

**Project Management Plan** 

Project:	GASVESSEL
Project No.:	723030
Deliverable No.:	D1.2
Document Version:	RV0
Document Preparation Date:	2017.06.30
Responsibility:	PARTNER No. 1 NAVALPROGETTI

Type of Deliverable								
R Document, Report, Drawing X								
DEM	Demonstrator, pilot, prototype							
DEC Websites, patent fillings, videos, etc.								
OTHER								
ETHICS	Ethics requirements							
ORDP	Open Research Data Pilot							

	Dissemination Level								
PU	Public	Х							
СО	Confidential, only for Members of the Consortium (including the EU								
	Commission Services)								





#### **Version Management**

Software used		Microsoft Word
Filename		D1.2 Project Management Plan.doc
Author(s)		Spartaco Angelini
Reviewed by		Spartaco Angelini
Approved by		Silvio Stenta
Authorized by		Loris Cok
Revision No.	Date	Modification description
RV 0	2017-06-30	First issue for Partners check
RV 1		
RV 2		
RV 3		

EC Grant Agreement	No.723030
Project Acronym	GASVESSEL
Project Title	Compressed Natural Gas Transport System
Instrument	HORIZON 2020
Programme	Smart, green and integrated Transport
Start Date of Project	2017-06-01
Duration	48 months
Organisation Name of Lead Contractor for this Deliverable	NAVALPROGETTI Srl – TRIESTE - Italy

Financial/Administrative Coordinator								
Project Coordinator Name	Loris COK							
Project Coordinator Organization Name	NAVALPROGETTI Srl							
Address	Via dei Papaveri, 21 34151 TRIESTE (Italy)							
Phone Numbers	0039 040 212918, mob 0039 3356383587							
Email	loris.cok@navalprogetti.net; gasvessel@navalprogetti.net							
Project web-sites & other Access Points	www.gasvessel.eu							



The GASVESSEL Project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 723030





#### **Contents**

1.	Exec	cutive Summary	е
2.	Fore	word	7
	2.1	Definitions	7
	2.2	Regulatory Framework	8
	2.3	Project Management Objectives	8
	2.4	Consortium Governance Bodies	9
	2.5	General operational procedures for all Consortium Bodies	. 10
	2.6	Relations between Partners in the PM (WP1)	. 12
	2.7	Communications	. 13
3.	Proj	ect Management Overview	. 14
4.	Proj	ect Management Actions	. 15
	4.1	Team Building	. 15
	4.2	Project Coordination	. 15
	4.3	Level-out outputs	. 16
	4.4	Consistency and Quality of Deliverables	. 16
	4.5	Deliverables Issuing Procedures	. 17
	4.6	Planning and Budget Monitoring	. 17
	4.7	Monitoring the Procurement Management	. 19
	4.8	Addressing technical issues	. 19
	4.9	Reporting	. 19
	4.10	Risk Management	. 20
5.	HSE		. 22
_	Dror	posals for Workshops and Dissemination	22





# Glossary, abbreviations and acronyms

EU	The European Commission or in general Europe
INEA	Innovation and Networks Executive Agency of European Commission
РО	Project Officer assigned by INEA to GASVESSEL Project
Partner	Company member of the GASVESSEL Project Consortium
Project	The GASVESSEL no. 723030 Project
CNG	Compressed Natural Gas
GA	Grant Agreement
CA	Consortium Agreement
PMS	Project Management System
PM	Project Management
TM	Team Management
PA	Project Administration
P&C	Planning and Controls
PR	Project Reporting
DC	Document Control
HSEQ	Health, Safety, Environment and Quality controls and assurance
PRM	Procurement Management
MM	Materials Management
WP	Work Package
NP	Navalprogetti Srl – Trieste – Italy – The Coordinator – Partner -Lead Beneficiary of
	WP1 and WP5
DOW	Dow Deutschland Anlaghengesellschaft mbH - Partner
DOWA	DowAksa Deutschland GMBH - Partner
PNO	PNO INNOVATION – Belgium – Partner – Lead Beneficiary WP9
VTG	VNIPITTRANSGAZ – Kyiv – Ukraine – Partner – Lead Beneficiary WP6
SINTEF	SINTEF OCEAN AS – Trondheim – Norway – Partner – Lead Beneficiary WP7
ВМР	BM Plus Srl – Buttrio – Italy – Partner – Lead Beneficiary WP4
CNGV	CNGV d.o.o. – Izola – Slovenia – Partner – Lead Beneficiary WP3
CEN	CENERGY Srl – Trieste – Italy - Partner
HLL	Hanseatic Lloyd Schiffahrt GMBH & Co – Bremen – Germany - Partner
CHC	Cyprus Hydrocarbon Company – Nicosia – Cyprus – Partner – Lead Beneficiary of
	WP2
EST	ESTECO S.p.A. – Trieste – Italy - Partner
ABS	American Bureau of Shipping (Hellenic) – Athens – Greece – Partner – Lead
	Beneficiary WP8
O&G	Oil and Gas
WP1	Project Management
WP2	Scenario analyses
WP3	Prototyping activities, design of pressure cylinders and prototyping pilot line





WP4	Prototyping of pressure cylinders. Procurement/construction/arrangement of prototyping pilot line
WP5	Ship Design
WP6	Offshore & Onshore gas loading/unloading systems
WP7	Costs and Benefits Analysis
WP8	Class Design Review – Safety Assessments
WP9	Dissemination and Exploitation





#### 1. Executive Summary

Scope of this Project Management Plan is to provide a single point of reference for the management process that will govern the GASVESSEL Project.

The present deliverable defines the Project organization, procedures, roles and responsibilities related to the management activities that will be carried out and describes how the Project will be controlled.

It describes management activities intended to ensure that processes and procedures are defined and their execution is continuously monitored, corrected if necessary and implemented, based on a common standard.

The document is based on the terms and conditions established in the Grant Agreement no.723030 and its Annexes, as well as in the Consortium Agreement.

The use of the present plan can ensure better collaboration among the Consortium Partners, individuals and groups.

The Project Management Plan is the deliverable no. D1.2 of WP1, intended to be used by all Partners, to ensure that Project processes and outputs are monitored and properly reported to prevent possible deviations from the Work Plan in Attachment 1.

**Time, budget and quality** are the overall objectives and priorities of the Consortium.

#### **Partners**































\_\_\_\_\_

#### 2. Foreword

Every project management technique and method can be used, but without appointing a leadership to the project, it is unlikely to get anywhere.

Only if the designed Coordinator become and is acknowledged a leader and manager of the project, the project may succeed.

As a leader, the Coordinator, together with the PM Team (see 2.6), thanks to the responsibilities it assumed with EU, would have the command authority for guiding the project.

Partners will consider Coordinator and PM Team a trusted and reliable source of information for the Project.

All people governing the Project are expected to be honest, competent, and inspirational. Main job is to motivate the Partners and make sure that everybody is moving in the same direction - towards the project goals and to its completion.

#### 2.1 Definitions

**Project Management System (PMS)** is the formalization of the Project Management practice within a set of documents, guidelines, and tools, to provide a formal mechanism for managing and controlling activities on the Project.

**Project Management (PM)** is a practice required to optimally plan, execute and control the complex and connected activities of the Development process. Its objective is to assure completion of the Project in the specified time, within budget, in accordance with an agreed quality specification.

Project Management focuses on different areas:

- **Team Management (TM),** including both Project staffing (definition of adequate Project organization and selection of appropriate resources) and Team Management (e.g. team motivation, team building).
- **Project Administration (PA)** including interfaces between Project Team and other Company functions, permits and consents, office administration and action tracking.
- **Project Planning and Control (P&C),** consisting of processes of planning and scheduling, cost estimates, cost budgeting, progress monitoring and cost control.
- **Project Reporting (PR),** describing the processes required to collect and analyze data and to produce and deliver reports on the status of the Project.
- **Document and Data Management (DC),** dealing with processes of planning, managing, controlling, and filing of Project data and documentation and management of approval cycles.





• **HSEQ management (HSEQ),** meaning the processes required to ensure that Project will satisfy HSEQ needs.

- **Procurement Management,** describing the processes required to acquire goods and services from outside the company. It includes procurement strategy, source selection and contracts administration.
- Materials Management, dealing with the processes required to ensure that the necessary materials are delivered to the right place, at the right time and are maintained damage free and in a suitable condition of preservation.

#### 2.2 Regulatory Framework

GASVESSEL Project execution shall comply with and governed by:

- Grant Agreement signed by the Coordinator with the European Commission-INEA and by all the Partners in the Accession Forms. Grant Agreement number 723030 entering into force on May 22<sup>nd</sup>, 2017
- Consortium Agreement signed between all Partners dated May 15<sup>th</sup>, 2017.
- National legislation frameworks, governing business administration, in the homeland of each Partner
- National legislation frameworks, governing HSE and social issues, in the homeland of each Partner

In case of conflict between the contents of Grant and Consortium Agreements, the Grant Agreement statements shall prevail.

Project Management starts on month 1 (First of June 2017) and ends on month 48 (End of May 2021).

The 48 months assigned to the Project are considered sufficient for the performance of the foreseen tasks.

#### 2.3 Project Management Objectives

The aim of the PM is to manage and administrate efficiently the Project Consortium internal and external affairs.

An adequate management structure is necessary in order to coordinate the work carried out in the project, manage the quality control, the financial and thematic reporting as well as to organize communication among project Partners.

- O 1.1 Manage the communication in the Project Consortium and Executive Board
- **O 1.2** Give overall project governance and provide for quality management ensuring the timely achievement of the project goals as outlined in the Work Plan (Attachment 1).
- **O 1.3** Be the central point of contact to the Project and interface with the European Commission and Partners.





O 1.4 Ensure coherence with all legal and EU requirements, rules and regulations and supervise

fulfilment of Consortium Agreement, including financial and legal management.

**O 1.5** To coordinate the work in accordance with the objectives of the Project and to ensure that all Project activities are conducted and deadlines met the satisfaction of the Project Work Plan and the European Commission.

**O 1.6** To manage the individual WPs activities ensuring adherence to the Work-Plan and to ensure the achievement of all Project deliverables due-dates and milestones.

The Management & Coordination Work Package (WP1) will be carried out under the responsibility of the Coordinator NP

#### 2.4 Consortium Governance Bodies

The Consortium Governance bodies are:

The **GENERAL ASSEMBLY** (all beneficiaries) is the ultimate decision-making body of the Consortium.

