

SUPAIR
SUSTAINABLE PORTS
IN THE ADRIATIC-IONIAN REGION

Report on internal capacity building workshop

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WPT2

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Deliverable description: The deliverable describes the implementation of the internal capacity building workshop which took place on the 12th of June 2018 at the premises of the Piraeus Port Authority focusing on the 'Guidelines for Sustainable and Low-carbon Ports'. The aim was to ensure that all port authorities participating in the project will implement the same methodology and approach for designing and developing their action plans. The deliverable comprises of the workshop agenda and the material that were used during the workshop, summarizes the main points of the relevant discussion and reports on the key outcomes and findings, which are expected to significantly support the successful transferability of the Guidelines in other ports within the ADRION region.

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1. Workshop organisation and agenda

The internal capacity building workshop took place on the 12th of June 2018 at the premises of the Port of Piraeus in conjunction with the 2nd project meeting which was held the following day. The aim of the workshop was to present in more detail the ‘Guidelines for Sustainable and Low-Carbon Ports’ which were devised by VIU, following an internal quality review by the other two technical partners of the project (i.e. CERTH and AREA), and discuss with the SUPAIR port authorities any potential gaps or necessary changes in the step-by-step approach that was proposed, resolving also any uncertainties and providing clarifications on specific issues for validating the Guidelines and ensuring their easy and successful transferability in other ports within the ADRIION region.

The aforementioned objectives were taken into careful consideration when structuring the agenda of the workshop (Table 1) so that all relevant discussions could be best facilitated and all expected outcomes could be successfully achieved.

Table 1: Agenda of the internal capacity building workshop

TIME	TALK TITLE	SPEAKER
13:30	Welcome and review of workshop agenda	Dimitrios Spyrou - PPA Maria Boile – CERTH-HIT
13:45	WPT1 - Progress and deliverables Focus groups implementation - General overview DT1.1.1 – Report on focus group sessions	Lucio Rubini - VIU
14:00	Guidelines for Sustainable and Low-carbon ports Presentation of the guidelines and instructions for a step-by-step approach for implementing them to develop the action plans <i>Scope: Instruct and train the ports on how to implement the guidelines in developing their action plans</i>	Marco Mazzarino & Lucio Rubini - VIU
15:00	Port of Venice: Using the guidelines for developing an action plan for low carbon port master plan	Mara Pitaccolo- VPA
15:15	Port of Trieste: Using the guidelines for developing an action plan for onshore power supply	Elisabetta Scala- TPA
15:30	Port of Koper: Using the guidelines for developing an action plan for noise reduction, ballast water and underwater flow analyses, and smart electricity at port terminal	Richter Robert - LUKA KOPER
15:45	Coffee Break	

16:00	Port of Bar: Using the guidelines for developing an action plan for green upgrading of port infrastructure	Dejan Novovic - BAR
16:15	Port of Durres: Using the guidelines for developing an action plan for the revitalization of green spaces, low carbon transport systems and multimodal connections	Afroviti Goge & Fationa Muhametaj - DPA
16:30	Port of Thessaloniki: Using the guidelines for developing an action plan for a truck flow management system, an energy management plan and an IT tool for energy consumption monitoring	Eva Vafaki - THPA
16:45	Port of Piraeus: Using the guidelines for developing an action plan for port activities carbon footprint assessment and an energy management plan	Dimitrios Spyrou & Chryssanthi Kontogiorgi - PPA
17:00	Transferability assessment <i>Scope: Validate the guidelines, resolve uncertainties and/or issues in their implementation for specific action plan development – assessment of their broad applicability</i>	Marco Mazzarino & Lucio Rubini - VIU
17:15	Summary of findings and key issues	Maria Boile & Lefteris Sdoukopoulos – CERTH-HIT

Considering that a detailed description of the outcomes of the Focus Group meetings (held in the SUPAIR ports between April and May 2018) would be provided during next day's project meeting, as well as that the lead partner of WPT1 (VIU) provided, prior to the workshop, the SUPAIR port authorities with a draft version of the 'Guidelines' as well as a relevant PowerPoint template (Annex I) for preparing their input and points for discussion, 4 hours were assessed as an appropriate timeline workshop, enabling to keep the discussion to the point and efficiently collect and discuss all partners' viewpoints and pending issues. Within this time framework, the agenda was structured around three main parts:

- The first part consisted of a small introduction to the workshop where its objectives and expected outcomes were highlighted, a general overview of the implementation of the Focus Groups along with some key insights and a presentation of the 'Guidelines' describing each step that needs to be followed by the port authorities for developing their sustainable and low-carbon action plans.
- The second part included presentations by the participating port authorities where the key issues to be considered within the first steps of the methodology were described and further discussed.
- The last part focused on resolving any uncertainties and discussing any necessary changes in the Guidelines, enabling in that way their validation thus ensuring, by accessing the views of 7 different ADRIAN ports, their increased transferability potential into other ports in the ADRIAN region.

2. Workshop implementation and material

All project partners participated in the internal capacity building workshop with the exception of the North Adriatic Sea Port Authority (VPA) and the Port of Bar Holding Company (BAR) who notified the project coordinator of their unavailability to attend but shared in advance with the partnership the presentations they had prepared for contributing to the discussion.

2.1 Introduction

Upon everyone's arrival and following a warm welcome by Mr. Spyrou representing the hosting partner (PPA), Prof. Boile (CERTH) introduced the scope of the workshop highlighting its main objectives and the outcomes expected to be achieved. As mentioned before, the aim of the workshop was to ensure that *all participating port authorities will apply the same methodology and approach in designing and developing their action plans taking into consideration the environmental and socio-economic impact, the financial sustainability and the involvement of different stakeholders and decision makers in the planning processes.* To this end, within the workshop it was expected to:

- i. Present in detail and discuss the 'Guidelines for Sustainable and Low-carbon ports' as they have been developed by the technical partners of the project (VIU, CERTH and AREA), with VIU also providing specific instructions on the step-by-step implementation approach that was devised
- ii. Resolve any uncertainties and/or issues that may have been raised by the port authorities with regard to the implementation of the Guidelines for developing their specific action plans
- iii. Discuss any necessary changes and validate the Guidelines, supporting in that way the assessment of their transferability and broad applicability in other ports within the ADRION region

The successful undertaking of the aforementioned activities would lead in turn to the following expected results:

- i. Updated and near final version of the Guidelines
- ii. Collection of useful insights for better supporting the successful transferability of the Guidelines in other ports within the ADRION region. This is expected to be greatly facilitated through the 'Network of ADRION Sustainable and Low-Carbon Ports' that will be established within the course of the project and is to be sustained beyond that, representing one of its key outcomes

2.2 Presentation of the Guidelines for Sustainable and Low-Carbon Ports

Following the introduction to the workshop, Mr. Rubini (VIU) as the Lead Partner of WPT1, after summarizing the current status of each WP activity, provided a comprehensive overview of the Focus Group meetings that were undertaken in the SUPAIR ports between April and May 2018. He highlighted their key characteristics (i.e. date of meeting, number of participants, number and type of stakeholders) and the main levels of stakeholder engagement that were targeted (i.e. inform and consult). More information on this can be found on DT1.1.1 "Report on focus group sessions"

The main part of Mr. Rubini's presentation (Annex II) focused on the detailed description of the 'Guidelines for Sustainable and Low-Carbon Ports' that have been devised with the aim to *provide the participating port authorities with a common and shared transnational methodology that will support the implementation of their action plans and low-carbon solutions.* The main methods that were utilized for the development of the Guidelines consisted of (a) understanding the relevant requirements of the SUPAIR ports, a process that was facilitated through the Focus Group meetings that were conducted, (b) understanding the relevant regulatory framework at EU level and (c) performing a benchmarking analysis identifying and reporting, through an

extended desk research, best practice case studies on port sustainability practices within the European context (i.e. Rotterdam, Amsterdam, Antwerp).

