1. Identification

Call	Date of submission
C1	26/04/2022

1.1. Full name of the project

Establishing new legislation for accelerating hydrogen projects within the region and contributing towards greener Europe

121 / 250 characters

1.2. Short name of the project

InterGreen

10 / 20 characters

1.3. Programme priority

3. Climate-neutral societies

1.4. Programme objective

3.2 Energy transition

1.6. Project duration

Contracting start	22/09/2022	**Contracting end**	31/12/2022
Implementation start	01/01/2023	**Implementation end**	31/12/2025
		Duration of implementation phase (months)	36
Closure start	01/01/2026	**Closure end**	31/03/2026

1.7. Project summary

The world's climate is under pressure and time is running out. The emitted carbon dioxide (CO2) dramatically increases pollution levels and related diseases and causes extreme weather events. We need new strategies and technologies for mitigating and adapting to climate change to protect us now, while also protecting the environment and health of our future generations. The demand for clean energy is greater than the supply, and the need for smart solutions is urgent.
Our aim is to make the green shift happen by realizing the potential of green hydrogen (H2), with significant reduction of CO_2 -emission in multiple sectors.
Yet the emergence of green hydrogen economy depends on regulations and political support. The biggest challenge in most of the Baltic Sea Region countries is to get the right policies in place to build up a H2 infrastructure and initiate first H2 pilots
The project is to establish a compatible legislation enabling easier uptake of H2 solutions within the EU. The legislation will be validated and demonstrated on different H2 pilots in Estonia and Latvia.
The timing and further commercialization perfectly matches with climate goals and market trends. Preparing the target groups and ensuring energy security is crucial particularly in countries depending greatly on energy outside the EU.

1,324 / 1,500 characters

1.8. Summary of the partnership

The aim is to establish a unified and compatible legislation that could be easily adopted throughout the whole region. The partnership represents the required competences and resources allowing to reach the wide-scale regional impact. The partners which, initiated the project, all have wide track-record of previous cooperation in international projects.
The successful implementation will be ensured by Tallinn University of Technology (TalTech) Department of Law (EE), having a vast history in coordinating and participating in EU and national projects. TalTech Legal Lab will carry out studies for proposing H2-related strategies and legislation. These will be based on examining the forerunners in EU and beyond, map valid legal acts, determine gaps and needs for amendments. TalTech Legal Lab is a co-operation project between TalTech and NJORD Law Firm who also has an office in DK. Bringing thus an opportunity to use the legal expertise on DK law.
The objective can only be reached by connecting top-level partners covering the entire value chain at the international level from the technology developers and public authorities to service providers and the end-users.
The partners and specified roles:
NGOs
Estonian Association of Hydrogen Technologies will provide input to ministries on EU H2 policy, contribute to local dissemination within association members; private and public sector. Representing the connecting link between the national authorities and public in general
GreenTech Cluster (LV) carrying out the feasibility study in LV, organising cross-sectoral cooperation, providing technical knowhow and representing the connecting link between the national authorities and public in general.

Private sector
Technology providers:
Stargate Rail (EE) retrofitted Estonia's first zero-emission freight locomotive that will be used and certified in the pilot
Stargate Hydrogen Solutions (EE) will share knowhow and experience on green H2 for the legislation
A Danish SME, Hydrogen Valley DK, will coordinate dissemination and share best practices from DK

End users:
Freeport of Riga (LV) will carry out the feasibility study and pilot: permitting H2 maritime fuel cell generator for electricity production from H2
Port of Tallinn (EE) will carry out the feasibility study

Associated Org.
Ministry of Economic Affairs and Communications (EE)

We have gained a lot of interest from public authorities responsible for legislation, regulations and technical standards development (support letters):
Ministry for the Environment (EE) legislative and environmental support
Consumer Protection and Technical Regulatory Authority (EE) supervisory function
Jõelähtme municipality (EE) a local municipality
Estonian Centre for Standardisation and Accreditation (EVS)

Advisory Board members:
Port of Hamburg, utilization of H2 locomotive, adapting DE's best practices in the developed legislation (confirmed)
The representative of the Standardisation Technical Committee at EVS (expected)

2,998 / 3,000 characters

1.11. Project Budget Summary

Financial resources [in EUR]		Preparation costs	Planned project budget
ERDF	ERDF co-financing	0.00	3,444,336.80
	Own contribution ERDF	0.00	861,084.20
	ERDF budget	0.00	4,305,421.00
NO	NO co-financing	0.00	0.00
	Own contribution NO	0.00	0.00
	NO budget	0.00	0.00
NDICI	NDICI co-financing	0.00	0.00
	Own contribution NDICI	0.00	0.00
	NDICI budget	0.00	0.00
RU	RU co-financing	0.00	0.00
	Own contribution RU	0.00	0.00
	RU budget	0.00	0.00
TOTAL	**Total Programme co-financing**	0.00	3,444,336.80
	Total own contribution	0.00	861,084.20
	Total budget	0.00	4,305,421.00

2. Partnership

2.1. Overview: Project Partnership

2.1.1 Project Partners

No.	LP/PP	Organisation (English)	Organisation (Original)	Country	Type of partner	Legal status	Partner budget in the project	Active/inactive	
								Status	from
1	LP	Tallinn University of Technology	Tallinna Tehnikaülikool	EE	Higher education and research institution	a)	1,228,394.60 €	Active	22/09/2022
2	PP	Estonian Association of Hydrogen Technologies	Eesti Vesinikutehnoloogiate Ühing	EE	NGO	b)	221,532.00 €	Active	22/09/2022
3	PP	Stargate Rail Ltd	Stargate Rail OÜ	EE	Small and medium enterprise	b)	1,089,046.20 €	Active	22/09/2022
4	PP	Stargate Hydrogen Solutions Ltd	Stargate Hydrogen Solutions OÜ	EE	Small and medium enterprise	b)	138,330.40 €	Active	22/09/2022
5	PP	Port of Tallinn	AS Tallinna Sadam	EE	EEIG	b)	106,866.50 €	Active	22/09/2022
6	PP	Cemtec Foundation	Cemtec Fonden	DK	Small and medium enterprise	b)	198,590.50 €	Active	22/09/2022
7	PP	Freeport of Riga Authority	Rīgas brīvostas pārvalde	LV	Infrastructure and public service provider	a)	1,100,736.00 €	Active	22/09/2022
8	PP	GREEN AND SMART TECHNOLOGY CLUSTER	ZAĻO UN VIEDO TEHNOLOĢIJU KLASTERIS	LV	NGO	b)	221,924.80 €	Active	22/09/2022

2.1.2 Associated Organisations

No.	Organisation (English)	Organisation (Original)	Country	Type of Partner
AO 1	Ministry of Economic Affairs and Communications	Majandus- ja kommunikatsiooniministeerium	EE	National public authority

2.2 Project Partner Details - Partner 1

LP/PP Lead Partner

Partner Status Active

Active from 22/09/2022 **Inactive from**

Partner name:

Organisation in original language Tallinna Tehnikaülikool

23 / 250 characters

Organisation in English Tallinn University of Technology

32 / 250 characters

Department in original language Õiguse Instituut

16 / 250 characters

Department in English Department of Law

17 / 250 characters

Partner location and website:

Address Ehitajate tee 5

15 / 250 characters

Country Estonia

Postal Code	19086 (5 / 250 characters)	**NUTS1 code**	Eesti
Town	Tallinn (7 / 250 characters)	**NUTS2 code**	Eesti
Website	taltech.ee/en/department-law (28 / 100 characters)	**NUTS3 code**	Põhja-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	74000323
VAT Number Format	EE + 9 digits
VAT Number	N/A ☐ EE100224841 (11 / 50 characters)
PIC	999842536 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.59 - Other education n.e.c.	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Financial data	**Reference period**	01/01/2020 –	31/12/2020
	Staff headcount [in annual work units (AWU)]		1,897.0
	Employees [in AWU]		1,897.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		0.0
	Owner-managers [in AWU]		0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]		0.0
	Annual turnover [in EUR]		117,165,835.00
	Annual balance sheet total [in EUR]		168,263,269.00
	Operating profit [in EUR]		0.00

Role of the partner organisation in this project:

Tallinn University of Technology (TalTech) Department of Law (EE) will be the lead partner (LP) for the planned Interreg project. In addition, TalTech Legal Lab will carry out studies for proposing H2-related strategies and legislation. These will be based on examining the forerunners in EU and beyond, map valid legal acts, determine gaps and needs for amendments.
TalTech Legal Lab is a co-operation project between TalTech and NJORD Law Firm who also has an office in DK. Bringing thus an opportunity to use the legal expertise on DK law.
In addition, TalTech will carry out a feasibility study for green hydrogen possibilities.

633 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 2

LP/PP	Project Partner
Partner Status	Active
Active from	22/09/2022
Inactive from	

Partner name:

Organisation in original language	Eesti Vesinikutehnoloogiate Ühing (33 / 250 characters)
Organisation in English	Estonian Association of Hydrogen Technologies (45 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	Valukoja 23 (11 / 250 characters)	**Country**	Estonia
Postal Code	11415 (5 / 250 characters)	**NUTS1 code**	Eesti
Town	Tallinn (8 / 250 characters)	**NUTS2 code**	Eesti
Website	h2est.ee (8 / 100 characters)	**NUTS3 code**	Põhja-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	80401368
VAT Number Format	EE + 9 digits
VAT Number	N/A ☑ (0 / 50 characters)
PIC	904981095 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	NGO	Non-governmental organisations, such as Greenpeace, WWF, etc.

Sector (NACE)	72.19 - Other research and experimental development on natural sciences and engineering

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Financial data	**Reference period**	01/01/2019 –	31/12/2019
	Staff headcount [in annual work units (AWU)]		0.0
	Employees [in AWU]		0.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		0.0
	Owner-managers [in AWU]		0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]		0.0
	Annual turnover [in EUR]		1,500.00
	Annual balance sheet total [in EUR]		1,500.00
	Operating profit [in EUR]		1,500.00

Role of the partner organisation in this project:

The Estonian Association of Hydrogen Technologies (H2EST) will be the main connecting link between the public and national authorities.
As Estonian Association of Hydrogen Technologies gathers high level expertise, the association will contribute towards action points 1.3 Defining the technical requirements for the use cases and 1.4 Providing procedures for permitting of H2 projects in the EU.

H2EST will be the main contributor to WP3 by raising the awareness about green hydrogen and its benefits in Estonia, mainly to national and local public authorities, as well as general public.
H2EST will carry out strong dissemination on a broader range to guarantee the wild-scale uptake of the green hydrogen solutions by sharing best practices, promoting the hydrogen uptake and disseminating and communicating the project outcomes.

835 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 3

LP/PP	Project Partner		
Partner Status	Active		
	Active from	22/09/2022	**Inactive from**

Partner name:

Organisation in original language	Stargate Rail OÜ
	16 / 250 characters
Organisation in English	Stargate Rail Ltd
	17 / 250 characters
Department in original language	N/A
	3 / 250 characters
Department in English	N/A
	3 / 250 characters

Partner location and website:

Address	Maakri 19/1 (11 / 250 characters)	**Country**	Estonia
Postal Code	10145 (5 / 250 characters)	**NUTS1 code**	Eesti
Town	Tallinn (7 / 250 characters)	**NUTS2 code**	Eesti
Website	stargatehydrogen.com (20 / 100 characters)	**NUTS3 code**	Põhja-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	16193739
VAT Number Format	EE + 9 digits
VAT Number	**N/A** ☐ EE102370450 (11 / 50 characters)
PIC	887965549 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	Small and medium enterprise	Micro, small, medium enterprises < 250 employees, ≤ EUR 50 million turnover or ≤ EUR 43 million balance sheet total
Sector (NACE)	30.20 - Manufacture of railway locomotives and rolling stock	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Financial data

Reference period	01/01/2020	–	31/12/2020
Staff headcount [in annual work units (AWU)]			711.0
Employees [in AWU]			711.0
Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]			0.0
Owner-managers [in AWU]			0.0
Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]			0.0
Annual turnover [in EUR]			114,559,030.00
Annual balance sheet total [in EUR]			457,256,870.00
Operating profit [in EUR]			0.00

Role of the partner organisation in this project:

Stargate Rail retrofitted Estonia's first freight locomotive which zero-emission powertrain (minimum viable product). Stargate Rail will be involved in giving recommendations to the new legislation development from the start-up point of view as well as will be testing the outcome on their pilot where it is foreseen to certify their retrofitted zero-emission locomotive. Please note that Stargate Rail is an innovative startup and an SME in nature, it ranks as a large enterprise due to its investors: UG Investments and Rothcap Investments OÜ.

546 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 4

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Stargate Hydrogen Solutions OÜ (30 / 250 characters)
Organisation in English	Stargate Hydrogen Solutions Ltd (31 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	Maakri 19/1 (11 / 250 characters)	**Country**	Estonia
Postal Code	10145 (5 / 250 characters)	**NUTS1 code**	Eesti
Town	Tallinn (7 / 250 characters)	**NUTS2 code**	Eesti
Website	stargatehydrogen.com (20 / 100 characters)	**NUTS3 code**	Põhja-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	16193521
VAT Number Format	EE + 9 digits
VAT Number	N/A ☐ EE102370447 (11 / 50 characters)
PIC	887996104 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	Small and medium enterprise	Micro, small, medium enterprises < 250 employees, ≤ EUR 50 million turnover or ≤ EUR 43 million balance sheet total
Sector (NACE)	35.21 - Manufacture of gas	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Yes

Financial data

Reference period	01/01/2021 –	31/12/2021
Staff headcount [in annual work units (AWU)]		711.0
Employees [in AWU]		711.0
Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		0.0
Owner-managers [in AWU]		0.0
Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]		0.0
Annual turnover [in EUR]		114,559,030.00
Annual balance sheet total [in EUR]		457,256,870.00
Operating profit [in EUR]		0.00

Role of the partner organisation in this project:

The main role of Stargate Hydrogen Solution (SHS) is to share its knowhow and experience on green hydrogen. SHS will mainly contribute to the new legislation development, especially from the startup point of view and be part of the dissemination activities in WP3.
SHS has vast experience in green hydrogen technologies as its core business is to offer turn-key electrolysis solutions for the production of green hydrogen with renewable energy. SHS designs, implements, and maintains systems from hydrogen production and compression to storage and dispensing.
Please note that Stargate Hydrogen Solutions is an innovative startup and an SME in nature, it ranks as a large enterprise due to its investors: UG Investments and Rothcap Investments OÜ.