The ordinary General Assembly shall meet about twice a year according with the following agreed calendar:

PROJECT DURATION																																																
POS	ITEM	LOCATION			20	)17					2018					2019																		- 2	2020	)						2	2021					
			J	J .	Α :	s	0	N I	5	J	F	М	А	и	J	J	A :	s (	o l	N I	D	J F		1 4	A N	ΛJ	J	Α	s	0	N	D	J	F I	VI A	۱ A	M .	ı [ ı	А	S	0	N	D	J	F	М	Α	М
1	Kick-off	Trieste at NP						П	T					T					T	T				T														Т	Т								П	Г
2	Periodic Meeting	Cyprus at CHC																																														Г
3	Periodic Meeting	Germany at DOW												Т																																		Ε
4	Periodic Meeting	Trieste at NP																																														
5	Periodic Meeting	Buttrio at BMPlus																																														
6	Periodic Meeting	Buttrio at BMPlus																																														
7	Periodic Meeting	Athens at ABS																																	Т													
8	Periodic Meeting	Bruxelles at PNO						П	Т	T				Т					Т					Т	Т											Т		Т	Т								П	П

The Representatives of the following Partners compose General Assembly:

Partner	Partner	Country	Role
no.	Short		
	Name		
1	NP	Italy	Partner – Lead Beneficiary WP1 and WP5 - Coordinator
2	DOW	Germany	Partner
3	DOWA	Germany	Partner
4	PNO	Belgium	Partner – Lead Beneficiary WP9
5	VTG	Ukraine	Partner – Lead Beneficiary WP6
6	SINTEF	Norway	Partner – Lead Beneficiary WP7
7	ВМР	Italy	Partner – Lead Beneficiary WP4
8	CNGV	Slovenia	Partner – Lead Beneficiary WP3
9	CEN	Italy	Partner
10	HLL	Germany	Partner
11	CHC	Cyprus	Partner – Lead Beneficiary WP2
12	EST	Italy	Partner
13	ABS	Greece	Partner – Lead Beneficiary WP8





The EVECUTIVE BOARD is the supervisory had for the supervisor of the Dusiest subjet shall represent

The **EXECUTIVE BOARD** is the supervisory body for the execution of the Project, which shall report and be accountable to the General Assembly.

The representatives of Partners sitting in the Executive Board are:

Partner no.	Partner Short Name	Role
1	NP	Partner - Coordinator
3	DOWA	Partner
4	PNO	Partner
7	ВМР	Partner
8	CNGV	Partner

Executive Board shall meet quarterly by default, according with the following calendar:

																										F	PRO.	EC	ΓDI	UR/	ATI	ON																							
POS	ITEM				2	201	۱7									:	201	8												20:	19												20	20								202	21		7
		J	Γ.	J	Α	s	T	)	N	D	J	F	М	I	N	1	J	J	Α	s	0	N	D	J	F	: 1	vi /	ı	и	J	J	Α	s	0	N	D	J	F	F	м.	Α	м	J	J	Α	s	0	N	D	J	F	N	ΛА	۱ V	Λ
1	Ex. Board meetings		Γ																																																			Τ	Ī

Additional Executive Board meetings shall be arranged on Partners request, if necessary, as ruled in the Consortium Agreement and shown here below.

Executive Board is furthermore in charge to address controversies that will possibly arise between the Partners.

The **COORDINATOR** (NP) is the legal entity acting as intermediary between the Partners and the European Commission. The Coordinator shall perform, in addition to its responsibilities as a Partner, the tasks assigned to it as described in the Grant Agreement and in the Consortium Agreement.

Apart the planned meetings of General Assembly and Executive Board each Partner is entitled to call other Partners to attend separate meeting in web/call conferences on specific matters. The Partner that called the meeting will issue a MoM and circulate it to all Partners and to Coordinator.

#### 2.5 General operational procedures for all Consortium Bodies

#### Representation in meetings

Any Partner which is a member of a Consortium Body:

- should be present or represented at any meeting;
- may appoint a substitute or a proxy to attend and vote at any meeting;
- shall participate in a cooperative manner in the meetings.





\_\_\_\_\_\_

#### **Preparation and organization of meetings**

The chairperson of a Consortium Body shall convene meetings of that Consortium Body.

#### **General Assembly**

- Ordinary meeting: According with above calendar or at least once a year
- <u>Extraordinary meeting</u>: At any time upon written request of the Executive Board or 1/3 of the Partners in the General Assembly

#### **Executive Board**

- Ordinary meeting: According with above calendar
- <u>Extraordinary meeting</u>: At any time upon written request of any Partner member of the Executive Board

#### Notice of a meeting

The chairperson of a Consortium Body shall give notice in writing of a meeting, to each Partner of the Consortium Body, as soon as possible and no later than the minimum number of days preceding the meeting as indicated below.

#### **General Assembly**

Ordinary meetinq: 45 calendar days
 Extraordinary meetinq: 15 calendar days

#### **Executive Board**

Ordinary meeting: 14 calendar days
 Extraordinary meeting: 7 calendar days

#### Sending the agenda

The chairperson of a Consortium Body shall prepare and send each Member of that Consortium Body a written agenda no later than the minimum number of days preceding the meeting as here indicated:

• <u>General Assembly:</u> 21 calendar days, 10 calendar days for an extraordinary meeting

• Executive Board: 7 calendar days





#### Adding agenda items

Any agenda item requiring a decision by the Partners in a Consortium Body, must be identified as such on the agenda.

Any Partner in a Consortium Body may add an item to the original agenda by written notification to all of the other Partners of that Consortium Body up to the minimum number of days preceding the meeting as indicated:

General Assembly: 14 calendar days, 7 calendar days for an extraordinary meeting

• <u>Executive Board:</u> 2 calendar days

During a meeting, the Partners of a Consortium Body, present or represented, can unanimously agree to add a new item to the original agenda

Meetings of each Consortium Body may also be held by teleconference or other telecommunication means.

# 2.6 Relations between Partners in the PM (WP1)

All Partners are engaged in the Project Management (Work Package 1) with a defined number of persons/month and corresponding assigned budget, as follows:

Partner Number and	WP1 Effort-
Short Name	Person/month
1 - NP	18,00
2 – DOW	3,00
3 – DOWA	1,00
4 – PNO	2,50
- PNO NL	1,75
- CIAOTECH	0,75
5 - VTG	2,00
6 – SINTEF	2,00
7 – BMP	2,00
8 - CNGV	4,00
9 - CEN	3,00
10 - HLL	1,00
11 - CHC	4,00
12 - EST	1,00
13 – ABS	1,00
Total	47,00

The Project Management Team listed in the table here above, will assist the Coordinator in performing the Project Management activities.

Each Partner to supply <u>as soon as possible</u> to the Coordinator at <u>gasvessel@navalprogetti.net</u> an e-mail with the following data for the necessary contacts and exchange of information:





- Name of the person in charge for the Project Management inside the Partner organization
- Phone number
- E-mail address

#### 2.7 Communications

The efficiency and promptness of communication between the Partners is vital for the Project success.

All queries and info from one Partner to another to be processed without undue delay having well in mind the planned due dates of Deliverable and Milestones as per Grant Agreement and Work Plan.

In order to allow the Coordinator to keep informed the Executive Board about the progress and possible problems for the Project, and enable it to intervene and help or ease i.e.: for problem solving, any correspondence exchanged about the GASVESSEL Project between Partners, **to be copied** to Coordinator and shall be addressed exclusively to <a href="mailto:gasvessel@navalprogetti.net">gasvessel@navalprogetti.net</a>.

As far as practicable and if not stated otherwise, **all communications** between Partners will be exchanged **in written** via e-mail.

Project language is English.

Matters of particular importance for the Project, even if previously discussed and agreed by phone or in teleconference between a limited numbers of Partners, shall be confirmed in written via e – mail to **all** Partners.

Information exchanged to be clear, transparent and well timed for the whole community of Partners.

The Object of the communications shall clearly refer to:

723030 GASVESSEL – WP no... - Task no... – Deliverable no... – Specific topic object of the communication



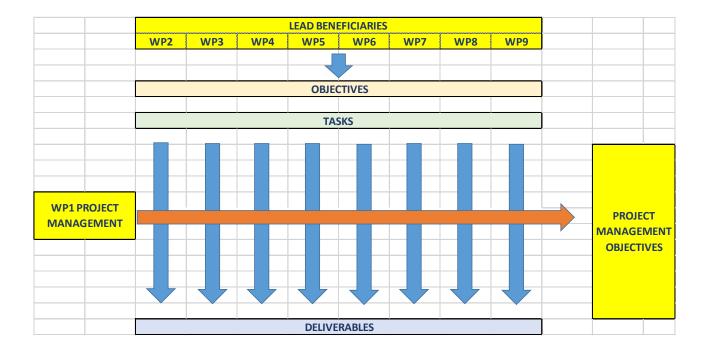


\_\_\_\_\_

#### 3. Project Management Overview

To reach Project objectives, PM actions will move across the normal activities performed by the Partners, as shown in the figure here below, while Partners go through the relevant Work Packages in order to satisfy the objectives, perform the agreed tasks and issue the relevant deliverables.

It is not in the scope of the PMS to interfere with the normal management process of each Partner.



Partners are free to apply their usual internal management practice for accounting, planning, quality, risk management, HSE, reporting, etc.

The PMS, instead, shall provide to:

- Team building
- Coordination of activities between the Partners
- Level out the outputs of our research programme
- Verify consistency and quality of deliverables and revert to the Lead Beneficiary accordingly
- Monitoring of the overall budget and resources consumption
- Monitoring the general planning and propose remedial actions, to keep the due dates of deliverables and milestones unchanged





\_\_\_\_\_

- Monitoring the Procurement Management
- Address possible technical issues
- Help Partners, on request, in the correct interpretation of the Grant and Consortium Agreements
- Help and coordinate Partners in the preparation of reporting to European Commission on months 18, 36 and 48
- Request to Partners periodical internal reporting, to be submitted to the Executive Board at every Executive Board meeting (see 2.4)
- Overall Risks management associated to the research Project activities.
- Highlight, during the research, the items of interest and consequently propose for conferences and dissemination.
- Project Ethics

#### Final scopes of PMS are:

- Completing the project on time
- Completing the project within the assigned budget and with the available resources
- Completing the project by achieving the desired level of quality

#### 4. Project Management Actions

#### 4.1 Team Building

Roles and goals for each Partner are already defined in detail in the Grant Agreement and in the Work Plan (Planning of activities) – See Attachment 1.

Over Project time, the Team building is intended by PMS to improve performance in a partnership environment. Team building is fundamental for organizational development of Partners' tasks.

#### Team-building includes:

- Aligning Partners around project goals
- Building effective working relationships between Partners
- Reducing ambiguity in Partners' role
- Finding solutions to Partners' problems

#### 4.2 Project Coordination

Project coordination generally refers to planning and managing multiple tasks simultaneously in the Project.





Coordination is essential for GASVESSEL Project that deals with a number of Partners with related objectives, tasks and deliverables, clearly detailed in the Grant Agreement.

In point 2.4 is reported the division of responsibilities between Consortium Governance Bodies.

In addition, all Partners, by signing the Grant and Consortium Agreements, have recognized to the Coordinator the authority and skill to achieve the Project objectives.

According with the above, the Coordinator expects from the Partners a sound commitment and spirit of cooperation, loyalty and transparency each other, as proven up to now, to realize the necessary synergies for the success of the Project. PM coordination activity will proceed on this path during its monitoring actions.

**Expediting** is another important aspect of the Coordination activity. It will be performed by the PM, that will monitor, examine the progress of research activities, verify the correct interface and get in touch with the Partners proposing and agreeing remedial actions when needed.

