DOCKSTHEFUTURE
defining the concept of "Port of the Future"

Projects Common Index: Analysis and Monitoring Results (PCI Assessment)

Deliverable 3.4
FINAL DRAFT

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 770064

Document Status	
Deliverable Lead	PortExpertise
Internal Reviewer 1	ISL + CIRCLE (DtF PMO & deliverables ex WP2) + Unige (for deliverables WP5)
Type	Task deliverable 3.5
Work Package	WP3: Selection and Clustering of Projects and Initiatives of interest
ID	D3.4: PCI Assessment
Due Date	10/04/2020
Delivery Date	09/04/2020
Status	V4 = **Final Draft** - includes the evaluation process and results of the assigned project evaluations for the PCI Assessment and processing the Peer Reviews.
Dissemination Level	Public

Document History	
Contributions	ISL as WP3 Lead contributed in reviewing the Project Evaluations and running them through the PCI Tool to calculate the PCI-scale (if project was found eligible for PCI Tool scoring Circle, Magellan, Unige: collaborative effort by the DtF consortium partners to evaluate assigned project evaluations
Final Version	This is the FNAL DRAFT of D3.4, on which the delay of 10 days for completion has been agreed upon with the EU Program Officer, in the light of the COVID-19 situation and to ensure the outcome of the Project Evaluations are reflected in the deliverable. This affects the confirmation round with the PoF RIA projects and had also impact on how the DSS Tool can be presented in time. The Corona crisis has also affected the limitations for the DtF team to conclude on this deliverable and the extension requested (proposed by DtF Steering Committee) for confirmation and guidance with the 3 PoF RIA projects (scheduled for the end of April / early May and the feedback required from Expert Workshops, which are now scheduled to be conducted online by the middle of May.

Disclaimer

Table of contents

List of figures and tables

List of appendixes

Abbreviations/Acronyms

ADAPTOR port	The receiving or targeted port of an already or to be implemented innovative project/concept from a donor port, where the context may be different. An adaptor port can also be part of a port peering initiative between various ports (DtF - D5.3 Transferability Analysis)
AIVP	Association International des Villes Portuaires / Worldwide Network of Port Cities
CSA	EU projects assigned as Coordination and Support Action type of project (other type – see RIA)
DONOR or "CHAMPION" **port**	The initiating port of an innovative project / concept provides assistance / guidance to 1 or more adaptor port(s) where the context may be different, or to promote the collaborative peering of ports to combine its resources. The collaboration efforts of peering between ports and dissemination for best practices around innovative concepts, allows multiple ports to jointly lead the implementation as best in class or assist other adaptor ports in implementing same scaled solution, considering the transferability analysis outcome through risk management of recognized barriers and constraints. (DtF - D5.3 Transferability Analysis)
DSS tool	Decision Support System
DtF	Docks the Future (CSA project under the EU PoF program call) – this project
IAPH	International Association of Ports and Harbors
IC	Innovative Concept
I-score	Innovativeness Score (DtF – D3.2 Adequacy)
KPI	Key Performance Indicator
LL (LLs)	Living Lab(s) (pilots)
MCA	Multi-Criteria Analysis
MoS	Motorway of the Seas
NoE	Network of Excellence
PCI	Project Common Index (PoF projects – DtF D3.3)
PCT	Potential Contribution towards Transferability (PoF-adapted Motorways of the Seas' DIP approach to "adequacy")
PI	Performance Indicators
PoF	EU Port of the Future Program (DtF context: vision 2030)
PoF-DtF NoE	Docks the Future Network of Excellence – refers to the community of EU ports forming a board of excellence for strategy, advise and recommendations to the EU Commission
PoF Network	Port of the Future Network (CSA+RIA projects + future calls and projects identified, proposed and/or approved under the PoF Program)

Port PEERING	Collaborative efforts between ports to combine its resources to realize an innovative concept or project or the efforts between DONOR and ADAPTOR ports to realize the implementation of an innovative solution already or to be implemented in the DONOR port and the dissemination of best practices around innovative concepts in a DONOR port. The collaboration efforts of peering between ports, allows multiple ports to jointly lead the implementation as best in class or assist other adaptor ports in implementing same scaled solution, considering the transferability analysis outcome through risk management of recognized barriers and constraints. (DtF - D5.3 Transferability Analysis)
RIA	EU projects assigned as Research and Innovative Action projects (other type – see CSA)
RoI	Return on Investment – relative to PoF projects this relates to the contribution of the outcome of a project towards its overall goals and strategic vision by the initiating port – potentially to be used by ADAPTOR ports to identify how the project outcome may address their strategic vision and goals.
SO	Strategic Objective
TA	Transferability Analysis
TA-score	Transferability Score (DtF - D5.3 Transferability Analysis)
TA-index	Transferability Index (DtF - D5.3 Transferability Analysis)
TO	Tactical Objective
TS	Transferability Score (DtF - D5.3 Transferability Analysis)
UN SDG(s)	UN Sustainable Development Goals
WP	Work Package (main parts or steps in the overall project)
WPSP	World Ports Sustainability Program (by IAPH and other maritime and port organisations)

Executive Summary

According to the Grant Agreement for the Docks The Future (DtF) project, this deliverable is aimed at deploying results of the activities centred on the PCI tool (D3.3). Related task: 3.5 - Monitoring of results of Projects and activities of interest selected by means of the Projects Common Index (D2.2).

This deliverable is the outcome of task 3.5 Evaluation of selected projects. The proposed indicators will assure a better understanding of the areas in which every project could impact on achieving the Port of the Future, vision 2030 targets, such as improving the decision-making processes (e.g. prioritising projects that are consistent with the local needs). Moreover, thanks to the differentiation per stakeholder and main impact category, the Indicator would allow to easily implement a better investment appraisal among competing alternatives (in case projects will foresee direct applications) or the robustness of the project findings.

Therefore Task 3.5 focuses on the assessment of the Project Common Index tool (D3.3) and in its understanding with the aim of improving the decision-making process and the resource utilization. For this purpose a sample of most-relevant projects were chosen and were run through a thorough evaluation. For some wider scope projects it was required to run through an extensive analysis to understand the magnitude of the set goals and the measures deployed as a result of the implementation of solutions in active port environments (Living Labs and pilots or full implementation deployment for one or more specific ports).

This deliverable D3.4 includes recommendations for future projects to obtain a positive PCI-score and defined advise to the current ongoing PoF RIA projects – COREALIS_eu, PortForward and PixelPort.

In additions the DtF project has established a PoF KPIset Dashboard for continuous evaluation of the deliverables for the PoF RIA projects which will be updated after confirmations with the RIA projects and the feedback from the Expert Workshops, both of which will be held as online workshops scheduled for end of April to the middle of May. The D3.4 Project Evaluations have been shared for review and confirmation with the PoF RIA projects.

The introduction provides a brief overview of the relevant previous deliverables whose results are combined in the PCI evaluation complemented with the methodology for selection of projects, which aimed at covering a large range of project types (e.g. different EU programmes), project objectives and also project owners.

The evaluation methodology is presented in chapter 4, which relates to and summarises the methodological deliveries D2.2, D3.1 and D3.3.

Chapters 5 and 6 give an overview of the World Port Sustainability Programme and the AIVP Agenda 2030 as background information and as the foundation to the adopted methodology and structure for the DtF deliverables since WP2. Annexes III and IV illustrate relevant projects of which most are linked to the Port of the Future concepts, some recognised as EU supported projects and initiatives. The outlines make an integral part of the knowledgebase for evaluation of projects in the PoF arena.

Chapter 7 summarises the functioning of the PCI tool and how it is used to evaluate the selected projects (including screenshots in the Annexes). Chapter 8 is a preview of deliverable D5.3 on transferability whose scores are also included in the PCI tool.

Chapter 9 provides a summary of the evaluation results. The results clearly show the possibilities and limitations of the PCI tool, but also shortcomings of certain projects that fail to provide a clear indication of targets with regard to their main objectives.

The DtF KPIset and identified measures together with their relationship to strategic and tactical objectives is assumed as a guide for Port of the Future projects. It is not to be observed as an all-inclusive final set, as new technologies and innovations come to market, and an ongoing optimisation in port and port terminal operations exists. A further improvement will be incorporated from the feedback from the expert workshops to be held in May 2020 and from the guidance of the PoF RIA projects through their respective PCI Project Evaluations.

Ports and its wider stakeholder communities are and will remain a changing environment of innovations, in which identification of new performance indicators and goals define their mid- to long-term competitive strategies.

This deliverable summarises elements of various previous deliverables, which makes it possible to read independently from these.

Important NOTE due to the COVID-19 situation
The DtF team – in consultation with and subject to agreement by the EU INEA Project Officer – is proposing an alternative method and time schedule to have the ***Expert Workshops*** *and* ***PoF RIA feedback and confirmation of the PCI Project Evaluation*** *held through online-facilitated workshops. While the DtF deliverables dependent on expert workshops and other conferences, the current document is delivered as a FINAL DRAFT document. The program outline for these workshops is in process. This deliverable will be updated accordingly to the outcome from the online workshops conducted with experts and project owners.*

The DtF team will provide initial assistance to the three ***PoF RIA projects*** *in communicating the results from the* ***PCI Project Evaluations*** *conducted in the framework of the DtF PCI Assessment. This will include an online guidance session with the respective project owners through an example of completing their projects for running a positive PCI score. During the same online conference we will also address their questions and comments. As the 3 PoF RIA projects are about mid-way their projects, it is to be understood that the DtF project team cannot further extend this type of assistance till they are at the level of fully compliance to report the required information as outlined in this document. Wherever possible the DtF team will update the* ***PoF KPI Dashboard*** *whenever such information still becomes available before the closure of the DtF project closure.*

1. Introduction to the UN SDGs and the WPSP Focus Areas

The United Nations' 2030 Agenda for Sustainable Development is the main tool to steer the world towards peace, prosperity and a positive relationship with the planet. The 17 **United Nations Sustainable Development Goals** (UN SDGs) are the core elements of this global governance initiative, to inspire, motivate and organize governments, corporations and individuals to engage in this major aim.

Since these goals were presented in 2015, actors in all regions of the world have gradually declared their support for this initiative. Although the consequences of climate change are known for years, the increasing state of emergency and dramatic consequences have become the strongest motivator to act before it is too late and actively seek for sustainable development.

The EU Port of the Future Program (PoF) covers a wide scope of aspects that are linked to a future port design that ensures economic development along with sustainability and inclusive governance. The DocksTheFuture project (DtF) under the PoF program developed a system to structure the manifold actions and efforts that are being carried out in this area. We consider the UN SDGs as outlined under the **World Port Sustainability Program** (WPSP[1]) as a most commonly accepted framework.

On this basis a structure has been developed which enables to organise the required actions related to their relevant fields in view of the ports' approach to adapt as Port of the Future. The challenge of ports is the assessment of specific measures that are undertaken, related to the structure proposed through the WPSP 5 Focus Areas:

- Sustainability (combat global warming, save natural resources, …)
- Port-City relationship (inclusive cities, employment, …)
- Governance (transparency, equal opportunities, …)
- Resiliency (economic growth, higher productivity, …)
- Safety & Security (safe working conditions, …)

The 5 Focus Areas are linked to their underlying Performance Indicators (PI), in line with the ports' Strategic and Tactical Objectives (SO's and TO's). While some measures contribute to different sustainability goals, other measures represent a trade-off between two diametrical goals.

It is therefore important to not only evaluate the targeted results of different measures towards their shared goal but also to be able to compare and benchmark these against a measure contributing to a very different goal. In the DtF methodology this is done through the use of aggregated KPI's (explained in the D3.3 – PCI tool), which serve the respective linked UN SDGs.

The aim of the Port of the Future Vision 2030 is to promote innovation and that solutions are used by as many ports as possible through transfer of innovative concepts or port peering in projects.

[1] WPSP is an initiative by IAPH and other engaged associations such as ESPO, PIANC, AAPA, AIVP, IADC, ICHCA, BPO and Ports Australia.

Interconnection between deliverables from the DtF Work Packages

The primary requirement is therefore the innovativeness of a project, which is assessed by means of the PCI Tool, together with its transferability and contribution to selected UN SDGs (see D3.3 – PCI Tool, for more detail). Based on the definition of adequacy and innovation for the PoF Vision 2030 (DtF D3.1 and D3.2), a project can obtain a ZERO or lower Innovative score (I-score) – resulting in a 0 PCI-score for Port of the Future evaluations – but can still be considered on its contribution to UN SDGs, its approach to transferability (DtF D5.3) and potentially verify its validity through the DtF DSS Tool (D5.2) independent of its innovativeness. For more information on the scores-scaling and their methodology applicable reference to the respective DtF WP5 deliverables. A synopsis is provided under chapter 8 Project Scoring.

Due to the manifold fields, this comparison is a complex but nonetheless important task as project resources are limited to pave the way towards the Port of the Future. In this document, DtF has evaluated past and present projects to the DtF approach of making the impact and contribution of different measures assessable for objective evaluation through linking measures to KPI's (a compilation of targeted PI's unique to each port relative to their SO's and TO's). These concepts have been outlined in the other WP3 deliverables relative to the use of the PCI tool.

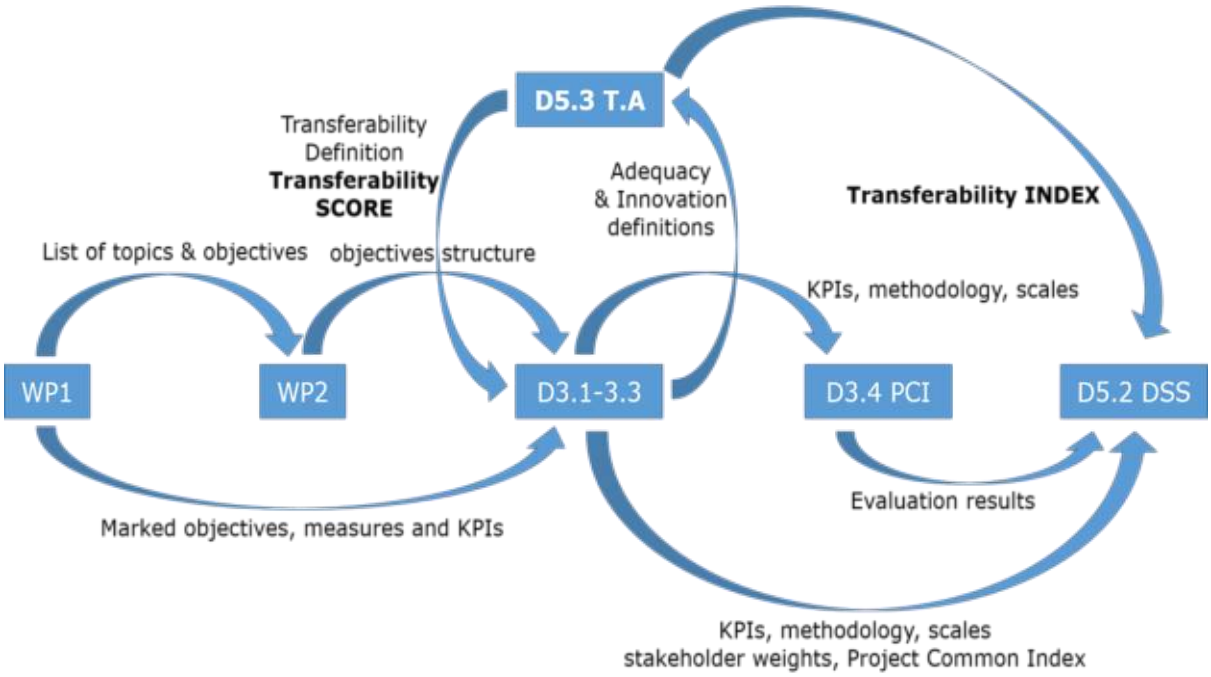


Fig.1: Overview of the flow of deliverables from the DtF Work Packages

Based on the DtF D3.1 – **PoF DtF defined KPI-set**, the D3.2 – **Definition for Adequacy**, the derived D3.3 – **Project Common Index** (PCI tool), and preliminary results obtained from the D5.2 – **Decision Support System** (DSS tool) and the D5.3 – **Transferability Analysis** (TA methodology), this deliverable presents the results of the evaluation of selected projects from the D2.2 – **DtF Clustered Projects List**, by means of the Projects Common Index (PCI Assessment – D3.4).

Projects Common Index: methodology for analysis and monitoring (D3.3 – PCI Tool)

To facilitate the reader a brief description of the PCI Tool and its methodology deployed are hereby provided. For more information it is recommended to reference to the DtF D3.3 – PCI Tool.

The Project Common Index (PCI) is a score that is generated from the set of related Key Performance Indicators (KPIs), allocable costs and other evaluation criteria (transferability, innovativeness) which are relevant factors for the characteristics of future ports. It can be used to evaluate a specific measure as well as a complex project combining various measures. The PCI Tool encompasses measures and projects equally. The underlying pattern of the PCI links operational actions to the strategic aspect they contribute to. The impact of operational actions is measured with suitable performance indicators, which correspond to the aim of the project or measure. The operational level provides hundreds of these indicators.

These capture operational effects; however, they may provide limited information regarding the impact on high-level strategic objectives. In order to compare the impact of two different actions on the same UN SDG, a comparable performance indicator (PI) is necessary. These PIs must be translated into KPIs. For some high-level strategic objectives, sub-KPIs have been introduced as an intermediate step. In order to compare between the 5 WPSP Focus Areas, KPI's of different UN- SDGs need to be aggregated. The following graphic depicts this integration. The methodology itself is independent of the object that is subject for evaluation.

Aggregation stages of performance indicators

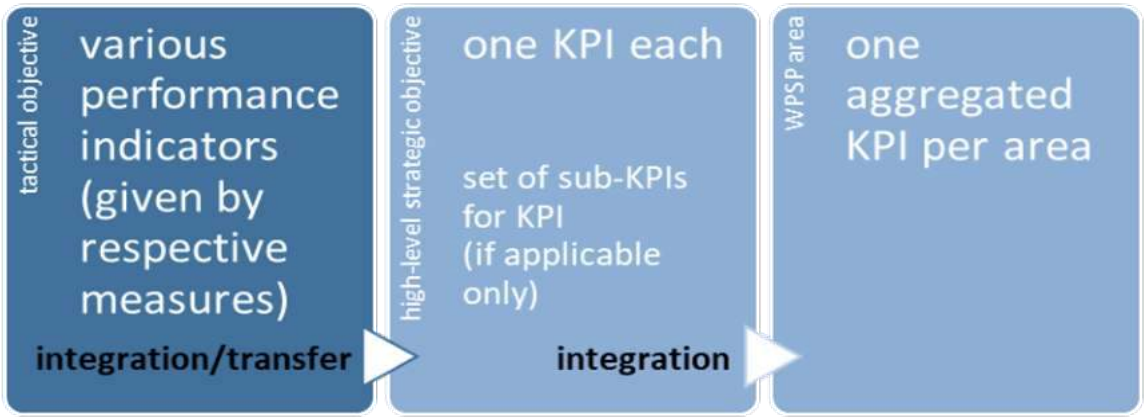


Fig.2: Aggregation stages of Performance Indicators

This deliverable is the result of an in-depth evaluation of the PCI tool and will be presented together with other available deliverables from WP3 and WP5 during the scheduled DtF Expert Workshops. This will enable further recommendations to have the different tools developed by Docks The Future adapted by maritime ports. Outcome of the evaluation of the PCI tool will allow further fine-tuning of the PCI tool.

The evaluation of the PCI tool is based on the aggregation of the DtF KPI-set, reflected as Performance Indicators (PI's) – the use of the PCI Assessment explained in Chapter 7. Compilation of Performance Indicators. The selected projects assessed have been reviewed in terms of their informed (available) KPI-set and measures based on the aggregation stages of Performance Indicators (see Annex II - Mapping project evaluations).

2. DtF Clustered Projects List

As the D2.2 Clustered Projects List is a momentum recording and needs updating even after the DtF project closes, a number of projects have been identified which also should be taken up in the Clustered Projects List. However, these are not considered in this PCI Assessment. Most of these projects have been recently (2019-2020) closed or commenced, others have also an international aspect with most of the TEN-T / PoF ports being beneficiary of the outcomes and benefits of using the DtF PCI Tool. Annex III (2019-2020 Identified additions to the Clustered Project List (D2.2)) represents a preliminary list of such projects.