A step-by-step methodological approach was followed in the Guidelines for supporting ports in the development of their action plans but also facilitating a cross-understanding among the 7 different plans that will be developed in total. Given the diversity of the latter, particular attention was placed to establish a common structure so much open for incorporating all different fields addressed by the action plans but not very general so that it acts as a useful tool to the port authorities for developing their action plan. Furthermore, and building upon the lessons to be learnt during the development process, such an approach is also expected to facilitate the easy transfer and uptake of the Guidelines by other interested ports in the ADRIION region.

Going in more detail into the methodology, the goals and outputs of each of the proposed 9 steps were presented and discussed (Table 2). Several of the steps were complemented with feedback from the 3 best practice case studies that were identified as a result of the benchmarking analysis (see Annex II).

Table 2: Steps of the proposed methodological framework

STEP 1 DEFINITION OF A SUSTAINABLE PORT

GOAL	Reach a common understanding of sustainability in ports
OUTPUT	Provide a commonly agreed definition of port sustainability at the local level

STEP 2 UNDERSTANDING CURRENT PORT OPERATIONS

GOAL	Understand current port / terminal operations
OUTPUT	- Provide a description of existing port / terminal operations, processes and management models
	- Provide a description of existing regulatory frameworks at different levels (EU, regional, national, local)
	- Identify key sustainability issues driving the development of relevant action plans
	- Assess local conditions affecting the action plans
	- Build future scenarios
	- Perform a SWOT and benchmarking analysis

STEP 3 STAKEHOLDERS' ANALYSIS

GOAL	Get insights from stakeholders about action plans and solutions
OUTPUT	Summarizing the main outcomes of the Focus Group sessions

STEP 4 EVALUATION FRAMEWORK

GOAL	Defining the overall evaluation framework to assess the impacts of the proposed action plans
OUTPUT	- Choose impact method
	- Identify stakeholders
	- Identify impact indicators
	- Identify required data

STEP 5 ACTION PLAN SOLUTIONS DESIGN

GOAL	Design and develop action plan
OUTPUT	<ul style="list-style-type: none"> - Deliver a strategic concept document (work plan) - Select and describe a use case - Analyse users' requirements - Develop 'to be' scenarios of action plans

STEP 6 ACTION AND SOLUTIONS DEPLOYMENT

GOAL	Implement and test proposed actions
OUTPUT	<ul style="list-style-type: none"> - Perform testing activities (e.g. live test, simulation using real data) - Perform training activities - Disseminate results

STEP 7 INTEGRATION WITH RELEVANT PLANS

GOAL	Integrate action plans into other relevant plans at various territorial levels
OUTPUT	Deliver an integrated / harmonized planning framework

STEP 8 ASSESSMENT AND LONG-TERM SUSTAINABILITY

GOAL	Assess overall impacts of selected action plans into port sustainability performance and ensure long-term sustainability
OUTPUT	<ul style="list-style-type: none"> - Elaborate financial, socio-economic and environmental assessment using selected indicators - Produce a policy document of long-term sustainability

STEP 9 MONITORING

GOAL	Monitoring the impacts of the action plan over time
OUTPUT	Set-up a monitoring plan

In **Step 1**, a common definition of port sustainability will be set which, as a next step, needs to be properly adjusted to each local context. Examples on how port sustainability is being addressed by the 3 selected case studies are also being provided in the form of boxes. The latter can serve as useful references, feeding with valuable insights the actions plans to be developed.

In **Step 2**, an analytical description of current port/terminal operations, processes and management models should be provided, using appropriate methodological tools (e.g. SWOT analysis), along with an assessment of the relevant regulatory frameworks at EU, regional, national and local level. The main drivers of sustainability along with the local conditions affecting the priorities to be put forward in the action plan, need to be carefully identified and well described. Such a process can set the ground for outlining future sustainability scenarios to be considered in the action plan. The approaches followed in the port of Antwerp and the port of Amsterdam served as indicative examples highlighting the sustainability issues each port puts emphasis on.

Step 3 focuses on the stakeholder analysis which, as mentioned before, was facilitated through the Focus Group meetings that took place in the SUPAIR ports. However, additional input from other stakeholders not engaged in the meetings should complement the analysis ensuring in that way that all different views are collected and taken into careful consideration. The relevant table that has been developed (see Annex II) can facilitate the analysis to be performed.

Step 4 focuses on the definition of an overall evaluation framework for assessing the impact of the proposed action plans. The most appropriate method in each case should be selected and the required data, stakeholders involved and measurable indicators to be used should be clearly defined. A list of indicative indicators that can be used for addressing different sustainability issues (e.g. air quality, energy consumption, noise, water quality and management, waste management, etc.) is being also provided.

Step 5 addresses a core part for efficiently implementing a low-carbon action plan which is its proper design and planning. As a first step, a strategic concept for the action plan needs to be defined within the framework of which specific use cases can be selected and described in detail addressing the users' requirements as the latter would have been previously identified in an earlier step.

For ports putting forward more concrete and short-term actions, in **Step 6** pilot testing and training activities need to be undertaken prior to their full-scale implementation so that the latter can be best facilitated.

Step 7 focuses on the way and the level to which an action plan is being integrated with relevant urban planning instruments, with the aim to achieve a harmonized planning framework ensuring that complementary actions are being put forward by the responsible authorities and no combined adverse impacts are being generated.

Step 8 focuses on the assessment of the overall impact of an action plan and looks into the way of ensuring long-term sustainability. To this end, financial, environmental and socio-economic aspects need to be taken into consideration and the respective impacts of the action plans can be measured using appropriate sets of indicators. The ambition is to produce a policy document that will support the long-term sustainability of the action plan.

As the last one, **Step 9** focuses on the way the progress of an action plan can be monitored. An appropriate monitoring plan should be developed detailing relevant processes required and setting the responsibilities of involved stakeholders.

Mr. Rubini concluded his presentation highlighting again the balance that the Guidelines aim to strike between ensuring their wide applicability and not comprising the level of detail required. With no urgent questions raised, it was decided to move forward with the presentations of the participating port authorities and revisit the step-by-step methodological framework in an overall discussion at the end, after better understanding the issues to be addressed at each port and collecting the main relevant concerns raised.