748 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 5

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	AS Tallinna Sadam
	17 / 250 characters
Organisation in English	Port of Tallinn
	15 / 250 characters
Department in original language	N/A
	3 / 250 characters
Department in English	N/A
	3 / 250 characters

Partner location and website:

Address	Sadama 25	**Country**	Estonia
	9 / 250 characters		

Postal Code	15051 (5 / 250 characters)	**NUTS1 code**	Eesti
Town	Tallinn (7 / 250 characters)	**NUTS2 code**	Eesti
Website	www.ts.ee (9 / 100 characters)	**NUTS3 code**	Põhja-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	10137319
VAT Number Format	EE + 9 digits
VAT Number	N/A ☐ EE100068489 (11 / 50 characters)
PIC	926537502 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	EEIG	European Economic Interest Grouping
Sector (NACE)	52.22 - Service activities incidental to water transportation	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Financial data	**Reference period**	01/01/2021 –	31/12/2021
	Staff headcount [in annual work units (AWU)]		469.0
	Employees [in AWU]		469.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		0.0
	Owner-managers [in AWU]		0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]		0.0
	Annual turnover [in EUR]		110,051,000.00
	Annual balance sheet total [in EUR]		629,538,000.00
	Operating profit [in EUR]		29,758,000.00

Role of the partner organisation in this project:

Port of Tallinn (PoT) will carry out, in cooperation with TalTech, a feasibility study for green hydrogen possibilities at the Port of Tallinn. The aim of this study is to investigate the technical and economic feasibility of the most likely solutions to the on-shore electrical power supply (OPS) problem.

307 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 6

LP/PP	Project Partner
Partner Status	Active
Active from	22/09/2022
Inactive from	

Partner name:

Organisation in original language	Cemtec Fonden (13 / 250 characters)
Organisation in English	Cemtec Foundation (17 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	Majsmarken 1 (12 / 250 characters)	**Country**	Denmark
Postal Code	DK-9500 (7 / 250 characters)	**NUTS1 code**	Danmark
Town	Hobro (5 / 250 characters)	**NUTS2 code**	Nordjylland
Website	www.hydrogenvalley.dk (21 / 100 characters)	**NUTS3 code**	Nordjylland

Partner ID:

Organisation ID type	Civil registration number (CPR)
Organisation ID	26263328
VAT Number Format	DK + 8 digits
VAT Number	**N/A** ☐ DK26 26 33 28 (13 / 50 characters)
PIC	935272352 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	Small and medium enterprise	Micro, small, medium enterprises < 250 employees, ≤ EUR 50 million turnover or ≤ EUR 43 million balance sheet total
Sector (NACE)	70.22 - Business and other management consultancy activities	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Yes

Financial data	**Reference period**	01/01/2020	–	31/12/2020
	Staff headcount [in annual work units (AWU)]			6.0
	Employees [in AWU]			6.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]			0.0
	Owner-managers [in AWU]			0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]			0.0
	Annual turnover [in EUR]			807,278.00
	Annual balance sheet total [in EUR]			5,382,633.00
	Operating profit [in EUR]			239,764.00

Role of the partner organisation in this project:

The Cemtec Foundation/Hydrogen Valley will be responsible for dissemination and communication in the project. The organisation will furthermore contribute with knowledge and sparring on Danish experiences with legislation and framework in relation to implementing production of hydrogen in the energy value chain.

313 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 7

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Rīgas brīvostas pārvalde (24 / 250 characters)
Organisation in English	Freeport of Riga Authority (26 / 250 characters)
Department in original language	Rīgas brīvostas pārvalde (24 / 250 characters)
Department in English	Freeport of Riga Authority (26 / 250 characters)

Partner location and website:

Address	Kalpaka blvd 12 (15 / 250 characters)	**Country**	Latvia
Postal Code	LV-1010 (7 / 250 characters)	**NUTS1 code**	Latvija
Town	Riga (4 / 250 characters)	**NUTS2 code**	Latvija
Website	rop.lv/en (9 / 100 characters)	**NUTS3 code**	Rīga

Partner ID:

Organisation ID type	Unified registration number (Vienotais reģistrācijas numurs)
Organisation ID	90000512408
VAT Number Format	LV + 11 digits
VAT Number	N/A ☐ LV90000512408 (13 / 50 characters)
PIC	896793422 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Infrastructure and public service provi	Public transport, utility company (water supply, electricity supply, sewage, gas, waste collection, airport, port, railway, etc.)
Sector (NACE)	52.22 - Service activities incidental to water transportation	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Financial data	**Reference period**	01/01/2020 –	31/12/2020
	Staff headcount [in annual work units (AWU)]		264.0
	Employees [in AWU]		264.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		0.0
	Owner-managers [in AWU]		0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]		0.0
	Annual turnover [in EUR]		37,587,826.00
	Annual balance sheet total [in EUR]		448,338,940.00
	Operating profit [in EUR]		7,651,291.00

Role of the partner organisation in this project:

Freeport Riga Authority and Freeport of Riga Fleet (Latvia) will carry out the following activities:
1. Techno-Economic feasibility study on H2 and other green fuel infrastructure implementation at the Freeport of Riga,
2. Pilot H2 maritime fuel cell generator for electricity production from hydrogen and powering on-shore power supply system of docked vessels.

362 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 8

LP/PP	Project Partner		
Partner Status	Active		
	Active from 22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	ZAĻO UN VIEDO TEHNOLOĢIJU KLASTERIS (35 / 250 characters)
Organisation in English	GREEN AND SMART TECHNOLOGY CLUSTER (34 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	4 Strautu iela (14 / 250 characters)	**Country**	Latvia
Postal Code	LV-3411 (7 / 250 characters)	**NUTS1 code**	Latvija
Town	Liepaja (7 / 250 characters)	**NUTS2 code**	Latvija
Website	greentechlatvia.eu/en/home (26 / 100 characters)	**NUTS3 code**	Kurzeme

Partner ID:

Organisation ID type	Unified registration number (Vienotais reģistrācijas numurs)
Organisation ID	40008160776
VAT Number Format	LV + 11 digits
VAT Number	**N/A** ☐ LV40008160776 (13 / 50 characters)
PIC	950538600 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	NGO	Non-governmental organisations, such as Greenpeace, WWF, etc.
Sector (NACE)	70.22 - Business and other management consultancy activities	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Yes

Financial data				
	Reference period	01/01/2020	–	31/12/2020
	Staff headcount [in annual work units (AWU)]			8.0
	Employees [in AWU]			8.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]			0.0
	Owner-managers [in AWU]			0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]			0.0
	Annual turnover [in EUR]			268,725.00
	Annual balance sheet total [in EUR]			0.00
	Operating profit [in EUR]			0.00

Role of the partner organisation in this project:

GreenTech Cluster (Latvia) organizing cross-sectoral cooperation, providing technical knowhow and representing the connecting link between the national authorities and public in general.
As project partner GreenTech Cluster will conduct feasibility study for Green Hydrogen production and Hydrogen ecosystem (valley) creation based on the assessment of decarbonization pathways at transport hubs (major local ports) via establishment of renewable energy communities focused on local renewable energy sources (solar, wind, biomass).
The deliverable will be assessment toolset which can form the basis for the Hydrogen Roadmap for creation of local hydrogen valleys with further opportunities to form transnational hydrogen economies.

733 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ◉ No

2.3 Associated Organisation Details - AO 1

Associated organisation name and type:

Organisation in original language: Majandus- ja kommunikatsiooniministeerium
41 / 250 characters

Organisation in English: Ministry of Economic Affairs and Communications
47 / 250 characters

Department in original language: Transpordi arengu ja investeeringute osakond
44 / 250 characters

Department in English: Transport Development and Investment Department
47 / 250 characters

Legal status: a) Public

Type of associated organisation: National public authority — Ministry, etc.

Associated organisation location and website:

Address: Suur-Ameerika 1
15 / 250 characters

Country: Estonia

Postal Code: 10122
5 / 250 characters

Town: Tallinn
7 / 250 characters

Website: www.mkm.ee
10 / 100 characters

Role of the associated organisation in this project:

Ministry of Economic Affairs and Communications (MKM) is involved as an associated organisation in the planned project. MKM is the main ministry in Estonia dealing with hydrogen.
The main role of the MKM is to cooperate with the partnership, especially with TalTech on the new hydrogen legislation establishment and adoption.

325 / 1,000 characters

3. Relevance

3.1 Context and challenge

Green hydrogen (H2) has been proven to have many benefits: enable to store surplus renewables power when the grid cannot absorb it, replace fossil fuels as a zero-carbon feedstock, as well as help decarbonize hard-to-electrify sectors e.g. long-distance transport. With Europe aiming for rapid advance of energy security as well as achieving climate neutrality in 2050, there is growing interest in it from every possible sector, particularly from transportation, a potential early adopter of H2 technology.
Despite of many advantages, the emergence of a green H2 economy depends on regulations and political support from national authorities. E.g., in Estonia the safety distances of H2 equipment are currently regulated by the Fuel Gas Safety Act that has been developed considering the properties of LNG and LPG. Yet it is not suitable for determining H2 safety distances and operating rules. There is a need for either a separate H2 safety act or including the H2 component in the Heating Gas Safety Act. Another similar example concerns the rules for the technical use of railways, which also need to include H2-related issues. Similar issues can be found all over the region.
The InterGreen project is contributing towards the EU green transition by harmonising the regional operational approach, including the demonstration activities in flagship areas. The main objective is to establish a compatible legislation enabling easier uptake of hydrogen solutions within the EU. The legislation will be validated and demonstrated through different pilots: permitting a multimodal hydrogen refueling station at Freeport of Riga, certifying zero-emission hydrogen locomotive in Estonia, and demonstrate the hydrogen value chain at Freeport of Riga. The broader aim is to support the integration and decarbonization of transnational sectors by establishing full hydrogen value chains to be deployed in various sectors like transportation and industry for example.

1,963 / 2,000 characters

3.2 Transnational value of the project

The project aims at supporting the achievement of the climate neutrality by sustainable energy transition. We will demonstrate the enhanced competitiveness in selected sectors at the forefront of the twin transitions such as the freight transport within the Baltic Sea Region (BSR) and beyond by exploiting the benefits of the green hydrogen (H2). The overall H2 capacity across the region is highly fragmented where there are some countries that are lagging and some that are far beyond. The lack of a common understanding and legislation significantly increases complexity to initiate H2 projects and reduces the opportunity for more open and competitive markets across Europe. That all makes the whole area fragile and vulnerable.
The cooperation is a key factor to improve how laggers will accelerate their H2 uptake and contribute thus towards the more unite union and overall EU climate goals.
The partnership involves actors from three BSR countries wherefrom Estonia and Latvia will benefit from the forerunners like Denmark by learning from their best practices related to green H2 initiatives. The coordinator country Estonia is also one of the coordinators of the EUSBSR transport and Innovation areas. And Estonia's status as a frontrunner in the fields of biotechnology (e.g. gene banks), AI (e.g. self-driving cars and delivery robots), as well as urban mobility (e.g. ride sharing) can be traced back to the successful implementation of an out-of-the box approach to legislation. The InterGreen project aims to adopt the same approach to H2-related legislation.
The new legislation will be demonstrated through a holistic pilot of permitting and certifying the H2 infrastructure in two neighboring countries, Estonia and in Latvia.
The project will seriously boost the BSR's energy transition with strengthened cross-border cooperation between different target groups and the deployment of new sustainable technologies leading to a more competitive zero-emission technologies.

1,992 / 2,000 characters

3.3 Target groups

Target group	Sector and geographical coverage	Its role and needs
Infrastructure and public service provid	The Port of Tallinn (Estonia) and Freeport of Riga (Latvia) are representing the target group in Baltics region involved directly in the project. Field of responsibility: End users, carrying out the feasibility studies, at the Freeport of Riga the full solution will be demonstrated. The involved ports are crucial for providing input about requirements for setting up the hydrogen pilot on the site; and further also operating the H2 value chain. Economic sector: Marine sector. 480 / 500 characters	The number of hydrogen projects and hydrogen infrastructure within the Baltic Sea Region is highly fragmented and some countries, especially the Baltic States, are far behind the forerunners like Scandinavia and Germany. With initiating new hydrogen projects in Estonia and Latvia with potential future business cases will significantly increase the overall performance of Europe by making the region more even in terms of energy independence and security. The project will also support the achievement of the European climate goals - to be an economy with net-zero GHG emissions - with decarbonizing the rail and marine sectors. For this a value chain consisting of hydrogen multimodal refueling, and the use of hydrogen for powering vessels need to be established on the territory of the ports. 797 / 1,000 characters

Target group	Sector and geographical coverage	Its role and needs
NGO	Estonian Association of Hydrogen Technologies (H2EST) and Greentech cluster (Latvia) are representing the NGO target group involved directly in the project. Field of responsibility of the target group: The H2EST and Greentech cluster will act as a connecting link between the public and national authorities. Greentech cluster will carry out also a feasibility study for Latvia. 379 / 500 characters	The overall understanding and awareness about green hydrogen and its benefits within the BSR is predominantly low. The lack of common understanding is present on almost all levels of national and local public authorities, as well as general public. The region needs firm guidance on initiating its first hydrogen pilot projects as well as strong dissemination on a broader range for guaranteeing the wild-scale uptake of the green hydrogen solutions. And this will be tackled by the NGO target group represented by the hydrogen expert groups. For being successful the target group needs to collaborate with the piloting partners and with those developing the hydrogen legislation. These partners' activities will feed in the NGO target group tasks – to share best practices, promote the hydrogen uptake and disseminate and communicate the project outcomes. 857 / 1,000 characters
National public authority	The target group is represented by Ministry of Economic Affairs and communications (EE) as an associated org. in the project. We have gained support from the Consumer Protection and Technical Regulatory Authority (EE), a local municipality Jõelähtme parish (EE), Ministry of Environment (EE); and Estonian Centre for Standardisation and Accreditation Field of responsibility: The target group is responsible for adapting the compatible hydrogen legislation for the BSR. 469 / 500 characters	The region, especially Baltics, lacks homogeneous and well-structured hydrogen related legislation that would allow stakeholders to initiate new hydrogen projects. There is a strong need for establishing a comprehensive EU-wide H2 legislation based on the best practices from the forerunner countries. Within the project the target group will develop and adopt in Estonia a new legislative package as a pilot. The legislation will be based on the recommendations from the Legal Department of the Tallinn University of Technology (LP) and from the Hydrogen Valley DK (PP) who will provide cross-border inputs with the aim to develop a solution to be used across the region. The developed legal package will be piloted in Estonia and Latvia to prove it's suitability. 765 / 1,000 characters
Large enterprise	The target group is represented by ports (Estonia, Latvia) involved directly in the project. Field of responsibility: The ports will carry out the feasibility studies for the H2 deployment options as well as demonstrate the benefits of the hydrogen value chain uptake supported by the new H2 legislation. Economic sector: Energy, transport, manufacturing industry. 366 / 500 characters	Although Europe's energy intensity is decreasing, high use of energy in industry is still a concern. This is particularly relevant for energy production and heavy industry such as iron and steel production, and manufacturing (e.g. fertilizers). And in order to meet the climate goals, we need to find ways to decarbonise the respective sectors as today still nearly three quarters of the EU's energy consumption is based on fossil fuels. Increasing the use of renewable energy sources like green hydrogen, is fundamental for reducing the GHG, yet the investments are high, legislation is fragmented, and there is lack of common knowledge about the H2. The target group will demonstrate the benefits derived from the new legislation and will be the ideal examples for the dissemination and communication towards the stakeholders outside the partnership as well as public in general. 883 / 1,000 characters