5 WPSP focus areas and relevant IAPH projects

In addition, as the DocksTheFuture project relates to the 5 WPSP Focus Areas, the projects published by the IAPH WPSP-website (www.sustainableworldports.org) and 2020 award candidates (https://sustainableworldports.org/iaph-2020-world-ports-sustainability-award-candidates-announced) in as far as they cover EU member state ports, have been considered.

An overview is provided under chapter 5. WPSP 5 focus areas and their relationship to UN SDGs. The list of relevant WPSP projects is provided in Annex IV – Relevant WPSP projects.

AIVP Agenda 2030 Port-City Relationship Survey

Relative to Port-City relationships, AIVP participated in the DtF project, through a global survey with ports, port-cities and other stakeholders in obtaining current status (April 2019, final AIVP report released Augustus 2019) on activities and initiatives undertaken to improve port-city relationships, together with identification of main areas of focus and areas of concern for future focus.

The results of the AIVP survey will be included as an Annex together with a short summary introduction to the Annex in the D5.5 - R&D and Policy recommendations.

Under Chapter 6. Overview of AIVP Agenda 2030 an overview of the 10 AIVP goals is provided. Annex IV contains a number of initiatives undertaken by AIVP and its membership.
A number of AIVP related projects also carry forward in IAPH/WPSP projects and are presented in Annex IV – Relevant WPSP projects.

DocksTheFuture ICC conference with industry experts

In December 2019, DtF also had an ICC (Independent Consultative Committee) conference with industry experts and participation by members of AIVP, dedicated to the outcome, further steps and incorporation of the AIVP Survey results in the DtF deliverables. While AIVP will further its engagement of the survey with its membership, enabling evaluation of progress and recommendations, the DtF project has followed up on several initiatives by AIVP and other association and/or individual ports and port-cities as is reflected in the annexes of IAPH/WPSP projects identified as currently ongoing or recently closed.

3. Priority and Secondary Project Selected

Considering the high importance of the WP3 deliverables and their impact on the deliverables of WP5 (DSS tool and Transferability Analysis) a selection of projects from the DtF D2.2 – Clustered Project List has been brought forward for the PCI Tool evaluation. While the GA of the DtF project suggests evaluating the PCI tool with all projects and initiatives clustered under DtF D2.2, it has been recognised to select those projects expected to be eligible for the PCI Assessment (if KPI's and measures against their Strategic and Tactical Objectives are available). The selected projects represent a variety of ports across the TEN-T corridors together with their related hinterland functions and cover the UN SDGs approached in the DtF project for the EU program Port of the Future, vision 2030. Various projects evaluated also involve cargo flows with **neighbouring countries**, including the Mediterranean, Russian Federation, other Eastern European non-EU countries, Turkey and United Kingdom, covering multiple transportation modes, such as: road, rail, IWW and Short Sea Shipping.

For a number of selected projects the PCI evaluation required interaction with the project owners to obtain and review the required documentation. However, many of the clustered projects have been closed before 2018 and not all information is readily available for the PCI assessment, while others reflect international scope (EU + other countries) or identified as non-compulsory initiatives. Therefore, the PCI Assessment focuses on the following project types which make sense within the overall objective of the Docks The Future project:

- The 3 Port of the Future Network RIA projects (currently in mid-phase development)
- 6 other selected projects recently completed or ongoing as of January 2020 (from the D2.2 - Clustered Project List)

Relative to the 3 PoF RIA projects it is to be noted that they are only halfway through their project term and do not have all relevant information yet for the PCI Assessment. While expected targets have been identified and Performance Indicators and Measures are defined, they do not have actual values. Most of these measures are related to the execution of the Living Labs, which will only provide the relevant values to be compared towards the end of the project. This is also further explained in the review of the individual Project Evaluations and the conclusion of the PCI Assessment see chapter 9 - Observations and results from the PCI Tool Assessment.

For a complete list of selected projects, see Annex II - Mapping project evaluations of selected projects from the DtF D2.2 Clustered Projects List.

Some of the initial assigned projects (STEAM and SUMPORT) do not have documents and/or information available adequate for the assessment through the DtF PCI tool. Other projects (e.g.: TENTacle) are not seen as a typical PoF project and do not align with the purpose of the PCI Assessment.

Project #5 in the priority list (5G at Port of Hamburg) was used by ISL in the sample exercise of the PCI tool (D3.3) and only covers one WPSP area, while projects covering Climate Change are targeted for evaluation and have been assigned for evaluation.

For this PCI Assessment, all DtF partners participated in the project evaluation analysis of the selected projects with the following designation.

Priority choice (D2.2 – Clustered Project List)	DtF partner
1. PoF - COREALIS_eu	PortExpertise
2. PoF – PortForward	UNIGE
3. PoF – PixelPort	Magellan
4. AEOLIX- Architecture for EurOpean Logistics Information eXchange	PortExpertise
5. 5G Industrial Environment Trial Platform launched in the Port of Hamburg	sample used in PCI Tool (ISL)
6. SAURON - Scalable multidimensionAl sitUation awaReness sOlution for protectiNg european ports	ISL
7. Ravenna Port Hub: infrastructural works	ISL
8. Green Cruise Port	Circle
9. POSEIDON MED	Circle

Table 1: Priority choice of selected projects assigned to each partner

The following 10 projects remained on the secondary choice list:

Secondary choice (D2.2 – Clustered Project List)	DtF partner
1. Civitas PORTIS - Port-Cities: Integrating Sustainability	PortExpertise
2. PÉÉPOS project	PortExpertise
3. CoRISMa	PortExpertise
4. SYNCHRONET project	PortExpertise
5. INES - Implementing new environmental solutions in the Port of Genova	UNIGE
6. ELEMED project (no assigned WPSP areas)	Magellan
7. POR2CORE-AGCT Port of Rijeka multimodal platform development and interconnection to Adriatic Gate container terminal"	Circle
8. MoS 24	ISL
9. IMPRESSIVE (Integrated Marine Pollution Risk assessment and Emergency management Support Service In ports and coastal enVironmEnts)	ISL
10. NSB CoRe	(ISL)

Table 2: Secondary choice of selected projects assigned to each partner

Chapter 9 Observations and results from the PCI Tool Assessment shows the observations of the evaluation (task 3.5 PCI Assessment)

The evaluation results of the primary and possible secondary projects are consolidated and reflected in Annex I Clustered project list and Annex II Mapping project evaluations.

4. General Approach to the evaluation of projects

In accordance with the WPSP framework, the DocksTheFuture project's (K)PI-set (Performance Indicators - for more details see D3.1 KPI-set (aggregation of KPI's), relates to the 5 WPSP Focus Areas (Macro Agenda) which each focus on specific UN SDGs and/or sub-goals. The PCI Assessment covers the following distribution of evaluated areas and their related UN SDGs:

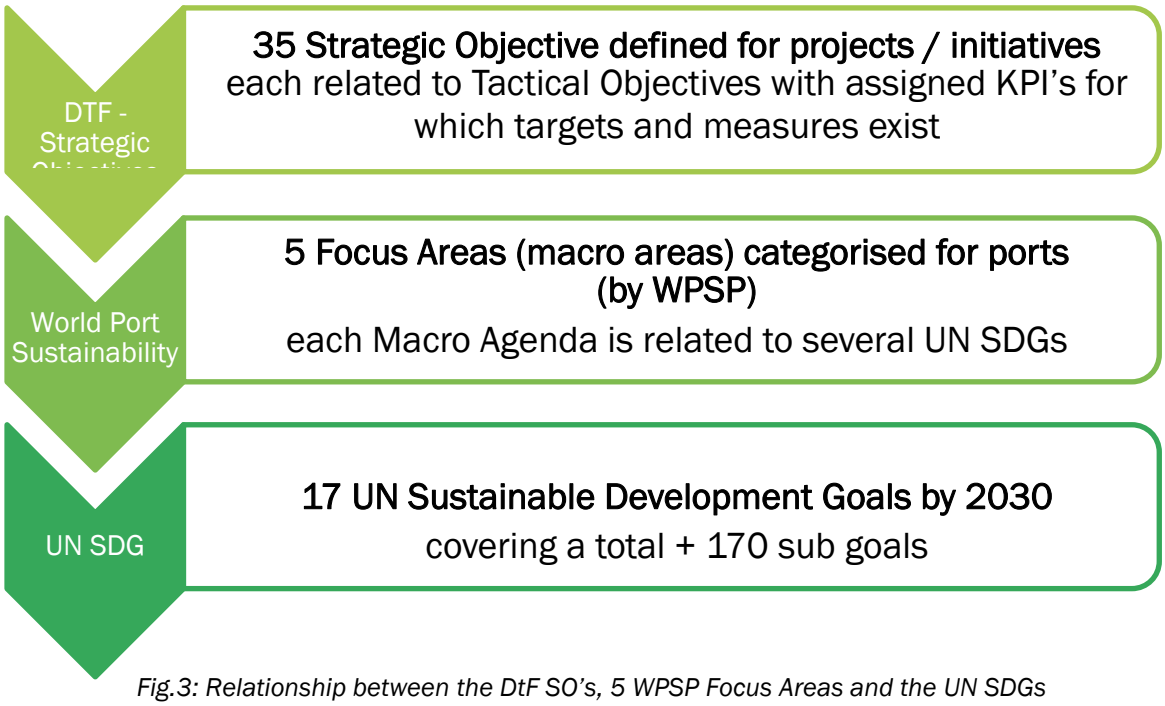


Fig.3: Relationship between the DtF SO's, 5 WPSP Focus Areas and the UN SDGs

The below table reflects the selected projects and their relationship to the 5 WPSP Focus Areas:

WPSP focus area	primary choice	secondary choice
➔ Climate and Energy:	4	3
➔ Community outreach and Port-City dialogue:	6	8
➔ Governance and Ethics:	5	4
➔ Resilient Infrastructure:	5	5
➔ Safety and Security:	5	1

Table 3: Distribution of project evaluations covering WPSP Focus Areas

Notes:

- *to distinguish the KPI-sets identified from Strategic Objectives in the evaluated projects, the DtF project looks at the aggregated level of PI's, called Key Performance Indicators (KPI's).*
- *the 3 PoF RIA projects cover potentially all 5 WPSP areas.*
- *while the primary assigned projects do not seem to cover Climate & Energy, there are relationships identified in these projects to this area (it is anticipated with the renewed EU focus of the Green Deal that future projects will have a more defined emphasis to environment, climate impact and optimal use of renewable energy as well as more solutions improving the circular economy).*

- *From the distribution table 3, one can notice that in recent years the Port-City Relationship (Community outreach and Port-City dialogue) to be a popular attention, second would be Resilient Infrastructure, closely followed by Governance & Ethics.*

For more information and coverage of the 5 WPSP Focus Areas (Macro Agenda) related to the DtF Clustered projects and their relationships to Strategic Objectives and UN SDGs, see the DtF D2.2 – Clustered Project List and the relationship reflected in the development document of the PCI tool (D3.3).

An overview is provided in the relationship diagram provided in Fig.4 below.

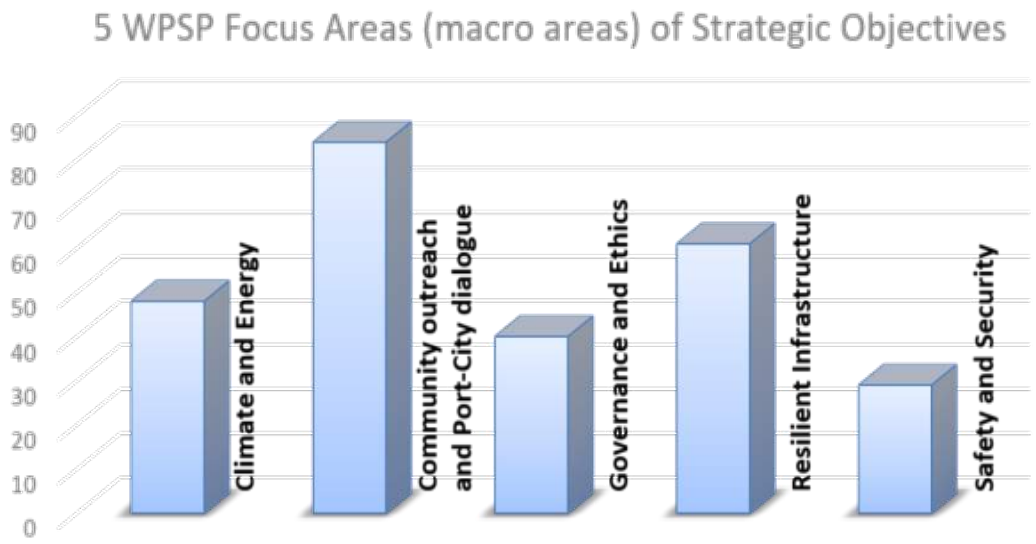


Fig.4: Coverage of projects related to the 5 WPSP Focus Areas

Quantitative and Qualitative Performance Indicators

The 5 WPSP Focus Areas are not specific and each relates to a variety of goals. These goals cover a specific field to include concrete or expected instructions or measures (targets or expectations and actual values). Hence, goals must be translated into objectives. Objectives are already closer to the operational level for two reasons. Firstly, they are formulated precisely enough so that SMART measures can be derived from it. The second operational dimension is that it is possible to define specific targets for an objective. The target can be measured qualitatively or quantitatively. The latter implies that you can assign some sort of desired threshold (absolute, relative) or change (absolute, relative) which can be observed or measured. Business administration refers to these as performance indicators.

Fig.5: Performance Indicators are related to SO and TO with a specific target, expressed in measures to validate the aggregated KPI's

These PI's can be quantitative or qualitative indicators, derived from one or several measures, agreed upon – expressed as a percentage, index, rate or other value – and monitored at regular or irregular intervals and compared to one or more criteria. A qualitative evaluation is often applied when quantification is not possible under traceable conditions. DtF accounts for both ways of measurement, depending on the context of the considered objective.

Coverage of the UN SDGs

While the Project Common Index (D3.3 – PCI tool) reflects the core UN SDGs and/or its sub-goals aligned to the 5 WPSP Focus Areas for the environment in which ports operate (maritime, port and hinterland clusters), PoF projects may relate also to other UN SDGs and sub SDGs or categories, which are not immediately included in the WPSP Focus Areas and by design in the Docks the Future analysis. While a number of targeted goals from the UN SDGs ("education", "employment") suggest that they also have high relevancy for ports, they were not considered as specific targets for PoF projects. DtF considers advanced training and education in its scope, where ports address these under UN SDG 8 (or more precise SDG sub-category 8.5) "Promote inclusive and sustainable economic growth, employment and decent work for all".

A number of UN SDGs are only occasionally mentioned in the context of European port governance and policy, but they are not a regular part of port development programmes and projects. Nevertheless, ports can embrace the wider field of the UN SDGs, recognising the need for looking also in less port-related areas for improvement. This can be an optimal choice in the context of developed port clusters and improving port-city relationships. Their examples of good / best practice stimulate other EU ports to adapt as well, while the UN recommends for all sectors and industries (and governments – authorities) to cover the entire field of UN SDGs. However, various goals have not been addressed directly in any of the analysed projects (e.g. UN SDG 2 'Zero Hunger'). This study and evaluation of projects for the assessment of the PCI Tool analysis will focus on the core areas only.

Underneath is a list of other potential contribution of UN SDGs towards future PoF projects, not included in the PCI Tool:

Strong PoF relation:

- **UN SDG 7: Renewable Energy** = Ensure access to affordable, reliable, sustainable and modern energy for all (ports contribute RE infrastructure and optimisation to ports, port terminals, industries and households)
- **UN SDG 9: Infrastructure** = Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation (only 9.1 is used in DtF)
- **UN SDG 14: Blue Economy + Ocean resources** = Conserve and sustainably use the oceans, seas and marine resources for sustainable development (ports and maritime shipping are using ocean and sea resources)
- **UN SDG 15: Green Economy + Governance** = Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (ports contribute in this area as well)
- **UN SDG 17: Partnerships** = Strengthen the means of implementation and revitalize the global partnership for sustainable development (e.g.: port clusters are an essential part of port evolution in EU)

Limited relevance to PoF:

- **UN SDG 1-2-3-4: Poverty** = while poverty is not a main focus in the maritime sector, employment and continuous education are of great importance, which are covered as sub-categories of the 5 WPSP focus areas
- **UN SDG 5: Gender Equality** = important for EU ports, however; a number of the UN's related targets (e.g. 5.1 legal framework, 5.2 eliminate violence against women, eliminate child marriage and genital mutilation, etc.) are not addressed by the European port community, as they are out of their scope of action. Instead, port-related projects focus on UN SDG 5.5 ('Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life'), which is covered in DtF.

Under chapter 5 - WPSP 5 Focus Areas and their relationship to UN SDGs the details of the 5 WPSP Focus Areas are provided with a clear vision and expectations set for ports, and which incorporate the guidelines in their strategies to adapt their practices and goals to the UN SDGs.

Likewise, as Port-city relationship takes an ever more important role within the port communities, an Overview of AIVP Agenda 2030 (chapter 6) is dedicated to the potentials of open collaboration for ports and their city hosts, enabling mutual benefits and understanding through more than just dialogue. It is also to be noted that the Association Internationale des Villes Portuaires / Worldwide Network of Port Cities (AIVP) has collaborated with the Docks The Future project to establish the initial phase of their Agenda 2030 through a global survey they organised and now continue to evaluate progress among their membership.

DtF-WPSP Relationships Matrix

As mentioned in the introduction, the DtF project has taken the 5 WPSP Focus Areas as the foundation reference for the evaluation of PoF projects coverage of their Strategic Objectives, goals and KPI's (targets and measures). This enables to relate their aggregated KPI's (for more details see chapter 7 Compilation of Performance Indicators) and is used accordingly to relate the project goals and expectations to the UN SDGs, reflected in the PCI Tool.

The overview below (Fig. 6 - DtF-WPSP Relationships Matrix) considers the aggregated KPI's and their respective targets or expectations (qualitative or quantitative KPIs), which in turn relate to their Strategic Objectives. From there the aggregated KPI's have a direct relationship with the 5 WPSP Focus Areas, linked to the UN SDG structure.

The DtF D3.3 (Project Common Index) also provides an annex with a detailed allocation of the DtF identified tactical objectives and their contribution towards the high-level Strategic Objectives. The same structure is reflected and further detailed with the evaluation results of the D3.4 PCI Assessment project evaluations (see Annex II - Mapping project evaluations)

WPSP areas	related WPSP topics as in WP2.2	high-level strategic objectives	targeted KPI type
Climate and Energy - Combat climate change and approach circular economy	To improve the energy efficiency at ports	Combat global warming (SDG 13)	reduction of port-related CO2-equivalent emissions [tons]
	To transit from fossil/based economy to bio-based economy		
	To increase the portion of renewable energy in port		
	To promote green infrastructure at ports		
	To provide systematic incentives for clean ships		
	To deploy alternative transport fuels		
	To have transition towards circular economy	Save natural resources (SDG 12)	dredging material: reducded dreding acitivity & reused dredging material (hazardous/non-hazardous) waste (plastic + general): reduction & reusage (recycling/thermal) in tons water: fresh water saved (litres)
Community outreach and port-city dialogue - Establish sustainable port-city relations and improve quality of life in port cities	To transform the port governance into stakeholder management	Inclusive cities (SDG 11.3.2)	qualitative scale (see PCI)
	To set up community outreach		
	To strengthen city-port relations		
	To promote spatial planning		
	To promote the public awareness and port culture		
	To publish annual port sustainability report		
	To increase the share of nature areas in ports	Land consumption (SDG 11.3.1)	former port area converted [square meters]
	To reduce / mitigate the externalities of port operations	Improve environmental quality (SDG 11.6)	reduction of emissions in port noise: measured as reduction noise in dB by noise level and exposure (fraction of runtime) in a specific area (see exact requirements in the PCI tool) air: Respective reduction of PM10 [kg], PM2,5 [kg], NOx [kg], NH3 [kg] or SO2 [kg] per year water: cut in harmful or toxic substance emission compared to last year (relative scale; see PCI tool)
	To improve employment conditions in the port	Good jobs (SDG 8.5)	qualitative scale
	To enhance the skills and education of port labour		
Governance and Ethics - Promote good governance practices in port authorities	To transit towards Transparency and integrity in policy	Transparency (SDG 16.6)	qualitative scale
	To have policies with equal rights and opportunities	Gender equality (SDG 5.5)	qualitative scale
	To set fair trade regulations for ports or bw ports	Equal opportunity (SDG 10.3)	port open to thrid-party operators [binary]
	To put anti-corruption regulations	Restrict corruption (SDG 16.5)	qualitative scale
	To establish a Governance towards responsible supply chains	Green governance (SDG 15.9)	ISO 14001 [binary]
Resilient Infrastructure - Provide resilient infrastructure to meet demands for maritime transport and sustainable landside logistics	To consider resilience in port planning and design	Economic growth (SDG 8.1)	growth in port's throughput capacities through measure [TEU, tons]
	To encourage port project financing and investments		
	To have an effective public-private partnerships		
	To transit towards digitization and automation in port activities	Higher productivity (SDG 8.2)	savings due to optimization [Euro]
	To have working with nature	Resilient infrastructure (SDG 9.1)	qualitative scale
	To take adaptive measures for climate resilience	Account for resilience (SDG 13.2)	
	To put in place ecosystems management		
Safety and Security - Establish a framework to ensure safe port operations	To establish cyber-security for port data network and platforms	Reduce crime (SDG 16.1)	qualitative scale
	To optimise protection of critical infrastructure		
	To comply with ISPS code		
	To improve nautical safety	Safe working conditions (SDG 8.8)	qualitative scale
	To enhance the port labor safety		
	To set responsible care Safety and Security		

Fig.6: DtF-WPSP Relationships Matrix

5. WPSP 5 Focus Areas and their relationship to UN SDGs

This chapter provides an overview of the 5 Focus Areas of Interest being the foundation for the World Ports Sustainable Program (WPSP), used as a basis within the DtF project for its WP2 and WP3 tasks and deliverables.