2.3 Presentation of participating port authorities

Following the relevant template provided (Annex I), the participating port authorities presented:

- Their experiences over the past 10 years on addressing sustainability issues, the main relevant actions undertaken and key results achieved
- The preliminary contents of the action plan to be developed within the course of the SUPAIR project
- The sustainability issues they are working on for defining their action plan and some preliminary indicators to be selected for assessing the relevant expected impact
- The main insights collected from the Focus Group meetings that were conducted in terms of stakeholders' vision, needs and level of engagement in the action plan.

PRESENTATION 1: The first presentation was held by Mr. Cozzi representing the Port Network Authority of the Eastern Adriatic Sea (Port of Trieste). After briefly introducing the port, Mr. Cozzi touched upon the aforementioned 4 topics with the main points being summarized below:

Past experiences, actions and results

- The port of Trieste is certified to ISO 14001 and thus has in place internal procedures for monitoring several environmental sustainability indicators
- Following the approval of its Master Plan, the port needs to comply with regular monitoring of emissions of pollutants generated by port-related activities, and deploy mitigating measures such as implementing Onshore Power Supply (OPS) systems and promoting renewable energies

Main contents of the Action Plan

- Environmental and energy plan of port infrastructures assessing and describing potential measures to be taken (i.e. timeframe, funding, evaluation and monitoring) for improving air quality and reducing noise in the port and surrounding urban area
- Implementation of OPS systems, mainly in the Ro-Ro terminals, considering best practices at EU and global level, conducting a demand and supply analysis and setting an implementation plan

Sustainability issues

- Considering the aforementioned ISO14001 procedures, the following indicators are monitored on an annual basis: energy consumption, share of renewables in the energy mix, water consumption, (dangerous) waste production, soil consumption, CO₂, CH₄, N₂O, HFC, PFC and SF₆ (expressed in tons of CO₂ equivalent) and SO₂, NO_x and PM (expressed in kg)

Stakeholder analysis

- Representatives from a local, regional and national authority participated in the focus group meeting along with representatives from the association of terminal operators and the associate of freight forwarders. All participants highlighted their support to the action plan to be developed, indicating their particular needs and the required alignment with other planning instruments at their level of jurisdiction.

Responding to a couple of questions that were raised, Mr. Cozzi added, to the aforementioned information, the following:

- According to a new national law published in September 2016, all ports in Italy have to develop a Port Sustainability Master Plan based on a common methodology that is still expected to be provided by the national government. However, the timeline for this is still unknown but the SUPAIR project activities can significantly contribute towards this process.
- The OPS installation to be examined will mainly focus on serving Ro-Ro vessels considering the Motorway of the Sea connection that the port has established with Turkey. Both technical and financial issues need to be carefully considered since the energy grid in Trieste cannot support all vessels. To this end and according to the views of the representative of the terminal operators who attended the focus group meeting, this technology is still not being considered mature enough for the port, with other options such as LNG being also taken into consideration.
- The results of the environmental sustainability monitoring process, based on the specific indicators that have been set, are only being used for internal purposes and no relevant public report is being issued.

PRESENTATION 2: Mr. Richter (Luka Koper) followed with his presentation. The key points are being summarized below:

Past experiences, actions and results

- Over the past decade and within the framework of its environmental policy, Luka Koper has developed clear environmental plans that are in accordance with all ISO standards and other certificates that the company has been awarded with.
- Environmental planning was mainly oriented to smart solutions for the local community and operative modifications in the planning and vessel berthing (e.g. time windows and consideration of the type of vessels visiting berths located nearby the city centre), with several benefits being reported such as air pollution and noise reduction in the port and the city centre, deployment of more ecological vehicles, water treatment, etc.

Main contents of the Action Plan

- The key issues to be tackled through the port's action plan include CO₂ emissions and noise reduction, check of waters in the port's aquatories and around them, analysis and measurements of water flows, analysis and video surveillance of underwater status and smart electrification implementation at the passenger terminal

Sustainability issues

- Noise (underwater and air) reduction can be addressed through studies, and the implementation of dedicated measuring stations for controlling noise levels nearby the city centre (especially in Basin 1 which is in close proximity to the city centre). The port can collaborate with the Municipality for detecting areas with increased noise levels and identifying potential solutions to be deployed for addressing them.
- Water pollution caused by accidents or oil spills of pollutants can be studied through the installation of a streamer for monitoring marine flows.
- Consultation with port-related stakeholders can greatly support the identification of solutions for tackling the pollution generated from their equipment or vehicles thus supporting their modernization.
- The development of green areas (e.g. trees, fountains) can also serve as an effective measure for tackling pollution in the port area

Stakeholder analysis

- A wide range of stakeholders participated in the focus group meeting including shipping companies and agents, private rail operators, freight forwarding companies, marine agencies and other national institutions, national and international truck transport companies, as well as citizens expressing their views on the main port-related environmental implications on the urban environment.

Responding to a couple of questions that were raised, Mr. Richter added, to the aforementioned information, the following:

- A single railway line currently connects the port of Koper with its hinterland. The high occupation level of the existing line (close to 100%) leads to increased levels of congestion while it is estimated that approximately 1 month is being required for locating an available time window. To this end, a second railway line from Koper to Divača has been planned but cannot be considered as an immediate solution for resolving existing issues, as it is expected to be completed in a 5-year time period.

- The port also handles bulk cargo (approximately 1 million ton per month) which is being stored near to the 3rd basin. Although relevant issues do not fall under the scope of the SUPAIR project, Luka Koper plans to mitigate pollution generated from bulk cargo, due to strong winds or storm waters, through the use of collectors. High barriers are used now for mitigating PM concentrations as well as a glow-like substance protecting bulk cargo from strong winds and rain.
- Although the discussion with citizens on port-related impacts has been on-going for long, with cargo volumes significantly rising over the last years, noise pollution has increased. To this end, actions are needed for reducing noise levels below the limits set by European and national laws.

PRESENTATION 3: Ms. Goge representing the Durres Port Authority briefly introduced the port and proceeded to the main part of her presentation:

Past experiences, actions and results

- Durres Port Authority has participated in various research projects funded under different programmes, the outcomes and experiences of which may also be exploited and/or built upon in the SUPAIR project activities.
- Since 2016, the port has been certified to ISO 14001 and 9001 and undertakes a number of activities within the framework of its environmental policy i.e. consideration of environmental issues in the decision-making process, educational and training programmes aiming to get employees more acquainted with environmentally-friendly practices, re-use and recycling of materials in port projects, minimal use of hazardous materials, establishment and update of anti-oil pollution plan, annual review of its environmental policy considering actions implemented, etc.

