of smart infrastructures and grid to offer a well-structured network;
- Future: the new challenges of E-Mobility, towards the direction of shared E-Mobility, Smart Roads and the concept of Mobility as a service for society (storage and re-use of energy).

1.4.2. Sustainable mobility Strategy: the island of Krk

(please refer to PDF named “02_Kirincic_Sustainable and Smart Mobility Strategy. The island of KRK”)

Speaker: Vedran Kiricic. University of Rijeka, Croatia

Mr. Kirincic explained the 2030 Sustainable and Smart Mobility Strategy developed for the Island of Krk, which aims is to move towards zero GHG emissions and to upgrade the percentage of Energy saving, investing in renewable sources. He focused on the main challenges, barriers and actions that the 2030 strategy is tackling and proposing.

The main challenges and barriers are:

- Lack of information and proper education;
- Purchasing of new EVs;
- Poor availability of services compared to ICEVs;
- Range anxiety;
- Limited experience and distrust of new technologies;
- Seasonality of touristic traffic;
- Habits of residents to classic means of transport;
- Demographic trends (population decline, outflow of young highly educated people);
- Turbulent and unpredictable environment;
- Variable legislation.

The main actions proposed are:

- Definition of strategic documents to create a long-term vision;
- Increase of charging stations, number of EVs, bike sharing system;
- Development of mobile app for the entire island of Krk;
- Analysis and monitoring through models and simulations to integrate renewable energy sources to support the increased electricity demand;
- Invest on a continuous educational and research center through workshops, promotional activities.

1.4.3. Nautical platforms and apps: how smart apps connect swarm intelligence and help to establish a sustainable nautical tourism

(please refer to PDF named "03_Dullberg_Nautical platforms & apps")

Speaker: Axel Düllberg. MySea

Mr. Düllberg presented the app MySea. The vision the app wants to achieve is to offer an interconnected platform where boating time is perceived as leisure time, and information must be easily accessible through platforms and apps.

MySea aims to make easy accessibility of online information both to strength nautical tourism and to make boating sustainable in the long-term.

Today MySea is a nautical community with more than 150.000 registered users and it offers a complete digital cruising guide with a wide range of information such as berth booking, tickets for Croatian Nature and National Parks, waste collection stations.

1.4.4. Current situation and trends in the fields of nautical tourism in the Republic of Croatia

(please refer to PDF named "04_Krce Miočić_Nautical Tourism")

Speaker: Božena Krce Miočić. University of Zadar, Croatia

Ms. Miočić from the University of Zadar, where in 1974 was founded the first department of nautical tourism, introduces through DATA the geographical distribution, type of ports (anchorage, mooring, marina), number of boats (vessel, yacht) in the Croatian territory and she underlined the problems that afflict the Croatian territory, among which the structure of berth lengths, the seasonality and the average age of the boats are the most relevant.

Ms. Miočić focused on good practices and the examples of sustainability increase on marinas, showing the case of the Blue Flag in Croatia (27 marinas in 2019), as example of the overall level of awareness of preserving and caring for the environment, and the failure example of bike sharing, deemed as financial failures.

According to Ms. Miočić what is necessary is an overall vision that is able to move towards the concept of Green Marinas, where there is a real care both for environment and for the local community, a long-term planning to attract responsible customers, realize a competitive advantage and reduce pollution and costs.

1.4.5. Current situation and trends in the field of nautical tourism in Split – Dalmatia County

(please refer to PDF named "05_Vukić_Current situation and trends in the field of nautical tourism in Split Dalmatia County")

Speaker: Luka Vukić. University of Split, Croatia

Mr. Vukić presented the vision on sustainable mobility in marinas of Split Dalmatia County and the main criticalities and barriers in the implementation of energy efficient solutions, that came out from a survey conducted in January 2021 on a sample of 16 marinas.

Main criticalities and barriers are summarized in:

- Impact of Covid-19 that reduced the business activities approximately of 50/60 %
- Impacts of major forces: unfavorable market trends, financial crisis, epidemics, climate change
- Low level of scientific research project focused on sustainable mobility.

The vision Mr. Vukić focused on three main aspects:

- Environmental monitoring: air quality, water and noise indicators, climate change, intensification of scientific research;
- External effects: understand market trends, analyze stakeholders, obtain finance source, increase cooperation;
- Energy efficient mobility services: use of environmentally friendly solutions, innovations and technology integrations (ICT based services).