Climate and Energy

energy efficiency, circular economy, bio-based economy, renewable energy, CO_2 and infrastructure, clean ship incentives, deployment of alternative transport fuels

Relevant UN SDGs

Ports subscribe to the Paris Climate Goal which aims to keep global warming well below 2°C. Building on the output of the World Ports Climate Initiative, port community actors can collaborate in refining and developing tools to facilitate reduction of CO_2 emissions from shipping, port and landside operations. In addition, they can take initiatives to enable energy transition, improve air quality and stimulate circular economy.

Community outreach and port-city dialogue

stakeholder management, sustainability reporting, community outreach, city-port relations, employment, education, spatial planning, nature in ports, port culture, externalities of port operations

Relevant UN SDGs

Port community actors can develop synergies to solve collective problems in and outside the port area, such as hinterland bottlenecks, training and education, IT, marketing and promotion as well as innovation and internationalisation. Similarly, port community actors strive for dialogue with urban stakeholders to offer innovative cross-over services that contribute to the attractiveness and resilience of port cities.

Governance and Ethics

transparency, integrity, equal rights and opportunities, fair trade, anti-corruption, responsible supply chains

Relevant UN SDGs

Principles of good corporate governance are increasingly being introduced to port authorities, regardless of their ownership. Furthermore, all port community actors should be encouraged to uphold high standards of ethics and transparency.

Resilient Infrastructure

port planning and design, public-private partnerships, financing, digitisation and automation, climate resilience, working with nature, ecosystems management

Relevant UN SDGs

Port and port-related infrastructure aim at anticipating demands of maritime transport and landside logistics, at being resilient to changes in climate and weather conditions and at developing in harmony with local communities, nature and heritage.

Safety and Security

cyber-security, protection of critical infrastructure, ISPS, nautical safety, labour safety, responsible care

Relevant UN SDGs

In ports a mixture of enforced regulatory laws, regulations, duties and responsibilities exist, related to ensuring safety and security of ship and cargo operations within the port. With the advance of global terrorism and digitalisation, security problems have obtained an entirely new dimension.

Source: WPSP
for more information on the WPSP initiative:
www.sustainableworldports.org
www.sustainableworldports.org/areas-of-interest

WPSP projects related to EU ports are reflected in Annex IV Relevant WPSP projects (includes AIVP projects)

6. Overview of AIVP Agenda 2030

Connecting 10 goals in port cities to the 17 UN SDGs

The AIVP Agenda 2030 translates the global governance UN SDGs into the context of port-cities, helping port and urban stakeholders to prepare projects and plans that contribute to sustainable development and port-city relationships.

01 | CLIMATE CHANGE ADAPTATION

Preparing city ports for the consequences of climate change.

Anticipating the consequences of climate change for river or maritime city ports

1. Including joint City Port measures to prevent inundation and flooding of the port and connecting infrastructure in strategic planning documents, and through a suitable land management policy.
2. Promoting the re-naturalisation of riverbanks and coastline to slow erosion and the impacts of extreme storm events.
3. Introducing an early warning system to reduce the human and economic consequences of exceptional climatic phenomena.
4. Considering other climatic changes, such as the consequences of drought and high temperatures, on port systems, supply chains, and labour.
5. Making resilience and carbon neutrality a priority in the design and operation of City Port installations with the use of the latest technologies in emissions reduction and CO_2 capture/storage.

CONNECTING TO UN SDG

UN SDG: 1 – 7 – 9 – 11 – 13 – 14

02 | ENERGY TRANSITION & CIRCULAR ECONOMY

Innovative sustainable energy and industry for city port territories.

Making our city port territories central to the energy transition and circular economy, in real symbiosis with the different local stakeholders

1. Promoting dialogue and cooperation between socio-economic stakeholders to bring their activities closer together, identify potential synergies and encourage better management of natural resources.
2. Giving priority to circular economy projects as part of new partnerships between the city, port, businesses and civil society, and by supporting the development of port activities aimed at promoting exchanges and/or recycling of materials and energy.
3. Committing the City Port territory to achieving a low carbon, low resources society, through the transformation of industrial production, and the production and management of carbon-neutral, renewable energies.
4. Encouraging the port community to become partners in the generation of clean energy, notably when concessions come up for renewal.

CONNECTING TO UN SDG

UN SDG: 7 – 8 – 9 – 11 – 12 – 17

03 | SUSTAINABLE MOBILITY

Finding new mobility connecting city and port.

Improving mobility in the city port and combating urban congestion

1. Encouraging the development of soft, multimodal and collaborative mobility, notably for commuting.
2. Developing soft solutions for proximity-based urban logistics, by promoting the use of waterways.

3. Promoting the use of waterways, rail or other non-fossil-based modes of transport within the City Port territory for shipping goods.
4. Reducing the negative impacts of periods of peak activity in the City Port territory by any means possible.

CONNECTING TO UN SDG
UN SDG: 9 – 11

04 | RENEWED GOVERNANCE

Using innovative governance for sustainable port cities.
Promoting city port dialogue through a renewed governance approach aimed at reconciling the quest for economic and environmental performance with the wellbeing and aspiration of the population

1. Guaranteeing better representation for all stakeholders - including civil society - in City Port decision-making bodies.
2. Committing to continuous, long-term consultation across the City Port region.
3. Guaranteeing transparent management of City Port regions and adopting open information systems.
4. Developing collaborative approaches, drawing on scientific and technologic knowledge from the scientific community and civil society to support decision-making.
5. Adopting a land management policy that strikes a balance between urban uses and the active port, especially on the waterfront.

CONNECTING TO UN SDG
UN SDG: 10 – 11 – 13 – 15 – 16 – 17

05 | INVESTING IN HUMAN CAPITAL

Human capital for port and social development.
Investing in human capital and developing port cities in a way that provides residents, young talents, professionals and entrepreneurs with the jobs needed for their own personal development and for the competitiveness of the port community

1. Mobilising public and private stakeholders in port sectors to promote life-long professional training and personal development for the citizen.
2. Enlarging the mix of profiles and promoting skills transfers, to improve flexibility and move beyond the sector-based approach. Without discrimination
3. Providing training in preparation for the deployment of smart and green technologies in cities and ports.
4. Promoting interactions and projects between schools, training institutes and the professional world.
5. Creating collaborative spaces for experimentation: technology halls, co-working spaces, Learning Centres, Port Centres etc., to encourage interaction and stimulate new projects.

CONNECTING TO UN SDG
UN SDG: 4 – 5 – 8 – 9 – 10 – 13 – 14 – 17

06 | PORT CULTURE & IDENTITY

Local port Identity as a key asset for sustainable relationship.
Promoting and capitalising on the specific culture and identity of port cities and allowing residents to develop a sense of pride and flourish as part of a city port community of interest

1. Developing all types of promenades and other open spaces in City Port interface zones, to promote a better understanding of port and logistic activities.
2. Integrating spaces and functions open to residents and visitors alike into port facilities, enhancing the visibility of the port and its activities.
3. Encouraging the creation of Port Centres.

4. Providing, by any means, daily news and information on port and city life for residents, particularly young people and school students.
5. Organising temporary or permanent cultural events in port areas.

CONNECTING TO UN SDG
UN SDG: 4 – 8 – 11 – 12

07 | QUALITY FOOD FOR ALL

City ports are crucial for sustainable food distribution.
Making port cities key players in the search for sufficient, quality food for all

1. Developing smart systems for monitoring and controlling food resources from one end of the logistics chain to the other.
2. Combating food waste by improving storage capabilities for both import and export of perishable goods.
3. Promoting fair trade and organic and local productions through a tailored commercial policy.
4. Enhancing port areas dedicated to commercial fishing and encouraging innovative food research projects in the City Port territory.

CONNECTING TO UN SDG
UN SDG: 2 – 12 – 14

08 | PORT CITY INTERFACE

Port city interface is a resource to mix different programs.
Providing residents living in proximity to port activities with housing, recreational and cultural amenities in city port interface zones

1. Incorporating measures designed to reduce port nuisances into building design.
2. Revising the status of port and City Port heritage to properly reflect the site's historical significance.
3. Developing public spaces and recreational or cultural amenities in City Port interface zones to create an appealing new area.
4. Promoting the architectural and landscape integration of port facilities.

CONNECTING TO UN SDG
UN SDG: 4- 11

09 | HEALTH & LIFE QUALITY

Having good living conditions a priority for the city port.
Improving living conditions for residents of port cities and protecting their health

1. Allowing independent, transparent measurement of air quality, water quality, sound levels, and light pollution in the City Port territory.
2. Optimising the use and management of fresh and sea water in ports.
3. Promoting and supporting the development of greener port facilities.
4. Introducing a commercial policy to reward the greenest ships and enforce slow steaming at the approach to port cities.
5. Regulating cruise ship stopovers based on the port city's capacity, without compromising the equilibrium and appeal of the local area.

CONNECTING TO UN SDG
UN SDG: 3 – 6 – 11 – 12

10 | PROTECTING BIODIVERSITY

City port biodiversity must be preserved and protected.
Restoring and protecting biodiversity on land and at sea in port regions and cities

1. Improving and maintaining water quality in the port basins.

2. Conducting regular surveys of biodiversity in the City Port territory and publishing the findings.
3. Preventing the destruction of sensitive natural habitats when developing onshore or offshore port spaces and by regulating ship-generated waves.
4. Supporting the efforts of civil society to protect fauna and flora in the City Port territory.
5. Encouraging programmes aimed at restoring and developing biodiversity in the City Port territory.

CONNECTING TO UN SDG
UN SDG: 6 – 11 – 14 - 1

Source: AIVP
AIVP Agenda 2030: www.aivpagenda2030.com
AIVP: www.aivp.org

For more information on the AIVP Survey for DocksTheFuture check the deliverable under WP5: D5.5 - R&D and Policy recommendation: the entire survey is included as an Annex together with a short summary introduction to the Annex in the body of the deliverable.

Some of the AIVP projects are also reflected in Annex IV Relevant WPSP projects (includes AIVP projects)

7. Compilation of Performance Indicators

In order to evaluate the designed PCI Tool, the DtF assessed feasibility covers all scopes of objectives and their performance indicators. For every project, the specific **objective** needs to be identified. The corresponding **measures** must also emerge from the project description. Furthermore, the project must assign an attainable **target**. The respective Performance Indicator – quantitative or qualitative – needs to be derived. If quantitative, the threshold or change that is targeted must be named along with its respective unit of measure, either expressed in absolute or relative numbers. The following example is provided:

A hypothetical project is addressing the sustainability of a port (goal). The specific objective is the reduction in greenhouse gas emissions. The measure is to install wind turbines as well as solar power modules in the port area in order to supply terminals and port infrastructure with green energy. The project gives a number of the targeted power output from the newly installed energy equipment.[2]

These three pieces of information need to be collected in order to assess if DtF's project common index (PCI) is able to evaluate and compare this action against the actions of the different projects considered to contribute to the Port of the Future concept. If a measure is found to contribute to more than one objective, this must be accounted for. The project reviewer must identify the three components (**goal, measure and target**) for each accordingly.

Qualitative and Quantitative KPIs

In function of the evaluation of the PCI tool, below figure provides a quick overview of the approach to qualitative and quantitative KPI's:

Qualitative KPIs

The score of a qualitative KPI of a specific project or measure is evaluated by the PCI tool according to the classification on the five-band scale. For qualitative KPIs only integer values between one (low impact) and five (high impact) are considered. Specific characteristics are provided for each of the five stages, which build the framework for evaluation. As an example, the KPI of the high-level strategic objective of *Gender Equality* is considered:

	KPI	estimated effect	score	1	2	3	4	5
Governance and Ethics	To which extent does this action promote and increase the share of women in upper management of port-based enterprises? To which extent does this action promote and increase the overall share of women in port-based enterprises?			**low** introduction of voluntary public events, e.g. "women career day", "girls day"; participation in "equal pay day" events	**low to medium** making salaries in upper management transparent; commit to non-binding equality initiatives; special programs that aim at increasing the share of female employees in traditionally male-dominated port-related professions	**medium** strong efforts to obtain equality in upper management, e.g. with mentoring program to individually foster women's careers within the organization; commit to binding equality initiatives; minimum quotas of 25% or more in upper management positions	**medium to high** set-up equally represented dual leadership positions; very strong efforts to obtain equality in upper management; commit to binding equality initiatives	**high** implementation of a mandatory quota of 50% in upper managment positions of public and private organisations

Fig.7: General assessment of qualitative KPI's in the PCI tool

[2] This type of project data is processed during the PCI Assessment and translated into CO_2-equivalents. The quantification of the target should be reported as detailed as it is expressed in the project description.

Exceptions exist for the area of “Governance and Ethics”, which includes two KPIs that deviate from the five-band scale as they are binary KPIs. Their specification can be either *yes*, which results in a five-point score, or *no*, which results in a score of zero.

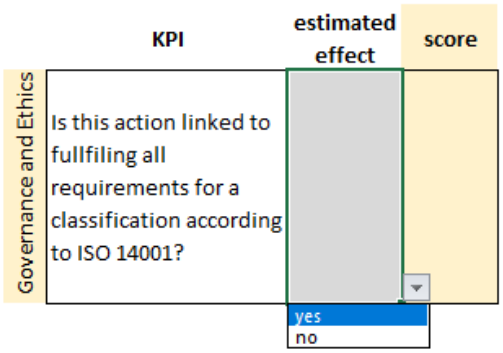


Fig.8: Assessment of qualitative KPI’s related to Governance & Ethics

Quantitative KPIs

The approach of measuring differs for each KPI, however, alignment in scaling guarantees the consistency among the different KPIs. For all quantitative KPIs a scale is applied where 1 additional point requires the respective effect to be 10 times higher. Here, decimal numbers as values are possible. For methodical reasons a score of 1 complies to a minimum threshold that needs to be achieved in order to maintain a score of 1 (or above). Decimal numbers between 0 and 1 do not exist. The calculation of each quantitative KPI differs.

As an example: KPI for CO_2 compensation or reduction is only subject to the respective amount of CO_2 measured in tons of equivalent units:

	KPI	unit	estimated effect	score	1	2	3	4	5
Climate and Energy	Reduction or compensation of port-related CO_2 equivalents emissions/year	tons (equivalent units)	19700	3,29	100	1.000	10.000	100.000	1.000.000

Fig.9: General assessment of quantitative KPI’s in the PCI tool

If all necessary inputs can be derived from the given reference, the PCI tool may be used in order to compute the respective KPI for the high-level strategic objective.[3]

[3] The reference point of the project assessment is measures. If one project is contributing to one high-level strategic objective, two lines have to be added. Two different measures for the same high-level strategic objective will also be recorded in two lines. The PCI of a project will add up the different effects.
E.g.: A project states to upgrade the illumination system of a facility in order to save energy while a different measure is targeting to implement solar panels on the facility to support the switch from fossil to renewable energy. Both actions contribute to the high-level strategic objective of combating global warming. The effect in the reduction of CO_2-equivalents will be summed if computing the PCI but assessed separately in this task.

Where possible, the reviewing partner may score the measure according to the framework provided in the PCI tool. Reasoning must be provided in the spreadsheet under remarks.[4]

When the data on the measure's indicators are not presented in the desired format or unit, it must also be recorded in the Project Evaluation worksheet. In case it is not possible to retrieve quantified data into the desired KPI format, the score may be left empty. To do so, it is important to record the given data and information properly and detailed in order to evaluate in the upcoming process if adjustments to the PCI are necessary or additional information may have to be requested from the responsible organisation. The reviewing partner may already carry out such additional research. If data has been retrieved after contacting the project's management it must be indicated in the spreadsheet accordingly.

[4] Reference to the documentation of the PCI tool (D3.3) in order to process data in the PCI tool.

8. Project Scoring (I-score – TA-score – TA-index)

As presented in the introduction (chapter 1), innovativeness is a prerequisite for Port of the Future projects, expressed as its I-score (see DtF D3.1 and D3.2 on the definition of Adequacy), attaining a positive score for Port of the Future weighing in the PCI Tool.

Independent from a project's innovativeness (no innovation concept is assigned as ZERO-score projects in the PCI assessment), any project

- can still be considered for its **Transferability** (DtF D5.3 – Transferability Analysis - TA): project owners can verify the wider range of potentials for transferability or project peering with other ports running their project through the TA methodology or project peering with other ports; and
- can make use of the benefits of running the project's objectives and solutions through the DtF D5.2 – **DSS Tool**, to recognise its deliverables' validity compared to other projects focusing on similar areas. While a synopsis of the methodology for both the TA and the DSS Tool is provided in this chapter, a more advanced understanding can be obtained in the referenced DtF WP5 deliverables.

In this chapter the focus is on the **Innovativeness** (I-score) and **transferability** (TA-score), while the full use of TA methodology (D5.3) results in a TA-index, making use of the full potentials of the Transferability Analysis.
While the current version of the DSS Tool does not reflect the outcome of the PCI Score – as the Project Evaluations surfaced incomplete information available on almost all projects evaluated for the PCI Assessment (see Chapter 9. Observations and results from the PCI Tool Assessment) – it is anticipated that future versions of the DSS Tool will reflect improved criteria and data provisions resulting in a confirmed or ZERO PCI-score. While most projects have a TA-score assigned the current DSS Tool may reflect as such when the information is supported through the ISL database, used by the current DSS Tool. Otherwise both TA-score and TA-index will remain empty fields in the current DSS Tool but receive updated information in future DSS Tool version.

Besides the validation of the I-score and the TA-score – identifying the project eligibility for PCI Assessment – considers the project costs and the KPI scores before calculating a project's PCI score. This is where the detailed evaluation of projects comes into perspective. The project evaluation performs numerous checks on the **project details**, such as the availability of essential data (Tactical Objectives (TOs) linked to defined Strategic Objectives (SOs) translated into clear project goals or aims and targets to be achieved from the projects set deliverables). These are then assessed in more detail, recognising the Performance Indicators (or aggregated KPI's) which demonstrate quantifiable and/or quantitative SMART measures, which in their turn need to be translated in budgeted or actual values and/or Cost Benefit Analysis (CBA) or at least a Financial Project Performance indicators analysis, meeting or surpassing the project goals and objectives.

In addition to the detailed projected information supported, the data also needs to be **compliant to several conditions** to enable the PCI Tool to function. As an example, the PCI Tool cannot process a percentage (x%) and needs to be expressed in absolute numbers. There are a number of other conditions to meet compliance and are listed under the General conclusions from the PCI Project Evaluations at the end of the next chapter 9.

In an affirmative scenario the PCI score can be assessed in the PCI Tool. If any of these requirements are not met, the PCI Assessment will strand till the required details up to SMART

measures and actuals or budgeted values are provided. The PCI-score remains uncalculated till that stage.

