

1. Identification

Call

C1

Date of submission

26/04/2022

1.1. Full name of the project

Integrated Baltic Sea Region Hydrogen Economy

45 / 250 characters

1.2. Short name of the project

Baltic-H2-Economy

17 / 20 characters

1.3. Programme priority

3. Climate-neutral societies

1.4. Programme objective

3.3 Smart green mobility

1.6. Project duration

Contracting start

22/09/2022

Contracting end

31/12/2022

Implementation start

01/01/2023

Implementation end

30/06/2025

Duration of implementation phase (months)

30

Closure start

01/07/2025

Closure end

30/09/2025

1.7. Project summary

The "Integrated Baltic Sea Region Hydrogen Economy" project (Baltic-H2-Economy) has the goal to create Hydrogen Valley concepts around carbon intensive areas within the Baltic Sea Region and pathways for their further integration to ensure scale and catalyze an effective cross-border Hydrogen Economy creation. Within the project a Hydrogen Cartridge Technology will be piloted as a potential backbone technology within the region to ensure supply, interoperability and resilience of the system to decarbonize transportation sector at scale.

The project will involve key local public players (ministries, port authorities and port cities municipalities) to create solutions around legal and permitting frameworks to enable introduction of green hydrogen value chains. Absence of the established green hydrogen projects in the region is limiting the knowledge base for the public sector decision makers. Project will enable better understanding of challenges and solutions via experience exchange with regions where hydrogen ecosystems have established first grounds. The project will also engage transport companies and citizens to actively use green and intelligent mobility solutions. This is achieved both by piloting and introducing new technical Hydrogen solutions and creating open and interactive Hydrogen awareness and technology transferring hubs.

1,358 / 1,500 characters

1.8. Summary of the partnership

The project partnership is composed of partners from Estonia, Latvia, Lithuania, Poland and Germany, effectively forming a Hydrogen corridor from Estonia to Germany connecting North-East Europe with Central Europe that is currently the backbone of Hydrogen development.

The consortium houses extensive experience in Hydrogen Technologies, mobility and facilitating the green transition. Furthermore, among the partners the main target group of the "Baltic-H2-Economy" project is represented - carbon intensive industrial areas with crucial need for decarbonization: Riga Free Port and Riga International Airport. Within the operations of these partners the pilot scenarios of Hydrogen Cartridge Technology will be run, as well as positive outcomes further refined and implemented.

In order to prepare and run the pilot scenarios, competency of SMEs and academia project partners is used, closing the triple helix approach. SMEs will provide the technology and run the pilot scenarios in collaboration with the public partners.

Furthermore, the public partners that will facilitate the pilot project have been chosen to represent different areas of mobility. Therefore, an broad perspective of green transition in mobility is available in the consortium. This is namely different mobility application around air transport at Riga International Airport, different applications at port facilities, including waterborne vessels, at Riga Free Port and different public transport application aspects as well.

1,508 / 3,000 characters

1.11. Project Budget Summary

Financial resources [in EUR]		Preparation costs	Planned project budget
ERDF	ERDF co-financing	0.00	2,289,618.42
	Own contribution ERDF	0.00	572,404.65
	ERDF budget	0.00	2,862,023.07
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	2,289,618.42
	Total own contribution	0.00	572,404.65
	Total budget	0.00	2,862,023.07

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	Riga Technical University	Rīgas Tehniskā universitāte	LV	Higher education and research institution	a)	528,898.08 €	Active	22/09/2022
2	PP	Green and Smart Technology Cluster	Zaļo un Viedo Tehnoloģiju Klasteris	LV	Business support organisation	b)	188,628.78 €	Active	22/09/2022
3	PP	Tartu BT Park OÜ	Tartu BT Park OÜ	EE	Business support organisation	a)	220,895.61 €	Active	22/09/2022
4	PP	Freeport of Riga Authority	Rīgas brīvdostas pārvalde	LV	Infrastructure and public service provider	a)	582,285.50 €	Active	22/09/2022
5	PP	Klaipeda State University of Applied Sciences	Klaipėdos valstybinė kolegija	LT	Higher education and research institution	a)	277,076.38 €	Active	22/09/2022
6	PP	Rzeszow Regional Development Agency	Rzeszowska agencja Rozwoju Regionalnego S.A.	PL	Regional public authority	a)	169,902.72 €	Active	22/09/2022
7	PP	SJSC Riga International Airport	VAS "Starptautiskā lidosta "Rīga""	LV	Infrastructure and public service provider	a)	688,628.78 €	Active	22/09/2022
8	PP	Electrify-Auto, Ltd.	Electrify-Auto GmbH	DE	Small and medium enterprise	b)	205,707.22 €	Active	22/09/2022