Main contents of the Action Plan

- Revitalization of green spaces in the port's entrances and efficient waste management in the port area and offices (i.e. recycling).
- Implementation of a bicycle parking lot and e-biking rental services, as well as of a pedestrian crossing (coupled with touristic information points) for promoting sustainable mobility.
- Promotion of electro-mobility through the use of electric cars in the cruise terminal by both passengers and port personnel.
- Improvement of accessibility within the port area for disabled and mobility impaired passengers
- A SWOT analysis and an assessment of the relevant EU, national and local regulatory framework will provide a good starting basis for the action plan to be developed.

Sustainability issues

- The main sustainability issues to be targeted address supply chain responsibility and stakeholder engagement (i.e. focus group meetings), energy efficiency and decarbonisation (i.e. bicycle parking lot, e-biking rental services, e-taxi), improvement of the natural environment (i.e. green spaces), waste management (i.e. ecological recycle bins), people and society (i.e. accessibility improvements for disabled passengers), circular economy (i.e. office supply recycling guide) and infrastructure upgrade (i.e. horizontal signals and touristic info points for pedestrians)

Stakeholder analysis

- A wide range of relevant stakeholders including national, regional and local authorities, environmental protection agencies, terminal operators and private port-related companies, participated in the two focus group meetings that were held and expressed their views on the actions to be developed

Responding to a couple of questions that were raised, Ms. Goge added the following:

- In close collaboration with the environmental director of the port, the methods to be used for measuring the benefits to be realized from the implementation of green infrastructure will be made more concrete during the development of the port's action plan (e.g. number of port employees using bicycles instead of cars)
- In order to facilitate the use of bicycles for accessing the port area, the city has also implemented a network of bicycle lanes
- The e-taxi services are already operational within the city but will also serve now the port as well

Ms Goge also mentioned a new proposal of the public terminal operators that the Durres Port Authority is currently considering, which comprises of the deployment of a new nest machine in the western terminal of the port, where the grain is released, for preventing the spread of grain waste in the western part of the city and mitigating the severe implications on air quality and quality of life.

PRESENTATION 4: Ms. Vafaki presented the relevant contribution of the Thessaloniki Port Authority, the main points of which are being summarized below:

Past experiences, actions and results

- Thessaloniki Port Authority joined the EcoPorts network in 2003 and has been engaged in several knowledge-exchange and networking activities since then, advancing sustainability and environmental protection into a high priority for the port, thus integrating it into the day-to-day organization of the different port activities
- The port had been receiving the PERS environmental certification from 2003 to 2014, while since 2015 it has been certified to ISO 14001 for all port operations
- The port implements waste and energy management practices as well as an environmental parameter monitoring program. To this end, it has achieved considerable improvements of its environmental performance, major electricity savings (i.e. through the use of capacitor arrays), improvements in energy consumption monitoring (i.e. fuel management), application of circular economy principles in waste management, etc.

Main contents of the Action Plan

- Based on the port's experiences and priorities, the action plan to be developed will focus on truck flow management, and energy management and monitoring. A thorough analysis will be performed and detailed studies and plans will be developed, along with an upgrade of the IT database currently used for monitoring energy consumption in the port area

Sustainability issues

- The main sustainability issues that the port is taking into consideration for the development of its action plan are air quality and energy consumption, with some preliminary indicators already been defined for monitoring the progress towards achieving the relevant targets that will be set (i.e. concentrations of emissions, carbon footprint, energy efficiency, etc.)

Stakeholder analysis

- A wide range of stakeholders attended the focus group meeting including local authorities, the customs office, public and private energy providers and distributors, the professionals' chamber of Thessaloniki, the local association of naval agents, local university, etc. In addition to the stakeholders attending the meeting, the regional authority was also consulted.

PRESENTATION 5: Closing the round of presentations from the port partners attending the meeting, Ms. Kontogiorgi presented the relevant contribution of the Piraeus Port Authority, the main points of which are being summarized below:

Past experiences, actions and results

- Following its certification as a member of the EcoPorts network, the port of Piraeus has implemented an environmental management system, providing regular reports on its environmental performance through a system of indicators. The system provides environmental quality monitoring programs, supports pollution preparedness and prevention thus facilitates the identification of possible improvement actions
- With regard to energy management, since 2016 the port of Piraeus has in place, at the commercial terminal, a photovoltaic station of 430,80 KW
- Within the framework of its environmental policy and following national, European and international regulations, the port aims to proceed into an advanced level of organization and management having in place, besides the aforementioned environmental management system, structures for environmental quality monitoring, ship generated waste management and conservation of natural resources
- Improvement actions that have been undertaken in the past include the implementation of a permanent sewage collection network for cruise vessels and ferries, the development of a noise map for the container area, the management of land generated waste following recycling principles, the implementation of a regulation for the management of dangerous goods, the development of contingency plans for sea and land oil spillages and the undertaking of an internal training programme for employees focusing on environmental management principles

Main contents of the Action Plan

- Taking into consideration relevant environmental and energy standards, best practices from other ports and the existing environmental performance and reporting framework established in the port of Piraeus, the action plan will aim to provide (a) a technical framework for port-related CO₂ sources and more specifically a common approach for developing a CO₂ emission inventory (i.e. setting its boundaries and defining reference period and baseline year) for enabling the undertaking of useful comparisons and the establishment of efficient decarbonisation strategies as well as (b) an assessment of the energy efficiency of port installations and of the possible wider exploitation of renewable energy sources within the framework of a port energy management plan that will be devised

Sustainability issues

- The main sustainability issues governing the development of the action plan are related to carbon footprint, energy consumption and air quality in the port area. A number of preliminary indicators have already been defined for monitoring the progress towards achieving the relevant targets that will be set, including CO₂ per output, share of renewables, etc.
- For the passenger terminals (cruise and ferries), the use of eco / electrical buses has been planned connecting distant gates of the port with urban transport modes (buses, tram and metro). A number of charging spots will be implemented in the port area supporting such operations. The benefits to be realized include reduction of air and noise emissions and improvement of the traffic congestion in the port area and the surrounding roadway network of the city.

Stakeholder analysis

- A wide range of stakeholders attended the focus group meeting including representatives from the local municipality (involved as an Associated Partner in the project), the regional authority, the Ministry of Shipping and Insular Policy, an environmental consulting company and agency, academia and power and natural gas providers. The stakeholders confirmed their support to the action plan to be developed and highlighted key issues and needs to be taken into consideration.

Responding to a couple of questions that were raised, Ms. Kontogiorgi added the following:

- The Port of Piraeus participates in the PoseidonMed II project, which focuses on the development of LNG infrastructure in Eastern Mediterranean. Of great interest to the port of Piraeus is the Revithoussa terminal, which is located at the vicinity of the port, alleviating the need for an intermediate terminal for energy supply. There are currently some plans in the central port for ship-to-ship and truck-to-ship energy supply, with some relevant case studies that were developed considering a specific type of passenger vessels.
- Through its participation in the ELEMED project, the port of Piraeus also investigated the implementation of OPS solutions for serving large passenger vessels. There is still however an ongoing discussion regarding power requirements, the relevant role that the port authority will undertake in the provision of such services and the cost-effectiveness of these solutions.