The PCI methodology (details provided in the DtF D3.3 – Project Common Index) is explained below with the elementary process steps documented to assess a project through the PCI Tool, while the examples of the evaluated projects and their review for PCI Tool Assessment are clarified in the next chapter 9 - Observations and results from the PCI Tool Assessment.

As part of the DtF D3.4 PCI Assessment the DtF partners evaluated a careful selection of projects from the DtF D2.2 Clustered Project List + the 3 PoF RIA projects, with regard to their innovativeness, transferability and evaluation of the detailed requirements to perform the actual PCI Assessment to obtain a PCI-score.

While the I-score and TA-score are not truly scientific evaluations, the assessment needs to happen by knowledgeable experts with a standing history in the respective industries or sectors involved. Further evaluation of detailed project documentation also requires profound knowledge of the project and the goals and objectives it aims to support. it provides indicative scoring of the project based on the criteria as outlined in the tables below and on the information available from the assessed projects. This scoring is supported in the Project Evaluation worksheet on the 'Projects Scoring' tab' under their respective fields: I-score – Innovativeness Score and TA-score – Transferability Score).

For the concept of Innovativeness, a 5-band scale is applied to evaluate the **degree of innovativeness (I-score)**. More details can be obtained in the DtF D3.2 – DtF Adequacy.

Scale	PCT	definition of innovativeness
0	NONE	implementation of existing technology
1	LOW	innovations that make existing solutions more accessible
2	MEDIUM	improvement of existing technical solutions
3	HIGH	adapting existing technology from other sectors or uses to the port sector
4	VERY HIGH	development of completely new technical solutions that could also have an impact on other sectors

Table 4: Scale for the Innovativeness Score (I-score)

The Transferability Analysis has two dimensions:

As an introduction and better understanding of the Transferability Analysis, the definitions are defined as:

TA-score = **potential contribution towards transferability** (PCT): high-level assessment on whether a project or initiative has the potential to transfer its solutions to other ports or for ports to peer/collaborate in same project (based on goals and strategic objectives) – *the TA-score is standard available in the PCI tool*.

TA-index = **ease of transferability** (EoT): defines how projects are recognised adequate and transferable or peered in other ports, independent from their innovativeness. Analysis through the TA methodology, defining the implementation expectations, evaluated measures and risk management as well as specific resolutions to local situations – *the TA-index is reflected in the DSS tool (when made available through the supported database for populating the DSS Tool, otherwise this will be available in future DSS Tool version).*

For the transferability assessment a 5-band scale is applied to evaluate the **potential contribution of transferability** (**TA-score**). Note this can only be possible when the score for innovativeness is not zero (a ZERO I-score results also in a ZERO-weight score for transferability). Note: this doesn't mean a project can be further evaluated through the full TA Methodology, referenced to in the DtF D5.3 – Transferability Analysis

The Transferability Analysis has a deeper definition through the application of its outlined methodology, resulting in a **Transferability Index (TA-index)**. This index cannot be supported through this type of high-level project evaluation applied for the PCI Assessment. This will require applying the Transferability Methodology, defined in the DtF D5.3 – Transferability Analysis, which is a task assigned to project owners and is therefore not included in the PCI Assessment.

scale	PCT	definition of potential transferability contribution
0	ZERO-weight	**NOT measured** OR project for a **single port**
1	LOW	**no support or high constraints** identified, but has a potential for transfer
2	MEDIUM	**modest support:** constraints and resolutions identified, but NO peered resources with other ports
3	HIGH	**limited potential:** applicable in 1 to 4 targeted ports, constraints and suggested resolutions identified, AND peered resources to implement across minimal 3 ports (simultaneous project through port peering and/or assistance in transfer from donor to adaptor port(s))
4	STRONG	**wide support:** applicable at multiple targeted ports (5 or more), constraints and suggested resolutions identified, peered resources to implement solution in more than 3 (simultaneous project through port peering and/or assistance in transfer from donor to adaptor port(s)

Table 5: Scale for the Transferability Score (TA-score)

For reference purposes and as the TA-Index is also shown in the DSS Tool, an overview of the detailed TA-Methodology and the applied scale is provided below.

The Transferability Analysis approach uses the proven **NICHES+ 6-step methodology** developed by **POLIS**, providing the conditions of relevancy (potential contribution) through risk management and identification of success factors to transferability related to both Adequacy Level and Innovative Concept, promoting the uptake of the most promising innovative concepts, in order to transfer them from their current "niche" position to a mainstream application.

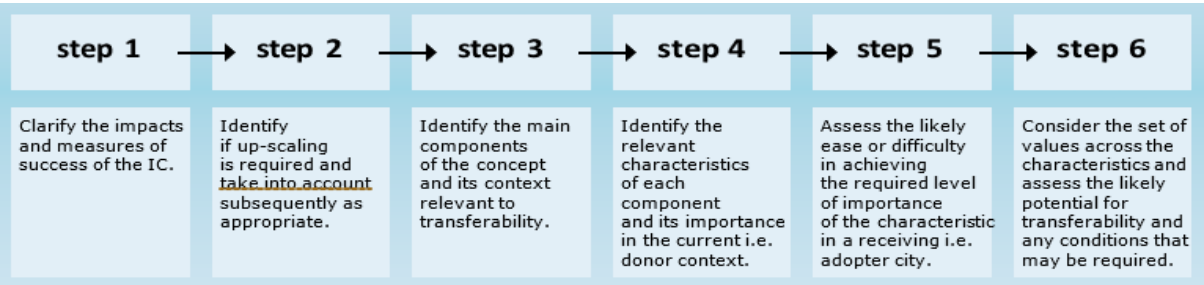


Fig.10: Transferability Methodology

Each concept is illustrated with good practice examples, key benefits, decision criteria for implementation, and useful references, outlining the following aims:

The outcome visualises how projects are recognised adequate and transferable or peered in other ports, independent from their innovativeness through the ***Transferability Index (TA-index)***

+2	strong support for transferability
+1	modest support for transferability
0	neutral
-1	modest constraint for transferability
-2	strong constraint for transferability

Table 6: Scale for the Transferability Index (TA-index)

While there may be innovative ways to implement or adapt existing solutions which may also increase the transferability (see applying the TA-index) the DtF team cannot assess such an evaluation of the project based on the information available.

For more details on the methodology of TA-score and TA-Index, refer to the DtF D5.3 – Transferability Analysis.

The I-score, TA-score and TA-index are also reflected in the **DtF DSS Tool** (D5.2 – Decision Support System) when the Positive PCI score is provided through the supporting database to feed in the DSS Tool. For the TA-Index, an empty field will be shown, as no project evaluation will be performed under the DtF project for the full Transferability Analysis, using the required methodology (not part of the DtF scope, except for an example for illustration purposes).

9. Observations and results from the PCI Tool Assessment

Obtaining the information and data required to assess the selected projects and perform the PCI evaluation has not been an easy undertaking as not all and in some case no valuable data was either publicly available or within our own DtF records traceable. While the DtF consortium had selected and assigned projects recently closed (2019) or currently ongoing (such as the PoF RIA projects – COREALIS_eu, PortForward and Pixel Ports), older closed projects and initiatives were excluded from the PCI Tool assessment. Due to not having the required information available for the evaluation, only 9 identified projects were considered providing value for the PCI Tool Assessment. Another secondary list of 13 projects were identified, but also here the evaluation had to eliminate 3 projects which did not have the required information to execute the evaluation or were identified as not typical PoF projects, unlikely to offer any usable inputs for feeding the KPIs or any transferable results to other ports.

Where such information or data was not available, the fields in the PCI Project Evaluation Worksheets and the PCI Tool have been marked as NA (not available).

Annex II Mapping Project Evaluations provides the results of the evaluations of the 9 projects selected from the DtF D2.2 – Clustered Projects List.

While most projects evaluated have closed their active partnerships after their closure date, the DtF team will progress with the current ongoing PoF RIA projects, obtaining their understanding and confirmation of the evaluation of their projects by the DtF team.

At the same time and treasuring the experts' advice, the DtF Consortium concludes the PCI Assessment with balancing of the results and approach of the PCI tool with port experts during the planned WP3 DtF Expert Workshops. These should have been held in March 2020, however due to the COVID-19 situation these workshops will be held through online conferencing to be organised by the DtF team during May 2019.

Likewise online conference calls will be held with the 3 PoF RIA projects to enable the confirmation of our findings with the project owners (currently scheduled for end of April, early May 2020).

Project Evaluation for PCI Tool

DtF has evaluated the selected priority projects (table 1 – page 12) to obtain data and insights about the measures identified by the project owners (and stakeholders), related to the project and solution(s) objectives and goals or targets (these respond to the Strategic and Tactical Objectives). Where available, the evaluator captured the quantitative targets or expectations and actual values measured and/or the quantitative measures reported on the project and implementation results from their living labs (LLS) (or pilots). These results were then run through the DtF D3.3 – PCI Tool in order to assess the project's contribution to the different DtF objectives in terms of KPIs and – where possible based on existing data – the project's PCI.

For this purpose a Project Evaluation Worksheet template was created to facilitate the process of information collection from the published or shared deliverables of the projects selected for evaluation. That information was retrieved on the mechanics of identifying the Strategic and Tactical Objectives (goals), measures and targets for each of the evaluated projects. The results where then filtered into the PCI Tool to result in the **PCI Score** to illustrate the completeness and robustness of the PCI Tool. The results from both the project evaluations and the inputs and throughput results from the PCI Tool are reflected in this chapter.

An overview of the results is reflected in Annex II – Mapping project evaluations.
Annex V - PCI Project Evaluation Worksheet provides a quick overview of the analysis tools (worksheets) used by the DtF team to obtain the required information for the PCI Tool Assessment.

Project Evaluation intro

During the evaluations of the selected projects the DtF team identified several conditions and shortcomings or additions which are provided in the below observations. Appropriate actions relative to the completeness of the PCI Tool have been performed.

Highlighted information in the project description must be kept in an adequate extent (highlighting whole pages is not feasible) and focus on key remarks regarding the needed information.

Some of the selected projects relate to a scope relative to its implementation of solutions and/or research for a specific port, port community, port cluster and/or a combination with its stakeholders in the serviced hinterland. Other projects, such as for example AEOLIX and the 3 PoF RIA projects have a much wider application during the project scope and execution of their Living Labs and reflect a larger geographical scope of stakeholders, covering either many ports and a wide range of stakeholders engaged in the project consortiums, or even covering a large number of the EU TEN-T Corridors.

This required a more extensive approach in the evaluation, to enable capturing the vast complexity and number of document deliverables to be evaluated. However, the aim of the project evaluations for the purpose of the PCI Tool Assessment is to extract the concrete information on measures and their contribution to certain targets, translated into DtF KPIs. While a more extensive evaluation for some complex wider-scope projects was approached to obtain in-depth understanding, such evaluation surfaced missing concrete information (or not yet observed by ongoing projects). Incomplete and quality data from the project is essential to be considered in the PCI Tool Assessment (e.g. KPIs which are mentioned without actual measures). This is not considered in the PCI Tool Assessment (e.g. KPIs which are mentioned without actual measures). Such a more extensive in-depth review has been reflected in the respective Project Evaluation worksheet, which can be shared with the relevant project owners for their further guidance in establishing more concrete data for future evaluation. However, with their current status of needed information they are not appraised further in the PCI Tool and did not obtain a PCI-score at this stage.

The choice of primary selected projects therefore also provided the opportunity to enable the PCI Assessment to cope with a variety of project complexities, ensuring its validity of usefulness for future PoF projects as well as for the project owners to identify the potentials of their projects and where to focus on in their objectives, targets and measures when proposing their potential projects to engaged stakeholders.

The following section provides an outline of the Project Evaluation templates. After that, a section is dedicated to the observations captured during the Project Evaluation process and at the end of this chapter an introduction to the **PoF KPI Dashboard** is provided, which enables current and future PoF projects to relate and compare their objectives, targets and measures with already ongoing or proposed projects in the maritime, port and supply chain sectors.

The PCI Project Evaluation worksheets (see below) reflect a five-point **PCI scale** (1=low to 5=high) to which the identified KPI's for a project are aggregated. The KPIs are of either qualitative or quantitative nature and approached differently, standardisation is required which is consistent among and within the 5 WPSP Focus Areas. For detailed explanation on how the PCI-score is calculated and composed of the identified aggregated KPIs see DtF D3.3 – Deployment of the Projects Common Index: methodology for analysis and monitoring.

Project Evaluation Worksheet

Tab1: Project Scoring:

Lists the project-level information and scoring (see chapter 8 Project Scoring)

- ID: serves as a reference to the projects analysed and evaluated (reference to the DtF D2.2 Clustered Project List)
- Project cost: total cost of the project (all measures listed in tab "measures")
- Consolidated evaluation results (in part evaluation observation)
    - I-score = Innovativeness Score – see tab "Innovativeness", DtF D3.3 – PCI Tool for further detail
    - TA-score = Transferability Score – see DtF D5.3 – Transferability Analysis
    - TA-index = Transferability Index (not measured as it requires making full use of the TA methodology defined in the DtF D5.3 - Transferability Analysis).

Tab2: *Measures:*

Placeholder for collecting information on the links between measures and strategic/tactical objectives – where available including the respective KPI score. Every identification of a measure is recorded in a separate row. A project may contain a measure that accounts for more than one high-level strategic objective and hence requires separate rows as well. A specific reference is indicated and where the project was also part of the DtF D1.1 Desktop Analysis, the Atlas.ti software can be used to identify the respective parts of the document for quick reference. Otherwise, the public and/or DtF available project documentation is used to obtain insights and detailed information about the Strategic and Tactical Objectives, goals, targets and expectations, their measures, together with quantitative and qualitative information, confirming the projects set goals.

The captured and evaluated information, related to the DtF-WPSP Relationships Matrix (see Fig. 6 – page 16), the DtF SO-TO-list and the DtF KPIset (MS – Measures) :

- High-level strategic objectives (+ source)
- Targets (+ source)
- Measures (+source)
- Identified Performance Indicators (PI) – if available
- PI Value – if available
- KPI's derived from the deliverables – if available
- KPI score (result from running the Project Evaluation information through the PCI Tool)
- Remarks and comments + reference documents or URL's

Every specification of set thresholds, measurements and use of indicators to quantify the outcome of a measure is captured in the Project Evaluation worksheet. The standard KPI is automatically listed when a high-level strategic objective is selected.

It is also essential to understand that in the context of the evaluations, past projects did not have the requirements to produce and proof their validity and implementations through the evaluation of expected or targeted measure versus actual values during and after implementation of the solution(s). Also, this required a different approach in evaluating past projects versus for example the PoF RIA projects.

For those projects which are currently ongoing (PoF RIA projects) the respective Project Evaluation Worksheets are being confirmed for review by the respective projects, together with online feedback review sessions with the project owners – scheduled for end of April – early May 2020.

To obtain an impression of the worksheet tool, see Image 1 and 2 in the Annex V PCI Project Evaluation Worksheet.

PoF KPI Dashboard

Within the PoF Network collaboration between DtF and the RIA projects, Docks The Future has established a PoF KPI Dashboard reporting and communication tool which also enables the evaluation of the 3 current PoF RIA projects, which covers also the 5 WPSP focus areas.
The RIA projects have provided their inputs as good as they could. However it has not been obvious for them how to provide all the information as all 3 RIA projects are still ongoing and about half-way through their project term.

The DtF project may update the PoF KPI Dashboard with the results of the evaluation carried out of the RIA projects for the PCI Tool Assessment, within the DtF project lifetime.

The images 6 to 10 in Annex VI PoF KPI Dashboard, provide a quick view of the PoF KPI Dashboard.

Project Evaluations observations and recommendations

The DtF team has performed extensive collaborative effort during the building of the PCI Tool and the PCI Assessment, because of the dependencies with the WP5 deliverables (D5.2 – DSS Tool and D5.3 Transferability Analysis) – see Fig.1 - page 6 – Overview of the flow of deliverables from the DtF Work Packages. This turned out not just essential but also beneficial in obtaining a common understanding of the different elements of the different tools as well as beneficial to the outcome of the PCI Tool evaluation.

A general observation during the project evaluations was that many of the closed projects – especially EU projects from before 2018 – have no specific quantitative information available within their deliverables relative to set KPI's, measures and actual values. In most occasions no access was available to such project details, though a lot of qualitative expectations are provided in the deliverable documents. This also confirmed the assumptive expectations that it would not make obvious sense to evaluate all projects from the DtF D2.2 Clustered Projects List as the translation into comparable KPIs requires an intensive workload.

Even for the larger projects many qualitative expectations were identified, but as long as there are no quantitative expectations of before and after situation (implementation of solutions, infrastructure improvements and/or realisation of Living Labs or pilots), a PCI score cannot be assigned. It may be the case that actual values are not made available as public information to protect the involved stakeholders companies and their operations. As the DtF outcomes will be

publicly available as the defined deliverables, it did not make sense to further insist on obtaining such detailed data from the projects evaluated. Dependency on the information publicly available on the project websites or the EU portfolio databases, required some assumptions to be made during the assessment, but limited, as much as possible based on the facts identified in the project deliverables.

For some projects where a Cost Benefit Analysis (CBA) was performed, the information was considered in the evaluation to get a better insight into the actual values. However, the information was limited to financial benefits of implementation of the solutions, not always expressed as Measures relative to KPI's. Current project – also for the Port of the Future – are obliged to report extensively on their financial performances through a CBA or cost analysis as required by the EU Commission.

It was essential to approach the extended PCI Evaluation worksheet for 2 projects (COREALIS_eu and AEOLIX) to allow for a so condensed possible complexity of information reviewed and aligned to the PIs and Measures set forth.

Using the Project Evaluation template, 1-1 – sometimes 1-n – relationships were common in identifying the Measures versus Strategic Objectives and relationship to set goals and expectations. For the wider-scope projects it was anticipated more difficult to directly relate measures, objectives and performance indicators. Therefore the measures table – which requires a clear link between measures and objectives – does not cover the full complexity of these projects. More details are provided in the below projects' PCI score evaluations.

DtF hierarchical structure:

While the DtF deliverables cannot be fully conclusive, the DtF team has put their outmost effort in the quality and accuracy of its deliverables. In those areas where missing elements in previous DtF deliverables are recognised – as is reflected also in this D3.4 – PCI Tool Assessment – supplementary information is provided relating to previous DtF deliverables. Examples for such additions: additional projects identified after closure of the DtF D2.2 – Clustered Project List, detailed information about the AIVP Agenda 2030 (delayed delivery) and a list of projects presented through the WPSP initiative.
All these have been included in this deliverable and presented in the Annexes or dedicated chapters.

From this perspective, the DtF team has also identified some shortcomings in the structural hierarchy of the DtF-WPSP Relationships Matrix (fig. 6 p. 16) and the further detailing towards Performance Indicators and KPI's. Underneath some essentials are presented from the findings during the PCI Project Evaluations.