2.1.2 Associated Organisations

No.	Organisation (English)	Organisation (Original)	Country	Type of Partner
AO 1	Latvian Wind Energy Association	Vēja enerģijas asociācija	LV	Interest group
AO 2	Latvian Association of Electricians and Energy Builders	Latvijas Elektroenerģētiķu un Energobūvnieku asociācija	LV	Interest group
AO 3	Latvian Stevedoring Company Association	Latvijas Stivdorkompāniju asociācija	LV	Interest group
AO 4	The Board of Liepaja Special Economic Zone	Liepajas specialas ekonomiskas zonas pārvalde	LV	Infrastructure and public service provider

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	Rīgas Tehniskā universitāte <small>27 / 250 characters</small>
Organisation in English	Riga Technical University <small>25 / 250 characters</small>
Department in original language	Aeronautikas institūts <small>22 / 250 characters</small>
Department in English	Institute of Aeronautics <small>24 / 250 characters</small>

Partner location and website:

Address	<input type="text" value="Kalku street 1"/> <small>14 / 250 characters</small>	Country	<input type="text" value="Latvia"/>
Postal Code	<input type="text" value="LV - 1658"/> <small>9 / 250 characters</small>	NUTS1 code	<input type="text" value="Latvija"/>
Town	<input type="text" value="Riga"/> <small>4 / 250 characters</small>	NUTS2 code	<input type="text" value="Latvija"/>
Website	<input type="text" value="www.rtu.lv"/> <small>10 / 100 characters</small>	NUTS3 code	<input type="text" value="Rīga"/>

Partner ID:

Organisation ID type	<input type="text" value="Unified registration number (Vienotais reģistrācijas numurs)"/>		
Organisation ID	<input type="text" value="90000068977"/>		
VAT Number Format	<input type="text" value="LV + 11 digits"/>		
VAT Number	<input type="checkbox"/> N/A	<input type="checkbox"/> <input type="text" value="LV90000068977"/> <small>13 / 50 characters</small>	
PIC	<input type="text" value="999920718"/> <small>9 / 9 characters</small>		

Partner type:

Legal status	<input type="text" value="a) Public"/>		
Type of partner	<input type="text" value="Higher education and research instituti"/>	<input type="text" value="University faculty, college, research institution, RTD facility, research cluster, etc."/>	
Sector (NACE)	<input type="text" value="85.42 - Tertiary education"/>		

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	<input type="text" value="No"/>
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Role of the partner organisation in this project:

<input type="text" value="xx"/> <small>2 / 1,000 characters</small>
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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 MAJS 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	<input type="text" value="Project Partner"/>		
Partner Status	<input type="text" value="Active"/>		
Active from	<input type="text" value="22/09/2022"/>	Inactive from	<input type="text"/>

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

Zaļo un Viedo Tehnoloģiju Klasteris

35 / 250 characters

Department in English

Green and Smart Technology Cluster

34 / 250 characters

Partner location and website:**Address**

Strautu iela 4

15 / 250 characters

Country

Latvia

Postal Code

LV-3401

7 / 250 characters

NUTS1 code

Latvija

Town

Liepāja

7 / 250 characters

NUTS2 code

Latvija

Website

http://www.greentechlatvia.eu/

30 / 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 NumberN/A LV40008160776

13 / 50 characters

PIC

950538600

9 / 9 characters

Partner type:**Legal status**

b) Private

Type of partner

Business support organisation

Chamber of commerce, chamber of trade and crafts, business incubator or innovation centre, business clusters, 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	01/02/2020	–	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:

The Green and Smart Technology cluster operates in the green-tech/hydrogen sectors and has created the "Hydrogen Alliance Latvia" platform. This network and collaboration opportunities in the region and sector are important for successful project implementation. The Cluster has experience in knowledge transfer to support the successful implementation of international projects. Furthermore as project partner it will ensure successful project output dissemination and establishing of Hydrogen excellence hubs that further promote the switch towards a Hydrogen economy within the region as a sustainable way of reaching climate neutrality.

642 / 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	Tartu BT Park OÜ	16 / 250 characters
Organisation in English	Tartu BT Park OÜ	16 / 250 characters
Department in original language	N/A	3 / 250 characters
Department in English	N/A	3 / 250 characters

Partner location and website:

Address	Tiigi 61b	9 / 250 characters	Country	Estonia
Postal Code	50410	5 / 250 characters	NUTS1 code	Eesti
Town	Tartu	5 / 250 characters	NUTS2 code	Eesti
Website	https://www.vesinikuklaster.ee/	31 / 100 characters	NUTS3 code	Lõuna-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)	
Organisation ID	14217720	
VAT Number Format	EE + 9 digits	
VAT Number	N/A <input type="checkbox"/> EE101960829	11 / 50 characters
PIC	908015255	9 / 9 characters

Partner type:

Legal status	a) Public	
Type of partner	Business support organisation	Chamber of commerce, chamber of trade and crafts, business incubator or innovation centre, business clusters, 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?