Target group	Sector and geographical coverage	Its role and needs
Small and medium enterprise	The target group is represented by Hydrogen Valley DK, Stargate Rail and Stargate Hydrogen Solutions as technology provider startups (EE) involved directly in the project. Field of responsibility: HV provides best practices of H2 uptake, transferring knowledge, and rising the awareness of general public. The target group is responsible also for developing new green hydrogen technologies supporting thus the growth of the hydrogen economy. Economic sector: Deeptech start-ups and SMEs. 488 / 500 characters	Often the innovative deeptech start-ups and SMEs face the bureaucracy coming from fragmented regulations and lack of common understanding as well as from low overall awareness. That in turn causes the brain drain as the private investors' money and suitable conditions in successful hydrogen countries outside the EU is more attractive. Such companies must be supported in every possible way for keeping the EU as a forerunner of green innovative technologies, finding the ways to achieve the climate goals by 2050, and diversify the energy supply for reducing the energy security. With all this we are contributing to making Europe more unite. Stargate Rail will be involved in giving recommendations to the new legislation development from the start-up point of view as well as will be testing the outcome on their pilot where it is foreseen to certify their retrofitted zero-emission locomotive. 899 / 1,000 characters

3.4 Project objective

Your project objective should contribute to:

Energy transition

As described in section 3.1, the biggest challenge in most of the BSR countries is getting the right policies in place to initiate first H2 pilots by many different target groups who are present in the green hydrogen value chain. The project will help the target groups to tackle the identified challenges by learning from the best - gathering the knowledge, selecting the most suitable solutions for the BSR countries and giving recommendations to the national authorities for establishing a holistic and compatible H2 legislation (in WP1) easily adoptable in different countries within the region.

The main objective is to simplify and regulate with the new legislation the entire H2 value chain (production, storage, refueling), including safety, permitting, certification, public procurement processes. The outcome of the WP1 will be demonstrated through different pilots:
1. Permitting and setting up a H2 maritime fuel cell generator for electricity production from hydrogen and powering on-shore power supply system of docked vessels at Freeport of Riga (testing the legislation's suitability to initiate the new H2 projects)
2. Certification of an existing zero-emission shunting locomotive (the PP Stargate Rail offers its developed locomotive for testing how the legislation suits for certifying the H2 freight locomotive)

The piloting will be designed in a way to be easily adopted by other countries under different conditions.

1,443 / 2,000 characters

3.5 Project's contribution to the EU Strategy for the Baltic Sea Region

Please indicate whether your project contributes to the implementation of the Action Plan of the EU Strategy for the Baltic Sea Region (EUSBSR).

(•) Yes ( ) No

Please select which Policy Area of the EUSBSR your project contributes to most.

PA Energy

Please list the action of this Policy Area that your project contributes to and explain how.

The policy area "Energy" focuses on ensuring competitive, secure and sustainable energy in the BSR. The project directly tackles towards this goal by preparing the solid base for the easier and faster green hydrogen uptake within the region. The green hydrogen enables to store surplus renewables power when the grid cannot absorb it, replaces fossil fuels as a zero-carbon feedstock, as well as helps to decarbonize hard-to-electrify sectors e.g. long-distance transport. With Europe aiming for climate neutrality in 2050, there is growing interest in it from every possible sector, but the wide-scale deployment is held back due to the low support from the legal level.
The project's regional cooperation will create a common understanding and legal basis for the green hydrogen supporting thus establishment of the new green energy infrastructure, guaranteeing security of energy supply, energy efficiency and renewable energy. The direct impact is achieving an open, competitive and fully integrated regional green energy value chain in the Baltic Sea region.

1,064 / 1,500 characters

If applicable, please describe which other Policy Areas of the EUSBSR your project contributes to and how.

The project contributes towards Transport and Innovation.
The "Transport" aims at improving internal and external transport links, which are prerequisites for the competitive region. The EUSBSR states that the improvements can be achieved by facilitating a sustainable and efficient transport system in the Baltic Sea Region. The project contributes to the development of green sustainable solutions for transportation areas, especially long-distance transport in marine and railway sectors by showcasing the suitability of the green hydrogen-as-a-fuel full value chain solutions. Estonia, where the legislation will be developed and piloted, is also one of the two coordinator countries of the EUSBSR transport area.
The "Innovation" aims at promoting global competitiveness and growth of the Baltic Sea region through support for entrepreneurship, business development, science, and increased innovation capacity. With supporting the deployment of the novel green hydrogen, the project directly contributes to the listed goals as we expect as a result of this project launches of new innovative energy projects within the region which in turn will result in wide cross-border cooperation between different target groups.
Mitigating climate change and increasing the use of renewable energy, will promote research and innovation, leading to more high-skilled jobs in the energy sector.
The Innovation area is coordinated by Estonia in cooperation with Poland, and Nordic Council of Ministers.

1,494 / 1,500 characters

3.6 Other political and strategic background of the project

Strategic documents

The planned project is addressing the overarching objective of the EU Green Deal to become the first climate neutral continent by 2050, resulting in a cleaner environment, more affordable energy, smarter and more sustainable transport, and an overall better quality of life. This is achieved by accelerating the H2 economy through developed hydrogen policies and regulations.

375 / 500 characters

The EU Strategic Plan 1st objective: by 2024 energy is clean, affordable and secure by fostering a decarbonised energy production and use in the EU that contributes to economic recovery and increased climate ambition. We contribute to this by demonstrating the uptake of the zero-emission solutions in freight transport sector. We believe the newly established H2 legislation and successful pilots will significantly accelerate the initiation of H2 projects and setting up the H2 infrastructure.

495 / 500 characters

Estonian H2 roadmap emphasises demonstration and pilot projects to kickstart the H2 economy; emphasises the importance of updating existing legislation and drafting new legislation and technical standards for rapid H2 adoption; to maximize the positive climate impact, the permitting processes need to be revised to allow for more flexibility, without making any concessions on safety. Finally, successful H2 economy requires also raising awareness of the public sector and the general public.

493 / 500 characters

3.7 Seed money support

Please indicate whether your project is based on a seed money project implemented in the Interreg Baltic Sea Region Programme 2014-2020.

( ) Yes (•) No

3.8 Other projects: use of results and planned cooperation

Full name of the project	Funding Source	Use of the project outcomes and/or planned cooperation
kasutuselevõtt ühistranspordis (Green hydrogen utilization in public transport) 79 / 200 characters	Funded by Estonian Environmental Investments Centre (EU structural grants) 74 / 200 characters	Project started in spring 2022 and will last till late 2024. The core is to demonstrate the technology and prove the benefits received from the green hydrogen utilisation. The project foresees to establish a green hydrogen production site next to a biomass and peat-fired combined heat and power plant in Tallinn, Estonia. In addition to the hydrogen production with electrolyzers, it involves also green hydrogen refuelling stations and demonstration of the value chain functionality with hydrogen taxis (Toyota Mirai). All this will fit extremely well with the planned Interreg as the activities include permitting, ex ante analysis, procurements, testing the electrolyzer, setting up the refuelling stations, risk analysis, etc. Today we can see how difficult is to initiate such a project and how long and bureaucratic the processes, concerning hydrogen, are. We will cooperate with the project and use their experience as a valuable input while establishing the new legislation. 985 / 1,000 characters
eFarm (Model green H2 valley at North Frisia region (Germany) 61 / 200 characters	Funded by German National and Local funding (National Innovation Programme Hydrogen and Fuel Cell Technology funding directive) and Private funding. 148 / 200 characters	Based around the joint initiative previously known as the “Hydrogen Mobility Project”, the company eFarming GmbH & Co. KG founded by GP JOULE has set up and operates a H2 production and distribution grid in North Frisia region on a modular, expandable basis. The project has been subsidized by the Federal Ministry of Transport and Digital Infrastructure with a total of €8M as part of the National Innovation Programme Hydrogen and Fuel Cell Technology funding directive. Together with private funding project totaled in €16 m. In addition to 35 FC passenger cars, 2 FC buses were part of the acquisition and deployment as part of regular public transport services in the district at the time for the launch in 2020 to stimulate demand and consumption. For the production of green H2 from wind power – which provides for fueling at two public filling stations – five electrolysers (225 kW each) have been installed at suitable sites, close to the wind power plants and near heat grids. 987 / 1,000 characters

3.10 Horizontal principles

Horizontal principles	Projects's direct impact
Sustainable development	positive
Non-discrimination including accessibility	neutral
Equality between men and women	neutral

4. Management

Allocated budget 10%

4.1 Project management

☑ **Please confirm that the lead partner and all project partners will comply with the rules for the project management as described in the Programme Manual.**

If relevant, please indicate any other important aspects of the project management, e.g. external entity supporting the lead partner in the management of the project, advisory board, steering committee, any other relevant working groups, etc.

The Steering Board consisting of a representative of each partner, has the highest decision-making responsibility and policy setting power.
The Advisory Board engages of related stakeholders to diffuse outcomes and compliance with H2 standardization efforts made so far. The confirmed members:
• The representative of Port of Hamburg
• Estonian Centre for Standardisation and Accreditation
AB will ensure the sustainability and level of technological innovation and the diffusion of project results.

500 / 500 characters

4.2 Project financial management

☑ **Please confirm that the lead partner and all project partners will comply with the rules for the financial management and control as described in the Programme Manual.**

If relevant, please indicate any other important aspects of the financial management, e.g. external entity supporting the lead partner, positions planned for financial management, involvement of special financial experts (e.g. for public procurement), etc.

The project is led by TalTech Dep. of Law which will also involve its financial department which will be responsible for managing the project resources. TalTech has a vast history in coordinating and participating in EU and national projects, including Interreg.
TalTech will be responsible for all strategic and administrative (including financial) management and communication with the Interreg MA/JS.

404 / 500 characters

4.3 Input to Programme communication

☑ **Please confirm that you are aware of the obligatory inputs to Programme communication that must be submitted along the pre-defined progress reports, as described in the Programme Manual.**

If relevant, please describe other important aspects of project communication that you plan to introduce, e.g. a communication plan, opening and closing events, social media channel(s) etc.

WP3 is centered on promoting the awareness and interest within the target groups within and outside the partnership to create a path for the exploitation of project results ensuring thus its sustainability. We will establish a Dissemination and communication strategy and plan; define the target groups and value propositions; set the communication tools and activities (web, info materials, webinars, events, demonstration days). Project starts with a kick-off and ends with the final meeting.

494 / 500 characters

4.4 Cooperation criteria

Please select the cooperation criteria that apply to your project. In your project you need to apply at least three cooperation criteria. Joint development and joint implementation are the obligatory ones you need to fulfill in your project.

Cooperation criteria	
Joint Development	☑
Joint Implementation	☑
Joint Staffing	☐
Joint Financing	☑

5. Work Plan

Number	Work Package Name
1	WP1 Preparing solutions

Number	Group of Activity Name
1.1	Defining the overall legal H2 framework across EU
1.2	Establishing a novel compatible green hydrogen legislation for the region
1.3	Providing procedures for permitting of H2 projects in the EU
1.4	Feasibility study in Estonia: green hydrogen usability in OPS
1.5	Feasibility study in Latvia: green hydrogen production possibilities and green fuels infrastructure

Number	Work Package Name
2	WP2 Piloting and evaluating solutions

Number	Group of Activity Name
2.1	H2 maritime FC generator for electricity production from H2 and powering OPS system
2.2	Certification of a zero-emission shunting locomotive
2.3	Validating and evaluating the functionality of the pilots

Number	Work Package Name
3	WP3 Transferring solutions

Number	Group of Activity Name
3.1	Dissemination and communication strategy and plan
3.2	Target groups and value propositions
3.3	Communication tools and activities
3.4	Exploitation strategy and plan

Work plan overview

Period:	1	2	3	4	5	6	Leader
WP.1: WP1 Preparing solutions							**PP1**
A.1.1: Defining the overall legal H2 framework across EU D.1.1: European legal H2 framework overview		D					PP1
A.1.2: Establishing a novel compatible green hydrogen legislation for the region O.1.2: New H2 legislation for the region					O		PP1
A.1.3: Providing procedures for permitting of H2 projects in the EU D.1.3: Permitting and certifying procedures for H2 projects				D			PP4
A.1.4: Feasibility study in Estonia: green hydrogen usability in OPS D.1.4: Feasibility study for hydrogen possibilities for OPS			D				PP1
A.1.5: Feasibility study in Latvia: green hydrogen production possibilities and green fuels infrastructure D.1.5: Tools and model roadmap for the Green H2 Valley and green fuels infrastructure options at the port			D				PP8
WP.2: WP2 Piloting and evaluating solutions							**PP7**
A.2.1: H2 maritime FC generator for electricity production from H2 and powering OPS system O.2.1: H2 maritime H2 generator for electricity production from H2 and powering OPS for docked vessels						O	PP7
A.2.2: Certification of a zero-emission shunting locomotive O.2.2: Certified zero-emission hydrogen locomotive						O	PP3
A.2.3: Validating and evaluating the functionality of the pilots D.2.3: Validation report						D	PP4
WP.3: WP3 Transferring solutions							**PP6**
A.3.1: Dissemination and communication strategy and plan D.3.1: Dissemination and Communication Strategy and Plan		D					PP6
A.3.2: Target groups and value propositions D.3.2: Recommendations to the target groups				D			PP6
A.3.3: Communication tools and activities D.3.3: Communication report						D	PP6
A.3.4: Exploitation strategy and plan D.3.4: Exploitation plan						D	PP6