While the DtF structure of SOs, TOs, PIs and measures are built upon evaluation of projects during previous DtF deliverables on projects considered to be relevant in the context of Port of the Future, consecutive analysis brings additional / new performance indicators to the surface as new innovative ideas emerge. Due to the innovative nature of Port of the Future, it is anticipated being a moving target for improvements in the maritime, port and supply chain sectors. Below represents an unlimited list of additional objectives, key performance indicators and measures showing up in the port arena, which can be added after the PCI evaluation:

- Multi-, Inter- and Synchro- modality: while these are reflected in the TOs, no Measures on rail, IWW, combined transport modes, etc… are available

- No clear Measure for Interoperability (but then again this is a very vague target (requires SMART KPI setting to enable measuring)
- Besides renewable energy measures there are no Measures related to decrease in fuel consumption thanks to optimisation of cargo and vehicles on the road, neither for optimisation of multi-modality
- No measures for Dangerous Goods (DG) are available, while SOs and TOs exist to enable information and data sharing solutions
- Use of standards and compliance may require more detail in the DtF Measures (aside from renewable energy areas); however it is to be noted that standards can be combined into the current DtF KPI set as complying with a standard or setting standards always has a higher objective (therefore applying standards should be considered as part of other KPIs
- While Measures for shared information system solutions exist for 3/4PL-ports-maritime corridor, industry-specific clusters and platform measures are not considered within DtF. However, contribution to critical performance indicators and benefits exist, as they are jointly involved in collaboration with logistics/port/maritime clusters and collaborative networks and solutions
- Functions and improvements for warehousing and DC and their interrelationship in the supply chain (either individual or through 3/4PLs)
- Besides system solutions (which are no true SMART measures) there are no measures for terminal and transportation improvement in productivity and efficiency (time and cost or savings and new business potentials) – this may require more in-depth analysis
- For harmonisation of administration or for example the use of e-manifest and other system solutions, these will result decreased admin work, cost savings and efficiencies. Systems result in such productivity improvements, but are no true SMART measure in itself - the system deployment and comparison between 'AsIs' and 'ToBe' brings the measurable KPIs to the surface
- Besides the need for reporting on project financial performance and financial analysis of the deliverables, there is no Measure for financial benefits and improvements - which are triggered by implementation of solutions – Measures relating to additional SOs and KPIs have to be established for these with clear approach on how they need to be measured – this can be subject of further research but is not currently in the scope of the DtF project
- Building resilience against terrorism, cyber criminality and climate change (covered in the TO's but not in the Measures)
- Foster growth, competitiveness, jobs and the development of internal market by making better use of the opportunities created by digital technologies. This is or can be included in identified SOs and therefore tangible SMART KPIs need to be set by the projects on what is aimed to be achieved with implementing proposed technology, which should result in measurable economic benefits
- For legal compliance (local regional, federal or international) TOs are available but no Measures. While port actors and therefore projects need to consider the compliance with applicable laws, it can be considered there is no need for tactical objective in this area (though this is part of UN SDGs related to governance). However project owners may consider establishing and follow up on clear set measures
- In-depth CBA brings smaller and indirect expectations from the project implementation forward with possible huge impact, such as reduction in stock keeping, new service and business opportunities due to optimisation of assets, positive impact for shippers (time, optimisation of stocks, cost reductions, new business, …), more effective distribution for clients, on-demand requirements, addressing distribution, consumer, market and seasonal expectations, etc… The DtF SOs and KPIs are not limited to the project owner, whereby many of the aforementioned can be integrated (efficiency/cost savings), some cannot. For a more detailed approach on economic and financial benefits measuring,

international and EU guidelines and standard ratios exist, such as the Cohesion Policy CBA Methodology for Major Projects and the EU Guide to Cost-Benefit Analysis of Investment Projects 2014-2020 available at:
http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cba_guide.pdf

The PCI evaluation was used to improve the PCI assessment tool and eventually provide updates to the DtF database, relative to the KPI set, by proposing new measures, SOs and KPIs, as samples provided above. Project owners may identify additional measures to be considered and are free to add, relating them to their project TOs, SOs towards the 1 or more of the 5 WPSP Focus Areas to bring forward the related UN SDG(s). It has to be clear that se targets require SMART measures for each of the PIs to be established together with an evaluation of the actual values and/or improvements achieved.

Furthermore, the reader of the Project Evaluation worksheets may find repetition of many SOs, TOs and even Measures throughout the Project Evaluation Worksheet for the evaluated project. This may occur for the larger more complex projects with multiple solutions implemented across multiple Living Labs or pilots across all or a vast number of EU TEN-T Corridors and their EU and other hinterlands serviced. It is to be known that each LL has different solutions applied for sometimes a similar functional area, but also because the identified expectation targets and KPI's identified and in some cases measured (mainly from a CBA perspective) relate to various aspects of each facet of the solutions implementations with different type of supply chain actors in each LL and different or combined modes of transportation. As good as possible the different scenarios with small description are provided and should provide sufficient differentiation why several SOs, TOs and Measures are repeatedly mentioned. In many cases it will be required to read the details in the different deliverables and LL scenarios (these are referenced in the Project Evaluation worksheets under sources).

<u>Overall conclusions and recommendations of the Project Evaluations:</u>

As an overall assessment, many projects focus on the UN SDG for Higher Productivity. Therefore projects concentrate on the implementation of systems solutions in particular areas such as cargo consolidation capacity, multi-modal functionality, cost control, collaboration and data sharing between maritime, ports/port-terminals and the logistics sector. In some projects the needs for shippers and the distribution chain actors are also considered, creating effectiveness, efficiencies and cost cutting, and enabling measurable results in ecological footprint, GHG emission reduction and combatting global warming. However, many of the identified targets, expectations and Performance Indicators (see list above) were not part of the initial DtF Key Performance Indicators and measures. At the same time, many DtF KPIs are not considered in the evaluated projects (see below for the detailed reviews for each of the project evaluations). It is to be noted that for Higher Productivity is covered in the DtF as target 8.2 under UN SDG "Decent Work and Economic Growth".

The DtF team has undertaken these project evaluations for the purpose of the effectiveness and completeness of the PCI Tool assessment. Where possible the project evaluation results are communicated with the respective project owners. It is recommended that project owners review and confirm the evaluation, so that they can be used for future benchmarking. The results from the DtF PCI Tool Assessment will be part of the DtF D5.3 – DSS Tool, which enables comparison for future projects, in as far as the information (ZERO- or positive PCI-score) is supported by the database populating the DSS Tool.

The respective DtF partners responsible for the affected DtF deliverables will update their documentation where possible with feedback from workshops.

Project owners should be able to discuss and ultimately confirm the project evaluations. As this has an impact on all WP 3 deliverables, a conference call including the project evaluator and the Task leader shall be organised for each evaluated project where possible. This may only be possible for the currently ongoing 3 PoF RIA projects.

Individual Project Evaluations and PCI Scoring

This section provides the feedback obtained from the WP Lead on the Project Evaluation worksheets and the processing of the information supported for the calculation of the PCI scores for each of the projects evaluated and/or for their respective assigned PCI score to the detailed project objectives.

The outcome of the results of the PCI Tool are reflected in the Annex II Mapping project evaluations

Detailed reviews:

Review of Circle assessment (**Green Cruise Port**)

The assessed project "Green Cruise Port" lists different measures and refers to pilot projects which provide concrete figures of costs as well as pieces of information that can be directly or indirectly transferred into KPIs. These KPIs feed the PCI tool and leads towards the calculation of the PCI value.

From our evaluation, the calculated KPIs support the current outline of the KPI scales (resulting in a PCI score).
Many of the listed measures indicate that a calculation of a KPI in accordance with the DtF KPI framework is possible when

- Information on the measure's effects is expressed in absolute figures instead of e.g. percentages in reduction
- Information on the measure's effects is provided in general
- Concrete projects are presented or information on the specific application and scope of the respective measure is given

From this evaluation, this is rather a problem of the availability of information than a problem of converting. Some of the listed pilot projects aim at measuring results very specifically and in line with DtF's PCI approach (e.g. reduction in dB for noise emissions, reduction of different harmful air particles for air emissions).

Overall, the actions of the Green Cruise Port project are rather specific which is good in terms of the assessment through the DtF KPI tool. It presents many specific measures of which a majority can be assessed by the PCI tool when missing pieces of information are provided.

As Port of the Future directs towards all different types of ports – Including cruise and passenger ports and RORO Short Sea Shipping services – the DtF PCI Tool is suitable to provide a PCI score but may be limited in terms of evaluation. Therefore a project like this Green Cruise Port project is equally relevant for the application of measures in the ports covered by the DtF project. It provides a guideline for the respective stakeholders. Therefore, focus was geared towards the projects and measures that have been listed and evaluated by "Green Cruise Port" and assessed the given information of the past or ongoing projects and measures in order to validate

the PCI tool. The actual results of the "Green Cruise Port" in terms of inspiring future projects cannot be assessed in advance.

Review of Magellan assessment (**PIXEL** – PoF RIA project)

PIXEL is a modular system that applies Internet of the Things (IoT) in order to connect multiple data sources in the ports to foster optimisation via digitalisation. Extract from the projects description:

> *PIXEL addresses all those issues by providing an easy-to-use open source smart platform for operational data interchange in ports and its associated agents (e.g. cities). The project expects to improve several indicators in varying use-cases such as a reduction of 5% in energy consumption, 6% average cost per passenger or 85% in average waiting time for vessels and trucks. PIXEL provides tools and guidelines leveraging technology with a unique approach: creating a single environmental metric for ports and modelling and optimising processes after gathering all available information.*

The overall goals are expressed in relative numbers with no further specified bases. In terms of the PCI absolute figures are required. Conversation of the operational savings in relative terms is possible if additional information is provided (CO_2-equivalent reduction is subject to the electricity mix in the respective port/country; operational savings need to be expressed in monetary terms which is only possible considering actual operational costs of the respective ports/terminals).

Projected contribution to various high-level-strategic objectives is presented. However the descriptions lack clear measures in most cases. The actions of PIXEL remain rather unspecified regarding goals, levels and thresholds of indicators. One key factor why the assessment of the PIXEL project in terms of the PCI is very limited is the project design: PIXEL provides new interfaces of data from different sources. This is often named as a result of the project's actions and measures. However, monitoring itself does not contribute to any indicator that is assessed within the PCI. Possible future effects on the indicators that are outlined vaguely cannot be processed in the tool.

Review of ISL assessment (**5G Industrial Environment Trial Platform in the Port of Hamburg**)

Port of Hamburg is providing a testbed area of 5G coverage in the port together with its telecommunication partners. While the measure is well-defined, the effects on specific goals are not determined to full extent. One major aspect of the project is the monitoring of real-time environmental data. Although this data may be used for future projects that contribute towards emission reduction goals, monitoring itself is not a measure that can be assessed by the PCI as it does not result in a quantifiable outcome. The project names two more concrete fields of application.

The 5G testbed is set to "manage the infrastructure better and thus make it safer". Additional information on this concrete measure would help to evaluate the contribution of the action. As the scale is qualitative an approximate assessment is possible. A contribution to the goal of higher productivity is expected with the co-ordination of traffic lights within the port area. A KPI cannot be obtained as information on the presumed impact is not provided.

Overall, the assessment of the project is not possible with the information that is public so far. Further input is required in order to validate the projects impact and make it measurable.

Review of Unige assessment (**PortForward**)

PortForward is a project that aims at shaping the Port of the Future. Therefore, the project defines three key objectives:

- Smart, through ICT solutions, because it is important to improvement exchange of information flows between port and port community
- Interconnected with the use of a combination of different modes of transport and the integration of different technologies, because it is important to achieve better monitoring and controlling of the freight flows
- Green through the adoption of green technologies because it is important to reduce the environmental impact of port operations saving the resources

The project defines various technological tools that are employed in order to support the goals to improve operational capacities, while considering saving natural resources at the same time. Different indicators are provided. However, these are not connected to specific measures and targets which makes an assessment through the PCI impossible as there are no figures and numbers on hand.

The indicators itself seem to have a strong focus on the specific port or even projects and business. The selected indicators are therefore not very suitable for comparisons outside of the dedicated scope. In general, the project defines indicators of which their main purpose is monitoring. Additionally, financial indicators are considered. The financial situation of a business entity has no direct purpose in terms of the goals of DtF so far. Financial performance and stability may support measures. However, they do not have a purpose themselves that is contributing towards the DtF goals.

Especially the strong focus on monitoring limits the compatibility of PortForward with the PCI framework. For identification of the Performance Indicators and calculation of the actual values of the KPIs, the PIs must be connected with targets and quantitative measures (absolute figures must be provided).

Review of ISL assessment (**SAURON**)

The SAURON (Scalable multidimensionAl sitUation awaReness sOlution for protectiNg european ports) project's overall goal is to provide a platform that supports port operators to prepare for potential cyber and physical threats or a combination of both. The systems aim at providing security to anticipated threats to cargo as well as all humans involved (employees, visitors, passengers and citizens).

The project is found to contribute to the UN SDG of reducing crime by two concrete measures:

- provide a multidimensional yet installation-specific Situational Awareness platform to help port operators anticipate and withstand potential cyber, physical or combined threats to their freight and cargo business and to the safety of their employees, visitors, passengers

- develop and integrate innovative population warning techniques for informing and protecting the vicinity of the ports

The respective KPI is determined by applying a qualitative scale. The combination of both measures, their scope in terms of integration as well as number of various parties represent an innovative approach that can be classified with the highest score of the scale. As the contribution of EU funds is also known, further assessment within the PCI Tool is possible. The SAURON project can successfully be evaluated within the PCI framework.

Review of ISL assessment (**Ravenna Port Hub: infrastructural works**)

The Ravenna Port Hub project includes several measures that aim at providing additional throughput capacities by improving marine and land side port infrastructure as well as port accessibility. The following measures promoted in the project have been identified:

- Constructing new terminal quay
- Dredging
- Upgrade existing quay walls
- Upgrading and developing infrastructure and platform services, handling areas and freight storage areas
- developing and creating an "integrated network" between maritime infrastructure and land-based infrastructure

All of the above-mentioned measures (including those that are related to hinterland connection) contribute to the goal of providing the additional handling capacity of 500,000 TEU by building a new terminal. They cannot be considered individually as they are not effective separately. The (presumed) expansion of container handling capacity can be evaluated as the PCI tool covers this as one possible channel of supporting the UN SDG of Economic growth (SDG 8.1). 500,000 additional TEU in capacity reflect a score of 3.7. As the project costs are known, it can successfully be evaluated within the PCI framework.

Review of ISL assessment (**Genoa Port Environmental Energy Plan**)

The Genoa Environmental Energy Plan contains multiple measures that aim at making Genoa a more sustainable port. For the evaluation in terms of the PCI Tool, only the measure of quay electrification of the ship repair docks (see D3.3) was considered. This measure tackles two goals as it supports the efforts in the fight against global warming while at the same time improving the environmental quality as the ships will need their auxiliary engines when lying in the repair docks which reduces noise emissions.

The estimated effect in terms of reduction of CO_2-equivalents is given in the project description. The respective KPI can be calculated accordingly. The reduction in noise emissions requires the input of various parameters in order to obtain the noise reduction measured dB as well as the respective KPI. A calculation based on averages and assumptions is possible and leads to a reasonable KPI score. If better information would be provided a more accurate KPI can be achieved.

The project lists the cost (and presumed effects) of all its measures separately. Overall, the evaluation within the PCI framework is possible.

Review of PortExpertise assessment (**COREALIS** – PoF RIA project)

COREALIS is a project that proposes a set of manifold technological solutions (including Internet of Things (IoT), data analytics, next generation traffic management and emerging 5G networks) to address various issues in ports. Five ports serve as living labs where the project's measures are being implemented. Four project objectives are named:

- Embracing circular economy models in its port strategy and operations
- Reducing the port's total environmental footprint associated with intermodal connections and the surrounding urban environment for three major transport modes, road/truck, rail and inland waterways.
- Improving operational efficiency, optimizing yard capacity and streamlining cargo flows without additional infrastructural investments.
- Enabling the port to take informed medium-term and long-term strategic decisions and become an innovation hub of the local urban space.

The project presents an extensive list of KPIs which are considered as relevant in order to track the development. The operational and technical indicators are very detailed and would be very useful in combination with operational costs in order to calculate savings due to higher productivity. For the environmental KPIs the reduction of CO_2-equivelents is most important for the PCI Tool but data on energy consumption could also be transferred into this indicator when additional information (energy sources etc) is available. COREALIS also intends to measure air emission in line with our methodology. Applying satisfaction surveys as a societal KPI is very advanced and ambiguous and hence, must be carried out with the respective accuracy (e.g. ex-ante surveys in order to depict development properly).

The project does not indicate clear goals or thresholds of the KPIs that are expected to be achieved within the project for any of the four project objectives. Furthermore no clear measures are defined that could be evaluated. COREALIS works on a very general or strategic level. The project budget of slightly above five million Euro will most likely only provide the financial basis for the living labs. Hence, the PCI can only evaluate the effects that arise from the living labs and not assumed effects of a general application of the measures in other ports. COREALIS should define measures including goals in terms of their targets as well as project costs and indicate possible effects (in their KPIs).

COREALIS' KPI set seems very suitable for being assessed within the PCI Tool in general. Once clear measures (incl. costs) and respective effects (projected or reported) are available those can be assessed.

Review of PortExpertise assessment (**AEOLIX**)

AEOLIX is a project that provides a multidimensional platform with the main task of optimizing the transport flow of cargo. Besides the operational advantages of the cloud-based technical solution it also aims at providing environmental, economic and social improvements at the same time.

Seven project objectives are named:

- Gain a thorough insight in the lessons learned, needs and requirements in the domain of ICT applications for logistics (Enabling connectivity)
- Design an architecture for a collaborative IT infrastructure for operational connection of logistics information systems
- Implement an appropriate data access management model (Open & interoperable)
- Build a common but user-tailored interface and tools to enable the IT infrastructure (Enhanced visibility for better control)
- Test, validate and implement the AEOLIX prototype in 12 living labs (LL) of logistics business communities across Europe (more details on tab 'Project Scoring' row 25-37)
- Monitor the impacts of AEOLIX based on environmental, economic and social impacts
- Develop an exploitation business model to enable roll-out and deployment of the concept across Europe, and possibly rest of the world

The project has carried out different living labs with various ports and other partners or stakeholders. As per review by PortExpertise the living labs have most importantly been found to contribute to goal of higher productivity through digitisation (UN SDG 8.2) as this reflects the project's basis. AEOLIX has defined a set of operational KPIs for improvement. In the majority, the living labs tracked these KPIs and assigned values in monetary terms to the improvements made. This approach is well in line with the PCI tool. Although figures for some KPIs are still unknown it is possible to assess (preliminary) KPIs for higher productivity through digitalisation. With the AEOLIX project being the most complete information provider, relative to relating its Living Labs' Performance Indicators to its project Strategic Objectives, the computed values average a score of 4.5. The PCI methodology seems to be a good fit for assessing this indicator which is a main target of the project.

Other effects of the measures presented in the living labs include improvements in the environmental quality (air emissions mainly) and support for the task of combating global warming. The assessment of the living labs can be further proceeded once values for those indicators are assigned. Additional cost information of the implemented solutions must be considered as well.

AEOLIX scope is extensive, considering the different systems and programs implemented. The results of the living labs provide a good basis of information, especially on savings in terms of operational optimisation, which is an indicator that is usually not easily obtained. The obstacles to complete the PCI Tool assessment are rather low as the project has been closed since October 2019. As living labs serve as pilot projects they are very suitable for assessing further transferability onto other ports.

General conclusions from the PCI Project Evaluations

The reviewed projects differ strongly in their design which led to varying results in the process of assessment. In many cases, there was no linkage of measure + target + indicator found that needed to be added into the PCI tool. Some projects approach specific goals differently. There are also different indicators applied. However, no amendments to the KPIs in the PCI Tool were made so far as the projects are either not able to provide further information on their approach (how is this indicator measured etc.) or too specific. The applied indicator may serve as a good indicator for the goal in the specific project but the PCI's KPI need to cover various aspects and ways of evaluation (which is why the PCI Tool applies qualitative KPIs for some goals while specific project might apply a quantitative indicator for their purpose). In general, some of the projects addressed areas that exceed the lists of targets and measures that were generated in the DtF WP1 Desktop Analysis. The impact on the KPI set and PCI Tool will be evaluated.

Depending on their design, the projects within the different Living Labs are easier to assess within the PCI tool than others. This is caused by the fact that each of the Living Labs are kept independent and no coordination between projects was made in terms of their use. This is partially offset by using the CBA, in which all (costs and) benefits are quantified as + and – in monetary units. The scope of evaluated projects ranges from very concrete projects that equal one specific measure to very strategic ones that combine manifold actions with various and differing goals. It became apparent that some strategic projects are only able to be assessed with the PCI tool in a limited context.

Eligibility Criteria and project details for calculating the DtF PCI score

The criteria and the project details necessary for a positive PCI-score for Ports of the Future projects are described in chapter 8 Project Scoring. Below an overview is presented for the essential criteria for such a positive PCI-score:

- proof of innovativeness expressed as its I-score – I-score = 2 to 4
- proof of potential contribution towards transferability (PCT) – TA-score = 2 to 4
- proof of essential project details:
  - Tactical Objectives (TOs) linked to defined Strategic Objectives (TO)
  - Translated into clear project goals or aims and targets to be achieved from the projects set deliverables
  - Recognised Performance Indicators (or aggregated KPI's) demonstrating quantifiable and/or quantitative SMART measures
  - Translated in budgeted or actual values and/or Cost Benefit Analysis (CBA) or at least a Financial Project Performance indicators analysis, meeting or surpassing the project goals and objectives

Other less essential but important criteria to be considered suitable for comparison of projects run through the PCI Assessment:

- Enable clear project design and purpose
- Complete data elements and actual values (quantitative measures) as per minimal Project Management practices
- No missing information
- Avoiding simplified information – be specific and overall SMART on defining KPIs and define targets / expectations and actuals, specifically to allow for clear measures expressed in absolute numbers
- Avoid minimalization of provided or single monitoring indicators
- Ensure targets or measures provided are effectively linked to the TO's and SO's (project and project deliverable goals and objectives)

It is to be noted that links between measures and specific objectives can be used at preference by a project stakeholder. Nevertheless, wherever measures contributing to the DtF Strategic Objectives are defined, these can be included in the supporting DtF database from which the PCI tool sources its options and data.