A set of planned projects and activities is defined to move towards the achievement of the vision:

- Development, promotion and implementation of transport services with low or no negative effects;
- Use of new technologies and energy efficient services;
- Monitoring and continuous analysis of impacts and trends;
- Increase the networking and educational system.

1.4.6. Nautical tourism: a gateway to the territory Nautical tourism: a gateway to the territory

(please refer to PDF named "06_Masiero_Nautical Tourism. Access Gate to the territory")

Speaker: Marino Masiero. Assonautica/Marina di Rodi Garganico

Mr. Masiero explained Porti di Puglia, a project born from the study group of the Assonautica System Conference (Pescara 2018) which aim is to create a network of ports, bring together the marinas (4000 berths in Puglia) with the aims to:

- Promote cultural, naturalistic and flavors of the territory;
- Develop a multi-system promotional touristic model of port tourism and improve the quality standards, offering the possibility to have boat holiday, be part of organized itineraries and discover both the coastal and the inland territory;
- Reconnect the ports to the inland territory, reconsidering ports as the gates of access to the territory from the sea;

- Develop “pilot port” to identify specific criticalities, studying the equipment and monitor the trends;
- Establish a fund for the startup and maintenance of the network over three years;
- Define a memorandum of understanding between Puglia Region, Assonautica Italiana, Nautical District to improve the Quality Marine brand certification (created in 2014 by Assonautica);
- Deliver promotional activities through a magazine.

1.4.7. Nautical tourism and marinas: hospitality tools to discover the territories

(please refer to PDF named “07_Bufalari_Nautical Tourism and Marinas. Hospitality tools to discover the territories”)

Speaker: Antonio Bufalari. Assonautica Romana/Porto Turistico di Vieste

Mr. Bufalari focused during his intervention on the recent transformations that marinas have undergone in recent years, shifting from infrastructures for the parking of boats to a touristic oriented port, developing a new port concept, where Marina-square is nowadays considered a new model of urban development to bring the sea closer to the territory and to become a new gate to the surrounding areas.

The main criticalities that have been identified are related to the:

- Distrust between economic operators;
- Administrative problems, due to a high fragmented and uncertain legislation.

Mr. Bufalari finally underlined that the key element towards this new marina’s future is the interaction and the networking between the key stakeholders involved: marinas, municipalities, touristic, cultural, economic operators. This network of cooperation can bring the possibility to develop an increasingly zero impact way, propose best practices and tools to facilitate the ecological use of boats and give origin to training projects in coastal areas for the development of training centers and the involvement of schools.

1.4.8. Barchelettriche. E-Boat sharing for an innovative nautical tourism

(please refer to PDF named “08_Sola_EBoat Sharing for an innovative nautical tourism”)

Speaker: Fabio Sola. Barchelettriche Srl

Mr. Sola presented the project he founded, BARCHELETTTRICHE, which main aims is to develop a system of:

- E-boat accessible for everyone one;
- E-boat sharing;

BARCHELETTICHE aims to be part to the electric mobility revolution that is growing into the international environment, towards a zero-emission navigation system.

Mr. Sola presented the new model of E-boat they proposal, made in Italy, able to carry up 8 people and idea for slow zero-emission tourism. It can be used without license and it is accessible to disabled people, strollers and bicycles, guarantying an autonomy up to 8 hours.

Parallel to the new model of boat, Mr. Sola presented the system of E-Boat sharing, following the trends of car, bike, and scooter sharing. Recreational boating, according to Mr. Sola will be the first to be totally transformed into electric and will be managed through a system of IOT technology and apps. This important shift towards an E-system will be an opportunity for rental botas, marinas and tourist companies, but also for municipalities, camping, hotels, energy companies, resorts and guest houses.

1.4.9. Sustainable mobility: trends in boatbuilding and leisure boating

(please refer to PDF named "09_Rossi_Sustainable Mobility. Trends in boatbuilding and leisure boating")

Speaker: Martina Rossi. Mare FVG Technoloy Cluster

Ms. Rossi presented the structure of MARE FVG, a no-profit public-private consortium of maritime stakeholders established in 2009.

She focused on the road maps 2021-2017 towards a sustainable waterborne mobility vision, considering a national level and a local level (not yet approved):

- Green and digital transitions concerning vessel and infrastructures (national) and green mobility and smart mobility (local level);
- Resilience and competitiveness concerning the concept of sea made in Italy and sea made in FVG.