Outputs and deliverables overview

Code	Title	Description	Contribution to the output	Output/ deliverable contains an investment
D 1.1	European legal H2 framework overview	As described in the group activity description the deliverable will map and collect H2 legislation-related information throughout the European Union for obtaining the big picture of the exact current situation. Analysing the results will directly feed into the next activity for establishing the H2 legislation and its adoption.	This deliverable contributes to output O1.2 New H2 legislation for the region	
O 1.2	New H2 legislation for the region	The output of this activity is a novel compatible legal framework that would be easy to adopt in other EU countries within the region. The legislation will be piloted in Estonia and Latvia during the project for verifying it in real working environment. The new legal H2 framework will be more flexible accelerating the uptake of H2, but with no compromise on safety issues.		
D 1.3	Permitting and certifying procedures for H2 projects	This deliverable will give an overview of permitting procedures for launching new H2 projects within the region. The deliverable will be taking into account the specific technical requirements of the use cases (pilots) in the project as an example. The deliverable is based in the outputs of the group activity 1.2 will	Outputs 2.1 and 2.2.	
D 1.4	Feasibility study for hydrogen possibilities for OPS	There are two main outcomes of the deliverable. First it is a report which discusses the feasibility of the described solutions to the OPS problem. and secondly it provides a model to help estimate the viability of each of the possible solutions based on the relevant parameters. This model would help maritime port managers in the EU region to decide which approaches to OPS are most suitable for their specific needs.	Output 2.2	
D 1.5	Tools and model roadmap for the Green H2 Valley and green fuels infrastructure options at the port	Assessment tools and model roadmap for the Green Hydrogen Valley based on local industrial renewable energy communities at the ports. Set of the structured assessment tools for evaluation of the decarbonization potential at the ports. It provides the strategies and techno-economic analysis for buildup of local renewable sources and formation of industrial renewable energy communities and focuses on ecosystem creation for green H2 as energy carrier. Assessment toolset provides target groups in ports (port authorities, stevedores, local port business and municipalities) with knowledge needed to assess feasibility of establishment of local Hydrogen Valleys. Feasibility study for green H2 production and modeling of the H2 valley (ecosystem) will be conducted with close collaboration of port authorities, port stevedores and companies operating in the ports free economic zones along with the municipalities. Study will cover aspects of legislation and local permitting identifying improvement points for enabling prompt future deployments of the technologies and value chains. It will be basis for the local H2 roadmaps and will lay foundation of the national H2 strategies. Knowledge exchange and learning of best practices with project partners will strengthen the design of the model H2 valley roadmaps. The feasibility study by Freeport of Riga is necessary to compare the available alternative fuels and solutions, develop clear roadmap for implementation of H2 and other green fuel infrastructure and application in the Freeport of Riga, select most suitable technologies and prioritize sites with highest overall environmental, financial, and economic benefits, consider the impacts on port's budget, competitiveness and in-depth risk and benefit assessment.	Output 2.1	
O 2.1	H2 maritime H2 generator for electricity production from H2 and powering OPS for docked vessels	The EU Directive 2014/94/EU states that the Member States shall ensure that the need for shore-side electricity supply for inland waterway vessels and seagoing ships in maritime and inland ports is assessed in their national policy frameworks. On-shore power supply (OPS) shall be installed as a priority in ports of the TEN-T Core network, and in other ports, by 31 December 2025, unless there is no demand and the costs are disproportionate to the benefits, including environmental benefits. Furthermore, a new Regulation for the deployment of alternative fuels infrastructure has been proposed to repeal Directive 2014/94/EU, that incorporates the policy initiatives of the Fit for 55 package, FuelEU and European Green Deal, and further clarifies obligations of EU ports to introduce OPS infrastructure at container and passenger berths.		
O 2.2	Certified zero-emission hydrogen locomotive	Certifying a retrofitted locomotive provides end users (product owner) with confidence that the retrofit technology has proven emission reduction performance and durability in the application areas. There are several items the manufacturer (applicant) shall provide to the keeper of vehicle and with this pilot outcome we demonstrate the certification process (based on the new hydrogen legislation) on a zero-emission hydrogen locomotive. Example items may include: - initial identification of safety-critical components; - the complete technical file with specific maintenance instructions recorded in the technical files; - recommendations for maintenance as part of the initial documentation; - information on safety critical components and appropriate maintenance instructions related to them; - technical and engineering support.		
D 2.3	Validation report	The report will provide an overview of the pilot outcomes, analysis them and proposes follow-up activities. It includes also a section for the lessons learned to upgrade the legislation. The evaluation report findings will be transferred in WP3 to the wider audience.	Outputs 2.1 and 2.2	
D 3.1	Dissemination and Communication Strategy and Plan	The strategy serves a dual objective: to disseminate the project's results as widely as possible; and to reach the appropriate audiences for the project's results, including dissemination to audiences that could boost the later exploitation and sustainability of the project's results. Therefore, the project has identified the audience that will be most interested in the project's results, including audience that will deal with the take-up and wider use of the project's outcomes. In particular, the audience targeted by the dissemination strategy includes: (a) the stakeholders identified as part of the value chain; (b) potential end-users of the legislation and approach; (c) policy makers and (d) local public authorities.	It contributes to all outputs: 1.2, 2.1, and 2.2	

D 3.2	Recommendations to the target groups	This task will be devoted to raising awareness and sharing recommendations to the target groups about energy transition, especially towards green hydrogen. The deliverable will help the target groups and stakeholders to understand the benefits of the green hydrogen and help to accelerate the new H2 initiatives and projects throughout the region.	It contributes to all outputs: 1.2, 2.1, and 2.2	
D 3.3	Communication report	The deliverable will contain the conclusions about the dissemination activities performed and respective suggestions for the future. Relevant dissemination, communication and information materials will be developed, which will be used in the scope of both on-line and face-to-face events for different stakeholders. As part of the task the project will develop on-line training resources (e.g., webinars), while at the same planning face-to-face training workshops.	It contributes to all outputs: 1.2, 2.1, and 2.2	
D 3.4	Exploitation plan	A shared exploitation plan agreed and partners' roles defined for after the project in order to guarantee the sustainability of the project and supporting thus the wide scale uptake of the new green energy solutions.	It contributes to all outputs: 1.2, 2.1, and 2.2	

Work package 1

5.1 WP1 Preparing solutions

5.2 Aim of the work package

The aim of this work package is to prepare solutions to help address the identified challenge. You can either develop entirely new solutions or adapt existing solutions to the needs of your target groups. Prepare your solutions in a way that you can pilot them in Work Package 2. Consider how you involve your target groups in preparation of the solutions.
Organise your activities in up to five groups of activities to present the actions you plan to implement. Describe the deliverables and outputs as well as present the timeline.

5.3 Work package leader

Work package leader 1 PP 1 - Tallinn University of Technology

Work package leader 2 PP 4 - Stargate Hydrogen Solutions Ltd

5.4 Work package budget

Work package budget 30%

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	Infrastructure and public service provider The Port of Tallinn (Estonia) and Freeport of Riga (Latvia) are representing the target group in Baltics region involved directly in the project. Field of responsibility: End users, carrying out the feasibility studies, at the Freeport of Riga the full solution will be demonstrated. The involved ports are crucial for providing input about requirements for setting up the hydrogen pilot on the site; and further also operating the H2 value chain. Economic sector: Marine sector. 480 / 500 characters	This target group is one of the end-users of the solution as in order to decarbonize new clean alternatives must be adopted. We will provide the outcomes of the techno-economic feasibility studies carried out in Estonia and Latvia and show thus the potential possibilities how to deploy the hydrogen. 300 / 1,000 characters

	Target group	How do you plan to reach out to and engage the target group?
2	NGO Estonian Association of Hydrogen Technologies (H2EST) and Greentech cluster (Latvia) are representing the NGO target group involved directly in the project. Field of responsibility of the target group: The H2EST and Greentech cluster will act as a connecting link between the public and national authorities. Greentech cluster will carry out also a feasibility study for Latvia. 379 / 500 characters	NGOs often play a critical role in advocating for changes in law, policy, procedure and administrative rules. NGOs bring the needs of the interest groups they serve to the process. And these needs form an important part of the evidence needed to convince policymakers of the needed changes. 292 / 1,000 characters
3	National public authority The target group is represented by Ministry of Economic Affairs and communications (EE) as an associated org. in the project. We have gained support from the Consumer Protection and Technical Regulatory Authority (EE), a local municipality Jõelähtme parish (EE), Ministry of Environment (EE); and Estonian Centre for Standardisation and Accreditation Field of responsibility: The target group is responsible for adapting the compatible hydrogen legislation for the BSR. 469 / 500 characters	As the core of the InterGreen project is to establish a new compatible hydrogen legislation that is easily adaptable across the region, it is utmost important to involve public authorities. The partnership NGOs (Estonian Association of Hydrogen Technologies and Greentech cluster) will be the main connecting links to reach out the respective national authorities dealing with hydrogen-related issues on a national level. 421 / 1,000 characters
4	Large enterprise The target group is represented by ports (Estonia, Latvia) involved directly in the project. Field of responsibility: The ports will carry out the feasibility studies for the H2 deployment options as well as demonstrate the benefits of the hydrogen value chain uptake supported by the new H2 legislation. Economic sector: Energy, transport, manufacturing industry. 366 / 500 characters	This target group is one of the end-users of the solution as in order to decarbonize new clean alternatives must be adopted. We will provide the outcomes of the techno-economic feasibility studies carried out in Estonia and Latvia and show thus the potential possibilities how to deploy the hydrogen. 300 / 1,000 characters
5	Small and medium enterprise The target group is represented by Hydrogen Valley DK, Stargate Rail and Stargate Hydrogen Solutions as technology provider startups (EE) involved directly in the project. Field of responsibility: HV provides best practices of H2 uptake, transferring knowledge, and rising the awareness of general public. The target group is responsible also for developing new green hydrogen technologies supporting thus the growth of the hydrogen economy. Economic sector: Deeptech start-ups and SMEs. 488 / 500 characters	Often the SMEs are the drivers of new innovative technologies. With the InterGreen we will pave the way towards easier initiation of H2 projects for the technology providers. 174 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
1.1	Defining the overall legal H2 framework across EU
1.2	Establishing a novel compatible green hydrogen legislation for the region
1.3	Providing procedures for permitting of H2 projects in the EU
1.4	Feasibility study in Estonia: green hydrogen usability in OPS
1.5	Feasibility study in Latvia: green hydrogen production possibilities and green fuels infrastructure

WP 1 Group of activities 1.1

5.6.1 Group of activities leader

Group of activities leader PP 1 - Tallinn University of Technology

A 1.1

5.6.2 Title of the group of activities

Defining the overall legal H2 framework across EU

49 / 100 characters

5.6.3 Description of the group of activities

The task is to carefully examine the currently valid legal acts in the EU which govern the manufacturing, storage, use and transport of hydrogen. The outcome of the task will be a detailed overview of the currently valid legal acts in the EU. The mapping of the legal acts will determine all aspects which are regulated, as well as significant, yet still unregulated aspects in the field of hydrogen. As part of completing the task, the interrelations and the links between the different legal provisions will be analysed. The analysis will determine the gaps in the laws, as well as possible conflicts between legal provisions.
To define the overall legal framework across the EU, the team will study regulations, directives, decisions, recommendations as well as opinions. In addition to the analysis of the legal acts which are valid at the moment, the second part of the task will focus on the legal acts which are still in draft stage. Also, the analysis will focus on the press releases, public statements and strategic documents issued by the European Commission. The aim is to understand how the EU's legislative framework may change in the coming years. Understanding this would also provide valuable input for other WPs.

1,233 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 1.1

Title of the deliverable

European legal H2 framework overview

36 / 100 characters

Description of the deliverable

As described in the group activity description the deliverable will map and collect H2 legislation-related information throughout the European Union for obtaining the big picture of the exact current situation. Analysing the results will directly feed into the next activity for establishing the H2 legislation and its adoption.

328 / 2,000 characters

Which output does this deliverable contribute to?

This deliverable contributes to output O1.2 New H2 legislation for the region

77 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: WP1 Preparing solutions						
A.1.1: Defining the overall legal H2 framework across EU						
D.1.1: European legal H2 framework overview						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 1 Group of activities 1.2

5.6.1 Group of activities leader

Group of activities leader PP 1 - Tallinn University of Technology

A 1.2

5.6.2 Title of the group of activities

Establishing a novel compatible green hydrogen legislation for the region

73 / 100 characters

5.6.3 Description of the group of activities

The task will focus on developing a new legal framework which would support the aims of green hydrogen for the region. The development of the legal framework will rely on the results for the previous task (defining the overall legal framework). To develop a novel green hydrogen legislation, the first step will be to determine what are the topics which should be regulated explicitly in the law and what are the topics for which a more abstract approach is necessary to establish a balance between regulatory control and innovation. As part of drafting the new green hydrogen legislation, the intended hierarchy of the new legal acts will also be assessed.
The completion of this task will involve co-operation with other consortium members, as well as the representatives of the regulatory bodies (the associated organisation the Ministry of Economic Affairs and Communications which is responsible for H2 legislation in Estonia).
As the aim is to develop a new legal framework which would support innovation, the team members will ask for input from other consortium members. The aim is to understand the sector-specific nuances which must be considered before drafting the plan for the new legal framework. In addition, the regulatory bodies will be engaged to gain an understanding of their viewpoint on the needs for the legal framework. The consortium has already received a letter of support from the Estonian Ministry of Environment for this project. The team plans to have a meeting with the Ministries before starting to work on this task, to gain an overview of what they see as important for a new legal framework. In addition to engaging the regulator, the team would engage other consortium members who are directly involved in the field of hydrogen as professionals. This is important to ensure that all crucial aspects would be covered by the legal framework.
TalTech is coordinating the activity, gathering input and collecting feedback from respective ministries, Consumer Protection and Technical Regulatory Authority, also from Estonian H2 roadmap and other target groups outside the partnership.