After concluding this round of presentations, an open discussion among all workshop participants was undertaken. The latter provided comments on the proposed step-by-step methodological approach in relation with the main issues they are taking into consideration for the development of their action plans, as these were previously presented. Such a discussion facilitated the identification of the main aspects to be addressed for the proper revision and finalization of the Guidelines, thus enabled to overcome possible hurdles that other interested ports may be faced with when applying the Guidelines.

The main findings of this open discussion are being summarized in the following section. It should be noted at this point, that the presentations provided by 2 project partners that did not succeed to attend the internal capacity building workshop, have been included in Annex III for the completeness of the reported information.

3. Main findings for validating the Guidelines and insights on their successful transferability and uptake

The last part of the workshop was dedicated on collecting, through a round table discussion, the partners' feedback on each of the 9 steps of the methodological approach that was devised for implementing the Guidelines. More specifically, the aim was for the port partners to highlight any existing gaps or missing details thus resolve, with the support of the technical partners, any uncertainties with regard to the activities that are to be undertaken in each of the steps, bearing in mind the three requirements that the Guidelines have to meet i.e. (a) high level of usability for addressing the needs of all ports, (b) facilitating the comparison of the different action plans that are being taken into consideration and (c) ensuring their high transferability potential and successful uptake by other interested ports within the ADRIAN region.

The key findings of the aforementioned discussion are being summarized below. They provided the basis for the appropriate revision and finalization of the Guidelines thus, as mentioned before, they proved to be invaluable for assessing the applicability of the latter across different port contexts.

- In **Step 1**, it was suggested and agreed to include a common definition for a 'sustainable port' that will be developed by the partnership considering all partners' views and building upon other relevant

definitions that have been introduced in the past (e.g. from the World Association for Waterborne Transport Infrastructure, different port authorities, etc.). Given the importance of this task, it was decided to send around to all partners within the following days, relevant definitions that have been used in the past as well as a new suggested one to which everyone will be asked to comment on and suggest any required changes that will reflect their own understanding and interpretation.

- For **Step 2**, it was highlighted that the activity of developing future (strategic) scenarios of port sustainability does not fit really well to the analysis of the current situation that this step focuses on. Instead, the port's vision for sustainability should be described in Step 2, along with the main objectives to be achieved in the short, medium and long-term. Along with that revision, it was agreed that the future scenario development activity should be conducted within the framework of Step 5, where the port's low-carbon action plan will be devised.
- Since **Step 3** incorporates the consultation with relevant stakeholders at the local level for collecting and analysing their views and needs, it was suggested to rename Step 3 into "Stakeholder Consultation" for better describing the activities expected to be undertaken in this step.
- Since the low-carbon port action plans to be developed should be coherent with relevant strategies and planning instruments that have been set at various territorial levels, 'coordination' instead of 'integration' with those plans proves to better fitting the heading of **Step 7** and explaining the relevant work to be undertaken. To this end, it was agreed to rename this step accordingly.
- For **Step 8**, the assessment process to be conducted was discussed in more detail, taking into account the different level of maturity that the solutions considered in the 7 action plans are being characterized of. More specifically, some ports are expected to complete the analysis and design stage of the solutions considered in their action plan while others, building upon and exploiting past relevant activities, may advance to a pre-implementation stage, pilot-testing the relevant solutions. To this end, it was decided to split the Guidelines into two distinct parts: **Steps 1, 2, 3, 4, 5** and **7** will be addressing the "design phase" of the action plan, while **Steps 6, 8** and **9** will be addressing the "implementation phase" of the action plan. The majority of the action plans to be developed in SUPAIR will address the first part, so the Guidelines are mainly to be used for the respective steps, as mentioned above. However, since this proves not to be the case for all actions plans, key insights are also provided in the Guidelines for supporting ports towards moving into the next stage.
- It was also highlighted that if an action plan due to time constraints, considering the limited duration of the project, does not go through all different steps, its contribution to the detailed testing of the proposed approach is still very significant, and therefore having action plans at different development stages should not be considered as a problem but rather as an opportunity. It was agreed that the ports advancing their action plan to the implementation phase, will also prepare in English a more detailed report (in addition to any supporting documents that may be in the national language), in the form of a case study, for facilitating the sharing of the relevant experiences and knowledge across the partnership and beyond.

Having set the actions to be taken after the workshop for the revision of the Guidelines, all partners shared the thought that the final version of the Guidelines will constitute a compact and, at the same time, solid methodology supporting ports in paving their way towards a sustainable future, a process that can be largely facilitated through targeted structures fostering knowledge and experience sharing. The "Network of ADRIAN Sustainable and Low-Carbon Ports" to be established within the course of the project representing one of its key and invaluable outcomes, aims to undertake such a role.

4. Conclusions

Overall, the internal capacity building workshop proved to be an important milestone for the project since several follow-up activities will be based on the Guidelines and a thorough discussion on the proposed approach was essential, efficiently considering and synthesizing the views of all participating ports.

The provision of a relevant template that the ports used for preparing their input and indicating the issues for clarification, enabled to keep the discussion to the point and properly resolve any uncertainties, enhancing the ports' understanding and fully preparing them for initiating the implementation of the first steps of the Guidelines and the progressive development of their action plans.

As clearly highlighted above, the workshop also reached another important outcome which is related to the assessment of the transferability potential of the Guidelines in support of their uptake by other interested ADRIION ports within the course of the project and beyond. The interim results and lessons learnt from the action plan development process will further support this goal which is expected to be facilitated on the long-term through the establishment of the SUPAIR network.

ANNEX I – Template for port partners preparing their input to the Guidelines



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SUPAIR - Sustainable Ports in the Adriatic-Ionian Region

2nd project meeting

Athens, Piraeus Port Authority, 12-13 June 2018

SUPAIR Internal Capacity Building Workshop

Partner's
logo

PARTNER INSTITUTE/COMPANY
Presenter's Name Surname




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SUPAIR - Sustainable Ports in the Adriatic-Ionian Region


1. Past Experiences

- *How have your Organization worked on the concept of Port sustainability in the last **ten years**?*
- *What have been the main actions?*
- *What have been the main achievements?*

(Maximum 2 slides)



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2. Port's Action Plan in a nutshell

- *Please recall in maximum 1 slide, the preliminary contents of the Action Plan you are going to define in the scope of the SUPAIR project*

(Maximum 1 slide)



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3. Sustainability issue(s)

Considering a number of international cases reported in the “SUPAIR_T1.2.1 Action Plan_GUIDELINES” (Box2 and Box3), some examples of effective strategies and actions that can be implemented in ports to improve sustainability can be found.