A series of different activities have been done and are planned for the future, related to the electric transition of nautical activities, the entrance of 4 new Italian business ideas, increase of digital services, transfer dual fuel system from tracks to boats. These should be supported, according to Ms. Rossi, by a strong network of shared knowledge, use of funds and contaminations from other mobility sectors.

Parallely she underlined the constraints, and the oppositions between:

- Local fragility vs global advancements;
- Social acceptance and preconceptions;
- Decision making time vs market trends;
- Temporary networks;
- Attractivity of the area;
- Established value chains;
- High-level innovation ecosystem in terms of research, industry, training.

1.4.10. Sustainable mobility in Short Sea Shipping: trends and decarbonization need, applications of alternative fuels and legislation demands in short sea shipping with overview to marine technologies available in Croatia

(please refer to PDF named “10_Vidas_Sustainable mobility in Short Sea Shipping”)

Speaker: Sandro Vidas. Croatian Shipping Association Mare Nostrum

Mr. Vidas presented the Croatian Shipowners’ Association Mare Nostrum and the IMO strategy for major reduction in GHG emissions from shipping. The strategy is based on:

- At least a 40 % reduction in carbon intensity (CO₂ emissions relative to the transport work) by 2030 and a 70 % reduction by 2050;
- At least a 50 % reduction of GHG emission from international shipping by 2050.

He also showed the roadmap towards 2030, in which he underlined the 2019 Green Deal, the 2020 EU MRV Regulation 2015/757, the 2022 EU Emission Trading Scheme, The Ballast Water Management Convention as important and fundamental steps towards a sustainable mobility in sea shipping and decarbonization processes.

Mr. Vidas lastly focuses on the EU Waterborne Transport, an industry-oriented Technology Platform to establish a continuous dialogue between all waterborne stakeholders: shipbuilders, shipowners, maritime equipment manufacturers, infrastructure and service providers, research institutes, and university, EU institutions and Member States. The EU Waterborne is structures around 6 main concepts: Increasing use of Sustainable Alternative fuels; Electrification of waterborne transport; Increasing energy efficiency; Design and Retrofit solutions for the new and existing fleet; Digital Green to improve efficiency; Sustainable bunkering and charging solutions for climate neutral ships. According to these objectives one of the most recent opportunity to move towards emissions’ reductions and sustainable mobility is the use of Hydrogen as ships’ fuel. Mr. Vidas explained the case of Ammonia, a hydrogen-based fuel that is suitable for larger ships and vessels and can be used in power stations to produce electricity without carbon emissions.

1.4.11. Salona Group

(please refer to PDF named "11_Donadini_Electric propulsion")

Speaker: Marin Donadini. Salona Group Ltd in Split

Mr. Donadini briefly presented the structure of Salona Yachts, founded in 2002 and producer till now of 441 sailing boats (from 33ft to 46 ft).

Following the prediction of future trends (2019-2025) towards the reduction of diesel engine and the increase of electric motor, Mr. Donadini focuses on the three main typologies of resources that can be used to provide a sustainable E-boats mobility:

- Hydrogeneration. Twin electric motors on a monohull with a battery capacity of 30.4 kWh and a charging time while sailing of 20 hours;
- Solar panels (1 kW or more) installed on the deck instead of teak or anti-slip;
- Shore power (16 A shore power): 6 hours charging time for 30kWh battery back.

1.4.12. Solar and electric vessels

(please refer to PDF named "12_Uroda_Designing Future")

Speaker: Tomislav Uroda. iCat d.o.o.

Mr. Uroda described the chronological development of iCat (concerning the group, consulting and the shipyard), from the creation (2007-2011) up to now, underlying the important and awarded steps towards a sustainable development and production of E-boats. iCat aims to run parallel to the future international and European goals of the EU Green Deal, towards zero pollution, smarter transport, investments and incentives, better quality of life, international business through partnerships with local companies.

Mr. Uroda presented 3 innovative typologies of boats:

- SolarCat (from 2021). The first self-sustainable solar vessel in the world, based on: solar energy, permanent magnet electric engines, LiFePO4 batteries, Smart chargers, on-line position and batteries control. It has a full day autonomy and a versatile deck that can be rearranged in 30 minutes and customized for a wide range of activities (passenger transport, sport, education, party);
- ICat fast electric ferry (from 2023). Built in carbon composite and designed as fast commuter in public transportation, with power PM electric engines, LTO batteries, fast chargers and strong reduction of noise, vibrations and pollution;

- JumboCat (from 2026). A concept model (in collaboration with the University of Zagreb) where lithium batteries will be combined.