Compliance to Data Conditions

The supported project details (data elements) need to be **compliant to several conditional requirements**, as there are:

- Actual values (expected/target, budgeted, AsIs vs ToBe, …) need to be expressed as absolute numbers – the PCI Tool cannot process percentages, nor ratios (fractions need to be expressed as integer numbers) – for example: reduction of CO_2 emissions by x% or reduction of empty intra-port transports by x%
- Operational improvements are always hard to translate into monetary measures; however several – even large and complex – projects manage the possibility to express benefits in financial numbers through Cost Benefit Analysis and/or Financial Project Performance Indicator Analysis. Also financial expressed 'AsIs'-vs-'ToBe' analysis

These limitations need to be considered towards compliance and eligibility to perform a PCI Assessment of a project and to result in a PCI-score. A PCI Assessment can be built, once eligible, but may still be interrupted due to missing data or a number of incomplete or incompliant data. No compliance to the above conditions results in no PCI-score result and therefore considered out of our scope.

For ongoing projects, such as the 3 PoF RIA projects, the PCI Tool outcome does not provide a PCI-score as most of the information and actual values are available at the current moment as projects are for example only half-way on delivering as per the expected results and targets. It is to be noticed that not all ongoing projects support the required data at the same level of compliance. It is therefore essential that project owners put forward a serious effort in ensuring their compliance to basic project management compliance to enable them to make use of the DtF PCI Tool. This is addressed especially to the 3 PoF RIA projects which will finalise their projects much later after the closure of the DtF project. It is recommended that they comply early on to the set requirements and perform their project evaluation accordingly to ensure the completion of their project assessment through the PCI Tool. This is not just for the overall project goals and objectives, but also for the specific project objectives, targets and measures of deliverables of their Living Labs or pilot implementations and solution deployment.

Partially evaluated and assessed projects do not contribute towards precise actions in terms of its work and budget, but solely provides guidelines and a list of possible measures, it is unsuitable for evaluation through the PCI Tool. However, the projects that these papers refer to, could be assessed to some extent after additional research work is supported. It will be up to the project owners to adapt their project management strategies to comply to the requirements.

Overall, the framework of the PCI was found to be extensive in its demand for quantification. While some projects did not yet list the assumed targets for comparative ease of accessible indicators such as reduction in CO_2-equivalents, others put strong effort into computing the benefits of operational optimisation in monetary terms. Fulfilling the requirements for the PCI indicators may be challenging for some, especially strategic projects. Other projects already provide a solid database or indicators or were found to be able to comply with the needs of the PCI without disproportionate effort. However, most of the projects evaluated do not comply to all requirements and have no PCI-score assigned or an assumptive PCI-score has been assigned based on the quality of data supported. Nevertheless, wherever measures contributing to the DtF Strategic Objectives are defined, these can be included in the database providing the inputs required for the DSS tool. The table in Annex I Selection from the DtF Clustered project list provides an overview of the results of the Project Evaluations and the effect of processing the outcome in the PCI Tool.

10. Appendixes

Annex I – Selection from the DtF D2.2 Clustered project list

Index: **n/a** = not assessed ; **ns** = no score (no PCI Tool Assessment at this stage) ; **np** = not able to use PCI Tool because limited data available)

Priority choice (D2.2 – Clustered Project List)	DtF partner	I-score	TA-score	TA-index	PCI-score	comments
1. PoF - COREALIS_eu	PortExpertise	3	4	n/a	ns	Project midway in progress
2. PoF - PortForward	UNIGE	2	3	n/a	ns	Project midway in progress
3. PoF - PixelPort	Magellan	3	2	n/a	ns	Project midway in progress (awaiting PCI)
4. AEOLIX- Architecture for EurOpean Logistics Information eXchange	PortExpertise	3	4	n/a	4.5 3.6	Multiple PCI-score per SO and per LL 2nd score is on aggregated KPIs of LL
5. 5G Industrial Environment Trial Platform launched in the Port of Hamburg	ISL	3	ns	n/a	2	Project in progress
6. SAURON (Scalable multidimensionAl sitUation awaReness sOlution for protectiNg eu ports)	ISL	3	4	n/a	5 3	Limited info available I-score = 0 considering high investment
7. Ravenna Port Hub: infrastructural works	ISL	1	3	n/a	3.7	No PCI-score possible on aggregated KPIs (only for new terminal)
8. Green Cruise Port	Circle	2	2	n/a	4.3 5.0	For air emissions For sound emissions - Combined: 5.0 (?? with a 3.7 for energy consumption)
9. Poseidon MED	Circle	2	2	n/a	Ns	Awaiting PCI Assessment results

Secondary choice (D2.2 – Clustered Project List)	DtF partner	I-score	TA-score	TA-index	PCI-score	Comments
1. Civitas PORTIS - Port-Cities: Integrating Sustainability	PortExpertise			n/a		Can be considered for PCI Assessment
2. PÉÉPOS project	PortExpertise			n/a		Limited information available
3. CoRISMa	PortExpertise			n/a		Limited information available
4. SYNCHRONET project	PortExpertise			n/a		Can be considered for PCI assessment
5. INES (Implementing new environmental solutions in the Port of Genova)	UNIGE	1	3	n/a	4 2.8	On CO_2 emissions, combat global warming On noise reduction
6. ELEMED project (no assigned WPSP areas)	Magellan			n/a		No applicable SO relative to WPSP 5 areas
7. POR2CORE-AGCT Port of Rijeka multimodal platform development and interconnection to Adriatic Gate container terminal"	Circle			n/a		Can be considered for PCI Assessment
8. MoS 24	ISL			n/a		Not familiar with project
9. IMPRESSIVE (Integrated Marine Pollution Risk assessment and Emergency management Support Service In ports and coastal enVironmEnts)	ISL			n/a		Can be considered for PCI Assessment
10. NSB Core	(ISL)			n/a		??

Annex II - Mapping project evaluations of selected projects from the DtF D2.2 Clustered Projects List

In the below table the evaluated projects are related to the 5 WPSP Focus Areas and the relationship to the respective UN SDGs
Index: **x =** applicable + #UN SDG or (#UN SDG – only partial) ; **(x) =** partially covered ; **? =** not sufficient information or no research possible

Project name	PCI score (conditional – further review required by project owners)	Mapping projects and initiatives with: Topics (According to the 11.6.2 : List of Topics in WP.1)	Mapping projects and initiatives with: Tactical objectives (According to the 11.6.3 : List of Tactical objectives in WP.1)	Mapping projects and initiatives with: Measures (According to the 11.6.4 : List of Measures in WP.1)	Climate and Energy 7 STRATEGIC OBJECTIVES: To improve the energy efficiency at ports	To have transition towards circular economy	To transit from fossil/based economy to bio-based economy	To Increase the portion of renewable energy in port	To promote green infrastructure at ports	To provide systematic incentives for clean ships	To deploy alternative transport fuels	Community outreach and port-city dialogue 10 STRATEGIC OBJECTIVES: To transform the port governance into stakeholder management	To publish annual port sustainability report	To set up community outreach	To strengthen city-port relations	To improve employments with new business models	To enhance the skills and education of port community	To promote spatial planning	To increase the share of nature areas in ports	To promote the public awareness and port culture	To reduce / mitigate the externalities of port operations	Governance and Ethics 5 STRATEGIC OBJECTIVES: To transit towards Transparency and integrity in policy	To have policies with equal rights and opportunities	To set fair trade regulations for ports or by ports	To put anti-corruption regulations	To establish a Governance towards responsible supply chains	Resilient Infrastructure 7 STRATEGIC OBJECTIVES: To consider resilience in port planning and design	To have an effective public-private partnership	To encourage port project financing and investments	To transit towards digitalisation and automation in port activities	To take adaptive measures for climate resilience	To have working with nature	To put in place ecosystems management	Safety and Security 6 STRATEGIC OBJECTIVES: To establish cyber-security for port data network and platforms	To optimise protection of critical infrastructure	To comply with ISPS code	To improve nautical safety	To enhance the port labour safety	To set responsible care Safety and Security
1. PoF - COREALIS_eu	**ns** (in progress)	(x)	(x)	(x)	X 13	X 12									X 11. 3.2		X 11. 3.2	X 11. 3.2			X 11.6	X 16. 6				X 15.9	X 8.1			X 8.2		(X) 9.1		x					X 8.8	(x)
2. PoF - PortForward	**ns** (in progress)	(x)	(x)	(x)																	X 11.6					X 15.9	X 8.1			X 8.2				(x)					X 8.8	
3. PoF - PixelPort	**ns** (in progress)	(x)	(x)	(x)																	X 11.6					X 15.9	X 8.1			X 8.2				(x)					X 8.8	
4. AEOLIX	**4.5** (3.6)	x	x	x	X 13	X 12									X 11. 3.2						X 11.6	X 16. 6				X 15.9	X 8.1	X 8.1		X 8.2		(x) 9.1		(X)						X
5. 5G Platform Port of Hamburg	**2** (in progress)	x	x	x																	X 11.6									X 8.2	(x)			(x)				X 8.8	X 8.8

Project name		Mapping projects and initiatives with			Climate and Energy 7 STRATEGIC OBJECTIVES:							Community outreach and port-city dialogue 10 STRATEGIC OBJECTIVES:										Governance and Ethics 5 STRATEGIC OBJECTIVES:					Resilient Infrastructure 7 STRATEGIC OBJECTIVES:							Safety and Security 6 STRATEGIC OBJECTIVES:					
		Topics (According to the 11.6.2 : List of Topics in WP.1)	Tactical objectives (According to the 11.6.3 : List of Tactical objectives in WP.1)	Measures (According to the 11.6.4 : List of Measures in WP.1)	To improve the energy efficiency at ports	To have transition towards circular economy	To transit from fossil/based economy to bio-based economy	To Increase the portion of renewable energy in port	To promote green infrastructure at ports	To provide systematic incentives for clean ships	To deploy alternative transport fuels	To transform the port governance into stakeholder management	To publish annual port sustainability report	To set up community outreach	To strengthen city-port relations	To improve employments with new business models	To enhance the skills and education of port community	To promote spatial planning	To increase the share of nature areas in ports	To promote the public awareness and port culture	To reduce / mitigate the externalities of port operations	To transit towards Transparency and integrity in policy	To have policies with equal rights and opportunities	To set fair trade regulations for ports or by ports	To put anti-corruption regulations	To establish a Governance towards responsible supply chains	To consider resilience in port planning and design	To have an effective public-private partnership	To encourage port project financing and investments	To transit towards digitalisation and automation in port activities	To take adaptive measures for climate resilience	To have working with nature	To put in place ecosystems management	To establish cyber-security for port data network and platforms	To optimise protection of critical infrastructure	To comply with ISPS code	To improve nautical safety	To enhance the port labour safety	To set responsible care Safety and Security
6. SAURON	**3** (review needed possible 5)	x	x	X																														X 16.1	X 16.1				
7. Ravenna Port Hub Rijeka	**3.7** (??)	x	x	X																							X 8.1	(x) 8.1											
8. Green Cruise Port	**4.3** (review – possible 5)	x	x	X	X (13)		X (13)	X (13)	X (13)	X (13)	X (13)										X 11.6						Additional SO: Improve waste management of cruise port terminals in addition to Reduce energy consumption / emissions from terminal operations – leading to emission reduction – but too general, no concrete application for evaluation														
9. POSEIDON MED	**ns**	x	x	X	(x)		(x)		(x)	(x)	(x)										X 11.6						no concrete action for evaluation named												
10. INES - Genova	**2.8** (review - possible 4)	x	x	X	X (13)		X (13)	X (13)	X (13)	X (13)	X (13)										X 11.6						RE- port plan to reduce emissions												
11. Civitas PORTIS	(open)	x	X	x																																			
12. SYNCHRONET	(open)	(x)	(x)	x																																			
13. POR2CORE-AGCT Port of Rijeka	(open)	x	x	X																																			
14. MoS 24	??	?	?	?																																			
15. IMPRESSIVE	(open)	x	x	X																																			
16. NSB Core	??	?	?	?																																			

Annex III - 2019-2020 Identified additions to the Clustered Project List (D2.2)

The current 3 PoF RIA projects are already included in the evaluation list.
By no means is this list complete and new projects still unfolds over time.

Project name	Mapping projects and initiatives with			Climate and Energy 7 STRATEGIC OBJECTIVES:							Community outreach and port-city dialogue 10 STRATEGIC OBJECTIVES:										Governance and Ethics 5 STRATEGIC OBJECTIVES:					Resilient Infrastructure 7 STRATEGIC OBJECTIVES:							Safety and Security 6 STRATEGIC OBJECTIVES:					
	Topics (According to the 11.6.2 : List of Topics in WP.1)	Tactical objectives (According to the 11.6.3 : List of Tactical objectives in WP.1)	Measures (According to the 11.6.4 : List of Measures in WP.1)	To improve the energy efficiency at ports	To have transition towards circular economy	To transit from fossil/based economy to bio-based economy	To Increase the portion of renewable energy in port	To promote green infrastructure at ports	To provide systematic incentives for clean ships	To deploy alternative transport fuels	To transform the port governance into stakeholder management	To publish annual port sustainability report	To set up community outreach	To strengthen city-port relations	To improve employments with new business models	To enhance the skills and education of port community	To promote spatial planning	To increase the share of nature areas in ports	To promote the public awareness and port culture	To reduce / mitigate the externalities of port operations	To transit towards Transparency and integrity in policy	To have policies with equal rights and opportunities	To set fair trade regulations for ports or by ports	To put anti-corruption regulations	To establish a Governance towards responsible supply chains	To consider resilience in port planning and design	To have an effective public-private partnership	To encourage port project financing and investments	To transit towards digitalisation and automation in port activities	To take adaptive measures for climate resilience	To have working with nature	To put in place ecosystems management	To establish cyber-security for port data network and platforms	To optimise protection of critical infrastructure	To comply with ISPS code	To improve nautical safety	To enhance the port labour safety	To set responsible care Safety and Security
AEOLIX (+ SELIS) - (further steps undertaken by FENIX																																						
Cluster2.0 – leverage the full potential of European Logistics Clusters for a sustainable, efficient and fully integrated transport system – ends 03/2020 www.clusters20.eu																																						
ELLIS – European Laboratory for Learning and Intelligent systems - www.ellis.eu																																						
EMSWe – European Maritime Single Window environment																																						

Project name	Mapping projects and initiatives with			Climate and Energy 7 STRATEGIC OBJECTIVES:							Community outreach and port-city dialogue 10 STRATEGIC OBJECTIVES:										Governance and Ethics 5 STRATEGIC OBJECTIVES:					Resilient Infrastructure 7 STRATEGIC OBJECTIVES:							Safety and Security 6 STRATEGIC OBJECTIVES:					
	Topics (According to the 11.6.2 : List of Topics in WP.1)	Tactical objectives (According to the 11.6.3 : List of Tactical objectives in WP.1)	Measures (According to the 11.6.4 : List of Measures in WP.1)	To improve the energy efficiency at ports	To have transition towards circular economy	To transit from fossil/based economy to bio-based economy	To Increase the portion of renewable energy in port	To promote green infrastructure at ports	To provide systematic incentives for clean ships	To deploy alternative transport fuels	To transform the port governance into stakeholder management	To publish annual port sustainability report	To set up community outreach	To strengthen city-port relations	To improve employments with new business models	To enhance the skills and education of port community	To promote spatial planning	To increase the share of nature areas in ports	To promote the public awareness and port culture	To reduce / mitigate the externalities of port operations	To transit towards Transparency and integrity in policy	To have policies with equal rights and opportunities	To set fair trade regulations for ports or by ports	To put anti-corruption regulations	To establish a Governance towards responsible supply chains	To consider resilience in port planning and design	To have an effective public-private partnership	To encourage port project financing and investments	To transit towards digitalisation and automation in port activities	To take adaptive measures for climate resilience	To have working with nature	To put in place ecosystems management	To establish cyber-security for port data network and platforms	To optimise protection of critical infrastructure	To comply with ISPS code	To improve nautical safety	To enhance the port labour safety	To set responsible care Safety and Security
FEDeRATED – G2B2G www.federatedplatforms.eu																																				
FENIX – B2B+B2G European Federated Network of Information eXchange in LogistiX - www.fenix-network.eu																																				
iTerminal - Application of Industry 4.0 Technologies towards Digital Port Container Terminals – started mid-2018/ongoing https://iterminalsproject.eu																																				
LEARN - Logistics Accounting and Emission Reduction Network - www.learnproject.net																																				
LOOP-Ports – (also in WPSP projects) www.loop-ports.eu/network-of-ports																																				
NexTrust - www.nextrust-project.eu																																				
Portopia – (in D1.1) www.portopia.eu																																				

Project name	Mapping projects and initiatives with			Climate and Energy 7 STRATEGIC OBJECTIVES:							Community outreach and port-city dialogue 10 STRATEGIC OBJECTIVES:										Governance and Ethics 5 STRATEGIC OBJECTIVES:					Resilient Infrastructure 7 STRATEGIC OBJECTIVES:							Safety and Security 6 STRATEGIC OBJECTIVES:					
	Topics (According to the 11.6.2 : List of Topics in WP.1)	Tactical objectives (According to the 11.6.3 : List of Tactical objectives in WP.1)	Measures (According to the 11.6.4 : List of Measures in WP.1)	To improve the energy efficiency at ports	To have transition towards circular economy	To transit from fossil/based economy to bio-based economy	To Increase the portion of renewable energy in port	To promote green infrastructure at ports	To provide systematic incentives for clean ships	To deploy alternative transport fuels	To transform the port governance into stakeholder management	To publish annual port sustainability report	To set up community outreach	To strengthen city-port relations	To improve employments with new business models	To enhance the skills and education of port community	To promote spatial planning	To increase the share of nature areas in ports	To promote the public awareness and port culture	To reduce / mitigate the externalities of port operations	To transit towards Transparency and integrity in policy	To have policies with equal rights and opportunities	To set fair trade regulations for ports or by ports	To put anti-corruption regulations	To establish a Governance towards responsible supply chains	To consider resilience in port planning and design	To have an effective public-private partnership	To encourage port project financing and investments	To transit towards digitalisation and automation in port activities	To take adaptive measures for climate resilience	To have working with nature	To put in place ecosystems management	To establish cyber-security for port data network and platforms	To optimise protection of critical infrastructure	To comply with ISPS code	To improve nautical safety	To enhance the port labour safety	To set responsible care Safety and Security
PortCDM International follow-up of STM - www.ipcdmc.org																																				
Port Call Optimisation (international initiative) - www.portcalloptimization.org																																				
PREFET.EU - Future and Emerging Technologies - www.prefet.eu																																				
RAGtime – (D1.1) www.ragtime-asset.eu																																				
SEA20 Cities AN OCEAN AWAKENING (collaborative model between cities & ports) - www.sea20.org/study																																				
SeaDataNet - Pan-European Infrastructure for Ocean & Marine Data Management - www.seadatanet.org																																				
Smooth Ports – Interreg Europe - Reducing CO_2 Emissions in Ports - www.interregeurope.eu/smoothports																																				