- *Starting from these “cases”, which is / are the sustainability issue (s) on which your Port is working for the definition of the Action Plan? Please indicate the “Sustainability issues”, also selecting a preliminary indicators for them (as a reference: Box 2 and Box3)*

(Maximum 2 slides)



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4. Stakeholders' analysis

- In the following table, the list of the stakeholders have to be filled-in, with the main insights collected in terms of vision, needs, whether or not they have been involved in the Focus Group, if they are easy to involve and how important is their involvement for the success of the Action Plan for a Sustainable and Low-carbon Port.
(please, refer to the "SUPAIR_T1.2.1 Action Plan_GUIDELINES", pag. 9)



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STAKEHOLDER CATEGORY (i.e Privates: Shipper; Logistics operator; Forwarders; Carrier (road/rail/shipping); Terminal operator i.e. Public: Regional authority, Transport agency, etc.)	RELEVANT STAKEHOLDERS (Name of the Organization)	INVOLVED IN THE FOCUS GROUP (Yes or not)	Contribution of the Sustainable and Low-carbon Port	
			NEEDS (list 2/3 of the main relevant needs)	INVOLVEMENT IMPACT (Involvement: indicate if easy, medium, difficult Impact on the sector: indicate if small, medium, large)
	Stakeholder 1		-Need1 -Need2 -Need3	Involvement: Impact:
	Stakeholder 2			Involvement: Impact:
	Stakeholder 3			Involvement: Impact:
	Stakeholder 4			Involvement: Impact:




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ANNEX II – Presentation of the ‘Guidelines for Sustainable and Low-Carbon Ports’




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SUPAIR - Sustainable Ports in the Adriatic-Ionian Region

1. Introduction

- Overall objectives: providing project partners with a common and shared transnational methodology to support the implementation of action plans and solutions
- Timeframe: Jan 2018 – May 2018
- Next: Action Plans (July 2018 – Dec 2019)




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SUPAIR - Sustainable Ports in the Adriatic-Ionian Region

2. Methods

- *Understanding SUPAIR Ports' requirements:* research on main findings from Focus Group meetings
- *Understanding:* desk research on some general references of EU regulatory framework
- *Benchmarking:* desk research on European case-studies (Rotterdam, Amsterdam, Antwerp)



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3. Goals / requirements

- *Support:* Providing project partners with a common and shared transnational methodology to support the implementation of action plans and solutions
- *Compare:* Cross understanding of Action Plans among PPs Ports of SUPAIR > transnational approach to the issue of Ports sustainability
- *Transfer:* usability of the Guidelines out of the project



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Methodological framework



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STEP 1

Definition of sustainable port

GOAL

Reaching a common understanding of sustainability in ports

OUTPUT

Providing an agreed definition of port sustainability at local level



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STEP 2

Understanding current port operations

GOAL

Understanding current port operations

OUTPUT

- Providing a description of existing port operations, processes and management models related to the foreseen action plans
- Providing a description of regulatory framework
- Identifying key issues driving

action plans

- local conditions affecting action plans
- Building future scenarios
- SWOT analysis
- Benchmarking analysis



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STEP 2

Understanding current port operations

-  1. Shipping
-  2. Mobility
-  3. Employment and safety at work
-  4. Economic activity
-  5. Nature and the environment
-  6. Energy and climate
-  7. Research and innovation
-  8. Society
-  9. The circular economy
-  10. Security

*Port sustainability issues
(source: Port of Antwerp,
Sustainability Report 2017)*



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STEP 2

Understanding current port operations

SUSTAINABILITY ISSUE	INDICATOR
Sustainable supply of energy	Investments made in renewable sources
	Space (ha) allocated to innovative start-ups
Air quality and noise	Monitoring suitable parameters
Port-hinterland connections	Modal shift
Labor market	Development of low/high skill jobs
Clean shipping	Number of ships accessing the port having adopted environmental-friendly measures to deal with emissions
	Waste management and ballast water
Safety	Number of incidents and inspections
Social and stakeholder engagement:	Number of regular meeting on various issues.

*Indicators of sustainability
issues (Port of Amsterdam)*



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STEP 3 Stakeholders' analysis

GOAL

Get insights from stakeholders about action plans and solutions

OUTPUT

Summarizing FGs sessions' main outcomes



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STEP 3 Stakeholders' analysis

STAKEHOLDER CATEGORY (i.e Privates: Shipper; Logistics operator; Forwarders; Carrier (road/rail/shipping); Terminal operator i.e. Public: Regional authority, Transport agency, etc.)	RELEVANT STAKEHOLDERS (Name of the Organization)	INVOLVED IN THE FOCUS GROUP (Yes or not)	Contribution of the Sustainable and Low-carbon Port	
			NEEDS (list 2/3 of the main relevant needs)	INVOLVEMENT IMPACT (Involvement: indicate if easy, medium, difficult Impact on the sector: indicate if small, medium, large)
	Stakeholder 1		-Need1 -Need2 -Need3	Involvement: Impact:
	Stakeholder 2			Involvement: Impact:



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STEP 4 Evaluation framework

GOAL

Defining the overall evaluation framework to assess the impacts of proposed action plans

OUTPUT

- Choosing impact methods
- Identifying stakeholders
- Identifying impact indicators
- Identifying needed data



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STEP 4 Evaluation framework

SUSTAINABILITY ISSUES/GOALS	INDICATORS	STRATEGIES/ ACTION PLANS
Air quality	<ul style="list-style-type: none"> ➤ emissions (SOx, NOx, CO₂, particulates, dust) Clean shipping: <ul style="list-style-type: none"> ➤ emission standards/ESI ➤ emission-reducing technologies ➤ fuel used ➤ type of engine 	Tools: <ul style="list-style-type: none"> ➤ We-nose/E-nose discounts on port dues/incentive programs
Energy consumption	<ul style="list-style-type: none"> ➤ CO₂ footprint ➤ energy efficiency (CO₂/output) 	<ul style="list-style-type: none"> ➤ clean energy investments (renewable, LNG, methanol, wind) ➤ decarbonisation strategies
Noise	<ul style="list-style-type: none"> ➤ emissions (surveys, maps) 	<ul style="list-style-type: none"> ➤ differentiated port charging systems ➤ onshore power supply
Water quality and management	<ul style="list-style-type: none"> ➤ ships 'waste: water ballast, oil & oily water, chemical waste, sewage, garbage ➤ cargo spillage 	<ul style="list-style-type: none"> ➤ alternative ways to use dredging sediments ➤ ship waste management plans ➤ cleaning tools and



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STEP 4 Evaluation framework

	<ul style="list-style-type: none"> ➤ oxygen conditions ➤ salinity ➤ nutrients levels ➤ chemical conditions ➤ emissions of metals and polyaromatic hydrocarbons ➤ water consumption 	
Waste management	<ul style="list-style-type: none"> ➤ clean shipping (ships 'waste') ➤ dock litter (empty cans, plastic, wood, etc.) 	<ul style="list-style-type: none"> ➤ port waste management plans (collection, transport, processing) based on the "polluter pays" principle ➤ specialized barge systems
People: society, employment & safety	<ul style="list-style-type: none"> ➤ perceptions (surveys) ➤ job market: skills, career development paths ➤ incidents, inspections 	<ul style="list-style-type: none"> ➤ "open port" initiatives ➤ events ➤ EDU & training programs ➤ cooperation strategies among in charge organizations (police, fire department, customs, etc.)
Innovation and r&d	<ul style="list-style-type: none"> ➤ innovative companies 	<ul style="list-style-type: none"> ➤ development programs