1.5. Chatrooms: questions in each interactive session

1.5.1. Session 1) Sustainable mobility: solutions, models, policies for energy sustainability on coastal areas mobility

Critical issues: Which barriers and limits could stop you in achieving the vision (diffusion of sustainable mobility in the Marina & Nautica sector)?

Main critical issues identified can be related to:

- Lack of planning. Municipalities and PA are not always able to have long-term planning/strategies and to use correctly and efficiently DATA
- Lack of communication and networking. In terms of economic and social relationships between PA, privates and citizens, in terms of permissions, in terms of spread of information to the community (role of media, newspaper and not transparent information)
- Lack of DATA and digital divide
- Lack of knowledge. Inability in understanding people needs and behavior, and how new technologies, sustainable mobility can affect the spaces people use.

Common vision: Where we want to go and why in the long-run (5 – 10 years).

- HUB as emblematic element and concept for sustainable mobility by correct communication and long terms consistent planning form PA. Opportunity for a fluent and efficient flows od DATA, knowledge, cooperation and networking between stakeholders.

Objectives: Which are the 3 main objectives you want to achieve and what are the targets determined? Please include the type of stakeholder in your answer.

- To foster Awareness – sharing knowledge to save energy

- To develop an efficient and proper planning. In terms of mobility planning: bikes, busses, cars, boats; be able to be closer to the city and to vibrant spaces
- To enhance PA and citizen cooperation and stakeholder's engagement

Main actions: What are concrete actions and measures to achieve the objectives, in terms of

Public and private partnership projects:

- To create, scale and improve HUB in airport and railways station, and places where there are people interconnections and exchanges: understand the principal expectation of the citizens
- Cooperation between all the stakeholders involved both at macro and micro scale of relationships

Policies or best practices needed to be transferred:

- Pilot projects/events to promote culture
- Try to experience promotion
- PA as first promoter and ambassador

Need, solutions or opportunities for e-mobility of and on-shore?

- Analyze the type of vehicle of users: e-boat, e-bike, scooter, e-cars
- Sharing knowledge, creating forum, doing surveys and questionnaires
- Climate changes adaptation
- Use new technology to share and discuss, organize repository of contents

1.5.2. Session 2) Nautical tourism: new pattern of individual behaviors, future trends and prospects

Critical issues: Which barriers and limits could stop you in achieving the vision (diffusion of sustainable mobility in the Marina & Nautica sector)?

- Main critical issues identified can be related to:

- Direct effects of COVID-19 pandemics on nautical tourism:
- boats allow to feel safe in this situation.
- companies have received a lot of orders (san Lorenzo, Azimut, Benetti) much more than previous years, but they are not even able to satisfy the demand. This trend reflects the need of people (of course a niche that can afford a boat). Parallely also the demand for renting boats last year was very high and 2021 is following the same trend.
- expectations of very quick changes and opportunity for the nautical sector, due to a high increase in demand
- Low level of collaboration with research regarding sustainable mobility and revenue distribution (70% of revenues in Dalmatia from boat rental, this share should be extended to other services including sustainable solutions).
- Inability to adapt rapidly to new changes. It is influenced by: the geographical position (Northern part of Adriatic has much more advantage as close to Germany and Austria and majority of guests came by car); the presence of too small infrastructure to support car traffic both in marinas and in cities.; the ability to deal with new technologies, safety, security.
- Decrease in economic welfare is also a great barrier. People has less money than before and this affects the demand.
- Low level of security and safety, especially fires, mostly connected to electric installations, and stealing

Common vision: Where we want to go and why in the long-run (5 – 10 years).

- Develop sustainable and safety infrastructure (e-boats, chargers, marinas) in parallel to the changes that are happening in the car sectors, able to answer to the demand that ranges from big yachts to small boats. Support the change towards sustainable mobility with a correct, clear and transparent communication that is crucial to support tourism.

Objectives: Which are the 3 main objectives you want to achieve and what are the targets determined? Please include the type of stakeholder in your answer.

- To boost incentives and define an efficient legal framework to: increase the number of project proposals for alternative energy and solutions; to manage funds to buy e-boats; to offer a wide range of boat typology (in economic term), to propose a long-term development and goals for the industry
- To monitor the environmental factors (noise, congestion, water, etc) and the impacts
- To reach high level of security and safety. Boats need to use the same technology that cars are using in order to be safe and also same recharging technology.