Project name	Mapping projects and initiatives with			Climate and Energy 7 STRATEGIC OBJECTIVES:							Community outreach and port-city dialogue 10 STRATEGIC OBJECTIVES:										Governance and Ethics 5 STRATEGIC OBJECTIVES:					Resilient Infrastructure 7 STRATEGIC OBJECTIVES:							Safety and Security 6 STRATEGIC OBJECTIVES:					
	Topics (According to the 11.6.2 : List of Topics in WP.1)	Tactical objectives (According to the 11.6.3 : List of Tactical objectives in WP.1)	Measures (According to the 11.6.4 : List of Measures in WP.1)	To improve the energy efficiency at ports	To have transition towards circular economy	To transit from fossil/based economy to bio-based economy	To Increase the portion of renewable energy in port	To promote green infrastructure at ports	To provide systematic incentives for clean ships	To deploy alternative transport fuels	To transform the port governance into stakeholder management	To publish annual port sustainability report	To set up community outreach	To strengthen city-port relations	To improve employments with new business models	To enhance the skills and education of port community	To promote spatial planning	To increase the share of nature areas in ports	To promote the public awareness and port culture	To reduce / mitigate the externalities of port operations	To transit towards Transparency and integrity in policy	To have policies with equal rights and opportunities	To set fair trade regulations for ports or by ports	To put anti-corruption regulations	To establish a Governance towards responsible supply chains	To consider resilience in port planning and design	To have an effective public-private partnership	To encourage port project financing and investments	To transit towards digitalisation and automation in port activities	To take adaptive measures for climate resilience	To have working with nature	To put in place ecosystems management	To establish cyber-security for port data network and platforms	To optimise protection of critical infrastructure	To comply with ISPS code	To improve nautical safety	To enhance the port labour safety	To set responsible care Safety and Security
STM + STM Masterplan - Sea Traffic Management (MONALISA 2.0 project) (D1.1) - www.stmvalidation.eu																																				
Waterborne TP (SEAeurope) – there may be several projects relevant to PoF www.waterborne.eu																																				

Annex IV - Relevant WPSP projects (includes AIVP projects)

In addition, as the DocksTheFuture project relates to the 5 WPSP Focus Areas, those projects published by the IAPH on the WPSP-website (www.sustainableworldports.org) and 2020 award candidates (https://sustainableworldports.org/iaph-2020-world-ports-sustainability-award-candidates-announced) are considered in as far as they cover EU member state ports. Some of the projects provide reference to contact persons of the projects on their websites via the provided info at the website of WPSP.
Some of the below projects may count duplication with projects identified in D1.1 and D2.2 of the DtF project.
(x) = main WPSP Focus Area
(x) = secondary WPSP Focus area

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs						
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
PROJECTS BY ASSOCIATIONS																																							
AIVP – Port Centre Network			2-3										x								x					x	x												
AIVP – Plan the city with the port; guide of good practices			2									x			x	x	x		x		x	x																	
AIVP – Port-City Governance publication			3-2										x										x	x	x	x	x												
CEDA / IADC- Dredging for Sustainable Infrastructure		2019	4																												x	x	x	x						

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
ESPO – Code of Good Practices for Cruise and Ferry Ports	C / F		2-3									x				x	x		x			x				x												
ESPO – Data collection and reporting initiatives			2									x			x		x		x			x																
ESPO – EcoPorts			2-3									x	x	x	x		x		x	x	x	x				x		x	x										
ESPO – Green Guide Awarded GreenPort members = EcoPorts	G P		1-2-3	x		x	x	x	x			x		x	x		x	x	x	x	x				x	x													
ESPO – Societal Integration initiatives			2									x	x			x	x					X																
IAPH – Carbon Footprinting	Al l me mb ers		1-2	x	x		x	x	x						x		x	x	x				X															
IAPH – Clean Marine Fuels	me mb ers	2018	1-2	x	x	x	x		x						x	x	x		x				x															

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
IAPH – Environmental Ship Index	members		1-2		x	x	x		x			x				x	x		x			X																
IAPH – Onshore Power Supply	All members	2010	1-2-4		x	x	x	x	x				x		x	x	x	x	x		x	x																	
PIANC – Climate Change Adaptation																												x	x	x	x	x	x	x	x						
PIANC – Navigating a Changing Climate			1-4	x		x	x	x																						x		x	x								
PIANC – Sustainable Ports Guide			1-2-3	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x				x	x		X												
PIANC – Working with Nature			2-4									x		x	x	x	x	x	x	x	x	x								x	x	x	x	x	x	x	x				

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
PROJECTS BY PORTS																																						
5G-MoNArch Port of Hamburg	D	2019	4-5																									x			x	x								x		
Air Quality Improvement Plan Port of Barcelona	E	2017	1-2		x	x	x					x				x	x					X																		
Applying the OECD Guidance for Responsible Business Conduct Dutch Seaports	NL	2019	3-2													x							x		x	x	x	x													
Artificial intelligence for environmental monitoring and prediction Port of Bari	I	2019	2-1-4			x	x		x								x		x	x		x																		
Carbon footprint, energy optimization and sustainability reporting – Ports of Stockholm	SW	2018	1-2	x		x	x	x	x			x			x		x	x	x																					
Carbon Neutral Port 2035 Port of Helsinki	Fi	2019	1-2	x	x	x	x	x	x			x			x	x	x	x	x		x																			

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
CIVITAS PORTIS project Multiple EU ports	B-Li-Ro-GB	2020	2-3-5									x					x					x				x					x					x					
CLINSH project Multiple EU ports	B-D-NL-GB	2020	2-1			x						x					x			x	x	X																		
Ecological recovery project Port of Huelva	E	2016	1-2-4			x	x		x			x	x				x		x		x							x				x	x				x				
e-ISLAND Sustainable Electric Mobility Plan Tenerife Ports + MED ports	E	2016	1-2	x	x	x	x	x	x			x			x	x	x	x	x		x	X															x				
Emergency Notification System JadeWeserPort	D	2016	5																																		x	x	x			X

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s													Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
Energy transition: decoupling growth from carbon emissions Associated British Ports	GB	2010	1	x	x	x	x	x	x																																		
Expanding Passive Litter Collection on the Thames Port of London	GB	2019	2-1			x								x			x	x		x		X																					
Expanding wetland fringes along the estuary Port of London	GB	2019	2-4											x					x	x	x	x								x			x		x	x	x						
Green and Connected Ports (collaborative project)	D – G – I - E	2019	1-2-4		x	x	x		x			x				x	x		x		x	x										x	x	x		x	X						
GuideMeMarseille Port de Marseille	F	2019	2-4									x				x	x					x			x			x															
H2Ports / Fuel Cells and Hydrogen in Ports Port of Valencia	E	2019	1	x	x	x	x	x	x																																		

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
Hamburg Sustainable Fleet Port of Hamburg	D	2017	1-2	x		x	x	x	x			x									X																		
Hydroturbine Port of Antwerp	B	2019	1	x	x	x	x	x	X																														
Incentive scheme for climate-friendly shipping Port of Rotterdam	NL	2019	1	x	x	x	x	x	X																														
Increasing resilience to climate change Port of Valencia + other partnerships	E	2019	1-4		x	x	x		x																						x	x	x			x					
Innovative intelligent lighting system Niedersachsen Ports	D	2017	1			x		x	x																														
Integrated Green Energy Solutions (IGES) Port of Amsterdam	NL	2018	1	x		x	x	x	X																														

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
INTER-IoT Port of Valencia	E	2018	4																											x	X									
JNPT / Antwerp Port Training and Consultancy Foundation Port of Antwerp / India	B	2015	3-2-1			x							x											x			x												
Jupiter 1000 Port of Marseille	F	2019	1	x	x	x	x	x	x																									x						
Livorno "Public debate" Port Network Authority of the North Tyrrhenian Sea	I	2016	3																					x		x	X												
Livorno Open Port project Port Network Authority of the North Tyrrhenian Sea	I	2015	2										x				x					X																	
LOOP-Ports project Port of Valencia + other EU ports	E	2018	1-2		x	x	x	x	x													X													x				

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
MeRS project Port of Marseille	F	2019	4-5																											x	x				x		x	x			
MOBI platform Port of Amsterdam	NL	2019	5-3-4																			x													x	x	x	x		x
NEPTUNES project EU (DK-Fi-D-IR-SL-SW-NL) and international ports involved	Multi	2019	2-1			x						x				x	x				x	x																		
Onshore Power Supply to vessels Ports of Genoa	I	2019	1-2			x	x		x			x					x		x		x	x																		
PIN project Port of Antwerp	B	2014	5																																x	x	x	x		x
Port Energy Consumption Management Tool JadeWeserPort	D	2018	1-4		x	x	x		x																					x	x	X							

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
Port Links Port of Barcelona (should be with other ports – clusters assumed)	E	2016	1-2-4			x			x			x							x												x	x			x					
Port Spot App JadeWeserPort	D	2018	4																													x	x								
PORTOPIA Project	EU	2013	1-2-3-5		x	x	x	x	x			x	x			x	x	x	x			x			x	x		x									x	x	x	x	x	
PortXchange Pronto Port of Rotterdam	NL	2019	1-4		x	x		x	x																							x	x	x		x	X				
Provision of Onshore Power Supply Port of Marseille	F	2019	1-2	x	x	x	x		x			x			x	x	x		x		X																				
Provision of Onshore Power Supply (OPS) Port of Santa Cruz de Tenerife	E	2019	1-2	x		x	x	x	x			x			x		x	x	x		x	x																			

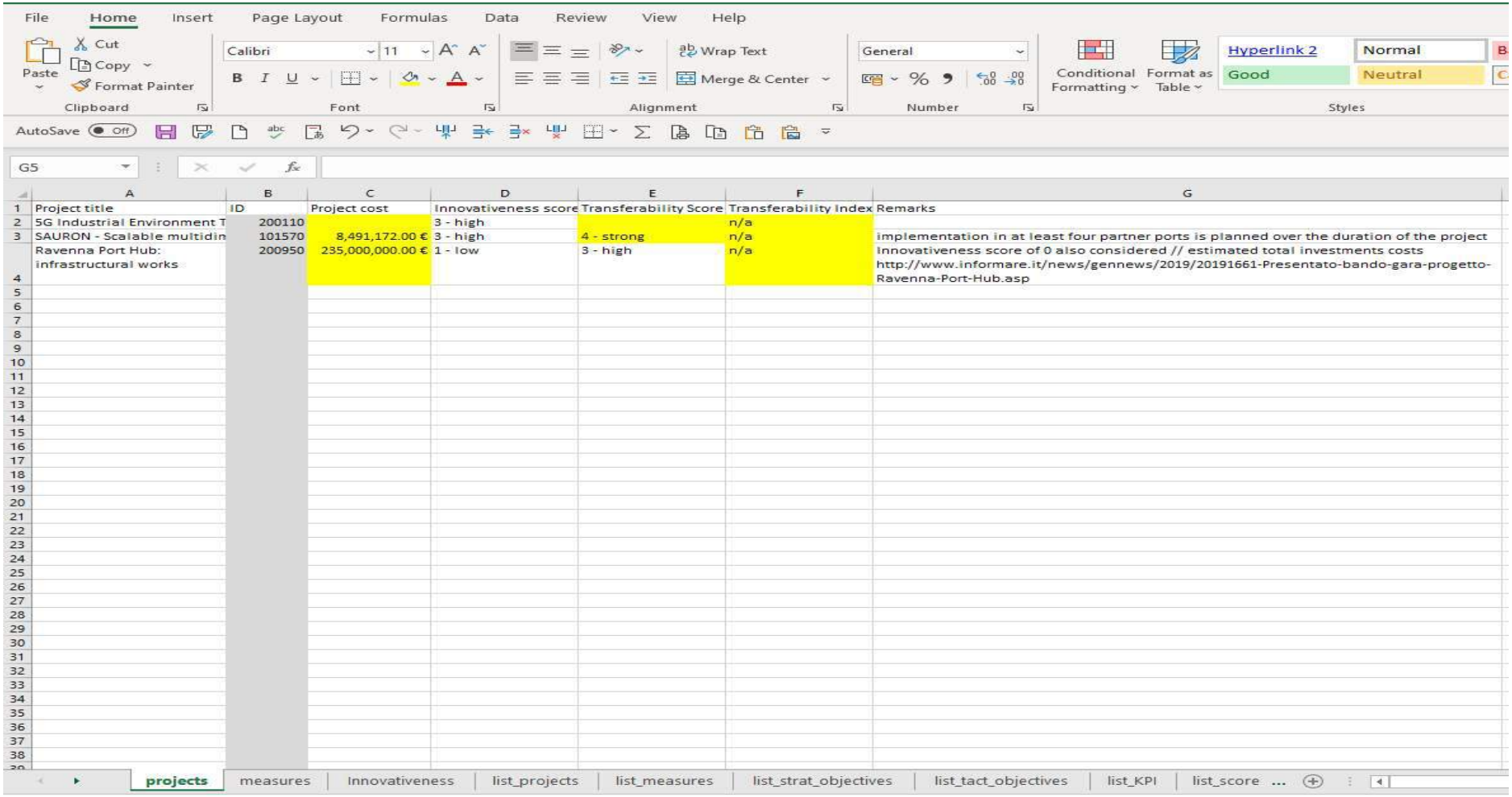
Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
SAFE SECA project Port of Le Havre	F	2014	1-2	x	x	x	x		x			x			x	x	x		x		x	x																	
Seabin Project JadeWeserPort	D	2019	2-1			x							x	x			x			x		x																	
SeaRoutes Port of Marseille	F	2019	1-4		x	x		x	x																							x	x	x					
Secure Truck Parking Port of Hamburg	D	2018	2-4-5									x				x	x					x					x					x	x					x	
Secure Truck Parking Port of Helsinki	Fi	2010	2									x				x	x					X																
Shore power supply for cruise ships Port of Kristiansand	Ny	2018	1-2	x		x	x		x			x			x		x		x		x																	

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
Study on Cruise Activity Port of Barcelona	E	2014	2									x	x			x	x																							
Submarine Cable Landing "Plug" Port of Marseille	F	2019	4-5																											x	x				x					x
Sunset Dock Project Port of Vigo	E	2019	1-2			x	x		x				x				x		x	x		x																		
Taking Action / Creating Values Port of Hamburg	D	2018	3-1-2			x						x	x			x	x		x		x	x				x		x	x												
Thames Vision 2035 Port of London	GB	2019	2-3									x				x	x			x	x	x					X													
Virtual Reality for model-based port infrastructure management Port of Hamburg	D	2017	4																											x	x				x					

Project name (+EU Ports engaged or peering)	Country involved or engaged	Year achieved	WPSP focus areas	Climate and Energy 6 UN SDGs						Community outreach and port-city dialogue 13 UN SDG"s												Governance and Ethics 6 UN SDGs						Resilient Infrastructure 9 UN SDGs									Safety and Security 6 UN SDGs					
				7 – Affordable and clean energy	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	13 – Climate action	1 – No poverty	2 – Zero Hunger	3 – Good health and well-being	4 – Quality education	6 – Clean water and sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	11 – Sustainable cities and communities	12 - Responsible consumption and production	13 – Climate Change	14 – Life below water	15 - Life on land	17 – Partnerships for the goals	5 – Gender equality	10 – Reduced inequalities	11 – Sustainable cities and communities	12 – Responsible Consumption and production	16 – Peace, justice and strong institutions	17 – Partnerships for the goals	4 – Quality education	6 – Clean Water and Sanitation	7 – Affordable and clean energy	8 – Decent work and economic growth	9 – industry innovation and infrastructure	13 – Climate change	14 – Life below water	15 – Life on land	17 – Partnerships for the goals (added)	3 – Good health and wel-being	8 – Decent work and economic growth	9 – Industry innovation and infrastructure	11 – Sustainable cities and communities	12 – Responsible consumption and production	16 – Peace, justice and strong institutions
Vision on responsible supply chains Port of Amsterdam	NL	2018	3-2							x													x	x	x	x	x												
WASh2Emden project Niedersachsen Ports	D	2019	1	x	x	x	x	x	X																														
Wetland at Torsviken Port of Gothenburg	SW	2020	2-4									x					x			x	x										x		x	X					

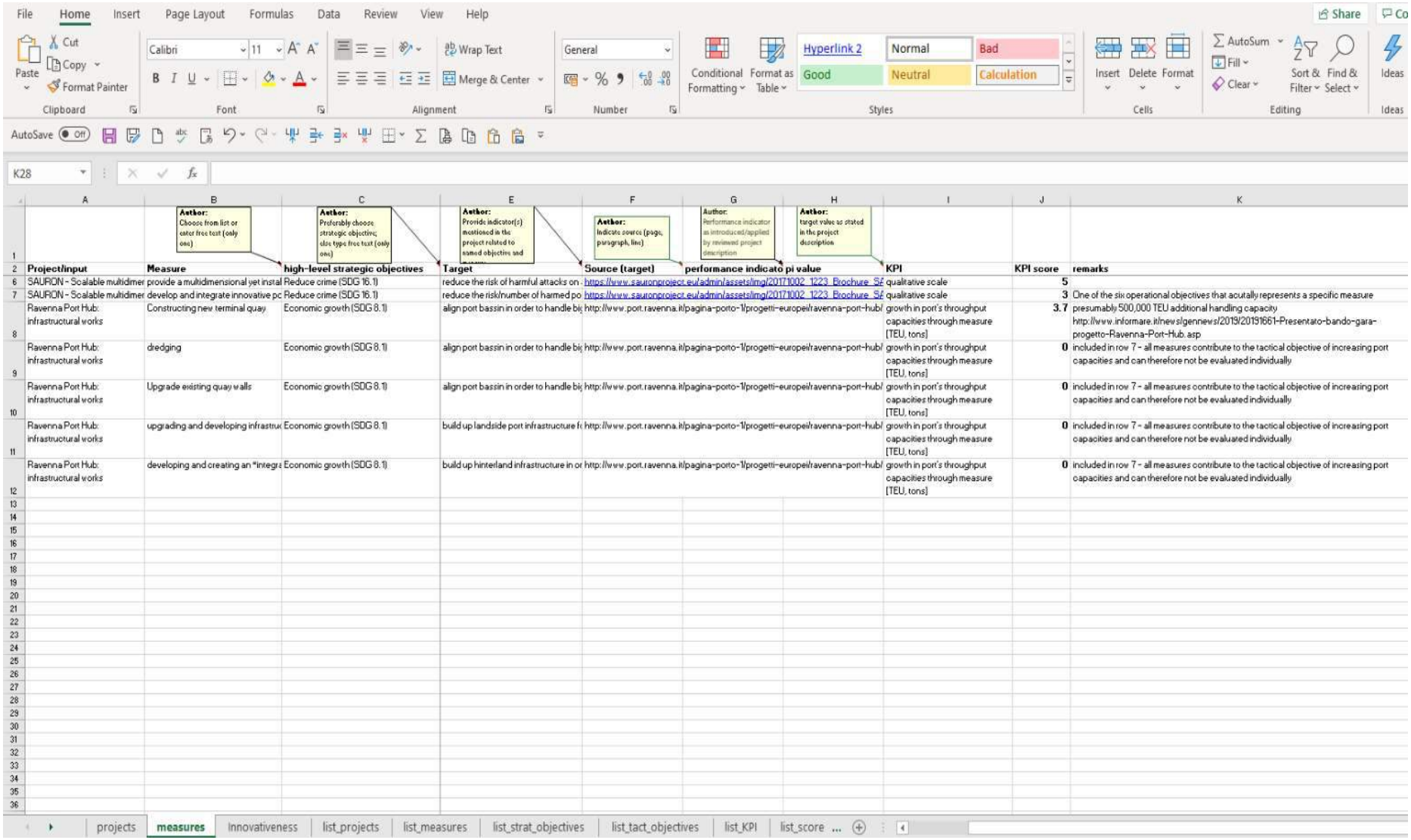
Annex V - PCI Project Evaluation Worksheet

The following Images provide a quick view of the Project Evaluation and Extended Evaluation worksheets used in the process of the PCI Assessment.