2,119 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☐

O 1.2

Title of the output

New H2 legislation for the region

33 / 100 characters

Description of the output

The output of this activity is a novel compatible legal framework that would be easy to adopt in other EU countries within the region. The legislation will be piloted in Estonia and Latvia during the project for verifying it in real working environment. The new legal H2 framework will be more flexible accelerating the uptake of H2, but with no compromise on safety issues.

374 / 3,000 characters

Target groups and uptake of the solution presented in this output

Target groups	How will this target group apply the output in its daily work?
Target group 1 National public authority The target group is represented by Ministry of Economic Affairs and communications (EE) as an associated org. in the project. We have gained support from the Consumer Protection and Technical Regulatory Authority (EE), a local municipality Jõelähtme parish (EE), Ministry of Environment (EE); and Estonian Centre for Standardisation and Accreditation Field of responsibility: The target group is responsible for adapting the compatible hydrogen legislation for the BSR.	H2 is expected to play a key role in a future climate-neutral economy, enabling emission-free transport, heating and industrial processes as well as inter-seasonal energy storage. For achieving the climate goals, we must accelerate the new H2 projects and initiatives. However, in many countries within the region, there is no previous experience and common understanding of H2. There is a strong need for such legislation on a national level. 443 / 1,000 characters

Durability of the output

We expect that a legislation, based on common principles and best practices of the successful "Hydrogen countries", and easily adoptable in different EU countries, will be accepted.

All members of the partnership contribute to the legislation development as described in the activity description. The main role is on the Lead Partner TalTech and on the Associated Organization the Ministry of Economic Affairs and Communications. The project has gathered a lot of support from other public authorities (who have signed the support letters) and the project has set up also an external Advisory Board.

601 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: WP1 Preparing solutions						
A.1.2: Establishing a novel compatible green hydrogen legislation for the region						
O.1.2: New H2 legislation for the region						

5.6.7 This deliverable/output contains productive or infrastructure investment

WP 1 Group of activities 1.3

5.6.1 Group of activities leader

Group of activities leader PP 4 - Stargate Hydrogen Solutions Ltd

A 1.3

5.6.2 Title of the group of activities

Providing procedures for permitting of H2 projects in the EU

60 / 100 characters

5.6.3 Description of the group of activities

In the coming years, the production and use of hydrogen is going to be a significant contributor to the reduction of carbon emissions, whether it be to fuel freight vehicles, vessels and buses or as a replacement for natural gas to decarbonize heat within industry. With increasing hydrogen production capacity and need, there must be a common understanding of procedures for launching such projects.
It is quite common that some municipalities place more stringent requirements than those provided for in the legislation for a certain hydrogen-related project. For example, for hydrogen production, storage volume, refueling station (HRS) and usage, such as, e.g. conducting an environmental impact assessment or opting for a formal, publicly attended procedure when this is not required. Within this group activity we will provide new procedures, specifically developed for hydrogen.
To achieve this, we have set the objectives for the group activity that are:
1. the definition of the technical requirements by the piloting partners (end users) for the three use case pilots and
2. establishing the procedures for permitting and certifying of H2 projects. These procedures will be applied throughout the work package 2 pilots.
The pilot-specific technical requirements are the initial input for establishing the procedures, but during the development process a wider scope will be kept in mind for further adaption in the EU for different applications.
Group activity outcome: technical requirements and permitting procedures as feeder for the piloting phase.

1,563 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 1.3

Title of the deliverable

Permitting and certifying procedures for H2 projects

52 / 100 characters

Description of the deliverable

This deliverable will give an overview of permitting procedures for launching new H2 projects within the region. The deliverable will be taking into account the specific technical requirements of the use cases (pilots) in the project as an example. The deliverable is based in the outputs of the group activity 1.2 will

319 / 2,000 characters

Which output does this deliverable contribute to?

Outputs 2.1 and 2.2.

20 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: WP1 Preparing solutions						
A.1.3: Providing procedures for permitting of H2 projects in the EU						
D.1.3: Permitting and certifying procedures for H2 projects						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 1 Group of activities 1.4

5.6.1 Group of activities leader

Group of activities leader PP 1 - Tallinn University of Technology

A 1.4

5.6.2 Title of the group of activities

Feasibility study in Estonia: green hydrogen usability in OPS

61 / 100 characters

5.6.3 Description of the group of activities

Stemming from the EU's aspirations towards a "greener" economy, the general trend for maritime ports of the future is to provide on-shore electrical power supply (OPS) for docked ships. This concerns, in particular, cruise vessels with a comparatively high power demand in the range of several MW per vessel. The electrical grid connections of most ports have been established several years ago and are inadequate to supply the substantial increase in electrical power consumption which would result when several cruise vessels are simultaneously connected to OPS. In addition, cruise shipping in the European region is seasonal in nature, which confines the increased power demand also to the months coinciding with the cruise season. Therefore, there is a need to assure adequate power supply to vessels while ideally avoiding the substantial investments into the power grid to increase its load capacity which would only be required for a small portion of the year.

In the spirit of reducing CO2 emissions, the extra power demand would ideally be covered using "green" energy sources. The aim of this project is to investigate the technical and economic feasibility of the most likely solutions to the OPS problem:
- Hydrogen-based solution. This includes pure H2, as well as derivatives thereof, which include hydrogen as a major component, e.g., ammonia and e-fuels. This also includes investigating which of the available H2 conversion technologies are most suitable, e.g., solid oxide fuel cells (SOFC) or proton exchange membrane (PEM) fuel cells. This line of investigation also includes considerations regarding the on-site storage possibilities of H2. Parameters such as the pressure of H2 gas or whether it should be liquified are important, also whether storage above or below ground level is more feasible. Viability of the production of H2 on-site during times of low electricity prices will also be investigated.
- Battery storage-based solution. The viability of existing and prospective battery technologies will be investigated. These include Li-ion, Na-ion, Ni-MH, supercapacitor-hybrid solutions, and others currently in the development phase.

Additionally, the possibilities of using the prospective H2-based and battery storage solutions outside of cruise season are investigated, including different use scenarios and their economic feasibility. These include, e.g., supplying the district heating grid and partially covering peak electricity demand of the power grid.

2,498 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☑

D 1.4

Title of the deliverable

Feasibility study for hydrogen possibilities for OPS

52 / 100 characters

Description of the deliverable

There are two main outcomes of the deliverable. First it is a report which discusses the feasibility of the described solutions to the OPS problem. and secondly it provides a model to help estimate the viability of each of the possible solutions based on the relevant parameters. This model would help maritime port managers in the EU region to decide which approaches to OPS are most suitable for their specific needs.

419 / 2,000 characters

Which output does this deliverable contribute to?

Output 2.2

10 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: WP1 Preparing solutions						
A.1.4: Feasibility study in Estonia: green hydrogen usability in OPS						
D.1.4: Feasibility study for hydrogen possibilities for OPS						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 1 Group of activities 1.5

5.6.1 Group of activities leader

Group of activities leader PP 8 - GREEN AND SMART TECHNOLOGY CLUSTER

A 1.5

5.6.2 Title of the group of activities

Feasibility study in Latvia: green hydrogen production possibilities and green fuels infrastructure

99 / 100 characters

5.6.3 Description of the group of activities

First, the assessment of the decarbonization potential at the three key transport hubs – ports in Latvia: Riga, Ventspils & Liepaja will be carried out by Greentech Cluster to identify renewable and low carbon energy generation scenarios for port operations (energy, heating and cooling and mobility) for reducing current carbon footprint.
All ports occupy large part of the municipal administrative territories with significant vacant areas as good opportunity to roll out local renewable energy production. Opportunities for establishing local industrial energy communities and clusters will be analyzed. Green H2 is foreseen as potential energy carrier for hard to decarbonize segments of mobility and maritime sectors along with coupling opportunities in re-electrification and heating segments. H2 scenarios will be designed as part of the study to provide techno-economic assessment, TCO calculations and cost-benefit analysis for the potential H2 solutions.
Second, Freeport of Riga is conducting a feasibility study to introduce H2 and other green fuel infrastructure in the port operations. Alternative fuels can be applied for multiple purposes at a port, incl., transportation of goods and cargo with H2 powered vehicles, for vessel propulsion both by purchasing new vessels and rebuilding existing, multimodal refueling (road-rail-water), green electricity production for on-shore power supply of docked vessels, electricity storage for peak consumption (such as, to recharge cruise vessels), heat production, etc.
The study includes:
- assessment of possible alternative fuel, technology solutions and application in the port
- technical, economic, and environmental feasibility and risk assessment
- assessment of current legal and permitting landscape with identification of improvement scope
- possible implementation site and use case assessment
- development of Cost-Benefit Analysis
- definition of financially and economically most viable implementation scenarios
- detailed implementation and financing plan for the selected implementation scenario

With the feasibility study the Freeport of Riga contributes to the following EU and Latvian sustainable development and growth objectives:
- EU's long-term "Blue growth" Strategy for achieving smart, sustainable and inclusive port development
- EU White paper on transport "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system"
- European Green Deal objectives and Fit for 55 package for reduction of member state's emissions and improvement of energy efficiency
- FuelEU Maritime set of proposals, to be carbon-neutral by 2050
- Development of TEN-T infrastructure and the fulfilment of the objectives of the Sustainable Development Strategy of Latvia until 2030
- Contribute to the EU Proposed Mission "Mission Starfish 2030: Restore our Ocean and Waters" which is backed by Latvian Investment and Development Agency via Program "Misija Jūra 2030"

2,976 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 1.5

Title of the deliverable

Tools and model roadmap for the Green H2 Valley and green fuels infrastructure options at the port

98 / 100 characters

Description of the deliverable

Assessment tools and model roadmap for the Green Hydrogen Valley based on local industrial renewable energy communities at the ports.
Set of the structured assessment tools for evaluation of the decarbonization potential at the ports. It provides the strategies and techno-economic analysis for buildup of local renewable sources and formation of industrial renewable energy communities and focuses on ecosystem creation for green H2 as energy carrier.
Assessment toolset provides target groups in ports (port authorities, stevedores, local port business and municipalities) with knowledge needed to assess feasibility of establishment of local Hydrogen Valleys.

Feasibility study for green H2 production and modeling of the H2 valley (ecosystem) will be conducted with close collaboration of port authorities, port stevedores and companies operating in the ports free economic zones along with the municipalities. Study will cover aspects of legislation and local permitting identifying improvement points for enabling prompt future deployments of the technologies and value chains.
It will be basis for the local H2 roadmaps and will lay foundation of the national H2 strategies. Knowledge exchange and learning of best practices with project partners will strengthen the design of the model H2 valley roadmaps.

The feasibility study by Freeport of Riga is necessary to compare the available alternative fuels and solutions, develop clear roadmap for implementation of H2 and other green fuel infrastructure and application in the Freeport of Riga, select most suitable technologies and prioritize sites with highest overall environmental, financial, and economic benefits, consider the impacts on port's budget, competitiveness and in-depth risk and benefit assessment.

1,777 / 2,000 characters

Which output does this deliverable contribute to?

Output 2.1

10 / 100 characters

5.6.6 Timeline

	Period: 1	2	3	4	5	6
WP.1: WP1 Preparing solutions						
A.1.5: Feasibility study in Latvia: green hydrogen production possibilities and green fuels infrastructure						
D.1.5: Tools and model roadmap for the Green H2 Valley and green fuels infrastructure options at the port						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

Work package 2

5.1 WP2 Piloting and evaluating solutions

5.2 Aim of the work package

The aim of this work package is to pilot, evaluate and adjust solutions. Plan one or several pilots to validate the usefulness of the solutions prepared in Work Package 1. Start Work Package 2 early enough to have time to pilot, evaluate and adjust solutions, together with your target groups. By the end of this work package implementation the solutions should be ready to be transferred to your target groups in Work Package 3.
The piloted and adjusted solution should be presented in one project output.
Organise your activities in up to five groups of activities. Describe the deliverables and outputs as well as present the timeline.

5.3 Work package leader

Work package leader 1 PP 7 - Freeport of Riga Authority

Work package leader 2 PP 3 - Stargate Rail Ltd

5.4 Work package budget

Work package budget 40%

5.4.1 Number of pilots

Number of pilots 2

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	Infrastructure and public service provider The Port of Tallinn (Estonia) and Freeport of Riga (Latvia) are representing the target group in Baltics region involved directly in the project. Field of responsibility: End users, carrying out the feasibility studies, at the Freeport of Riga the full solution will be demonstrated. The involved ports are crucial for providing input about requirements for setting up the hydrogen pilot on the site; and further also operating the H2 value chain. Economic sector: Marine sector. 480 / 500 characters	High-quality public infrastructure supports growth, improves well-being and generates jobs. Yet, infrastructure investment is complex, especially if it concerns new technologies like hydrogen for example. Getting from conception to operation is a long way with vast amount of obstacles. Poor governance due to poor understanding of rules and laws is a major reason why infrastructure projects often fail to meet their timeframe, budget, and service delivery objectives. With offering and introducing the new legislation and demonstrating its operation via pilots is the way to reach the target group. 601 / 1,000 characters
2	NGO Estonian Association of Hydrogen Technologies (H2EST) and Greentech cluster (Latvia) are representing the NGO target group involved directly in the project. Field of responsibility of the target group: The H2EST and Greentech cluster will act as a connecting link between the public and national authorities. Greentech cluster will carry out also a feasibility study for Latvia. 379 / 500 characters	The NGOs, like hydrogen clusters and associations, etc. are crucial to be reached out in this stage as they are the main technical knowhow providers and promoters of the new clean technologies. Being the connecting link between the public and national authorities, NGOs have a good overview and understanding of the situation on legal level. Thanks to the wide contact networks of the partnership NGOs we hope to reach out to other similar organizations throughout the region in order to promote the current project's outcomes. 527 / 1,000 characters
3	National public authority The target group is represented by Ministry of Economic Affairs and communications (EE) as an associated org. in the project. We have gained support from the Consumer Protection and Technical Regulatory Authority (EE), a local municipality Jõelähtme parish (EE), Ministry of Environment (EE); and Estonian Centre for Standardisation and Accreditation Field of responsibility: The target group is responsible for adapting the compatible hydrogen legislation for the BSR. 469 / 500 characters	With piloting in Estonia and Latvia the new legislation will be showcased. The new hydrogen legislation, easily adoptable in different Member States within the region, encompasses a broad range of legal, administrative and other governmental instruments that will facilitate the implementation of the hydrogen related projects. 329 / 1,000 characters
4	Large enterprise The target group is represented by ports (Estonia, Latvia) involved directly in the project. Field of responsibility: The ports will carry out the feasibility studies for the H2 deployment options as well as demonstrate the benefits of the hydrogen value chain uptake supported by the new H2 legislation. Economic sector: Energy, transport, manufacturing industry. 366 / 500 characters	The commercial partners, large enterprises, will act as end-users for testing the pilot and validating and evaluating the results. Both pilot outcomes are important for the commercial sector. With the hydrogen maritime FC generator pilot we will prove the new legislation suitability for setting up new hydrogen infrastructure and test it in real world operational environment. The second pilot for certification ensures that a product or a piece of equipment is safe and reliable. It is a benchmark for quality, a guidepost leading to reliable manufacturers. Product certification demonstrates companies' commitment to quality and safety. Clear and unambiguous certification processes are necessary for the companies providing hydrogen-related products and or equipment. 771 / 1,000 characters