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STEP 4 Evaluation framework

Economic development and the circular economy	<ul style="list-style-type: none"> ➤ employment ➤ added value ➤ profitability ➤ productivity ➤ GDP contribution ➤ recycled waste (quantity) 	<ul style="list-style-type: none"> ➤ developing recycling and reuse processes and activities
The natural environment	<ul style="list-style-type: none"> ➤ Cleanliness index ➤ biodiversity ➤ hectares of conservation areas ➤ habitats and ecosystems 	<ul style="list-style-type: none"> ➤ ecological networks ➤ creating conservation areas
Soil	<ul style="list-style-type: none"> ➤ soil contamination (surveys on soil pollution) ➤ contaminated land 	<ul style="list-style-type: none"> ➤ actions minimizing impacts
Supply chain responsibility and stakeholder engagement	<ul style="list-style-type: none"> ➤ meetings with stakeholders and customers 	<ul style="list-style-type: none"> ➤ promoting regular meetings
Accessibility and mobility	<ul style="list-style-type: none"> ➤ modal shift ➤ information provision to port users ➤ commuting trips 	<ul style="list-style-type: none"> ➤ technological tools providing information to port users and stakeholders ➤ EDI systems and platforms involving port users and stakeholders



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STEP 5 Action plan solutions design

GOAL

Designing and developing action plans

OUTPUT

- Delivering a strategic concept document (work plan)
- Selecting and describing use case
- Performing users' requirement analysis
- Developing "to be" scenarios of action plans



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STEP 6 Actions and solutions deployment

GOAL

Implementing and testing proposed actions

OUTPUT

- Testing activities: live test/simulation using real data
- Training activities
- Disseminating results



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STEP 7

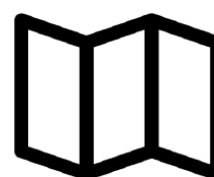
Integration with relevant plans

GOAL

Integrating action plans into relevant plans

OUTPUT

Delivering an harmonized planning framework



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STEP 8

Assessment and long-term sustainability

GOAL

- Assessing overall impacts of selected action plans onto port sustainability performance
- Ensuring long-term sustainability

OUTPUT

- Elaborating financial, socio-economic and environmental assessment using selected indicators
- Producing a policy document of long-term sustainability



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STEP 9 Monitoring

GOAL

Monitoring action plan impacts over time

OUTPUT

Monitoring plan



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Contacts

Thank you for your kind attention!

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ANNEX III – Input presentations of the North Adriatic Sea Port Authority and the Port of Bar



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2nd project meeting
Athens, Piraeus Port Authority, 12-13 June 2018

SUPAIR Internal Capacity Building Workshop



NORTH ADRIATIC SEA
PORT AUTHORITY

North Adriatic Sea Port Authority
Marta CITRON- Head Environmental Unit



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1. Past Experiences

1. **North Adriatic Sea Port Authority environmental management system, certified ISO 14001 since 2012** is a tool able to monitor the environmental aspects related to port activities, their impacts and the positive effects of the green initiatives;
2. **ENERGY SAVING MEASURES:** a) Medium voltage grid efficiency improvement, b) Heating power station and grid distribution efficiency improvement, c) lighting Led technology implementation;
3. **MARINE NAVIGATION AID LED LIGHTING SYSTEM:** Since August 2015 a new marine navigation aid has been implemented along 15 km-long Malamocco Marghera Canal



Porto Marghera (cargo port)
Malamocco Inlet

Old lighting
system linked to
national
company energy
grid, had
expensive
mantainance





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1. Past Experiences

MARINE NAVIGATION AID LED LIGHTING SYSTEM

OLD EQUIPMENT

- 345 lighting points
- 2 traditional lamps 36 W each
- Linked to national energy grid system
- Energy cost around 30.000 €/year
- High annual maintenance costs (650.000 €/year)
- No service continuity guaranteed

NEW EQUIPMENT

- 345 lighting points
- 2 led lamps 3 W each
- 4 photovoltaic modules 65 Wp each
- 4 cells – 200 Ah total
- No energy cost
- Annual fee 625.000 €/year
- Service continuity guaranteed

Total investment: 3.723.811,55 €

ADVANTAGES

Every lighting point is totally autonomous to guarantee **service continuity**;
Every lighting point is constantly **monitored through a web platform** system by NASPA, Harbour master and Pilot Corporation;
Energy and cost saving



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2. Port's Action Plan in a nutshell

SCOPE: To provide economic benefit as well as environmental benefit and to enable our port to provide environmental sustainable services to port community.

HOW:

- 1) Designing and developing the evaluation framework, taking into account port specific sustainability issues;
- 2) Identifying stakeholders to be involved in the criteria evaluation, needs and requirements.
- 3) Identifying evaluation criteria and indicators;
- 4) Identifying necessary data to be collected for the subsequent actions evaluation;
- 5) Elaborating data to produce financial, socio-economic and environmental impact assessment.

e.g. In the field of energy and climate (but also air quality improvement), recent investments have been developed in the Port of Venice, thanks to Saupair Project: a Traffic Smart Management Tool will be realized to reduce traffic congestion in port infrastructures, thus reducing CO2 emission.



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3. Sustainability issue(s)

Sustainability issues on which Port of Venice is working for the definition of the Action Plan are:

1. Air quality;
2. Noise;
3. Relationships with local community;
4. Energy consumption and climate change.

1. Air quality will be monitored looking at the various components, including SO_x, NO_x and particulates, in collaboration with Regional Environmental Agency (indicator: PM reduction related to Green action e.g. Venice Blue Flag Agreement). In the field of shipping, investments made in non-fossil energy sources, including LNG, have been promoted in Venice Port.
2. Noise related to vessel at birth is/will be monitored, in sensitive areas, very close to the historical centre (also related to point 3);
3. Evaluation of energy consumption in port areas will be realized to identify possible actions to be implemented to reduce CO₂ emissions (CO₂ emission will be the indicator).