#### 4.3 Level-out outputs

As far as practicable, all Deliverables shall be levelled-out according with a common standard suitable for the GASVESSEL Project and in line with other EU granted projects.

In the Deliverable D1.3 Quality Management Plan a number of standard forms will be made available to Partners for the documents having EU and Project web site as final destinations, i.e.:

- Documents numbering procedure
- Standard EU form for time sheets
- Deliverables front page
- Etc.

#### 4.4 Consistency and Quality of Deliverables

Each Lead Beneficiary is responsible for performing its activities among the following constrains:

- Completing the project/tasks on time, as planned
- Completing the project/tasks within the specified budget and with the available resources
- Completing the project/tasks by achieving the desired quality

PM will verify that Consistency and Quality of Deliverables characteristics are ensuring that it is "fit for the purpose".

To measure consistency and quality of a deliverable, first of all it will be checked that each Partner - consulting a Deliverable prepared by another Partner - has to find in it, clearly presented and easy to understand, all the information needed to progress in its own research activity, along the planned duration of each WP.





.....

#### 4.5 Deliverables Issuing Procedures

Responsible Partner (Lead Beneficiary of each WP) is in charge of the deliverable consistency, quality and timely issuing within the budget.

**One month before the deliverable due date** (see Grant Agreement), the deliverable will be circulated to all Partners for comments.

Partners to submit comments to Lead Beneficiary within 2 weeks at the latest.

Deliverables not commented within the two weeks are considered "Approved".

Responsible Partner will forward final version of deliverable to Coordinator within 1 week from Partners comments receipt.

Coordinator will upload the deliverables on EU portal and on GASVESSEL web site.

### 4.6 Planning and Budget Monitoring

#### **Progress Control**

Executive board meetings dates (see 1.4) represent the checkpoints for progress control.

Each Executive Board meeting is considered, in addition to what specifically present in the agreed agenda of meeting, as a "Phase Review" of the Project for monitoring the progress and fairly prepare the Consortium for the official reporting to EU on months 18, 36 and 48.

Status Reports presented by Partners to the Executive Board quarterly are a fundamental monitoring tool to identify progress and problems.

Partners are encouraged to take Status Reports seriously.

Each Partner shall complete Status updates **one week in advance to each Executive Board meeting date**. Partners Status updates will be gathered and summarized by the PMS.

Partner Status Reports, for each WP of competence, shall briefly contain:

- Detail of the actions completed in the reporting period
- Cumulated progress of budget and resources consumed up to the closing date of the reporting period (see below in the Cost Control section)
- Detail of actions foreseen in the next reporting period
- Risk assessment and possible mitigation actions
- HSE assessment





A standard form for Status Reports will be part of Project Quality Management Plan (Deliverable D1.3 of WP1).

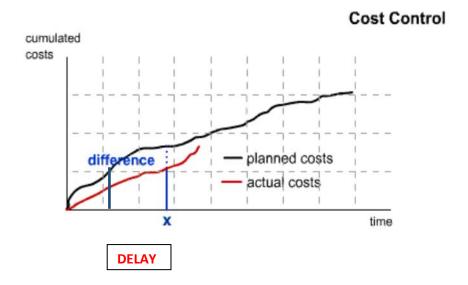
A suggested way to monitor Status is to use two columns in a table and compare the current schedule with the original plan (see Attachment 1 Work Plan which is integral part of this Project Management Plan) When visualizing it in a chart Partner might get an even more powerful tool to envision the progress of the Project.

#### **Cost Control**

To review the project cost it is useful to compare the actual cost to date with the budget plan (see Attachment 1 Work Plan).

Partner might use the cumulated budget plan for the planned costs and compare it to the actual costs to the reporting date.

Always consider the project's progress when doing an evaluation. As in the example below, the actual costs might be a lot less than the planned ones, while at the same time the project's progress might be weeks behind its planned status.



#### **Changes**

To grant a fair progress to the Project, no substantial changes are allowed. Objectives, tasks, deliverables, milestones, due dates to EU remain as defined in detail in the Grant Agreement.

Small modifications in internal procedures, Consortium management aspects, technical aspects are acceptable. Partner proposing modifications, with written justifications, shall address them to the Executive Board and Coordinator. Executive board reserves itself the final decision on the proposed change, or otherwise decide to ask by e-mail for the approval of all other Partners, that may accept or reject the proposed change.

The budget granted by EU, globally to the project and to each Partner, cannot be exceeded.





Partners to expect some budget downgrading due to the foreseen EU auditors actions or for inconsistency of their cost reporting to Europe.

#### **Force Majeure**

Force Majeure is governed by Section 4 – Article 51 of the Grant Agreement.

## 4.7 Monitoring the Procurement Management

Each Partner to perform its procurement actions freely, but in line with EU and national legislation on the matter.

Partners to document Coordinator and Executive Board that value of procured goods is **"best for money"**, that quality is as necessary to satisfy Project needs and that delivery time will not affect Project schedule.

### 4.8 Addressing technical issues

Each partner is in charge to address technical issues as it will be necessary and/or discovered during Project progress, or requested by another Partner.

Coordinator team remain available anytime to address technical issues if so requested by Partners

#### 4.9 Reporting

As already mentioned above in this document there are two aspects of reporting:

- Reporting to EU
- Internal reporting

Reporting to EU, requiring many preparatory works, will be made ready in due time by each Partner. Coordinator team will assists Partners in this activity as far as practicable.

During kick-off meeting, PO suggested Partner to register costs on a monthly basis, at least.

According to previous experiences, Coordinator suggest Partners to provide internal costs accounting on a weekly basis, for prompt references to events, or not to lose documents/papers for costs justification.

Nearly all articles of the Grant Agreement, at the end of each section, foresee a paragraph named "Consequences of non-compliance". Partners are invited to monitor carefully this warning not to fall in non-compliances.





For internal reporting see 4.6 Planning and Budget Monitoring

### 4.10 Risk Management

Risk management is the identification, assessment, and prioritization of risks.

Risks are defined as the effect of uncertainty on objectives.

Risks are followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events.

Risk management's objective is to assure uncertainty does not affect the endeavor from the Project goals.

For the time being, Risks identified are:

#### **Project External Risks**

Risks	Likelihood (0-5)	Contingency/Opportunities
Unforeseen too low gas sale price and in consequence less demand from Oil and Gas companies to exploit stranded and associated gas off-shore	2	Alternative market opportunities e.g. CNG as a more flexible and less risky solution compared to LNG exploitation
Storage facilities offshore and onshore require specific considerations regarding space and safety	2	Depending on the local development plans and urgency to adopt alternative energy supply. Risk and safety constraints will be evaluated from the beginning i.e., scenario analyses with multiple potential users (Greek and Italian Islands)
Technology breakthrough in alternative sources of energy	2	Gas will continue to be a raw material for petrochemical industry. Alternative logistics and storage solutions for petrochemical plants.
Oil and Gas continue to be down in a cost cycle and O&G companies are reluctant to invest into new technologies and solutions	4	Demonstrating cost effectiveness and positive business case of CNG solution for short distances delivery will actually provide an alternative for more risky (e.g. LNG) exploitation routes and offer additional turnover resources
O&G companies are reluctant to guarantee long term take or pay contracts for logistics/ ship owners	2	Involve local Governments for long-term demands commitments. Involve whole value chain into commitment including final gas users





#### **Project internal Risks**

Description of risk	Likelihood Level	WP(s) involved	Proposed risk-mitigation measures
Technology applied for the Pressure Cylinders does not confirm the technical and economic benefits		3, 4, 7	Design the whole process (material & equipment) as close as possible to the original consideration.
New resin system development unmet specific needs regarding technology selection	1		Dow broad Epoxy resin system portfolio is assumed to be appropriate for one of the technologies
Translation of properties between Carbon Fibre & Epoxy resin is not sufficient to meet mechanical performance of the composite		4	Newly developed sizing agent will be used for the process. Design of experiment will be run early on to test Inter laminar shear and impregnation properties
Participants' non-performance in terms of quality and timing of deliverables submittal. Budget is not spent correctly or contributors do not deliver according to the plan	Low	All	Proper use and management of Consortium Agreement clauses. For these cases, Consortium Agreement will provide tools for the Coordinator and the Consortium to react on time and redistribute work and/or budget.
Increase of procurement costs for prototyping machinery and equipment due to market changes		3	Efficient Procurement Policy Design to cost
Delay issuing work packages and deliverables	Low	3	Work has to be stringently and efficiently managed, planned and monitored. This will be done e.g. through a close follow-up by the Coordinator and he review meetings with the work package leaders. The compliance has to be followed up through quality management.
Prototyping results not in line with expectations and calculations	Low		Prototyping phases split in two: deficiency discovered during the 1 <sup>st</sup> phase will be tuned during the 2 <sup>nd</sup> phase.

As pointed out in 4.6, each Partner shall submit to the Executive Board in the periodic reports the detail of risks discovered while performing tasks and the mitigation actions proposed, together with the proposal of cancellation of risks in the meantime expired.

#### **Technical Risks**

Technical Risks relevant to the waterborne transportation of CNG are part of the WP8 and will be dealt separately there, as directed by ABS.





#### 5. HSE

Each Lead Beneficiary/Partner is fully responsible and in charge for the respect of the HSE laws, rules and regulations in force in its Country.

Every Partner is committed to improve health, safety and wellbeing of researchers in the workplaces, encouraging researchers' involvement to enable them to better understand the health risks, consequences and control measures associated with the GASVESSEL Project activities.

In association with the nature of GASVESSEL Project, that foresee pressure testing, fatigue testing and burst tests, it is necessary to raise awareness of the potential consequences of pressure systems failures and the importance of implementing and sustaining robust control measures.

Partners to ensure that researchers have right to the Social Security as per national and EU laws.

Partners to provide Environment protection as per national and EU directives, which scopes are summarizes in:

- to protect, conserve and enhance the European Union's natural capital
- to turn the Union into a resource-efficient, green, and competitive low-carbon economy
- to safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing

#### 6. Proposals for Workshops and Dissemination

Aside the foreseen and planned Dissemination and workshop actions in WP9, it could be of interest, on Project completion, a document reporting the cumulated experience in the GASVESSEL Project Management.