	Target group	How do you plan to reach out to and engage the target group?
5	Small and medium enterprise The target group is represented by Hydrogen Valley DK, Stargate Rail and Stargate Hydrogen Solutions as technology provider startups (EE) involved directly in the project. Field of responsibility: HV provides best practices of H2 uptake, transferring knowledge, and rising the awareness of general public. The target group is responsible also for developing new green hydrogen technologies supporting thus the growth of the hydrogen economy. Economic sector: Deeptech start-ups and SMEs. 488 / 500 characters	The commercial partners, SMEs and startups, will act as service and technology providers as well as end-users for testing the pilot and validating and evaluating the results. Both pilot outcomes are important for the commercial sector. With the hydrogen maritime FC generator pilot we will prove the new legislation suitability for setting up new hydrogen infrastructure and test it in real world operational environment. The second pilot for certification ensures that a product or a piece of equipment is safe and reliable. It is a benchmark for quality, a guidepost leading to reliable manufacturers. Product certification demonstrates companies' commitment to quality and safety. Clear and unambiguous certification processes are necessary for the companies providing hydrogen-related products and or equipment. 815 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
2.1	**H2 maritime FC generator for electricity production from H2 and powering OPS system**
2.2	**Certification of a zero-emission shunting locomotive**
2.3	**Validating and evaluating the functionality of the pilots**

WP 2 Group of activities 2.1

5.6.1 Group of activities leader

Group of activities leader PP 7 - Freeport of Riga Authority

A 2.1

5.6.2 Title of the group of activities

H2 maritime FC generator for electricity production from H2 and powering OPS system

83 / 100 characters

5.6.3 Description of the group of activities

The objective of this pilot is to gather “real-world” experience with setting up (according to the new legislation) and operating hydrogen FC equipment for the OPS system in port.
On-shore power supply or OPS (also referred to as “cold ironing”, “shore power”, “shoreside electricity” and other) infrastructure allows the vessels to turn off their engines while at berth, leading to less harmful emissions and to more environmentally friendly vessel handling at port. Along with the reduction in carbon emissions at the port environment, OPS reduces noise, costs, and improves the working environment of seafarers onboard the vessel.
The OPS system can be powered by H2 to provide environmentally friendly electricity from an H2 fuel cell (FC) that would act as an auxiliary power source for service vessels docked in the FRA harbor (Freeport of Riga). The pilot installation would include:
- Containerized hydrogen storage tank,
- Containerized fuel cell and power conditioning unit for electricity output to vessels,
- OPS system (connected to the grid and fuel cell system) with cable reel for connection to vessels.

The pilot installation shall be applied to provide clean auxiliary electricity for FRA service vessels (pilot vessels, icebreakers and hydrography ships) during winter, spring and autumn months while they are docked at RBF piers. The total energy output of the pilot shall not exceed 1 MW which constitutes the current combined peak consumptions by the FRA service vessels (pilot vessels, icebreakers and hydrography ships during winter months).

Due to its modular and containerized structure can be moved to different locations during summer months when OPS is not necessary for FRA service vessels in summer months, for example, to provide H2 OPS for cruise or ferry vessels. In addition, placement locations of this unit can be tailor-fit for better access to potential green electricity production sources (solar, wind or other renewables) in port area and resolve potential issues with existing distribution grid limitations (grid-lock) when compared with direct use of electricity for OPS needs.

The activities conducted:
- Asses the possible technology solutions for the pilot and define technical requirements for the overall system
- Conduct public tender for the supply of the OPS, containerized H2 storage tank and fuel cell system and supply of the H2 fuel
- Obtain legal permits for the installation and operation of H2 storage tank and fuel cell system at the port area
- Develop detailed technical design & installation project for installation of OPS at the pilot site and operation of H2 storage tank and fuel cell system
- Install the OPS and deploy H2 storage tank and fuel cell system
- Organize the safety and employee training for the management of the system
- Commission the system and initiate the piloting at the RBF piers
- Gather performance information and conduct operational and economic evaluation of the pilot

2,967 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☐

O 2.1

Title of the output

H2 maritime H2 generator for electricity production from H2 and powering OPS for docked vessels

95 / 100 characters

Description of the output

The EU Directive 2014/94/EU states that the Member States shall ensure that the need for shore-side electricity supply for inland waterway vessels and seagoing ships in maritime and inland ports is assessed in their national policy frameworks. On-shore power supply (OPS) shall be installed as a priority in ports of the TEN-T Core network, and in other ports, by 31 December 2025, unless there is no demand and the costs are disproportionate to the benefits, including environmental benefits.
Furthermore, a new Regulation for the deployment of alternative fuels infrastructure has been proposed to repeal Directive 2014/94/EU, that incorporates the policy initiatives of the Fit for 55 package, FuelEU and European Green Deal, and further clarifies obligations of EU ports to introduce OPS infrastructure at container and passenger berths.

842 / 3,000 characters

Target groups and uptake of the solution presented in this output

Target groups	How will this target group apply the output in its daily work?
Target group 1 Infrastructure and public service provider The Port of Tallinn (Estonia) and Freeport of Riga (Latvia) are representing the target group in Baltics region involved directly in the project. Field of responsibility: End users, carrying out the feasibility studies, at the Freeport of Riga the full solution will be demonstrated. The involved ports are crucial for providing input about requirements for setting up the hydrogen pilot on the site; and further also operating the H2 value chain. Economic sector: Marine sector.	With the pilot we will prove the new legislation suitability for setting up new hydrogen infrastructure and test it in real world operational environment. The pilot will be ideal showcase for other ports and transport hubs within the region striving towards zero-emission solutions by taking green hydrogen into use. 319 / 1,000 characters

Durability of the output

The H2 maritime fuel cell generator for electricity production from hydrogen and powering on-shore power supply system of docked vessels will remain at the possession and operation of Freeport of Riga. The port will cover its further operational costs. The equipment will remain at the possession of the Freeport of Riga.

321 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: WP2 Piloting and evaluating solutions						
A.2.1: H2 maritime FC generator for electricity production from H2 and powering OPS system						
O.2.1: H2 maritime H2 generator for electricity production from H2 and powering OPS for docked vessels						

5.6.7 This deliverable/output contains productive or infrastructure investment

☐

WP 2 Group of activities 2.2

5.6.1 Group of activities leader

Group of activities leader PP 3 - Stargate Rail Ltd

A 2.2

5.6.2 Title of the group of activities

Certification of a zero-emission shunting locomotive

52 / 100 characters

5.6.3 Description of the group of activities

Certification means a third party attestation related to products, processes, systems or persons where the certificate provided by the accredited or recognized certification body according to the regulation, provides assurance that the applicant fulfills the requirements established of the regulation and the certification scheme.
Yet, today the certification of a hydrogen related products, processes, systems (e.g. a zero-emission shunting locomotive) require a number of modifications in technical regulations. These regulations currently lack crucial information and requirements concerning, e.g. battery charging, H2 refuelling, fire safety, durability, field tests etc.
Within this group activity we will pilot the hydrogen-related products/processes/systems certification procedures. For that we will use Stargate Rail's retrofitted zero-emission locomotive (Stargate Rail is a startup providing solutions for retrofitting freight locomotives with a zero-emission hydrogen powertrain) to demonstrate the appropriateness of the new hydrogen legislation.

The new legislation shall significantly simplify the certification steps:
1) Initial application review
- review of the application collected to ensure that:
- information is sufficient
- certification activities can be prepared

2) Document review
- assessment of maintenance documentation
- Evaluate presence of necessary processes (requirements)

3) On-site audits
- Evaluate implementation of maintenance system

4) On-site inspections
- Evaluate appropriateness of competences in place
- Coherence in application of processes and sampling
- Activities affecting safety

5) Surveillance activities
- Regular monitoring of representative areas and functions of maintenance system
- Upcoming audits

The steps to undergo within this group activity include the following parameters for which conformity to applicable rules will be assessed (please note that this is an example list and depends on the specific locomotive type and rules that will be set in the legislation):

General documentation (maintenance, instructions, track side tests)
Load capability (conditions, weighted mass, axle and wheel load)
Mechanical interfaces for Endcoupling or Innercoupling
Vehicle gauge (running safety, dynamics, track loading, vertical acceleration)
Functional requirements at train level
Safety requirements (traction/braking interlocking)
Environmental conditions impacting the vehicle (altitude, temperature, humidity, rain, snow, ice, etc.)
Integrity of software employed for safety related functions (headlights, warnings, etc.)
Interior layout
Fire safety
Etc.

2,637 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable

O 2.2

Title of the output

Certified zero-emission hydrogen locomotive

43 / 100 characters

Description of the output

Certifying a retrofitted locomotive provides end users (product owner) with confidence that the retrofit technology has proven emission reduction performance and durability in the application areas.
There are several items the manufacturer (applicant) shall provide to the keeper of vehicle and with this pilot outcome we demonstrate the certification process (based on the new hydrogen legislation) on a zero-emission hydrogen locomotive.
Example items may include:

- initial identification of safety-critical components;
- the complete technical file with specific maintenance instructions recorded in the technical files;
- recommendations for maintenance as part of the initial documentation;
- information on safety critical components and appropriate maintenance instructions related to them;
- technical and engineering support.

842 / 3,000 characters

Target groups and uptake of the solution presented in this output

Target groups	How will this target group apply the output in its daily work?
Target group 1 Large enterprise The target group is represented by ports (Estonia, Latvia) involved directly in the project. Field of responsibility: The ports will carry out the feasibility studies for the H2 deployment options as well as demonstrate the benefits of the hydrogen value chain uptake supported by the new H2 legislation. Economic sector: Energy, transport, manufacturing industry.	Product and equipment certification ensures that a product or a piece of equipment is safe and reliable. It is a benchmark for quality, a guidepost leading to reliable manufacturers. Product certification demonstrates companies' commitment to quality and safety. Clear and unambiguous certification processes are necessary for the companies providing hydrogen-related products and or equipment. 394 / 1,000 characters
Target group 2 Small and medium enterprise The target group is represented by Hydrogen Valley DK, Stargate Rail and Stargate Hydrogen Solutions as technology provider startups (EE) involved directly in the project. Field of responsibility: HV provides best practices of H2 uptake, transferring knowledge, and rising the awareness of general public. The target group is responsible also for developing new green hydrogen technologies supporting thus the growth of the hydrogen economy. Economic sector: Deeptech start-ups and SMEs.	Product and equipment certification ensures that a product or a piece of equipment is safe and reliable. It is a benchmark for quality, a guidepost leading to reliable manufacturers. Product certification demonstrates companies' commitment to quality and safety. Clear and unambiguous certification processes are necessary for the companies providing hydrogen-related products and or equipment. 394 / 1,000 characters

Durability of the output

The output does not require future investments as being a certification process in nature

89 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: WP2 Piloting and evaluating solutions						
A.2.2: Certification of a zero-emission shunting locomotive						
O.2.2: Certified zero-emission hydrogen locomotive						■

5.6.7 This deliverable/output contains productive or infrastructure investment

WP 2 Group of activities 2.3

5.6.1 Group of activities leader

Group of activities leader PP 4 - Stargate Hydrogen Solutions Ltd

A 2.3

5.6.2 Title of the group of activities

Validating and evaluating the functionality of the pilots

57 / 100 characters

5.6.3 Description of the group of activities

The group activity validating and evaluating the functionality of the pilots will be carried out to evaluate feasibility, duration, cost, adverse events, and propose possible improvements to the processes based on the established legislation.

242 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 2.3

Title of the deliverable

Validation report

17 / 100 characters

Description of the deliverable

The report will provide an overview of the pilot outcomes, analysis them and proposes follow-up activities. It includes also a section for the lessons learned to upgrade the legislation. The evaluation report findings will be transferred in WP3 to the wider audience.

267 / 2,000 characters

Which output does this deliverable contribute to?

Outputs 2.1 and 2.2

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: WP2 Piloting and evaluating solutions						
A.2.3: Validating and evaluating the functionality of the pilots						
D.2.3: Validation report						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

Work package 3

5.1 WP3 Transferring solutions

5.2 Aim of the work package

In Work Package 3, communicate and transfer the ready solutions to your target groups. Plan at least one year for this work package to transfer your solutions to the target groups, considering their respective needs. Select suitable activities to encourage your target groups to use the solutions in their daily work.
Organise your activities in up to five groups of activities. Describe the deliverables and outputs as well as present the timeline.