- To develop a E-Boat sharing system accessible to all users

Main actions: What are concrete actions and measures to achieve the objectives, in terms of Public and private partnership projects:

- Pump station at the Adriatic marinas

Policies or best practices needed to be transferred:

- Improve education of customers and staff on technology use, maintenance, etc...

Need, solutions or opportunities for e-mobility of and on-shore?

- Formalize a common standard of safety requirements. Long development in automotive industry must be adopted by boats to avoid problems. In Italy for example they need rules in the market, otherwise they cannot go further with more demand.
- Transparent information and cooperation

1.5.3. Session 3) Yachting and shipyard: the uptake of new technologies and market response

Critical issues: Which barriers and limits could stop you in achieving the vision (diffusion of sustainable mobility in the Marina & Nautica sector)?

Main critical issues identified can be related to:

- Regulations (regarding technical aspects such as retrofitting, navigation and safety issues). Non-updated regulations and policies hamper the uptake and full implementation of new technologies in sustainable mobility.
- Return on investment is not clearly defined.
- Social acceptance and preconceptions. Vessel owners and operators are skeptical about the need of turning to sustainable/alternative fuel vessels, since incentives/subsidies are lacking and there is no mandatory requirement.
- Lack of awareness concerning the available technologies and the benefits they are able to produce in environmental, social and economic terms. Often marinas experience insufficient energy and storage capacity, and this could further deter e-vessels diffusion.

Common vision: Where we want to go and why in the long-run (5 – 10 years).

To gradually introduce alternative fuels across the entire value chain (vessels, ports, end users), although 10 years might not be enough to achieve relevant results. Technologies are known and they just need to be tested at a wider scale, in order to prove their marketability.

- Shipyard and Yachting should move towards a circular economy model, considering environmental, economic and social aspects, i.e.
- use of alternative fuel vessels/boats
- sustainable materials for boat construction
- energy efficiency in manufacturing
- data-driven life cycle design, etc.
- advanced automation and domotic
- Electric transition of leisure boating: marinas as energetic hubs.

Objectives: Which are the 3 main objectives you want to achieve and what are the targets determined? Please include the type of stakeholder in your answer.

- To foster lobbying activity, in order to achieve higher commitment of Public Authorities, as they are the main actors supporting the introduction of new and “leaner” regulations and procedures.
- To test new technologies at a wider scale, to ensure their scalability and marketability.
- To introduce ad-hoc financial schemes, able to support the transition to sustainable transport.

Main actions: What are concrete actions and measures to achieve the objectives, in terms of Public and private partnership projects:

- Besides establishing public-private partnerships, it would be important for local Public Authorities to demonstrate high commitment and become direct buyers of waterborne mobility services and technologies.

Need, solutions or opportunities for e-mobility of and on-shore?

- New and “leaner” regulations
- Introduction of financing schemes reserved to electric/alternative fuel mobility (e.g. ad-hoc funds from the recovery plan) to attract new investors (public and private).
- Boosting research and education in this sector. New technologies need to be implemented as pilot actions in order to prove their marketability and scalability, involving the wider community of actors (integration of different systems for energy

production/provision, sustainable tourism, connections/cooperation with other marinas, etc.)

- Lobbying to ensure political commitment.
- Development of permanent networks, thus avoiding overlapping and fragmentation of opportunities.

2. FINAL CONFERENCE IN TRIESTE

Data: 23rd November 2022

Venue: Trieste, Hotel Savoia Excelsior Palace, Riva Mandracchio 4 (with some participants via zoom)

Minute – taker: ARIES Scarl

Number of participants: 47 in presence + 5 via zoom

Drive folder link of presentations:

https://drive.google.com/drive/folders/1kiHyWfAm95qYObrvsLfa1zFlb6AvVY9G?usp=share_link