# Attachment 1 to PROJECT MANAGEMENT PLAN WORK PLAN

#### WP 1 PROJECT MANAGEMENT LEAD BENEFICIARY: NAVALPROGETTI 2019 2020 2021 2017 2018 Pers / Mean TASK DESCRIPTION PARTNER TASK value 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 REPORTING AND COSTS JUSTIFICATION TO EU BENEFICIARIES GENERAL ASSEMBLY MEETINGS Trieste at NP Cyprus at CHC Germany at DOW Trieste at NP Buttrio at BMPlus Buttrio at BMPlus Athens at ABS Bruxelles at PNO EXECUTIVE BOARD MEETINGS (web meeting) DELIVERABLES D1.1 Executive Board minutes of meeting, Consortium Agreement document NP D1.2 Project Management plan NP Χ Χ D1.3 Quality management plan NP D1.4 Project final report NP Χ D1.5 "Web-based Knowledge Management" manual NP D2.1 | Scenario description and characterization Χ CHC D2.2 Decision support model Χ EST D3.1 Platform for Pressure Vessel Optimization, validation of the design process, optimisation software and design basis document. EST Χ D3.2 Scenario analysis performed with the decision supporting model CHC Technical specifications and executive plans of the installations and D3.3 equipment necessary for the design of Pressure Vessels, Pilot Line and CNGV prototyping equipment Test procedures on prototypes and experimental support tests with strain D4.1 gauges to validation of the software simulations models (FEM analysis), **BMPlus** safety factor validations tests. Production procedures with the winding pattern, the winding parameters. D4.2 validation of the tension control systems, the system of impregnation, BMPlus Χ viscosity and processing temperatures, issue of quality assurance and quality control documents Final report by the entity independently with the issuance of the results of D4.3 all the validation tests and the issuance of the final document of homologation of the Pressure Vessels and the production process Х BMPlus (Production Quality Manual) D5.1 Basic design and Naval Architecture Package Х Х D5.2 Reports on towing tank experimental tests results NP D5.3 Functional Design, engineering Package and safety report NP Χ D6.1 Technical proposals for the construction and equipment of a Loading / X CEN unloading modules D6.2 Soit facilities Software tool for the design and operation of the loading / unloading CEN Χ Χ D6.3 Report on the offshore loading/unloading operation analyses MTEK D7.1 CBA database MTFK D7.2 Report on Comparative / sensitivity analysis (for each scenario) of CNG-GASVESSEL versus LNG, FLNG, Pipeline MTEK Χ D7.3 Profitability assessment of the GASVESSEL concept (socio-economic and MTEK financial analysis) D8.1 Documentation printing in the HAZID analysis Documentation providing safeguards solutions for the system as identified ABS Documentation providing a master hazard register and a framework for ABS quantitative risk assessment (ABS) D8.3 General (Basic) Design Approval Letter for the whole CNG carrier design ABS and its associated systems (if meeting requirements)

WP	<b>TAC</b> //	TASK DESCRIPTION	PARTNER	Pers /	Mean				201	17				2	2018								201	9								2020					20	)21
WP	TASK	TASK DESCRIPTION	PARTNER	month	value	€	6	7 8	9	10 11	12 1	. 2 3	3 4	5 6	7	8 9	10	11 12	2 1	2	3 4	5	6	7 8	9	10 1	11 12	2 1	2	3 4	5	6 7	8	9 10	11 12	2 1	2 3	3 4
		D9.1 Dissemination and Exploitation plan	PNO								Х																											
		D9.2 Promotion material, including brochures, articles, presentations.	PNO																																			Х
		D9.3 Public and internal website (First, Full version )	PNO										Х																									
		D9.4 Reports of the 3 workshops	PNO																											Х								
		D9.5 Business plan for the project results and 6 business cases	PNO																																			Х
1	[	D10.1 NEC - Requirement n°1	NP					Х																														
	[	D10.2 EPQ - Requirement n°2	NP					Х																														
	I	D10.3 NEC - Requirement n°3	NP					Х																														
		TOTAL WP1				333 900																																
											MS	1	N	VIS2			M	1S3				MS4						MS:	5		MS6						M	1S7 M:
													_	MS8																								

X Circulagtion between Partners

Due date to EU

Short name	Total PM	Direct personnel costs (Euro)
NP	18	134460
DOW	3	22500
DOWA	1	6500
PNO	5	42750
VTG	2	13500
MTEK	2	19000
BMP	2	10000
CNGV	4	29840
CEN	3	14400
HLS	1	7500
СНС	4	22000
EST	1	5450
ABS	1	6000

#### WP 2 SCENARIOS ANALYSIS LEAD BENEFICIARY: CYPRUS HYDROCARBON COMPANY 2017 2018 2020 2021 Pers / Mean TASK DESCRIPTION PARTNER TASK value 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 3 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 T2.1 SCENARIOUS DEFINITION 2.1 A Collection of information and data for the following regions: North sea (Barents Sea), West and East Mediterranean area 65 000 | 2.0 | 2.0 | 3.0 | 3.0 | 2.0 CHC 12.00 2.40 2.1 B Overview of the available gas reserves and identification of the gas fields in the areas mentioned in T2.1A 0.5 | 1.5 | 1.5 | 0.5 | MTFK 4.00 1.00 40 000 0.2 0.3 0.3 0.2 1.00 0.25 6 750 VTG 2.1 C Connecting the supply and demand to creating the Scenarios for the CNG conpert in the areas mentioned in T2.1A 0.1 0.2 0.2 0.2 NP 0.65 0.16 1 980 DEVELOPMENT OF A DECISION SUPPORT MODEL FOR SCENARIO COST T2.2 SIMULATION AND OPTIMIZATION 2.2 A Elaboration of a MTF platform for optimization of p. vessels - ships characteristics according to the Market demands D2.2 EST 14.00 1.56 76 300 | 0.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 0.2 0.4 0.4 0.3 0.1 0.1 NP 1.35 0.23 12 960 1.0 2.0 2.0 1.0 2.2 B Coordination and supply to ESTECO of the results form T2.1 CHC 6.00 1.50 32 500 0.3 0.5 0.5 0.3 MTEK 1.60 0.40 18 000 T2.3 SCENARIO ANALYSIS D2.1 10.00 56 500 2.0 3.0 1.0 2.0 2.0 CHC 2.00 2.3 A Comparison of the GASVESSEL concept against conventional technologies based on ESTECO developed decision support model 0.3 0.6 1.0 1.0 0.5 MTEK 3.40 0.68 27 500 0.1 0.2 0.3 0.3 0.2 2.3 B Results analysis for dissemination PNO 1.00 0.20 8 550 TOTAL WP2 346 040

MS6

MS7 MS9

MS5

MS1 - Scenario description and characterization; Decision Support Model definition (Leader:CHC)

MS2 - Scenario analyses performed with the Decision support model (Leader:CHC)

NP	PNO	VTG	MTEK	СНС	EST
2.00	1.00	1.00	9.00	28.00	14.00

MS1

MS2

MS8

MS3

MS4

#### WP 3 DESIGN OF PRESSURE VESSELS AND PILOT LINE LEAD BENEFICIARY: CNGV 2017 2018 2019 Pers / Mean TASK DESCRIPTION PARTNER value month 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 PRESSURE VESSEL DESIGN & MFD PLATFORM SOFTWARE T3.1 134 400 | 0.2 | 0.4 | 1.0 | 2.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 0.2 18.00 1.00 CNGV 3.1 A Preliminary and final design of cylinder and hydroforming mould & plants 0.5 | 1.0 | 2.0 | 1.0 | 0.5 | 5.00 1.00 36 600 NP 0.5 | 0.5 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.5 | 0.5 3.1 B Development of the MFD platform relevant to pressure vessels design EST 17.00 1.13 81 750 0.4 0.6 0.6 0.3 3.1 C Technological tests on steel pates (Mech. Coeff. Determination) BMP 0.48 11 000 1.90 0.2 1.0 1.5 1.0 0.3 3.1 D Technological tests on composite material (Mech. Coeff. Determination) 4.00 DOWAKSA 0.80 26 000 3.1 E Procurement and supply of First cylinder by Gortani (1 pc) 0.30 0.10 0.1 0.1 1.0 3.1 F Hydroformig of the First cylinder for testing speciments (1 pc) BMP 1.00 5 000 1.00 0.8 1.0 1.0 3.1 G Technological tests on cylinder welded joints (Mech. Coeff. Determination) 2.80 BMP 0.93 14 000 PILOT LINE DESIGN T3.2 110 000 | 2.0 | 2.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 Design of Pilot line - winding machine, curing, autofrattage, test plant 15.00 2.14 3.2 A CNGV 3.2 B Detailed design of the winding machine CNGV 27.00 3.86 203 200 3.0 | 4.0 | 5.0 | 5.0 | 4.0 | 4.0 | 2.0 |

1.80

1.00

9.00

2.00

67 980

12 000

701 930

NP

3.2 C

MS3 -MFD Platform (Leader: ESTECO)

ABS Survey

TOTAL WP3

Detailed design of curing and autofratage plants & test

NP	DWAK	ВМР	CNGV	EST	ABS
14.00	4.00	6.00	60.00	17.00	2.00

MS1

2.0 2.0 2.0 2.0 1.0

1.0 1.0

MS3

MS4

MS5

MS6

MS2

MS8

2020

2021

MS7 MS9

#### WP 4 PRE-INDUSTRIAL PROTOTYPING OF PRESSURE VESSELS LEAD BENEFICIARY: BMPlus 2017 2018 2020 2021 Pers / Mean TASK DESCRIPTION PARTNER TASK value 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 CONSTRUCTION PROTOTYPING PILOT LINE & ARRANGEMENT 137 000 1.0 | 2.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 4.1 A Electrical and automation design for Pilot line CNGV 18.00 2.00 0.5 1.5 1.5 1.5 1.0 4.1 B Pilot line working procedures CNGV 7.50 1.25 55 000 0.2 0.2 0.4 0.5 0.5 0.5 0.5 0.5 0.4 0.4 0.4 0.4 0.4 0.2 Pilot line components specification for orders 5.50 0.39 41 000 4.1 D 0.7 | 1.0 | 1.0 | 1.0 Hydroforming mould and relevant plants construction and installation 4.20 0.84 21 000 BMP 0.4 0.4 1.0 2.0 2.0 1.0 1.0 4.1 E Winding machine construction and installation ВМР 7.80 1.11 39 000 Curing and autofattage plants contrustion and installation 2.60 0.65 13 000 0.5 0.8 0.8 0.5 0.5 1.0 1.5 1.0 1.0 0.5 0.5 Testing of single components of the pilot line 4.1 G 6.00 30 000 RMP 0.86 3.0 3.0 2.0 2.0 2.0 2.0 4.1 H Design of Pilot line arrangement NP 14.00 2.33 104 580 4.1 I Installation Workshop 9 000 0.4 0.5 0.5 0.4 ВМР 1.80 0.45 1.4 1.6 1.4 CNGV 4.40 1.47 31 000 4.1 L Pilot line commissioning 0.1 0.1 0.1 BMP 0.30 0.10 1 000 T4.2 & T 4.3 CONSTRUCTION AND TESTS ON PRESSURE VESSEL PROTOTYPES 0.2 0.1 0.1 0.1 Order and Supply of n°5 liners "Gortani" 0.50 2 500 15 000 1.0 1.0 4.2 B Resin impregnation advisor DOW 2.00 1.00 0.7 CNGV 0.70 0.70 5 000 Vessel Propotypes production (5 pcs) 4.2 C 0.3 0.30 0.30 1 500 1.0 1.5 1.0 0.5 CNGV 4.00 1.00 30 000 4.2 D Tests on n°5 liners 0.2 0.2 0.2 0.2 RMP 0.80 0.20 3 500 0.3 0.3 0.3 Tunning of firts test results CNGV 0.90 0.30 7 080 0.1 0.2 0.1 0.1 4.2 F Order and supply for n°10 vessels "Gortani" ВМР 0.50 0.13 2 500 1.0 1.0 1.0 CNGV 3.00 1.00 22 000 Production of n°10 vessels 4.2 G 0.2 0.2 0.2 0.60 0.20 3 500 1.0 | 1.0 | 1.0 | 1.0 | 30 000 CNGV 4.00 1.00 Final tests on n°5 vessels (of total 10 vessels, see second order) 0.1 0.2 0.2 0.1 RMP 0.60 0.15 3 500 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 48 000 4.21 Survey and test reports assessment for Product Design Approval (PDA) ABS 8.00 1.00 TOTAL WP4 655 660 MS1 MS2 MS3 MS4 MS5 MS6 MS7 MS9