	A	B	C	D	E	F	G
1	Project title	ID	Project cost	Innovativeness score	Transferability Score	Transferability Index	Remarks
2	5G Industrial Environment T	200110		3 - high		n/a	
3	SAURON - Scalable multidin	101570	8,491,172.00 €	3 - high	4 - strong	n/a	implementation in at least four partner ports is planned over the duration of the project
4	Ravenna Port Hub: infrastructural works	200950	235,000,000.00 €	1 - low	3 - high	n/a	Innovativeness score of 0 also considered // estimated total investments costs http://www.informare.it/news/gennews/2019/20191661-Presentato-bando-gara-progetto-Ravenna-Port-Hub.asp

Image 1: PCI Project Evaluation worksheet – project information and scoring



	A	B	C	E	F	G	H	I	J	K
1		Author: Choose from list or enter free text (only one)	Author: Preferably choose strategic objective; else type free text (only one)	Author: Provide indicator(s) mentioned in the project related to named objective and	Author: Indicate source (page, paragraph, line)	Author: Performance indicator as introduced/applied by reviewed project description	Author: target value as stated in the project description			
2	**Project/input**	**Measure**	**high-level strategic objectives**	**Target**	**Source (target)**	**performance indicato**	**pi value**	**KPI**	**KPI score**	**remarks**
6	SAURON - Scalable multidimer	provide a multidimensional yet instal	Reduce crime (SDG 16.1)	reduce the risk of harmful attacks on	https://www.sauronproject.eu/admin/assets/img/20171002_1223_Brochure_SA			qualitative scale	**5**	
7	SAURON - Scalable multidimer	develop and integrate innovative pc	Reduce crime (SDG 16.1)	reduce the risk/number of harmed po	https://www.sauronproject.eu/admin/assets/img/20171002_1223_Brochure_SA			qualitative scale	**3**	One of the six operational objectives that acutally represents a specific measure
8	Ravenna Port Hub: infrastructural works	Constructing new terminal quay	Economic growth (SDG 8.1)	align port bassin in order to handle bi	http://www.port.ravenna.it/pagina-porto-1/progetti-europei/ravenna-port-hub/			growth in port's throughput capacities through measure [TEU, tons]	**3.7**	presumably 500,000 TEU additional handling capacity http://www.informare.it/news/gennews/2019/20191661-Presentato-bando-gara-progetto-Ravenna-Port-Hub.asp
9	Ravenna Port Hub: infrastructural works	dredging	Economic growth (SDG 8.1)	align port bassin in order to handle bi	http://www.port.ravenna.it/pagina-porto-1/progetti-europei/ravenna-port-hub/			growth in port's throughput capacities through measure [TEU, tons]	**0**	included in row 7 - all measures contribute to the tactical objective of increasing port capacities and can therefore not be evaluated individually
10	Ravenna Port Hub: infrastructural works	Upgrade existing quay walls	Economic growth (SDG 8.1)	align port bassin in order to handle bi	http://www.port.ravenna.it/pagina-porto-1/progetti-europei/ravenna-port-hub/			growth in port's throughput capacities through measure [TEU, tons]	**0**	included in row 7 - all measures contribute to the tactical objective of increasing port capacities and can therefore not be evaluated individually
11	Ravenna Port Hub: infrastructural works	upgrading and developing infrastru	Economic growth (SDG 8.1)	build up landside port infrastructure f	http://www.port.ravenna.it/pagina-porto-1/progetti-europei/ravenna-port-hub/			growth in port's throughput capacities through measure [TEU, tons]	**0**	included in row 7 - all measures contribute to the tactical objective of increasing port capacities and can therefore not be evaluated individually
12	Ravenna Port Hub: infrastructural works	developing and creating an "integra	Economic growth (SDG 8.1)	build up hinterland infrastructure in or	http://www.port.ravenna.it/pagina-porto-1/progetti-europei/ravenna-port-hub/			growth in port's throughput capacities through measure [TEU, tons]	**0**	included in row 7 - all measures contribute to the tactical objective of increasing port capacities and can therefore not be evaluated individually

Image 2: PCI Project Evaluation worksheet – Sos, Targets, Measures, PIs, PI Value, KPIs, and KPI Score

Annex VI - PoF KPI Dashboard

Within the PoF Network collaboration between DtF and the RIA projects, Docks The Future has established a PoF KPI Dashboard reporting and communication tool which also enables the evaluation of the 3 current PoF RIA projects, which also cover the 5 WPSP focus areas.
The images on the next pages provide a quick view of the PoF KPI Dashboard.

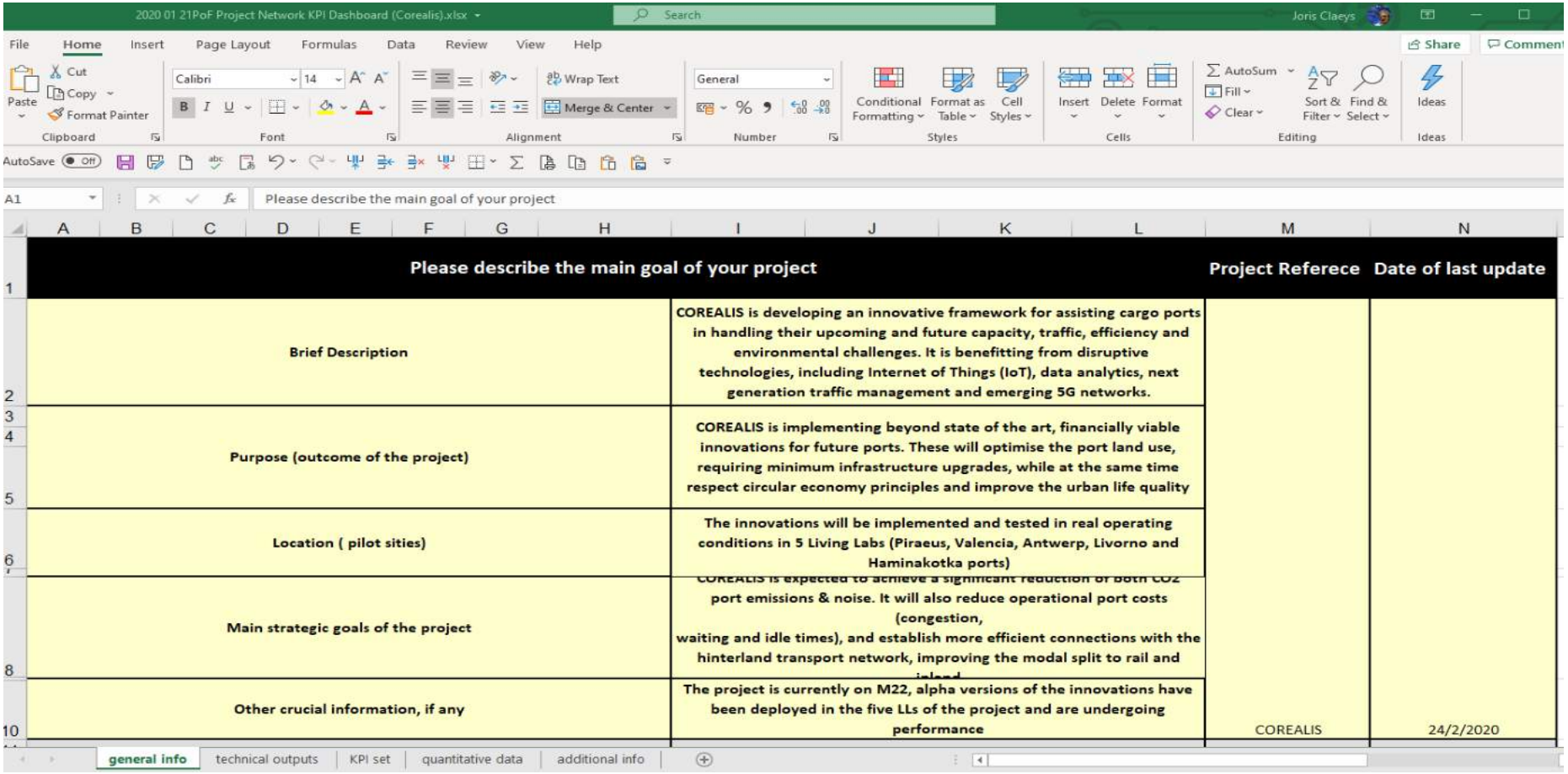
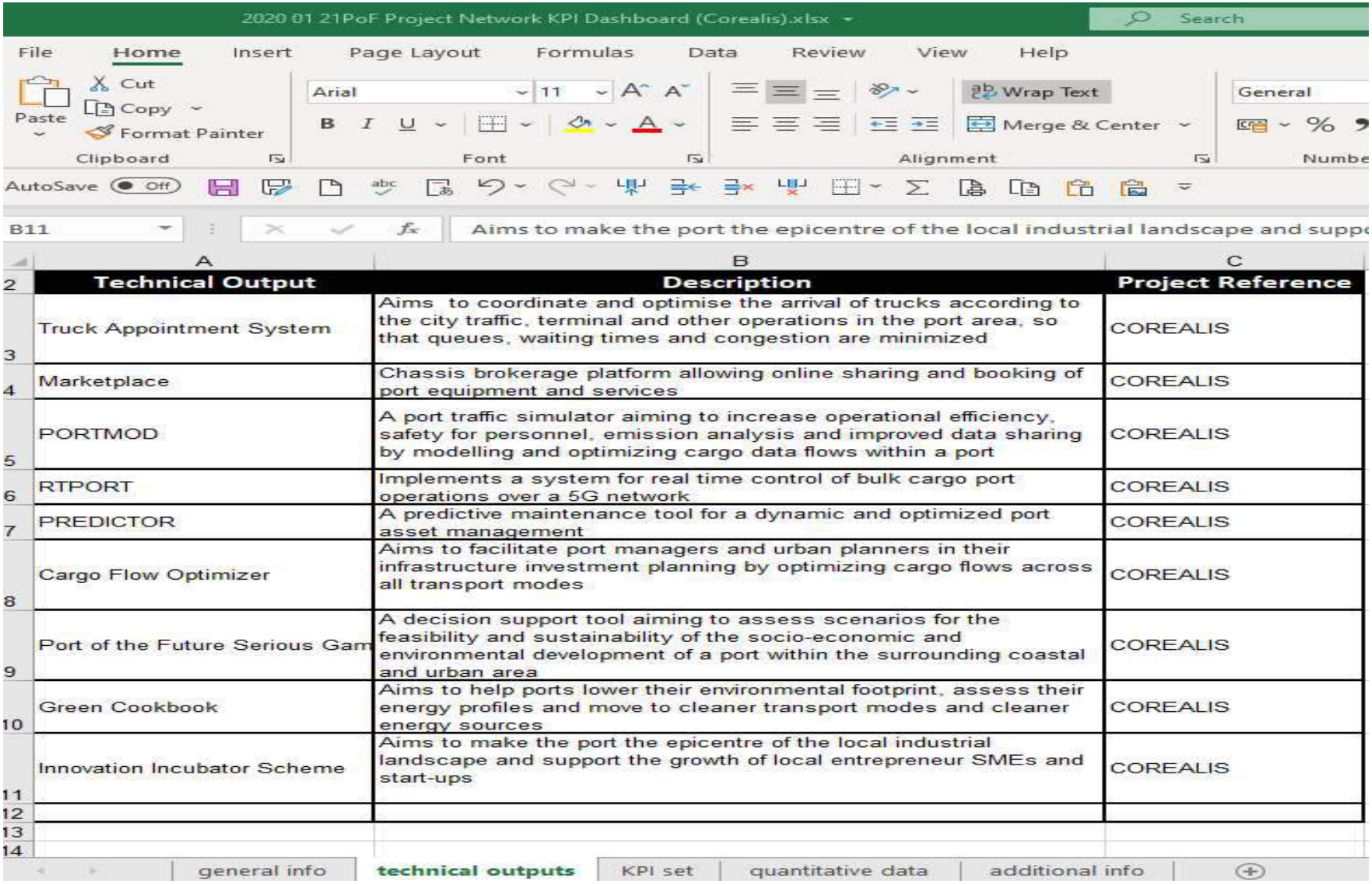


Image 6: PoF KPI Dashboard - RIA projects – Intro



2020 01 21PoF Project Network KPI Dashboard (Corealis).xlsx

Technical Output	Description	Project Reference
Truck Appointment System	Aims to coordinate and optimise the arrival of trucks according to the city traffic, terminal and other operations in the port area, so that queues, waiting times and congestion are minimized	COREALIS
Marketplace	Chassis brokerage platform allowing online sharing and booking of port equipment and services	COREALIS
PORTMOD	A port traffic simulator aiming to increase operational efficiency, safety for personnel, emission analysis and improved data sharing by modelling and optimizing cargo data flows within a port	COREALIS
RTPORT	Implements a system for real time control of bulk cargo port operations over a 5G network	COREALIS
PREDICTOR	A predictive maintenance tool for a dynamic and optimized port asset management	COREALIS
Cargo Flow Optimizer	Aims to facilitate port managers and urban planners in their infrastructure investment planning by optimizing cargo flows across all transport modes	COREALIS
Port of the Future Serious Gam	A decision support tool aiming to assess scenarios for the feasibility and sustainability of the socio-economic and environmental development of a port within the surrounding coastal and urban area	COREALIS
Green Cookbook	Aims to help ports lower their environmental footprint, assess their energy profiles and move to cleaner transport modes and cleaner energy sources	COREALIS
Innovation Incubator Scheme	Aims to make the port the epicentre of the local industrial landscape and support the growth of local entrepreneur SMEs and start-ups	COREALIS

Image 7: PoF KPI Dashboard - RIA projects – technical outputs

	A	B	C	D	E	F	G	H
1		Explanation		WPSP areas	high-level strategic objectives	Aggregated PI (Performance Indicator)	Please relevant KPIs that, according to the outcomes of your project, you think are missing	Project Reference
2	This table is a re-elaboration of the KPIs set as defined in deliverable 3.1 of the Docks The Future Project. The development of a KPI set starts with finding a suitable structure where objectives that support a similar goal are classified. The KPI design is based on the structure of the World Ports Sustainable Programm (WPSP). while also relating closer to the original UN Sustainable Development Goals (UN SDGs). The ultimate result of this task is the development of a KPI set and its corresponding subsets that are suitable to evaluate the potential contribution of projects with regard to the aspects that are considered to be important for the Port of the Future. KPIs shall:be relevant to and consistent with the "Port of The Future" vision, strategy and objectives;			Climate and Energy	Combat global warming (SDG 13)	reduction of port-related CO2-equivalent emissions [tons]		
3					Save natural resources (SDG 12)	waste reduction (plastic, dredging material) [tons]		
4					Other:	KPI:		
5					Other:	KPI:		
6					Other:	KPI:		
7				Community outreach and port-city dialogue	Inclusive cities (SDG 11.3.2)	qualitative scale		
8					Land consumption (SDG 11.3.1)	former port area converted [square meters]		
9					Improve environmental quality (SDG 11.6)	reduction of emissions in port (noise, air)		
10					Good jobs (SDG 8.5)	qualitative scale		
11					Other:	KPI:		
12					Other:	KPI:		
13					Other:	KPI:		
14				Governance and Ethics	Transparency (SDG 16.6)	qualitative scale		
15					Gender equality (SDG 5.5)	qualitative scale		
16					Equal opportunity (SDG 10.3)	port open to thrid-party operators [binary]		
17					Restrict corruption (SDG 16.5)	qualitative scale		
18					Green governance (SDG 15.9)	ISO 14001 [binary]		
19					Other:	KPI:		
20					Other:	KPI:		
21					Other:	KPI:		
22				Resilient Infrastructure	Economic growth (SDG 8.1)	growth in port's throughput capacities [TEU, tons]		
23					Higher productivity (SDG 8.2)	savings due to optimization [Euro]		
24					Resilient infrastructure (SDG 9.1)	qualitative scale		
25					Account for resilience (SDG 13.2)			
26					Other:	KPI:		
27					Other:	KPI:		
28					Other:	KPI:		
29				Safety and Security	Reduce crime (SDG 16.1)	qualitative scale		
30					Safe working conditions (SDG 8.8)	qualitative scale		
31					Other:	KPI:		
32					Other:	KPI:		
33					Other:	KPI:		
34				New area:	Other:	KPI:		
35					Other:	KPI:		
36					Other:	KPI:		
37					Other:	KPI:		
38								
39								

general info | technical outputs | KPI set | quantitative data | additional info

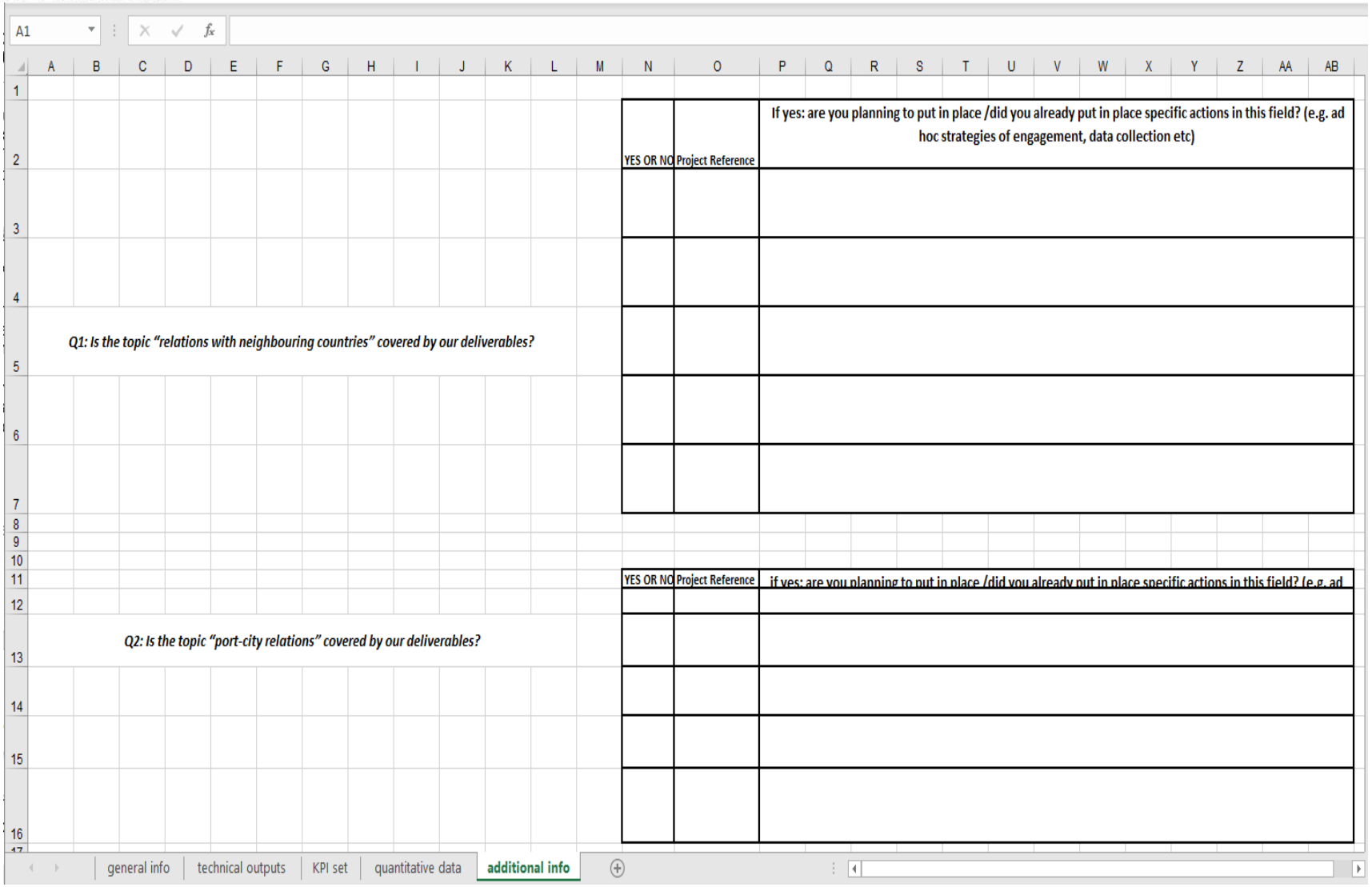
Image 8: PoF KPI Dashboard - RIA projects – KPI-set

A1 | KPI included in the KPI set sheet

	A	B	C	D	E	F
1	KPI included in the KPI set sheet	Brief description	UoM (quantitative)	Measure of reduction (amount or %)	Comments or clarifications	Project Reference
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

general info | technical outputs | KPI set | **quantitative data** | additional info

Image 9: PoF KPI Dashboard - RIA projects – quantitative data



	YES OR NO	Project Reference	If yes: are you planning to put in place /did you already put in place specific actions in this field? (e.g. ad hoc strategies of engagement, data collection etc)
Q1: Is the topic "relations with neighbouring countries" covered by our deliverables?			

	YES OR NO	Project Reference	if yes: are you planning to put in place /did you already put in place specific actions in this field? (e.g. ad
Q2: Is the topic "port-city relations" covered by our deliverables?			

Image 10: PoF KPI Dashboard - RIA projects – port-city relationship and relations with neighbouring countries