Role of the partner organisation in this project:

With the project the Tartu BT Park OÜ as business support organization represents a wider network and collaboration platform – Estonian Hydrogen Cluster. The Cluster operates in green-tech/hydrogen sectors and house a broad network both in the BSR and beyond. This network and collaboration opportunities in the region and sector are important for successful project implementation. The Hydrogen Cluster has experience in mapping of the Hydrogen ecosystems in Estonia and will act actively in knowledge transfer to support the successful implementation of this Work package. Furthermore as project partner it will ensure successful project output dissemination and establishing of Hydrogen excellence hubs that further promote the switch towards a Hydrogen economy within the region as a sustainable way of reaching climate neutrality.

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 4

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

Partner name:

Organisation in original language	Rīgas brīvostas pārvalde	28 / 250 characters
Organisation in English	Freeport of Riga Authority	26 / 250 characters
Department in original language	Rīgas brīvostas pārvalde	28 / 250 characters
Department in English	Freeport of Riga Authority	26 / 250 characters

Partner location and website:

Address	<input type="text" value="Kalpaka blvd. 12"/> <small>24 / 250 characters</small>	Country	<input type="text" value="Latvia"/>
Postal Code	<input type="text" value="LV-1010"/> <small>7 / 250 characters</small>	NUTS1 code	<input type="text" value="Latvija"/>
Town	<input type="text" value="Riga"/> <small>4 / 250 characters</small>	NUTS2 code	<input type="text" value="Latvija"/>
Website	<input type="text" value="ww.rop.lv"/> <small>17 / 100 characters</small>	NUTS3 code	<input type="text" value="Rīga"/>

Partner ID:

Organisation ID type	<input type="text" value="Unified registration number (Vienotais reģistrācijas numurs)"/>
Organisation ID	<input type="text" value="90000512408"/>
VAT Number Format	<input type="text" value="LV + 11 digits"/>
VAT Number	<input type="checkbox"/> N/A <input type="checkbox"/> <input type="text" value="LV90000512408"/> <small>13 / 50 characters</small>
PIC	<input type="text" value="896793422"/> <small>9 / 9 characters</small>

Partner type:

Legal status	<input type="text" value="a) Public"/>
Type of partner	<input type="text" value="Infrastructure and public service provi"/> <input type="text" value="Public transport, utility company (water supply, electricity supply, sewage, gas, waste collection, airport, port, railway, etc.)"/>
Sector (NACE)	<input type="text" value="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?	<input type="text" value="Yes"/>
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Role of the partner organisation in this project:

<input type="text" value="Additionally to participating in all group activities, the partner is responsible for piloting the Hydrogen Technology at their premises and operations and establish the defined pilot project scenarios."/>

202 / 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	<input type="text" value="Project Partner"/>		
Partner Status	<input type="text" value="Active"/>		
Active from	<input type="text" value="22/09/2022"/>	Inactive from	<input type="text"/>

Partner name:

Organisation in original language	<input type="text" value="Klaipėdos valstybinė kolegija"/> <small>36 / 250 characters</small>
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Organisation in English	Klaipeda State University of Applied Sciences	45 / 250 characters
Department in original language	Transporto inžinerijos katedra	30 / 250 characters
Department in English	Transport Engineering department	32 / 250 characters

Partner location and website:

Address	Jaunystes g. 1	14 / 250 characters	Country	Lithuania
Postal Code	LT-91274	8 / 250 characters	NUTS1 code	Lietuva
Town	Klaipėda	8 / 250 characters	NUTS2 code	Vidurio ir vakarų Lietuvos regionas
Website	www.kvk.lt	10 / 100 characters	NUTS3 code	Klaipėdos apskritis

Partner ID:

Organisation ID type	Legal person's code (Juridinio asmens kodas)		
Organisation ID	111968056		
VAT Number Format	LT + 9 digits		
VAT Number	N/A <input type="checkbox"/>	LT119680515	11 / 50 characters
PIC	949665503		
			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)	85.42 - Tertiary education		

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	No
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Role of the partner organisation in this project:

Additionally to group activities and conceptualizing the H2 Valley and regional strategies, the partner will implement H2 excellency hub in the Lithuanian region. Furthermore, the partner will investigate academic-training program for e-mobility/hydrogen specialists-engineers, developed by Transport engineering dpt. Based on the experience gathered during the pilot testing. It will be based on existing academic program for automotive engineers, will be improved by adding important chapters of elector-mobility/hydrogen knowledge. The pilot testing gives an opportunity to have qualified staff able to provide qualified maintenance and repair services for modern equipment, as well as rising of society awareness about positive aspects of the project results. Modernized program, mentioned above, is impossible without technologically equipped training-research laboratory where part of education-training activities is supposed to take place.