MS8

MS4 - Pressure Vessels - Pilot Line ready even (Leader: BM Plus)

MS5 - Results of PV pilot productions and Tailored Ship design and (on/off) loading system (Leader: NP)

NP	DOW	ВМР	CNGV	ABS
14.00	2.00	26.00	48.00	8.00

#### WP 5 SHIP DESIGN LEAD BENEFICIARY: NAVALPROGETTI 2020 2021 Mean Pers / TASK DESCRIPTION PARTNER TASK value month 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 T5.1 BASIC DESIGN 5 500 | 0.1 | 0.1 | 0.3 | 0.3 | 0.1 | 0.1 CHC 1.00 0.17 Information about scenarious definition (see WP2) 0.2 0.2 0.2 0.2 0.2 0.3 0.3 0.3 0.2 0.2 0.2 0.2 0.2 0.1 EST 3.00 0.21 16 350 0.2 0.3 0.5 0.8 1.0 2.0 2.0 2.0 1.0 1.0 1.0 1.0 0.5 0.2 Ship design and naval architecture for CCNG ship sailing in North sea NP 13.50 0.96 100 000 0.5 | 1.0 | 2.0 | 2.0 | 2.0 | 1.5 | 1.0 48 000 Loading and unloading plant design CEN 10.00 1.43 0.5 1.5 2.0 1.0 0.5 Supervision of ship design under logistic/operativity point of view HLS 5.50 1.10 40 000 1.0 1.0 1.0 0.8 0.2 Conceptual design for n°2 different ships sailing in Maditerranean sea NP 4.00 0.80 30 190 TOWING TANK TESTS 0.5 1.0 1.0 1.0 0.5 NP 30 000 Test organisation and assistance (\*) 4 00 0.80 0.2 1.0 1.0 0.8 0.5 0.5 38 000 MTEK 4.00 0.67 Anchor/mooring investigation according with seakeeping results (SAL, STL) FUNCTIONAL DESIGN FOR CLASS APPROVAL 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.5 Structural ship design 7.50 56 000 1.0 1.0 1.0 0.5 0.5 0.5 0.2 Ship collision structural analysis NP 4.70 0.67 35 000 1.0 1.0 1.0 1.0 1.0 0.6 Hull outfitting design NP 5.60 0.93 42 000 0.8 | 1.5 | 1.0 | 1.0 | 0.4 | Accommodations and thermal plant design NP 4.70 0.94 35 000 0.3 0.3 0.3 0.3 0.8 0.8 1.5 1.5 1.5 1.5 1.5 0.8 NP 12.60 94 000 Hull and main engine piping plants design 0.97 0.3 0.3 0.3 2.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 1.0 0.5 Electrical plants NP 17.40 1.24 130 500 1.0 1.0 1.0 Engine room and compressors room arrangement 3.00 1.00 22 500 0.3 0.3 1.0 1.5 1.5 1.5 1.5 1.0 0.5 0.5 0.4 Functional design of loading / unloading plant and gas compression system 10.00 0.91 47 000 Analysis of the loading / unloading electrical energy supply ( Electrical 20 000 0.5 1.5 1.5 0.5 CEN 4.00 1.00 plant) 1.0 Analysis of loading / unloading operation time 5 000 1.00 1.00 CEN Technical analysis and comments of the functional design under owner 0.2 0.2 0.2 0.5 0.8 0.8 0.8 0.8 0.8 0.5 0.5 0.4 HLS 6.50 0.54 50 500 point of view Design review and comments 90 000 ABS 15.00 0.79 Ship design CAPEX and OPEX calculation according to WP2 results HLS 3.00 1.00 22 000 TOTAL WP5 957 540 30000 KSRC + 30000 Budget EU MS2 MS3 MS4 MS5 MS6 MS7

MS6 - Functional Ship Design Ready (Leader: NP)

NP	MTEK	CEN	HLS	СНС	EST	ABS
77.00	4.00	25.00	15.00	1.00	3.00	15.00

MS8

#### WP 6 OFFSHORE & ONSHORE GAS LOADING/UNLOADING SYSTEMS LEAD BENEFICIARY: VTG 2017 2018 2019 2020 2021 Pers / Mean TASK DESCRIPTION PARTNER value 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 DESIGN PARAMETERS AND COSTS OF ON-SHORE AND OFF-SHORE LOADING/UNLOADING SYSTEMS According to information from WP2, VTG will be able to propose a suitable 94 500 0.5 0.5 1.0 2.0 2.0 2.0 1.0 1.0 1.0 0.5 0.5 0.5 0.5 VTG 14.00 1.00 mooring design for three operativity scenarious Preliminary technical information to VTG for loading/unloading ship system 1.0 1.0 1.0 0.5 3.50 0.88 16 400 CEN for connectiong ship plant to on-shore loading/unloading system 0.3 0.3 0.3 0.3 0.3 0.3 10 000 Review and comments 1.80 0.30 IMPLEMENTATION OF A SOFTWARE TOOL FOR THE DESIGN AND T6.2 OPERATION OF THE LOADING AND UNLOADING PLANTS Software tool development CEN 10.50 0.75 50 000 0.3 0.3 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.5 0.2 0.2 0.5 0.5 0.5 0.5 1.0 1.0 1.0 1.0 CHC 0.75 33 000 Interface inputs for development of the task 6.00 THE LIMITING WEATHER ANALYSIS DURING LOADING/UNLOADING T6.3 OPERATION Sea State limit during loading/unloading operativity in various 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.5 | $\frac{m}{8}$ MTEK 13.00 0.93 123 500 onshore/offshore operations According to experimental data NP will provide to MRTK suitable 0.5 0.5 0.5 0.5 2.00 0.50 14 940 information Mechanical verification of gas flexible connections to loading/unloading 0.5 | 1.0 | 1.0 | 0.5 | 0.5 | 0.2 | 0.2 | 0.1 4.00 0.50 20 000 onshore/offshore structures 20 000 Review and comments ABS 3.20 0.29 382 340

NP	VTG	MTEK	CEN	ABS	СНС	
2.00	14.00	13.00	18.00	5.00	6.00	

MS2

MS8

MS1

MS4

MS5

MS6

MS7 MS9

MS3

#### WP 7 COST - BENEFIT ANALYSIS LEAD BENEFICIARY: SINTEF OCEAN - MARINTEK 2018 2020 2021 Pers / Mean TASK DESCRIPTION PARTNER month value 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 DATA IDENTIFICATION AND COLLECTION T7.1 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0 38 000 data collection, identification, + database MTEK 4.00 0.20 data from WP2 + data identification for T7.2 and T7.3 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 CHC 2.00 0.29 11 000 0.5 0.5 0.5 0.5 0.5 0.3 0.2 data from WP3 + data identification for T7.2 and T7.3 CNGV 3.00 0.43 22 380 T7.2 COMPARATIVE AND SENSITIVITY ANALYSIS 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | MTEK 6.00 0.50 57 000 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 30 000 ABS 5.00 0.50 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | Task resonsible CHC 14.00 1.17 77 000 VTG 4.00 0.40 27 000 T7.3 PROFITABILITY ASSESSEMENT (SOCIO-ECONOMIC AND FINANCIAL) T7.3.1 SOCIO-ECONOMIC PROFITABILITY MTEK 2.00 0.20 19 000 0.4 0.4 0.6 0.6 0.6 0.6 0.6 0.4 0.4 0.4 NP 5.00 0.50 37 350 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 CNGV 6.00 0.60 44 760 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 DOWAKSA 5.00 0.50 32 500 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 HLS 5.00 0.50 37 500 0.5 | 0.5 | 0.5 | 0.5 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | CHC 7.00 0.41 38 500 VTG 5.00 0.50 33 750 T7.3.2 FINANCIAL VIABILITY MTEK 2.00 0.20 19 000 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 NP 6.00 0.60 44 820 CHC 7.00 0.70 38 500 1.0 | 1.0 | 1.0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 1.0 | 1.0 | 2.0 Task resonsible CNGV 11.00 1.00 82 060 PNO 2.00 0.20 17 100 TOTAL WP7 707 220 MS1 MS2 MS3 MS4 MS5 MS6 MS7 MS8

MS7 - Proof-of-concept (Tool for CNG cost simulation validated by means of verification Results of CBS, Environmental assessment and safety assessment) (Leader: MARINTEK)

NP	DOWA	PNO	VTG	MTEK	CNGV	HLS	CHC	ABS
11.00	0.00	2.00	9.00	14.00	20.00	5.00	30.00	5.00

#### WP8 CLASS DESIGN REVIEW - SAFETY ASSESSMENT LEAD BENEFICIARY: ABS GREECE 2017 2018 2019 2020 2021 Pers / Mean TASK DESCRIPTION PARTNER value 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 SPECIAL STUDIES - (CONSEQUENCE MODELLING) T8.1 ModeFRONTIER input data preparation relative to ship design 10.60 0.71 80 000 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.5 | 0.5 | 0.5 | 0.2 | 0.2 | 0.2 ModeFRONTIER input data preparation relative to pressure vessel design CNGV 6.80 0.68 50 000 1.0 1.0 1.0 1.0 1.0 0.2 0.2 0.2 0.2 0.2 Automatic process integration workflow in modeFRONTIER to manage and evaluate the following failure cases: - Gas dispersion analysis - Smoke and gas ingress analysis for the potential impact on accommodation speces EST 14.00 0.78 76 300 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 - Explosion analysis - Fire propagation and effects on ship structures Thermal radiation effects Joule - Thompson effects Coordination and assessment of CFD application ABS 6.70 0.42 42 000 T8.2 HAZARD IDENTIFICATION (HAZID) ANALYSIS HAZID analysis with reference to the following design: - Ship arrangement - Ship safety systems 6.80 0.49 50 000 1.0 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.3 0.3 0.3 0.2 - Ship systems (Structure/propulsion/steering,...) 0.5 1.0 0.5 - Power system BMP 2.00 0.67 10 000 - Containment system CNGV 3.80 0.54 25 000 0.5 0.8 0.8 0.8 0.3 0.3 0.3 D8.1 & D8.2 CEN #DIV/0! - Cargo handling system 0.00 0.6 1.3 1.3 1.0 Coordination , partecipation and reporting Task 8.2 ABS 4.20 1.05 25 000 HAZOP ANALYSIS (Following the indications from T8.2 HAZID, in this task the safety aspects T8.3 will be analysed and technical measures necessary to increase the safety of the ship and gas cylinder will be identified for operativity phase of CNG ship) HAZOP development relevant to the following systems: 0.5 0.5 0.5 0.5 0.5 0.2 0.2 0.2 - Gas cylinders CNGV 3.10 0.39 24 200 x x x x x - System of loading and discharging CEN 0.00 #DIV/0! MTEK 0.00 #DIV/0! - System of station keeping VTG 0.00 #DIV/0! 3.00 0.33 21 000 0.2 0.5 0.5 0.5 0.5 0.2 0.2 0.2 0.2 - Safety system on ship 0.5 0.7 1.0 1.0 ABS 20 000 Coordination, partecipation and reporting Task 8.3 3.20 0.80 BASIC DESIGN APPROVAL REVIEW 0.3 1.0 1.0 1.0 1.0 0.7 0.7 0.3 0.3 Quality manual preparation for gas cylinders construction CNGV 6 30 0.70 50 000 Assistance to ABS final approval NP 2.60 0.15 20 810 0.3 | 0.3 | 0.3 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 Preparation and final delivery of classification documents ABS 7.90 0.66 45 000 D8.3 TOTAL WP8 539 310 MS1 MS2 MS3 MS4 MS5 MS6 MS7 MS9 MS8