5.3 Work package leader

Work package leader 1 PP 6 - Cemtec Foundation

Work package leader 2 PP 2 - Estonian Association of Hydrogen Technologies

5.4 Work package budget

Work package budget 20%

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	Infrastructure and public service provider The Port of Tallinn (Estonia) and Freeport of Riga (Latvia) are representing the target group in Baltics region involved directly in the project. Field of responsibility: End users, carrying out the feasibility studies, at the Freeport of Riga the full solution will be demonstrated. The involved ports are crucial for providing input about requirements for setting up the hydrogen pilot on the site; and further also operating the H2 value chain. Economic sector: Marine sector. 480 / 500 characters	The target group will be reached out by showcasing the successful pilots where the new hydrogen legislation will be deployed (multimodal refuelling, the use of hydrogen for powering vessels, certifying the zero-emission locomotive) as well as by demonstrating the results of the feasibility studies. This is expected to grow the interest and encourage the target group to initiate new hydrogen pilots in the near future and contribute thus in achieving the climate goals. 473 / 1,000 characters
2	NGO Estonian Association of Hydrogen Technologies (H2EST) and Greentech cluster (Latvia) are representing the NGO target group involved directly in the project. Field of responsibility of the target group: The H2EST and Greentech cluster will act as a connecting link between the public and national authorities. Greentech cluster will carry out also a feasibility study for Latvia. 379 / 500 characters	The NGOs will It is utmost important to involve the local public authorities and transfer the solutions developed within the project. This is because they are who have to cope with the new H2 related projects in the future as many initiatives take place on a local level. 271 / 1,000 characters
3	National public authority The target group is represented by Ministry of Economic Affairs and communications (EE) as an associated org. in the project. We have gained support from the Consumer Protection and Technical Regulatory Authority (EE), a local municipality Jõelähtme parish (EE), Ministry of Environment (EE); and Estonian Centre for Standardisation and Accreditation Field of responsibility: The target group is responsible for adapting the compatible hydrogen legislation for the BSR. 469 / 500 characters	The region, especially Baltics, lacks homogeneous and well-structured hydrogen related legislation that would allow stakeholders to initiate new hydrogen projects. There is a strong need for establishing a comprehensive EU-wide H2 legislation based on the best practices from the forerunner countries. Within the project the target group will develop and adopt in Estonia a new legislative package as a pilot. The legislation will be based on the recommendations from the Legal Department of the Tallinn University of Technology (LP) and from the Hydrogen Valley DK (PP) who will provide cross-border inputs with the aim to develop a solution to be used across the region. The developed legal package will be piloted in Estonia and Latvia to prove it's suitability. The project will be introduced to the whole Baltic Sea Region respective authorities and interested stakeholders who are responsible for their national hydrogen policies. 936 / 1,000 characters
4	Large enterprise The target group is represented by ports (Estonia, Latvia) involved directly in the project. Field of responsibility: The ports will carry out the feasibility studies for the H2 deployment options as well as demonstrate the benefits of the hydrogen value chain uptake supported by the new H2 legislation. Economic sector: Energy, transport, manufacturing industry. 366 / 500 characters	Although Europe's energy intensity is decreasing, high use of energy in industry is still a concern. This is particularly relevant for energy production and heavy industry such as iron and steel production, and manufacturing (e.g. fertilizers). And in order to meet the climate goals, we need to find ways to decarbonise the respective sectors as today still nearly three quarters of the EU's energy consumption is based on fossil fuels. Increasing the use of renewable energy sources like green hydrogen, is fundamental for reducing the GHG, yet the investments are high, legislation is fragmented, and there is lack of common knowledge about the H2. The target group will demonstrate the benefits derived from the new legislation and will be the ideal examples for the dissemination and communication towards the stakeholders outside the partnership as well as public in general. 883 / 1,000 characters

	Target group	How do you plan to reach out to and engage the target group?
5	Small and medium enterprise The target group is represented by Hydrogen Valley DK, Stargate Rail and Stargate Hydrogen Solutions as technology provider startups (EE) involved directly in the project. Field of responsibility: HV provides best practices of H2 uptake, transferring knowledge, and rising the awareness of general public. The target group is responsible also for developing new green hydrogen technologies supporting thus the growth of the hydrogen economy. Economic sector: Deeptech start-ups and SMEs. 488 / 500 characters	The SME target group will be reached by active dissemination and communication activities by the partnership. The innovative deeptech SMEs and startups are often struggled with bureaucratic regulations restricting their groundbreaking technologies to come true. With the project's successful pilots we will demonstrate the low administration burden for initiating novel hydrogen-related projects and innovative hydrogen technologies. 433 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
3.1	**Dissemination and communication strategy and plan**
3.2	**Target groups and value propositions**
3.3	**Communication tools and activities**
3.4	**Exploitation strategy and plan**

WP 3 Group of activities 3.1

5.6.1 Group of activities leader

Group of activities leader PP 6 - Cemtec Foundation

A 3.1

5.6.2 Title of the group of activities

Dissemination and communication strategy and plan

49 / 100 characters

5.6.3 Description of the group of activities

A major point of attention in communication activities will be the need to ensure the involvement of stakeholders from the public authorities and from the entire sustainable energy value chain.
A Dissemination and Communication Strategy will be developed, clarifying the participants' roles, the internal information flow and stakeholder management in the project as well as rules and governance for communication. This work is to be carried out by Hydrogen Valley in cooperation with the partners, who will each make use of their extensive network and relationships for communication and awareness raising:
• HV will lead the Transferring Solutions Work Package and will be responsible for the strategy and the structure of the dissemination, communication and exploitation work. HV will also be responsible for the general communication to target groups, including the public, policy makers, media and relevant industry sectors.
• Tallinn University of Technology will be responsible for legal related dissemination
• Stargate Hydrogen Solutions and H2est will be responsible for the energy sector, especially hydrogen related, dissemination.
• Freeport Riga and Port of Tallinn will be responsible for disseminating towards marine sector.
• Stargate Rail will be responsible for the Hydrogen rolling stock companies' and other suitable target groups' specific dissemination. This involves locomotive retrofitters, rail manufacturers, rail operators of locomotives, who will convert to zero-emission solutions. Among them may be Operail, DB Cargo, CP Rail, SNCF, Renfe, Italo Treno, Norfolk Southern and CN Rail.
For the dissemination mainly the current partners' and customers' networks and also other possible stakeholder groups will be used through industry and hydrogen associations.

The dissemination is twofold – via direct contacts (including participation in demo events and conferences) and via online presence (partner website and LinkedIn). The strategy will create the backbone in the dissemination and communication, including the following elements:
• Map of target groups and the project's value propositions for each of these.
• Position paper (vision, common understanding of the projects objectives and context, key messages and Q/A) and messaging platform
• Media strategy, including identification of relevant media and communication channels to use

Based on the strategy, a communication plan will be elaborated, encompassing the specific activities and timetables, see activity 3.3.

2,510 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 3.1

Title of the deliverable

Dissemination and Communication Strategy and Plan

49 / 100 characters

Description of the deliverable

The strategy serves a dual objective: to disseminate the project's results as widely as possible; and to reach the appropriate audiences for the project's results, including dissemination to audiences that could boost the later exploitation and sustainability of the project's results. Therefore, the project has identified the audience that will be most interested in the project's results, including audience that will deal with the take-up and wider use of the project's outcomes. In particular, the audience targeted by the dissemination strategy includes: (a) the stakeholders identified as part of the value chain; (b) potential end-users of the legislation and approach; (c) policy makers and (d) local public authorities.

729 / 2,000 characters

Which output does this deliverable contribute to?

It contributes to all outputs: 1.2, 2.1, and 2.2

48 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.1: Dissemination and communication strategy and plan						
D.3.1: Dissemination and Communication Strategy and Plan						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 3 Group of activities 3.2

5.6.1 Group of activities leader

Group of activities leader PP 6 - Cemtec Foundation

A 3.2

5.6.2 Title of the group of activities

Target groups and value propositions

36 / 100 characters

5.6.3 Description of the group of activities

Identification of external target groups
The scope of the project is potentially relevant for several target groups. A specific stakeholder analysis in relation to dissemination will be prepared in the project. The primary target groups will include:
1. Large Industry, among these Viru Keemia Group (EE), Baltic Oli Service (EE)
2. Integrated trading companies like Marubeni Corporation (JP)
3. Terminal operators like HHLA TH Estonia and Liwathon E.O.S
4. Policy decision makers on local and national level, among these involved municipalities, Ministries of Environment, Ministries of Economy
5. Rail Operators, among these Operail OÜ (EE), Rail Baltic (EE; LV, LT), Rail Consult (CZ Loco partner, IT), PESA locomotive (PL), On Rail (NO)
6. General public. We find it utmost important as H2-related topics are unfamiliar and the overall awareness is low often causing thus unacceptance.
For each target group, value propositions will be identified. This will lead to elaboration of key messages, tailored to each target group to maximize the uptake of the message by the given group.

1,087 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 3.2

Title of the deliverable

Recommendations to the target groups

36 / 100 characters

Description of the deliverable

This task will be devoted to raising awareness and sharing recommendations to the target groups about energy transition, especially towards green hydrogen. The deliverable will help the target groups and stakeholders to understand the benefits of the green hydrogen and help to accelerate the new H2 initiatives and projects throughout the region.

347 / 2,000 characters

Which output does this deliverable contribute to?

It contributes to all outputs: 1.2, 2.1, and 2.2

48 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.2: Target groups and value propositions						
D.3.2: Recommendations to the target groups						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 3 Group of activities 3.3

5.6.1 Group of activities leader

Group of activities leader PP 6 - Cemtec Foundation

A 3.3

5.6.2 Title of the group of activities

Communication tools and activities

34 / 100 characters

5.6.3 Description of the group of activities

Based on the action 3.1, including the target group mapping, the value propositions, the position paper on the vision, the impact and the key messages of the project and the strategy for media and channels, a communication plan will be elaborated, mapping the external activities which will be carried out during the project and after to reach the target groups via following means:
A visual identity and a graphic design
Website and social media
The site will be maintained and updated by Hydrogen Valley. The content of the site will be text and visually supported communication to create a dynamic appearance, to be interesting, understandable, and relevant for all target groups.
Participation in conferences and seminars
we will elaborate a poster, leaflets and a deck of slides, presenting the project. The main events we aim to attend include Hannover Messe, Green Hydrogen summit, InnoEnergy events, Shift2Rail Conference, InnoTrans, International Conference of Energy Law, Hydrogen Europe Flagship Event, IUPAC International Conference on Green Chemistry and Trans-European Transport conferences.
Networks and associations
Engagement and interaction with both national and international networks and associations is considered relevant for the dissemination of the project. These networks and associations will be mapped, approached and communicated with during the project and in line with the dissemination strategy. The project partners have a wide personal network and are already involved in a number of associations, among which are European Clean Hydrogen Alliance, Estonian Hydrogen Association, Latvian Hydrogen Association, Hydrogen Denmark, Hydrogen Europe, COST Action 18112 Mechanochemistry for sustainable industry, and The European Sea Ports Organisation.
Other projects, the partners are involved in or monitoring
Interaction with stakeholders in other relevant projects, among these are IPCEI and ECH2A-projects, HFC-Rail, Methanol for Laesoe Shipping Company.
Events, webinars and site visits
At minimum 3 targeted workshops will be arranged to introduce the project. The representatives of relevant target groups will be invited to the Freeport of Riga to present and showcase the work in progress and results. These events stand also as awareness and knowledge.
Press releases and pitches
Relevant media and journalists will be mapped. Press releases and pitching of selected media will be done along with project progress. Among the relevant media to address could be Imeline teadus, Rohegeenius, H2 View, International Journal of Hydrogen Energy, ACS Sustainable Chemistry and Engineering, European Energy and Environmental Law Review, H2-international, H2 Today and Intelligent Transport, Postimees, Päevaleht, Eesti Ekspress, Hydrogen Denmark Newsletter, Ingeniøren, The Journal of World Energy Law & Business, Energy Law Journal, European and Environmental Law Review, Global Energy Law and Sustainability.
2 project videos
Leaflets
Scientific articles

2,986 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 3.3

Title of the deliverable

Communication report

20 / 100 characters

Description of the deliverable

The deliverable will contain the conclusions about the dissemination activities performed and respective suggestions for the future. Relevant dissemination, communication and information materials will be developed, which will be used in the scope of both on-line and face-to-face events for different stakeholders. As part of the task the project will develop on-line training resources (e.g., webinars), while at the same planning face-to-face training workshops.

465 / 2,000 characters

Which output does this deliverable contribute to?

It contributes to all outputs: 1.2, 2.1, and 2.2

48 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.3: Communication tools and activities						
D.3.3: Communication report						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 3 Group of activities 3.4

5.6.1 Group of activities leader

Group of activities leader PP 6 - Cemtec Foundation

A 3.4

5.6.2 Title of the group of activities

Exploitation strategy and plan

30 / 100 characters

5.6.3 Description of the group of activities

To ensure exploitation and sustainability of the project results after the end of the project an exploitation plan will be established coordinated by HV and supported by all the partners. The plan will include an IPR strategy, a data management plan as well as a market analysis to clarify the best route-to-market for the project outputs. The exploitation modalities and channels will be elaborated in the exploitation plan, but the initial list includes:
• Mapping of exploitable results
• Mapping of target groups, relevant for exploitation
• Development of exploitation plan

579 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☑

D 3.4

Title of the deliverable

Exploitation plan

17 / 100 characters

Description of the deliverable

A shared exploitation plan agreed and partners' roles defined for after the project in order to guarantee the sustainability of the project and supporting thus the wide scale uptake of the new green energy solutions.

216 / 2,000 characters

Which output does this deliverable contribute to?

It contributes to all outputs: 1.2, 2.1, and 2.2

48 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.4: Exploitation strategy and plan						
D.3.4: Exploitation plan						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

6. Indicators

Indicators

Output indicators				Result indicators		
Output indicators	**Total target value in number**	**Project outputs**	**Please explain how the solution presented in this output serves the target group(s).**	**Result indicator**	**Total target value in number**	**Please explain how organisations in the target groups within or outside the partnership will take up or upscale each solution.**
RCO 84 – Pilot actions developed jointly and implemented in projects	2	N/A	N/A	**RCR 104 - Solutions taken up or up-scaled by organisations**	3	We hope the outcome 1.2: New H2 legislation for the region will be adopted by "H2-lagging" countries throughout the Baltic Sea Region. The main adopters are the representatives of public sector (national and local authorities like e.g. ministries). The same outcome is related also with setting up the H2 value chains in new locations by infrastructure and service providers (Freeport of Riga from the partnership), launching new H2 pilot projects by SMEs, large enterprises as well as innovation and demonstration projects by research organizations. After having the outcome 1.2 and 2.1 performed and feasibility study carried out, the Port of Tallinn is interested in setting up the whole H2 value chain in their territory (H2 production, storage, multimodal refueling and usage). The interested parties (Consumer Protection and Technical regulatory Authority; Estonian Center for Standardisation and Accreditation) are interested in Outcome 2.2: Certified zero-emission hydrogen locomotive as this complements their fields of activity. The commercial partners Stargate Rail and Stargate Hydrogen Solutions both benefit from all the outcomes as these support their core activities. And the same applies also to the NGOs in and outside the partnership. 1,256 / 2,000 characters
RCO 116 – Jointly developed solutions	3	O.1.2: New H2 legislation for the region	The project proposes a new H2 legislation that will be established in Estonia, piloted in Estonia and Latvia and will be designed in a way that it will be easy to adopt in different countries of the region. The NGOs will be advocating for changes in law, policy, procedure and administrative rules as well as reaching out the respective national authorities dealing with H2-related issues on a national level. The national and public authorities are responsible for adopting the legislation supporting initiation of new H2 projects. The infra and service providers, commercial sector (large enterprises and SMEs) will benefit from a clear legislation and understanding how to deploy H2 and accelerating thus H2 uptake and open up more competitive markets across Europe. 772 / 1,000 characters			
		O.2.1: H2 maritime H2 generator for electricity production from H2 and powering OPS for docked vessels	This outcome will prove the new legislation suitability for setting up new hydrogen infrastructure it in real world operational environment. This is an ideal showcase for other infrastructure and service providers like ports and transport hubs, that are striving towards zero-emission solutions by taking green hydrogen into use. This outcome extends also to other target groups like large enterprises and SMEs (technology providers) who can learn the best practices from this case. 484 / 1,000 characters			

Output indicators	Total target value in number	Project outputs	Please explain how the solution presented in this output serves the target group(s).
		O.2.2: Certified zero-emission hydrogen locomotive	This outcome is important for the commercial sector, large enterprises and SMEs as technology providers and manufacturers. The certification ensures that their product or a piece of equipment is safe and reliable. It is a benchmark for quality, a guidepost leading to reliable manufacturers. Product certification demonstrates companies' commitment to quality and safety. Clear and unambiguous certification processes are necessary for the companies providing hydrogen-related products and or equipment.