Table 2: event agenda

Time	Description
9:15 – 10:00	<p>Welcome Greetings</p> <ul style="list-style-type: none"> • Antonio Paoletti, President of Chamber of Commerce Venezia Giulia - Aries • Fabio Scoccimarro, Assessor of Environment, energy and sustainable development, Autohononomous Region FVG • Hrvoje Grancarić, Managing Authority/Technical Secretariat • Roberto Perocchio, President of Italian Assomarinas
10:00 – 10:45	<p>DEEP-SEA Project</p> <ul style="list-style-type: none"> • DEEPSEA Project in a nutshell – Guido Piccoli, ALOT Srl, ARIES Trieste • DEEPSEA Nautical marinas framework analysis and investment plans – WP3 Leader Uni Rijeka, Adrijana Agatić • DEEPSEA Pilots: small technological investments, equipment installations and new services start-up – WP4 Leader Uni Split, Katarina Rogulj <p>DEEPSEA Guidelines for the energy efficient mobility in the Adriatic marinas and its transferability – Guido Piccoli, ALOT Srl, ARIES Trieste</p>
10:45 – 11:00	Coffee Break and press conference

<p>11:00 – 13:20</p>	<p>11:00 – 11:30 Policy Panel</p> <p>Policies for the promotion of Electric mobility and energetic transition</p> <p>Moderator: Alessandro Massi Pavan, University of Trieste</p> <p>Speakers: Romeo Danielis, University of Trieste; Hrvoje Grancarić, Interreg Italy Croatia program, Technical Secretariat</p> <p>11.25 – 12:25 Technological Panel</p> <p>State of the art in nautical electric mobility technologies</p> <p>Moderator: Raphaela Guppy, Mare FVG</p> <p>Speakers: Fabio Morea (Area Science Park), Serena Bertagna (University of Trieste, Department of Engineering and Architecture); Marino Masiero (Italian Assonautica, Vice president); Eduard Vivoda (Riteh d.o.o.), Marin Donadini and Jerko Bačić (Salona Yachts); Tomislav Uroda (iCat, managing director)</p> <p>12:25 – 13:20 Tourism Panel</p> <p>State of the art in the use of nautical electric mobility</p> <p>Moderator: Michele Solari, Italian Assonautica (representative for electric water mobility); founder of Barchelettriche Srl</p> <p>Speakers: Marino Masiero (Italian Assonautica, Vice president); Marco Da Re (Assomarinas), Maurizio Spoto (Marine Protected Area of Miramare, director); Ivan Kuret (H.L. Dvorac, procurator; head and member of hoteliers and nautical tourism Associations inside Croatian Chamber of Commerce)</p>
<p>13:20 – 13:30</p>	<p>Wrap-up and Conclusions</p>

2.1. Introduction

Mr. Antonio Paoletti has remarked the importance of the project as a contribution for the sustainability of the whole port area (with a special regard to the ongoing project for electrification of the piers also for cruise ships) and of the marinas as tourist destination. Sustainability must be related both to tourism and to mobility in a broader view, also with other sectors of blue economy (e.g. fishery). Mr Fabio Scocimarro, FVG regional assessor to environment, energy and sustainability, has appreciated and highlighted the necessity of implementing and providing incentives for concrete actions for the sustainability (underlining the high commitment of Region FVG), in view of achieving electrification and other lower environmental impact forms of mobility and tourism (e.g. e bikes, public and private vehicles).

Mr Hvroje Grancarić has underlined the role of the project in the framework of the objectives set by the Program. Mr Roberto Perocchio, president of Italian Assomarinas, has undelined the committment and the activities of itlian marinas in view of implementing and funding sustainable and more efficient mobilities forms (e.g. electirc and hydrogen), allowing a better use of lower impact energies.

2.2. DEEP SEA project: Development of Energy Efficiency Mobility for the Adriatic Areas

Mr. Guido Piccoli has described the briefly explained the project, the objectives and the partnerships of DEEP SEA. DEEP SEA is a project that aims to improve the quality, safety and environmental sustainability of marine and coastal transport services and nodes by promoting multimodality in the Program area.

The project has involved 4 areas (Venezia Giulia, Krk Island, Province of Foggia, Solta Island) and 11 specific locations, involved partners from four main sectors:

- Universities: University of Rijeka (Faculty of Maritime Studies); University of Split (Faculty of Civil Engineering, Architecture and Geodes); University of Trieste (Department of Engineering and Architecture).
- Public Administrations: Municipalities of Malinska - Dubašnica (Krk Isl); Province of Foggia; RERA S.D. development Agency of Split-Dalmatia County.
- Chambers of Commerce: Aries – Chamber of Commerce Venezia Giulia; Chamber of Commerce of Foggia.
- Marinas and Public Utility: H.L. Dvorac (Šolta isl.); Ponikve Eco Island (Krk isl.).