NP	ВМР	CNGV	EST	ABS
23.00	2.00	20.00	14.00	22.00

#### WP9 DISSEMINATION AND EXPLOITATION LEAD BENEFICIARY: PNO INNOVATION 2018 2021 2019 Mean Pers / TASK TASK DESCRIPTION PARTNER month value 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 T9.1 COMMUNICATION, DISSEMINATION AND EXLOITATION PLAN 0.5 | 1.0 | 1.0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 5.0 7 500 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | D9.1 DOW 1.0 26 000 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | DOWAKSA 4.0 17 100 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 2.0 14 920 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 CNGV 2.0 7500 0.1 0.1 0.2 0.2 0.1 0.1 0.1 0.1 1.0 22 000 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 CHC 4.0 D9.3 D9.2 12 000 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 2.0 ABS T9.2 GASVESSEL WEBSITE AND SOCIAL MEDIA COMMUNICATION ACTIVITIES 5.0 37350 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.0 PNO 2.0 17 100 0.03 0.03 0.03 0.03 0.03 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0. ABS 1.0 6 000 DISSEMINATION AND EXPLOITATION ACTIVITIES 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0 NP 4.0 29880 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0. DOW 7 500 6 500 DOWAKSA 1.0 85 500 PNO 10.0 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0. 6 750 MTEK 2.0 19 000 0.10 0.04 0.04 0.04 <mark>0.04</mark> BMP 1.0 5 000 0.04 | 0.04 | 0.04 | 0.04 | 0.08 | 0.10 | <mark>0.10 |</mark> 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | CNGV 2.0 14 920 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.0 5 0.04 0.02 0.02 <mark>0.02</mark> 4 800 CEN 1.0 HLS 1.0 7 500 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0. CHC 1.0 5 500 <mark>05</mark> 0.04 0.02 0.02 <mark>0.03</mark> 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.0 5 450 05 0.04 0.02 0.02 <mark>0.0</mark> EST 1.0 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0. 0.05 0.04 0.02 0.02 0.02 ABS 1.0 6 000 FINAL CONFERENCE WITH POLICY MAKERS 0.2 0.3 0.5 0.5 0.3 NP 2.0 14940 0.1 0.2 0.2 0.2 0.2 PNO 1.0 8 550 432 610 TOTAL WP9 MS2 MS3 MS4 MS6 MS7 MS9 MS1 MS5 MS8

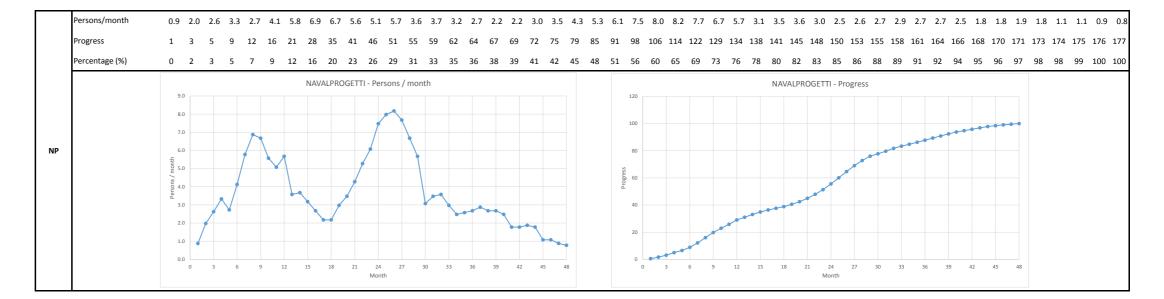
MS8 - Dissemination, Communication, Exploitation Plan

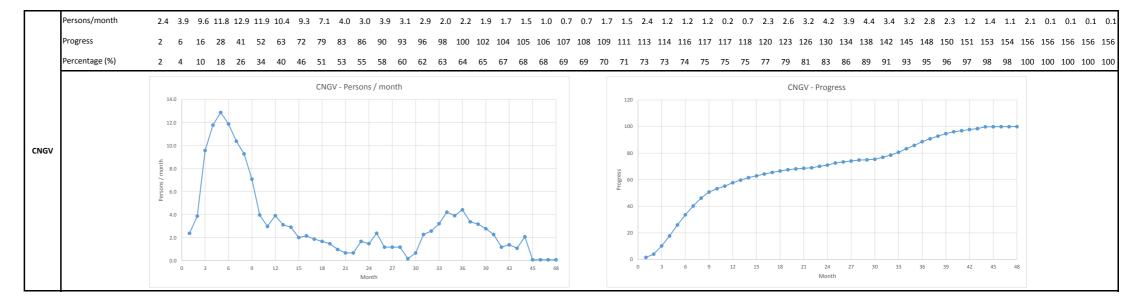
MS9 - Workshops and Conferences

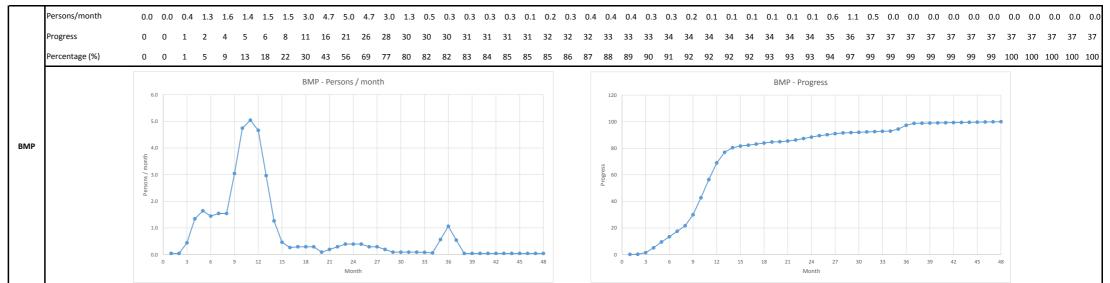
NP	DOW	DOWA	PNO	VTG	MTEK	ВМР	CNGV	CEN	HLS	СНС	EST	ABS
16.00	2.00	5.00	15.00	1.00	2.00	1.00	4.00	1.00	2.00	5.00	1.00	4.00

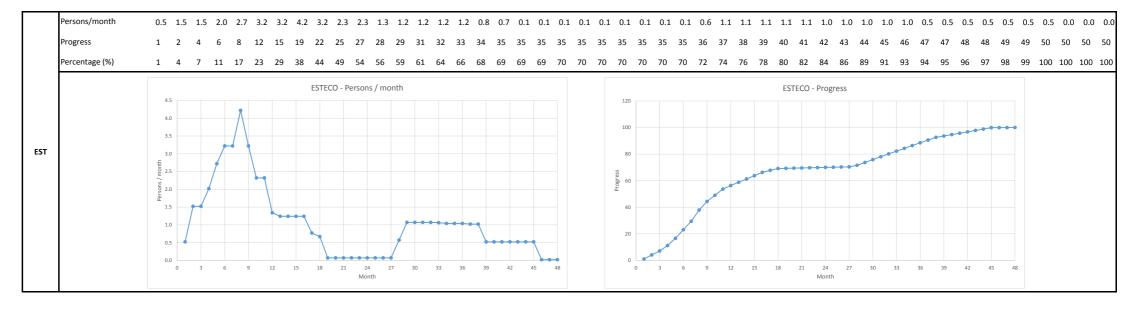
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