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4. Stakeholders' analysis

STAKEHOLDER CATEGORY	RELEVANT STAKEHOLDERS (Name of the Organization)	INVOLVED IN THE FG (Yes or not)	Contribution of the Sustainable and Low-carbon Port	
			NEEDS (list 2/3 of the main relevant needs)	INVOLVEMENT IMPACT
Terminal operator	Terminal Rinfuse Venezia SPA	yes	Investments for cutting energy leakages/waste from main electric cabin (national network) to terminal cabin (estimated approx.. in 40k euros/year)	Involvement : easy Impact: large
company providing personnel for port operations	Nuova CLP Venezia	yes	Must create and use clear KPI to measure and have a common definition of energy source and energy type. Pay attention not to shift the problem from lesser consumption to more CO ₂ created via old sources. Lean production and total quality practices (KAIZEN etc) must be way of work in the port community. First item to be practically addressed: the port area is not connected with public transport	Involvement : easy Impact: medium
Terminal operator	Terminal Intermodale Adriatico Srl	yes	Critical points remain the ROI - Return on Investment Index and the timing of investments required for reducing energy consumptions. Passengers ship are investing a lot in renewable energies propelled vessels, but this is not always the case in the commercial / cargo sector.	Involvement : easy Impact: large
Terminal operator	Multiservice srl	yes	Multipurpose terminals are the most complicated to apply energy reducing procedures, due to heterogeneous areas and means of cargo lifting/operations. Concessions should be longer to have better ROI on investments. Traditionally, Rubber Tired Gantry Cranes (RTG) are propelled by diesel (some are hybrid but very costly).	Involvement : easy Impact: large
Terminal operator (Passengers)	VTP Spa	yes	Passengers terminal in Venice is a world class best practice in terms of efficiency. Electric vehicles already in use. Request for a specific questionnaire to get more details from terminal operators so to draft the energy plan baseline.	Involvement : easy Impact: large




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4. Stakeholders' analysis

STAKEHOLDER CATEGORY	RELEVANT STAKEHOLDERS (Name of the Organization)	INVOLVED IN THE FOCUS GROUP (Yes or not)	Contribution of the Sustainable and Low-carbon Port	
			NEEDS (list 2/3 of the main relevant needs)	INVOLVEMENT IMPACT easy, medium, difficult Sector impact: small, medium, large
Terminal operator	Venice Port Mos SCSA	yes	Investments for cold ironing are outdated by new technologies - need to recover cost of investment made years ago and make new more efficient ones	Involvement: easy Impact: large
Public utilities	VERITAS Spa	yes	Authorities must have long term vision and plans that stem from "as-is" deep analyses are right instrument to reach goals.	Involvement: easy Impact: medium
Terminal operator	Grandi Molini Italiani spa	yes	Energy Management Plan is seen as a big opportunity in terms of improving productivity and money savings. Nevertheless, Porto Marghera is very peculiar and private and public areas are very close, not always clear if public funding can be available. There is a need for public funding to boost investments in energy savings infrastructures.	Involvement: easy Impact: large
Terminal operator	Cerealdocks Marghera Srl	yes	Break bulk company is extremely energy intensive (average consumption is 4 <u>MegaWatt</u> /year). KAIZEN methodology helped us to reduce consumptions: need to spread the method to all port .Need for public funding to leverage private equity and financing.	Involvement: easy <u>Impact: large</u>




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SUPAIR - Sustainable Ports in the Adriatic-Ionian Region


Contacts

Thank you for your kind attention!

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SUPAIR: the Network of Adriatic-Ionian sustainable and low-carbon ports



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2nd project meeting
Athens, Piraeus Port Authority, 12-13 June 2018

SUPAIR Internal Capacity Building Workshop



“Port of Bar” H.C. - Bar
Dejan Novović



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1. Past Experiences

- *How have your Organization worked on the concept of Port sustainability in the last **ten years**?*

The basic directions of our activities were focused on the following sustainability issues:

- *Treatment of solid waste;*
- *Electricity and water consumption;*
- *Port aquatorium water quality;...*
- *What have been the main actions?*
- *Separation of wastewater generated as a product of a process of handling cargo on Dry bulk cargo Terminal (washing mechanization, open storage areas, connection separators to the rain sewage system etc.)*
- *Establishment of a system of solid waste management (according to the Plan);*



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1. Past Experiences

- *Preparation of the measures for reducing of consumption electricity and drinking water in the port;*
- *Activation of wells of technical water;*
- *Monitoring of water quality parameters in port aquatorium;...*
- *What have been the main achievements?*
- *System of selective disposal, collection and delivery of solid waste;*
- *Reduction of the discharges of oil contaminated water in the atmospheric sewage system;*
- *Reduction of consumption electricity and drinking water;...*



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2. Port's Action Plan in a nutshell

- *Please recall in maximum 1 slide, the preliminary contents of the Action Plan you are going to define in the scope of the SUPAIR project*
- **green upgrading of port infrastructure**
Preparation of the investment-technical documentation for :
 - *on shore power supply for ships,*
 - *modernization substations and power grid,*
 - *power supply for port machinery (e.g. mobile harbour cranes).*



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3. Sustainability issue(s)

Sustainability issues in Port of Bar Action Plan

Sustainability issues	indicators
Air quality	<ul style="list-style-type: none"> ➤ fuel used ➤ emissions (Sox, CO₂,..., dust)
Energy consumption	<ul style="list-style-type: none"> ➤ CO₂ footprint, ➤ energy efficiency,...
Noise	<ul style="list-style-type: none"> ➤ emissions (surveys, number on shore power supply)
Water quality	<ul style="list-style-type: none"> ➤ Oily water



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3. Sustainability issue(s)

Sustainability issues in Port of Bar Action Plan

Sustainability issues	indicators
Innovation and r&d	<ul style="list-style-type: none"> ➤ r&d investments (modernization of substation equipment,...)
Soil	<ul style="list-style-type: none"> ➤ Soil contamination (substation obsolete equipment with oil insulation,...)
Waste management	<ul style="list-style-type: none"> ➤ dock litter (substation obsolete equipment with oil insulation,...)
People: society, employment and safety	<ul style="list-style-type: none"> ➤ perceptions



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4. Stakeholders' analysis

STAKEHOLDER CATEGORY (i.e Privates: Shipper; Logistics operator; Forwarders; Carrier (road/rail/shipping); Terminal operator i.e. Public: Regional authority, Transport agency, etc.)	RELEVANT STAKEHOLDERS (Name of the Organization)	INVOLVED IN THE FOCUS GROUP (Yes or not)	Contribution of the Sustainable and Low-carbon Port	
			NEEDS (list 2/3 of the main relevant needs)	INVOLVEMENT IMPACT (Involvement: indicate if easy, medium, difficult Impact on the sector: indicate if small, medium, large)
Public	Ministry of traffic and maritime affairs	Yes	- harmonization with EU regulations - creating an environment to increase market attractiveness	Involvement: difficult Impact: large
Public	Municipality	No	- creating an environment to increase market attractiveness - Healthy environment	Involvement: difficult Impact: medium
Public	Maritime University	Yes	- R&D work - Set-up of the specific educational profiles	Involvement: easy Impact: medium
Public	Maritime Safety Department	Yes	- Protection of the sea from pollution - Development of Port EMS	Involvement: easy Impact: medium



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			NEEDS (list 2/3 of the main relevant needs)	INVOLVEMENT IMPACT (Involvement: indicate if easy, medium, difficult Impact on the sector: indicate if small, medium, large)
Private	Port operators	Yes	- development of Port EMS - improvement of cargo handling technologies for optimizing environmental aspects	Involvement: difficult Impact: medium
Private	Shipper	No	- Discount on port dues; - Minimizing costs;	Involvement: difficult Impact: medium
Private	Logistic operators	No	- Discount on port dues; - Minimizing costs



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