504 / 1,000 characters

Output indicators		Result indicators		
Output indicator	Total target value in number	Result indicator	Total target value in number	Please describe what types of organisations are planned to actively participate in the project. Explain how this participation will increase their institutional capacity. These types of organisations should be in line with the target groups you have defined for your project.
RCO 87 - Organisations cooperating across borders	9	PSR 1 - Organisations with increased institutional capacity due to their participation in cooperation activities across borders	22	Project partners and associated organisations

Within the partnership we have the following institutions who will increase their institutional capacity through the cooperation with other target groups within and outside the membership:

Research and higher education partner (LP): Tallinn University of Technology will benefit from cooperating with the whole membership to develop the new legislation.
NGO partners: Estonian Association of Hydrogen Technologies and Green and Smart Technology Cluster will have a chance to represent their interest groups and give expert suggestions to the legislation development.
The commercial partners (ports, technology providers (Stargate Rail and Stargate Hydrogen Solutions) and the SME Hydrogen Valley) will all feed into the legislation development, test the results and spread the outcomes to the wider audience.

Associated Organisation: Ministry of Economic Affairs and Communications is the main authority managing hydrogen topics in Estonia. Eventually the legislation shall be adopted thanks to the cooperation with InterGreen partners.

All these partners will benefit from the cooperation with the non-exhaustive list of institutions and organisations listed below.
The main connecting point is via dissemination activities that are planned in the transfer of solutions WP.

1,278 / 1,500 characters

borders Result indicator	Total target value in number	Please describe what types of organisations are planned to actively participate in the project. Explain how this participation will increase their institutional capacity. These types of organisations should be in line with the target groups you have defined for your project.	
		Other organisations	We have gathered Support Letters from: Estonian Ministry of Environment Consumer Protection and Technical regulatory Authority Estonian Center for Standardisation and Accreditation Local municipality Jõelähtme Parish We have the Port of Hamburg involved in our External Advisory Board to guide the InterGreen partners and provide information about the upcoming trends. We value their participation due to their green hydrogen experience. In addition, we have gained support and expect strong cooperation with the respective Latvian ministries and organisations at the first place as one of the pilots will be conducted there. The project will be introduced to the whole Baltic Sea Region respective authorities and interested stakeholders who are responsible for their national hydrogen policies. Also, we expect to cooperate with other institutions and stakeholders from the Baltic Sea Region that are interested in increasing their capacity to set and achieve social and economic goals, through enhanced hydrogen-related knowledge, skills, and systems. The main route to reach such institutions is via solutions transfer activities planned in work package 3. 1,163 / 1,500 characters

7. Budget

7.0 Preparation costs

Preparation Costs

Would you like to apply for reimbursement of the preparation costs?	Yes

Other EU support of preparatory cost

Did you receive any other EU funds specifically designated to the development of this project application?	No

7.1 Breakdown of planned project expenditure per cost category & per partner

No. & role	Partner name	Partner status	CAT0 - Preparation costs	CAT1 - Staff	CAT2 - Office & administration
1 - LP	Tallinn University of Technology	Active 22/09/2022	2,000.00	901,842.00	135,276.30
2 - PP	Estonian Association of Hydrogen Technologies	Active 22/09/2022	2,000.00	149,640.00	22,446.00
3 - PP	Stargate Rail Ltd	Active 22/09/2022	10,000.00	196,574.00	29,486.10
4 - PP	Stargate Hydrogen Solutions Ltd	Active 22/09/2022	2,000.00	86,408.00	12,961.20
5 - PP	Port of Tallinn	Active 22/09/2022	2,000.00	62,205.00	9,330.75
6 - PP	Cemtec Foundation	Active 22/09/2022	2,000.00	89,685.00	13,452.75
7 - PP	Freeport of Riga Authority	Active 22/09/2022	2,000.00	96,720.00	14,508.00
8 - PP	GREEN AND SMART TECHNOLOGY CLUSTER	Active 22/09/2022	2,000.00	96,096.00	14,414.40
Total			24,000.00	1,679,170.00	251,875.50

No. & role	Partner name	CAT3 - Travel & accommodation	CAT4 - External expertise & services	CAT5 - Equipment	Total partner budget
1 - LP	Tallinn University of Tech	135,276.30	54,000.00	0.00	1,228,394.60
2 - PP	Estonian Association of H	22,446.00	25,000.00	0.00	221,532.00
3 - PP	Stargate Rail Ltd	29,486.10	493,500.00	330,000.00	1,089,046.20
4 - PP	Stargate Hydrogen Soluti	12,961.20	24,000.00	0.00	138,330.40
5 - PP	Port of Tallinn	9,330.75	24,000.00	0.00	106,866.50
6 - PP	Cemtec Foundation	13,452.75	80,000.00	0.00	198,590.50
7 - PP	Freeport of Riga Authorit	14,508.00	118,000.00	855,000.00	1,100,736.00
8 - PP	GREEN AND SMART TE	14,414.40	95,000.00	0.00	221,924.80
Total		251,875.50	913,500.00	1,185,000.00	4,305,421.00

7.1.1 External expertise and services

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
1. Tallinn Universitv	Specialist support	CAT4-PP1-E-0	Legal services for the new legislation 38 / 100 characters	No	1.1 1.2	10,000.00	
1. Tallinn Universitv	Events/meetings	CAT4-PP1-A-0	Costs for dissemination and communication (events and local materials) 70 / 100 characters	No	1.1 1.2 1.3 1.4 2.2 3.1 3.2 3.3 3.4	4,000.00	
2. Estonian Associa	Events/meetings	CAT4-PP2-A-0	Costs for organising dissemination and communication events in Estonia 70 / 100 characters	No	1.1 1.2 1.3 1.4 2.2 3.1 3.2 3.3 3.4	5,000.00	
3. Stargate Rail Ltd	Specialist support	CAT4-PP3-E-0	Certification notified body services. Calculation is based on a price offer. 76 / 100 characters	No	2.2	172,000.00	
3. Stargate Rail Ltd	Specialist support	CAT4-PP3-E-0	Consultancy on certification process (from German and Estonian experts) 71 / 100 characters	No	2.1	46,500.00	
3. Stargate Rail Ltd	Specialist support	CAT4-PP3-E-0	Field test (operational tests for controllers, H2 system, components etc.) 74 / 100 characters	No	2.1	200,000.00	
3. Stargate Rail Ltd	Other	CAT4-PP3-G-0	H2 cost for the field test 26 / 100 characters	No	2.1	50,000.00	
3. Stargate Rail Ltd	Events/meetings	CAT4-PP3-A-0	Costs for organising dissemination and communication events related with zero-emission locomotive 97 / 100 characters	No	1.3 2.1 3.1 3.2 3.3 3.4	5,000.00	
	Total					913,500.00	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
4. Stargate Hydrog	Events/meetings	CAT4-PP4-A-0	Costs for organising dissemination and communication events in Estonia 70 / 100 characters	No	1.2 1.3 2.1 3.1 3.2 3.3 3.4	4,000.00	
5. Port of Tallinn	Events/meetings	CAT4-PP5-A-1	Costs for organising dissemination and communication events in Estonia 70 / 100 characters	No	1.2 1.3 1.4 3.1 3.2 3.3 3.4	4,000.00	
6. Cemtec Foundati	Communication	CAT4-PP6-C-1	Production of video, leaflets & posters. Fees for conferences. Catering etc. for events. Webhosting. 100 / 100 characters	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4	60,000.00	
8. GREEN AND SM	Specialist support	CAT4-PP8-E-1	Feasibility study for green hydrogen possibilities 50 / 100 characters	No	1.5 2.1	75,000.00	
7. Freeport of Riga	Other	CAT4-PP7-G-1	H2 cost for the field test 26 / 100 characters	No	2.1	20,000.00	
7. Freeport of Riga	Events/meetings	CAT4-PP7-A-1	Costs for organising dissemination and communication events in Lavia 68 / 100 characters	No	1.5 2.1 3.1 3.2 3.3 3.4	3,000.00	
7. Freeport of Riga	Other	CAT4-PP7-G-1	Site preparation for the pilot (roads, electrical installations, etc.) 70 / 100 characters	No	1.5 2.1	10,000.00	
	Total					913,500.00	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
7. Freeport of Riga	Specialist support	CAT4-PP7-E-1	Legal services, permitting, risk analysis, engineering proc. etc. 65 / 100 characters	No	1.5 2.1	5,000.00	
7. Freeport of Riga	Specialist support	CAT4-PP7-E-1	External services and expertise for feasibility study 53 / 100 characters	No	1.5	60,000.00	
7. Freeport of Riga	Project management	CAT4-PP7-D-1	Project management related costs 32 / 100 characters	No	N/A	20,000.00	
1. Tallinn University	Project management	CAT4-PP1-D-1	Project management related costs 32 / 100 characters	No	N/A	40,000.00	
2. Estonian Associa	Project management	CAT4-PP2-D-2	Project management related costs 32 / 100 characters	No	N/A	20,000.00	
3. Stargate Rail Ltd	Project management	CAT4-PP3-D-2	Project management related costs 32 / 100 characters	No	N/A	20,000.00	
4. Stargate Hydrog	Project management	CAT4-PP4-D-2	Project management related costs 32 / 100 characters	No	N/A	20,000.00	
5. Port of Tallinn	Project management	CAT4-PP5-D-2	Project management related costs 32 / 100 characters	No	N/A	20,000.00	
6. Cemtec Foundati	Project management	CAT4-PP6-D-2	Project management related costs 32 / 100 characters	No	N/A	20,000.00	
8. GREEN AND SM	Project management	CAT4-PP8-D-2	Project management related costs 32 / 100 characters	No	N/A	20,000.00	
	Total					913,500.00	

7.1.2 Equipment

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value
3. Stargate Rail Ltd	Other specific equip	CAT5-PP3-H-0	mobile refuelling station for field tests for locomotive certification (70 / 100 characters)	No	2.2	180,000.00
7. Freeport of Riga	Other specific equip	CAT5-PP7-H-0	mobile hydrogen storage and electricity production station (59 / 100 characters)	No	2.1	750,000.00
7. Freeport of Riga	Other specific equip	CAT5-PP7-H-0	On-shore power supply system for pilot site (43 / 100 characters)	No	2.1	100,000.00
3. Stargate Rail Ltd	Tools or devices	CAT5-PP3-F-0	Consumables and test devices for locomotive certification (57 / 100 characters)	No	2.2	150,000.00
7. Freeport of Riga	Other specific equip	CAT5-PP7-H-0	Safety and auxiliary equipment (30 / 100 characters)	No	2.1	5,000.00
	Total					1,185,000.00

7.1.3 Infrastructure and works

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value
Please select	Please select	CAT6-PP--01	(0 / 100 characters)	Please select		0.00
	Total					0.00

7.2 Planned project budget per funding source & per partner

No. & role	Partner name	Partner status	Country	Funding source	Co-financing rate [in %]	Total [in EUR]	Programme co-financing [in EUR]	Own contribution [in EUR]	State aid instrument
1-LP	Tallinn University of Technology	Active 22/09/2022	EE	ERDF	80.00 %	1,228,394.60	982,715.68	245,678.92	For each partner, the State aid relevance and applied aid measure are defined in the **State aid section**
2-PP	Estonian Association of Hydrogen Technologies	Active 22/09/2022	EE	ERDF	80.00 %	221,532.00	177,225.60	44,306.40	
3-PP	Stargate Rail Ltd	Active 22/09/2022	EE	ERDF	80.00 %	1,089,046.20	871,236.96	217,809.24	
4-PP	Stargate Hydrogen Solutions Ltd	Active 22/09/2022	EE	ERDF	80.00 %	138,330.40	110,664.32	27,666.08	
5-PP	Port of Tallinn	Active 22/09/2022	EE	ERDF	80.00 %	106,866.50	85,493.20	21,373.30	
6-PP	Cemtec Foundation	Active 22/09/2022	DK	ERDF	80.00 %	198,590.50	158,872.40	39,718.10	
7-PP	Freeport of Riga Authority	Active 22/09/2022	LV	ERDF	80.00 %	1,100,736.00	880,588.80	220,147.20	
8-PP	GREEN AND SMART TECHNOLOGY CLUSTER	Active 22/09/2022	LV	ERDF	80.00 %	221,924.80	177,539.84	44,384.96	
Total ERDF						4,305,421.00	3,444,336.80	861,084.20	
Total						4,305,421.00	3,444,336.80	861,084.20	

7.3 Spending plan per reporting period

	EU partners (ERDF)		Total	
	Total	Programme co-financing	Total	Programme co-financing
Preparation costs	24,000.00	19,200.00	24,000.00	19,200.00
Period 1	600,000.00	480,000.00	600,000.00	480,000.00
Period 2	800,000.00	640,000.00	800,000.00	640,000.00
Period 3	900,000.00	720,000.00	900,000.00	720,000.00
Period 4	850,000.00	680,000.00	850,000.00	680,000.00
Period 5	631,421.00	505,136.80	631,421.00	505,136.80
Period 6	500,000.00	400,000.00	500,000.00	400,000.00
Total	4,305,421.00	3,444,336.80	4,305,421.00	3,444,336.80