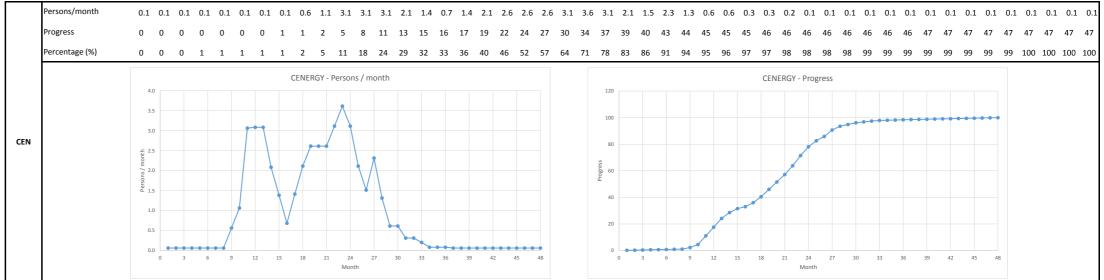
PERSON / MONTH DISTRIBUTION

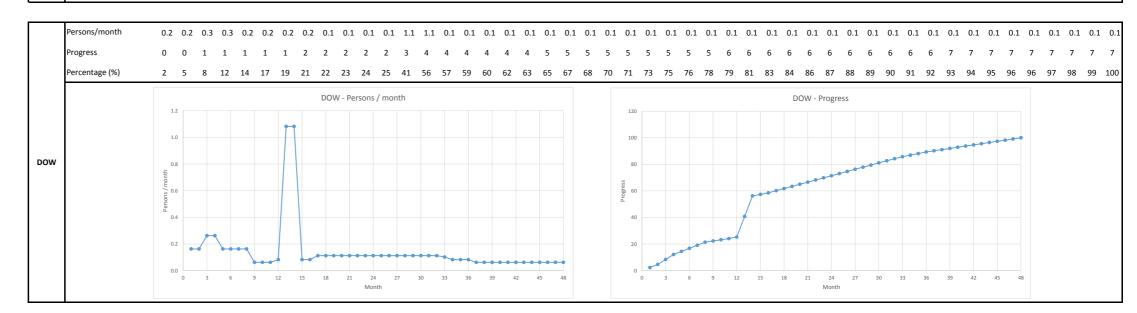


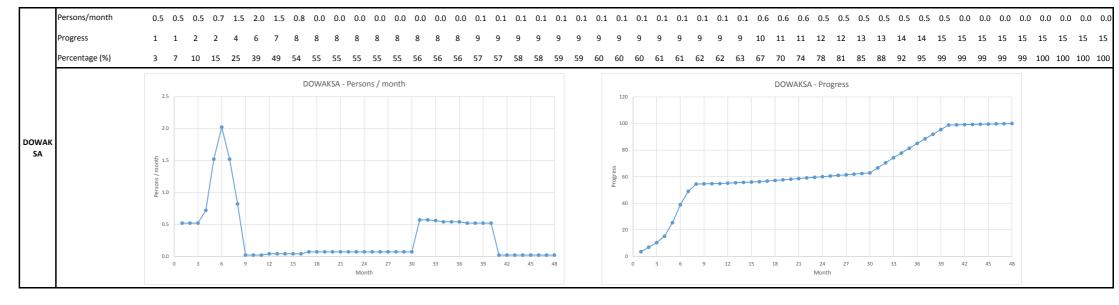


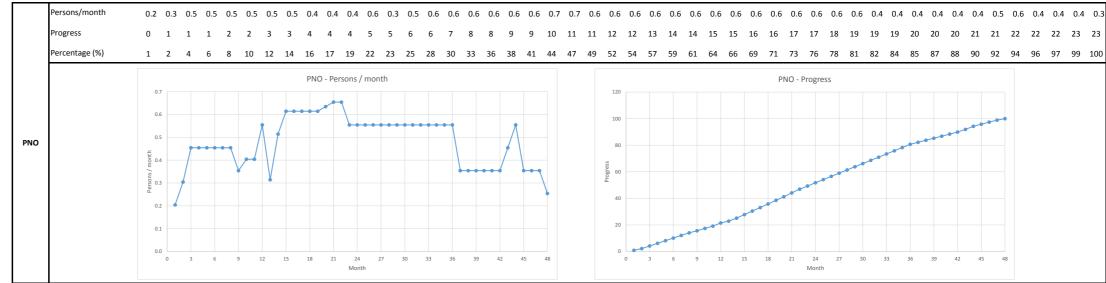


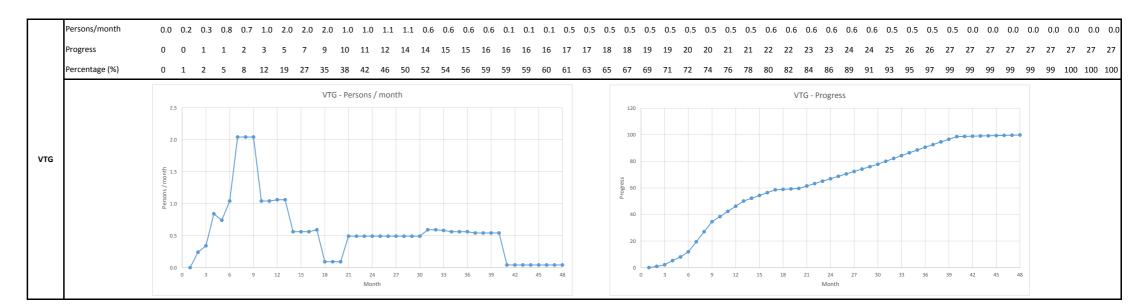


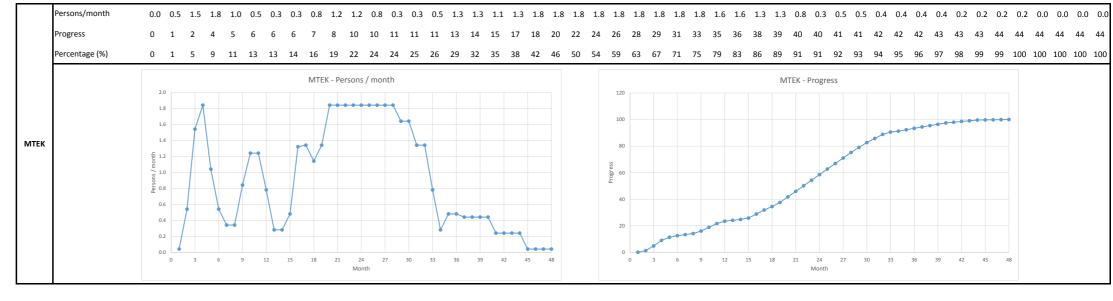


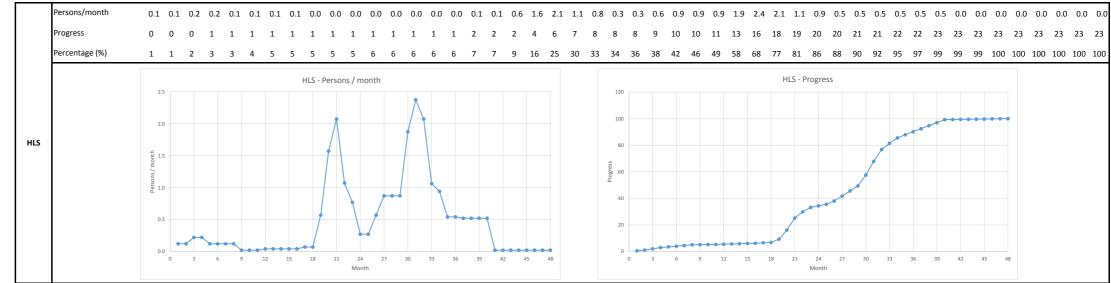


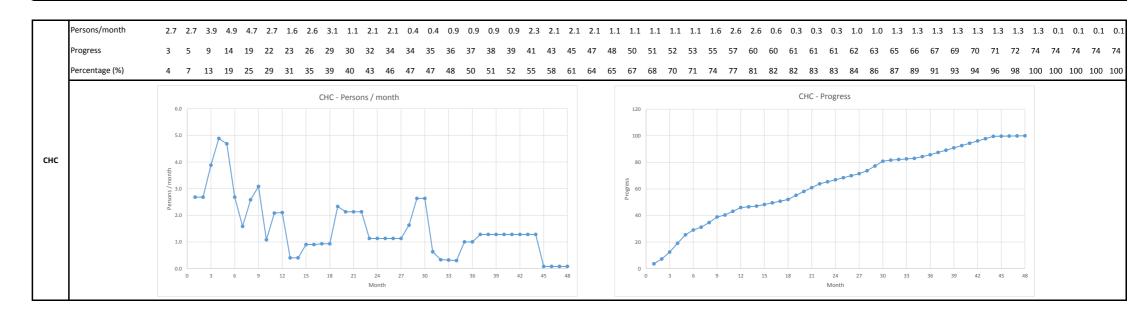


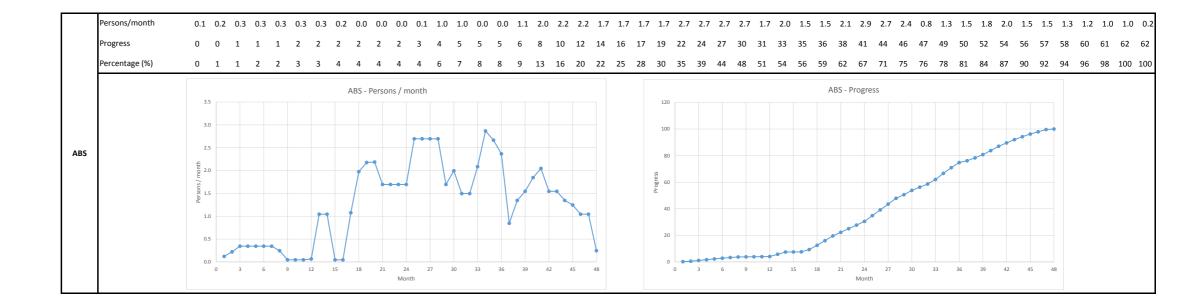














# Work Plan APPENDIX 1

# Detail of activities of the Prototyping Pilot line and construction of the liners

Project: GASVESSEL

Project No.: 723030

**Deliverable No.:** 

Document Version: revision no.7

Document Preparation Date: date 2017-06-14

Responsibility: PARTNER No.1

TASK	ACTIVITY	RESPONSABILITY				2017			I					201						I					201					$\neg$	$\Box$
7,61			1	2				6 7 N D	8	9	10 M	11	12 M			15	16 1	7 18	19 D	20	21 E	22 M	23	24			27	28 29	30 N	31 D	32
			j	Ė	_	,	Ŭ		Ü	Ė		_	141		1	_		, ,	Ľ	Ü			_			Ì			Ë	Ĭ	Ü
	Procurement by Gortani Ricezione della specifica da CNGV per fornitura Gortani	BMPlus CNGV											j		$\pm$		1				Н							$\pm$	士	H	
	Emissione richiesta di offerta a Gortani per: a - materiali saldati per esecuzione prove tecnologiche,																														
	b - fornitura di un cilindro, secondo indicazioni definitive CNGV,																														
	c - fornitura di 5 cilindri, dopo prove sul primo, d - completamento fornit. 10 cilindri su indicazioni definitive di CNGV	BMP-CNGV																													
	Verifica offerta Gortani con CNGV Emissione ordine quadro a Gortani	BMP-CNGV BMP																											$\perp$	$\Box$	
																	1												土		
3.1.C	Technological tests on steel plates (Mech. Coeff. Determination)  Ricezione della specifica da CNGV per preparazione provini	BMPlus CNGV			0,4	0,6	0,6	0,3	-				į																+-	$\vdash$	$\vdash$
	Preparazione dei provini secondo specifica CNGV	ВМР											į														1		I		
	Scelta Laboratorio tecnologico, in accordo e secondo specifiche CNGV Emissione ordine a Laboratorio tecnologico	BMP-CNGV BMP							1																				+	┤┤	$\blacksquare$
	Esecuzione prove di laboratorio Valutazione risultati di laboratorio	BMP CNGV							-						_														Ŧ	$\square$	
																	1												土		
3.1.E	Procurement and supply of First cylinder by Gortani  Conferma caratteristiche primo serbatoio a Gortani	BMPlus BMP-CNGV						0,1 0,3	0,1							-							_						+	$\vdash$	
	Fornitura e ricezione del primo serbatoio da Gortani	BMP-Gortani																											$\perp$	$\square$	
3.1.F	Hydroforming of the First cylinder for testing speciments(1 pc)	BMPlus								1,0																			$\pm$		
	Assistenza a CNGV per esecuzione idroformatura	ВМР							-						_														Ŧ	$\square$	
3.1.G	Technological tests on cylinder welded joints (Mech. Coeff. Determ.)	BMPlus									0,8	1,0	1,0																土		
	Ricezione della specifica da CNGV per preparazione provini  Preparazione dei provini secondo specifica CNGV	CNGV BMP							┢								-				H				-		+	+	+	$\vdash$	$\vdash$
	Emissione ordine a Laboratorio tecnologico	ВМР																									1		$\perp$		
	Esecuzione prove di laboratorio Valutazione risultati di laboratorio	BMP CNGV													$\pm$	_+	_				┢┼	_	_		_		_+	$\pm$	士	⊣	
4.1.D	Hydroforming mould and relevant plants construction and installation	BMPlus				0.7	1.0	1,0 1,0	0 5						7	7	1	I	F				$\exists$		$\exists$	$\exists$	$\exists$	1	+	$\Box$	
4.1.0	Ricezione della specifica da CNGV per studio di fattibilità impianto	CNGV				U, 7	1,0	1,0 1,0	0,5						$\pm$		士				団						士	士	士	$\Box$	
	Studio fattibilità impianto su specifiche CNGV Scelta parti make/buy e programmazione attività interne/esterne	BMP-CNGV BMP			H		$\dashv$		+	<u> </u>	$\dashv$		$-\overline{ }$	Ŧ	+	-[	$ \parallel$		H		$+ \mathbb{I}$	-[	$\dashv$		$\dashv$	$\dashv$	$-\Gamma$	+	+	┯┦	
	Richieste di offerta per buy	ВМР													#	#									1		1	1	丰	$\Box$	
	Emissioni ordini buy con benestare CNGV Forniture parti	BMP-CNGV BMP						$\vdash$	H		$\vdash$				+	$\dashv$	+			-	$\vdash$		-				+	+	+	$\vdash \vdash$	
(4.1.1)	Lavorazioni interne parti Studio fondazioni impianto su istruzione CNGV	BMP BMP-CNGV													#		1					1	1		1		1	1	1	$\square$	
_ , ,	Predisposizione area per montaggio impianto	BMP-CNGV																					_						士		
	Assiemaggio impianto in sito Impianto pronto per collaudo	BMP BMP											İ		_														Ŧ	$\square$	
	Studio layout campate per impianto di ricerca su indicazioni CNGV	BMP-CNGV																											$\pm$		
	Definizione ed acquisto attrezzature specifiche per impianto ricerca Definizione ed acquisto impianti di campata non specifici	BMP BMP							1				į		_														+-	$\vdash$	$\vdash$
415	Winding machine construction and installation	BMPlus						0.		1.0	2.0	2.0	1.0	1.0															Ŧ	$\Box$	
4.1.E	Ricezione della specifica da CNGV per studio di fattibilità impianto	CNGV						0,4	1 0,4	1,0	2,0	2,0	1,0	1,0															+	$\vdash$	$\Box$
	Studio fattibilità impianto su specifiche CNGV Scelta parti make/buy e programmazione attività interne/esterne	BMP-CNGV BMP												_	_		1								_		_	1	Ŧ	$\square$	
	Richieste di offerta per buy	ВМР																													
	Emissioni ordini buy con benestare CNGV Forniture parti	BMP-CNGV BMP												_	_		-										_	+	$\vdash$	$\square$	
	Lavorazioni interne parti	ВМР																											士		
	Studio fondazioni impianto su istruzione CNGV Predisposizione area per montaggio impianto	BMP-CNGV BMP																											+	$\vdash \vdash$	$\vdash$
, ,	Assiemaggio impianto in sito	BMP BMP																											$\perp$	$\square$	
	Impianto pronto per collaudo												ļ																土		
4.1.F	Curring and autofrattage plants construction and installation  Ricezione della specifica da CNGV per studio di fattibilità impianto	BMPlus CNGV							-			0,5	0,8	0,8	0,5														1	$\square$	
	Studio fattibilità impianto su specifiche CNGV	BMP-CNGV											į																		