The presentation has regarded the achievement of the main objectives of the project (defining a model to improve the sustainable mobility of passengers and tourists in the Adriatic marinas; ensuring the transferability of DEEP-SEA results and outputs during and after the project life-time). A focus has been dedicated to activities carried out (Document of the Guidelines for Elaboration of installations and investment plans related to mobility services; ICT development of the DEEP-SEA Application and Services CARD; Signature of MoUs; Investment plans).

Adrijana Agatić (University of Rijeka) has described the results of the Wp3 activities, concerning the Framework and planning for the short-term implementation of pilot actions and for the long-term development and implementation of energy-efficient sustainable mobility services in the Adriatic marinas. She has outlined the multidisciplinary approach, combining scientific knowledge and practice, carried out by including planning levels (Municipalities and other PAs), scientific centers (Universities), with investment links to private sectors (CoC and MOs).

Katarina Rogulj (University of Split) has described the activities implemented within the WP4, on the single partners and sites, remarkign the aforementioned project results and transferability thereof:

- **Ponikve** on Island of Krk: Installation of a photovoltaic plant, of a charging station for electric vehicles and a system for renting electric bicycles and scooters in the city of Krk; installation of a charging station for electric vehicles and ships in municipality of Omišalj, installation of a charging station for electric vehicles in Vrbnik;
- Municipality of **Malinska-Dubašnica**: installation of 2 ECS : 1 combined for e-cars and 1 mooring for e-boats; 1 ECS for e-cars; on two locations; installation of 1 rack with electric and muscular bicycle; charging system for e-bikes: 8 charging stations / stands: 4 for electric bicycles compatible with the already existing charging system on the entire island of Krk and 4 for the muscular bikes; installation of 1 Micro-grid system: photovoltaic plant 35 kW on the roof of the Kindergarten in Malinska; start up of 1 e-car sharing service for Malinska Area.
- Pilot site **Maslinica-Šolta**: installation of 1 ECS for e-vehicles and 1 ECS for e-boats; startup of 1 e-car mobility service for tourist transport; installation of 1 rack with electric bicycles for sharing system and at least 6 e-bikes including a charging system for e-bikes and a rental software; 1 Microgrid system.

2.3. Workshop

The workshop has been composed of 3 panels:

- 11:00 – 11:30 Policy Panel - Policies for the promotion of Electric mobility and energetic transition
- 11.25 – 12:25 Technological Panel - State of the art in nautical electric mobility technologies
- 12:25 – 13:20 Tourism Panel - State of the art in the use of nautical electric mobility

2.4. Policy panel

Policies for the promotion of Electric mobility and energetic transition

Moderator: Alessandro Massi Pavan (University of Trieste)

Speakers: Romeo Danielis (University of Trieste); Hrvoje Grancarić; Project manager; JTS Program Italy Croatia

Professor Alessandro Pavan has described the present critical situation of the main energy production sources (nuclear; hydro-power, natural gas). Emissions and Italian energetic balance with the high inefficiency of the system. The way is shown by DeepSea project consists of incrementing renewable energy and smart energy network: market investments share in the renewable sector is actually 40%. A more intense effort for using renewable energy must be displayed especially in transport sector.

Professor Romeo Danielis has focused on the global high increase of plug-in electric passenger cars (in 2022 more than 10 millions, of which 6 in China). A lower percentage is shown by Italy, in great delay compared to EU countries such as e.g. Germany and Austria. Italian policy of incentives has focused on funding the purchase of private e-cars (and not those purchased by companies). The choice has not taken into consideration the polluting emissions of cars (e.g., a different choice has been made by Norway, setting higher costs for more polluting vehicles). It is foreseeable that e-mobility will anyway increase, depending on driving forces such as more stringent EU emissions standards, China's competitiveness, increasing costs of energy.

Mr Hrvoje Grancarić has described the results achieved by the Program Italy Croatia in programming period 2014 – 2020, in the frameworks of Priority Axis 4 (Maritime Transport), with 5 standard+, 10 standard, 3 strategic projects and 1 cluster. He has furthermore describe the cohesion policies objectives of the new programming period 2021 – 2027 (good connectivity, smart and sustainable transformation). In the new 2021 – 2027 Program, Priority 3 envisages the Sustainable maritime and multimodal transport. Expected results consist in integrated and sustainable transport connections related to ports, increase the efficiency and quality of maritime transport. The Program encourages the synergies with maritime and multimodal transports and funds, such as the capitalization of the results of past projects.