	Scelta parti make/buy Richieste di offerta per buy	BMP BMP							1					_	_		+				H						-	+	+	$\square$	$\blacksquare$
	Emissioni ordini buy con benestare CNGV	BMP-CNGV											į																I	口	
	Forniture parti Lavorazioni interne parti	BMP BMP							╂							-	+				H		_				_	+	+	$\vdash \vdash$	$\blacksquare$
_ , ,	Studio fondazioni impianto su istruzione CNGV Predisposizione area per montaggio impianto	BMP-CNGV BMP							-				į																1	$\square$	
(4.1.1)	Assiemaggio impianto in sito	ВМР																											士		
	Impianto pronto per collaudo	ВМР							$\vdash$							$\dashv$	+			$\vdash$	$\vdash$		_				+	+	+	$\vdash \vdash$	
4.1.G	Testing of single component of pilot line	BMPlus							0,5	1,0	1,5	1,0	1,0	0,5	<mark>0,5</mark>		1						_		-		1	1	丰	口	
	Collaudo hydroforming mould and relevant plants Collaudo winding machine	BMP-CNGV BMP-CNGV									H				_+	_	_				$\vdash \vdash$	_	_			_	_+	+	+	╁┼┦	
	Collaudo curing and autofattage plants	BMP-CNGV												7		1	7				П		4		7	1	7	7	干	口	
4.1.I	Installation workshop	BMPlus									0,4	0,5	0,5	0,4	╛	╛	士		L								$\pm$	士	士	${f  extstyle /}$	
4.1.L	Pilot line commissioning	BMP-CNGV							H							-[	+		H		$oxed{\top}$	[	$\dashv$			-[	-	+	+	$\dashv$	
71111	Assistenza a CNGV per commissioning	BMP											0,1	0,1	0,1						Ш								丰	口	
4.2.A	Procurement and supply of nr. 5 cylinders by Gortani	BMPlus					$\vdash \vdash$		$\vdash$		$\vdash \vdash$		0.2	0,1	0,1	0,1	+				H		-				$\dashv$	+	+	$\vdash \vdash$	
	Conferma caratteristiche nr. 5 serbatoi a Gortani	BMP-CNGV											-,-				#				П						$\Rightarrow$	$\pm$	丰	$\Box$	
	Fornitura e ricezione di nr. 5 serbatoi da Gortani	BMP-Gortani							$\vdash$	1					1		+			┞	$\vdash$		$\dashv$				+	+	+	$\vdash \vdash$	
4.2.C	Vessel Prototype production (5 pcs) Assistanza a CNGV per produzione pr. 5 contenitori	BMP-CNGV BMP							L						1	0.2						1			1	1	$\dashv$		丰	口	
	Assistenza a CNGV per produzione nr. 5 contenitori	PINIS							+	<u> </u>	$\vdash$				_	0,3	_				$\vdash$	_	$\exists$		_	_	+	_	+	$\vdash \vdash$	
4.2.D	Tests on nr. 5 liners Assistenza a CNGV per produzione nr. 5 contenitori	BMP-CNGV BMP						$\perp$	F					7	7	7	0,2 0	2 0	2 0 2		П	7	$\exists$		7	7	丁	Ŧ	干	口	
4.2.E	Tuning of first test result	CNGV								L					_		J,Z U	, <u>-</u> U,	- U,Z								$\Rightarrow$	$\pm$	士	oxdot	
4.2.F	Procurement and supply of nr. 10 cylinders by Gortani	BMPlus					H		F				$\Box$	1	7	7	Ŧ		F		0,1	0.2	0.1	0.1	4	1	7	-	+	口	
(4.2.E)	Conferma caratteristiche nr. 10 serbatoi a Gortani	BMP-CNGV						士	L						1		士				<u> </u>	-,-	J,±	<b>-</b> ,±			士	士	士	世	
	Forniturae ricezione di nr. 10 serbatoi da Gortani	BMP-Gortani					H	$\Box$	F	L					Ŧ	4	+		F				1		4	7	Ŧ		+	凵	
4.2.F	Production of nr. 10 vessels	BMP-CNGV													#	#											1	1	丰	$\Box$	
	Assistenza a CNGV per produzione nr. 10 contenitori	ВМР					$\vdash$	$\vdash$	1	_	$\vdash$		-		+	$\dashv$	+		-		$\vdash$	-	0,2	0,2	0,2	-	$\dashv$	+	+	$\vdash \vdash$	
4.2.G	Final tests on nr. 5 vessels (of total 10 vessels, see second order)	BMP-CNGV													#	1	1					1			0.4	0.2	0.3	0.4	丰	$\square$	
	Assistenza a CNGV per test	ВМР					Ы		H		Н				_+	$\dashv$	_				$\vdash$		_		υ,1	U,Z	0,2	<del>0,1</del>	士	╁┤	
4.2.H	Survey for final approval Assistenza a CNGV per approvazione finale da parte di ABS	ABS BMP											į		7	7		Ŧ					$\exists$						+	$\Box$	
		DIVIT											i		1						H								丰	$\Box$	
			G 1		A 3						M 10						S (				F 21					26		S 0			
			•												1.			MS				1		MS4		- 1		1			MS5

	DDACETTA	CACHECCEL	. PROGRAMMA	ADDININ E E	1DKIITI IDE	CODTANI
DIVIPIII -	• PRI 117 F I I I I	IJANVENNEI	PRIMIRAIVIIVIA	LIKIJIMI E EL	JRIVILIEF	THE PRIME
DIVII IMS	INCULIO					

TASK	ACTIVITY	RESPONSABILITY				2017	7								20	18								2019		
			1	2	3	4	5	6	7	8		10	11	12	13	14	15	16	17					22	23	24
			G	L	Α	S	0	N	D	G	F	М	Α	М	G	L	Α	S	0	N	D	G	F	М	Α	M
	Procurement by Gortani	BMPlus													<u>.</u>											
	Ricezione della specifica da CNGV per fornitura Gortani	CNGV																								
	Richiesta di offerta a Gortani per:														i !											
	- materiali saldati per esecuzione prove tecnologiche,																							, ,		
	b - fornitura di un cilindro, secondo indicazioni definitive CNGV,																							, ,		
	c - fornitura di 5 cilindri, dopo prove sul primo,																							, ,		
	d - completamento fornit. 10 cilindri su indicazioni definitive di CNGV	BMP-CNGV																								
	Verifica offerta Gortani con CNGV	BMP-CNGV																								
	Emissione ordine quadro a Gortani	BMP-GORTANI													! !											
															!											
3.1.C	Technological tests on steel plates (Mech. Coeff. Determination)	BMPlus													!											
	Ricezione della specifica da CNGV per preparazione provini	CNGV																								
	Conferma a Gortani delle caratteristiche delle piastre per provini	BMP-CNGV																								
	Lavorazione e fornitura delle piastre da parte Gortani	BMP-GORTANI																								
	Valutazione risultati di laboratorio	CNGV																								
3.1.E	Procurement and supply of First cylinder by Gortani	BMPlus													!											
	Conferma caratteristiche primo serbatoio a Gortani	BMP-CNGV																								
	Lavorazione e fornitura del primo serbatoio da parte Gortani	BMP-Gortani																								
4.2.A	Procurement and supply of nr. 5 cylinders by Gortani	BMPlus																								
	Conferma caratteristiche nr. 5 serbatoi a Gortani	BMP-CNGV																								
	Lavorazione e fornitura di nr. 5 serbatoi da parte Gortani	BMP-Gortani																								
															<u> </u>											
4.2.F	Procurement and supply of nr. 10 cylinders by Gortani	BMPlus																								
(4.2.E)	Conferma caratteristiche nr. 10 serbatoi a Gortani	BMP-CNGV																								
	Lavorazione e fornitura di nr. 10 serbatoi da parte Gortani	BMP-Gortani																								
			MS3											MS												