2.5. Technological Panel

State of the art in nautical electric mobility technologies

Moderator: Raphaela Gutty, Mare FVG

Speakers: Fabio Morea (Area Science Park), Serena Bertagna (University of Trieste, Department of Engineering and Architecture); Marino Masiero (Italian Assonautica, Vice president); Eduard Vivoda (Riteh d.o.o.), Marin Donadini and Jerko Bačić (Salona Yachts); Tomislav Uroda (iCat, managing director)

Raphaela Gutty has remarked the upgrading of the S3 FVG to enhance the smart specialization area, with an highest importance reserved to sustainable born mobility and land connections transport with ports, with a special hint to environment sustainability and digitalization. The new

trajectories refer to sustainable mobility, no longer seen just as e-mobility, but use of innovative and sustainable materials and innovative processes.

Fabio Morea has described the challenges connected to the new ways of production, transport and accumulation of energy (with especial care to be given to this element), with regard to their costs.

Prof. Serena Bertagna has described the projects in the frameworks of projects whose objectives are coast mobility with low emission in Trieste area. This regards vessels with low emission of pollutants and noises. Circular economy has a great importance in this sector, especially regarding propulsion of boats (low emission fuels). The use of some fuels allows a low emission, without considering also whether they are rated at circular fuels (e.g. hydrogen: it depends how it is produced, if using traditional or low impact sources, or electivity, with regard to batteries).

Marino Masiero, vice President of Italian Assonautica, has given some key information about the association guidelines regarding e mobility on touristic ports. Italy and Croatia have common paths to be developed in the use of renewable sources, such as tides, wind and waves. The possibility is to exploit these sources with specific micro plants, especially Eolic.

Eduard Vivoda (Riteh Doo) has spoken of the investments in matter of sustainable mobility in the field and the marine localities, with an optical of wider investments and an eye to the conditions posed from the law for their feasibility.

Marin Donadini (Salona Yachts), producers of boats with low environmental impact, spoke about the problems related to the use of materials and technologies and the recycling of materials. He called for the use of innovative technologies and materials, including in dedicated projects.

Tomislav Uroda (iCat), manufacturer of electric catamarans and innovative services, has described the green path of his company and the development of its products, characterized by collaboration with universities and public institutions. The result is the production of a boat for passengers with a solar energy source with low energy consumption and autonomy, in which innovative materials (such as carbon composites) and Ai based technologies have also been used.

2.6. Tourism Panel

State of the art in the use of nautical electric mobility

Moderator: Michele Solari, Italian Assonautica (representative for electric water mobility); founder of Barchelettriche Srl

Speakers: Marino Masiero (Italian Assonautica, Vice president); Marco Da Re (Assomarinas), Maurizio Spoto (Marine Protected Area of Miramare, director); Ivan Kuret (H.L. Dvorac, procurator; head and member of hoteliers and nautical tourism Associations inside Croatian Chamber of Commerce)

Mr. Michele Solari highlighted the regulatory barriers and the absence of incentives for electric mobility on water. It has given a worldwide overview on electric nautical mobility and with the use of elements of aeronautical technology, with regard to ferries also with high drilling capacity of passengers and smaller boats (e.g. displacement boats and full electric gliders). He also examined smart sharing and online booking of boats, scooters and electric bicycles).

Mr Marino Masiero has evidenced as the electric mobility on pleasure boats cannot pull down, for the quantity, the total quota the emissions. But it can lead by example with innovative solutions.

Mr Marco Da Re (Assomarinas) has examined the causes of the lacked adaptation of the marine ones to the electric mobility, remembering the role not active in the implementation of technologies that make head to the shipbuilding one. Nevertheless, the sad ports are committed to the environment, including dredging, energy management and waste management.

Mr Maurizio Spoto (director of the Marine Protected Area of Miramare - Trieste), has exposed the use of the Flabellina, totally electric boat as an example for the decrease of the emissions from CO₂ and acoustic, is from the tourist point of view that didactic (in line with the purpose of the reserve).

Mr Ivan Kuret, Director of Marina Martinis Marchi of Šolta (project partner), believes that the project has been an opportunity to get in touch with design and product innovations. The specificity of nautical tourism in Croatia is given by the fact that the movement of people is higher than that, although high of boats. So guests expect always new and high quality services. Electric propulsion can solve the problem of mobility: however, it must be taken into account the state of mobility, with a large number of charter nautical services. The final question is why this mobility has not been more widely used: it is a question that responds to an expectation that is not only of boat owners, but also of tourists.

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