948 / 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 MAJS for a plausibility check on the State aid relevance. Does the partner want to do this?

Yes No

2.2 Project Partner Details - Partner 6

LP/PP	<input type="text" value="Project Partner"/>		
Partner Status	<input type="text" value="Active"/>		
	Active from	<input type="text" value="22/09/2022"/>	Inactive from
		<input type="text"/>	<input type="text"/>

Partner name:

Organisation in original language	<input type="text" value="Rzeszowska agencja Rozwoju Regionalnego S.A."/>		
			<small>44 / 250 characters</small>
Organisation in English	<input type="text" value="Rzeszow Regional Development Agency"/>		
			<small>35 / 250 characters</small>
Department in original language	<input type="text" value="Dział Projektów i Programów Krajowych i Międzynarodowych"/>		
			<small>57 / 250 characters</small>
Department in English	<input type="text" value="Department of National and International Projects and Programs"/>		
			<small>62 / 250 characters</small>

Partner location and website:

Address	<input type="text" value="Szopena Street 51"/>	Country	<input type="text" value="Poland"/>
	<small>17 / 250 characters</small>		
Postal Code	<input type="text" value="35-959"/>	NUTS1 code	<input type="text" value="Makroregion wschodni"/>
	<small>6 / 250 characters</small>		
Town	<input type="text" value="Rzeszów"/>	NUTS2 code	<input type="text" value="Podkarpackie"/>
	<small>7 / 250 characters</small>		
Website	<input type="text" value="www.rarr.rzeszow.pl"/>	NUTS3 code	<input type="text" value="Rzeszowski"/>
	<small>19 / 100 characters</small>		

Partner ID:

Organisation ID type	<input type="text" value="Tax identification number (NIP)"/>		
Organisation ID	<input type="text" value="8130010538"/>		
VAT Number Format	<input type="text" value="PL + 10 digits"/>		
VAT Number	<input type="checkbox"/> N/A	<input type="text" value="PL8130010538"/>	<small>12 / 50 characters</small>
PIC	<input type="text" value="999767361"/>		
			<small>9 / 9 characters</small>

Partner type:

Legal status	<input type="text" value="a) Public"/>		
Type of partner	<input type="text" value="Regional public authority"/>	<input type="text" value="Regional council, etc."/>	

Sector (NACE)

Partner financial data:

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

Role of the partner organisation in this project:

Rzeszow Regional Development Agency is the largest institution supporting regional development, including entrepreneurship development of the Podkarpackie region. RRDA is a member of clusters, has research laboratories, technology and entrepreneurship incubators, manages the Podkarpackie Science and Technology Park AEROPOLIS, awards the Innovator of the Year and Junior Innovator of the Year prizes. As a partner of BSR-H2-ECONOMY project RRDA will work for the development of Podkarpackie Hydrogen Valley - a cluster taking advantage of region's potential in modern technologies and the usage of hydrogen in transport and mobility. Furthermore, through the project activities RRDA will be promoting hydrogen technologies and raising local authorities awareness in this regard. Regional stakeholder meetings will serve a project dissemination events.

853 / 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
Partner Status
Active from **Inactive from**

Partner name:

Organisation in original language 42 / 250 characters
Organisation in English 40 / 250 characters
Department in original language 64 / 250 characters
Department in English 49 / 250 characters

Partner location and website:

Address 26 / 250 characters **Country**
Postal Code 14 / 250 characters **NUTS1 code**
Town 14 / 250 characters **NUTS2 code**
Website 37 / 100 characters **NUTS3 code**

Partner ID:

Organisation ID type	Unified registration number (Vienotais reģistrācijas numurs)	
Organisation ID	40003028055	
VAT Number Format	LV + 11 digits	
VAT Number	N/A <input type="checkbox"/> LV40003028055	<small>13 / 50 characters</small>
PIC	951790385	<small>9 / 9 characters</small>

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)	52.23 - Service activities incidental to air transportation	

Partner financial data:

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

Financial data	Reference period	01/01/2021	–	31/12/2021
	Staff headcount [in annual work units (AWU)]			1,045.0
	Employees [in AWU]			1,045.0
	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]			31,768,910.00
	Annual balance sheet total [in EUR]			173,595,028.00
	Operating profit [in EUR]			-3,126,152.00

Role of the partner organisation in this project:

Additionally to participating in all group activities, the partner is responsible for piloting the Hydrogen Technology at their premises and operations and establish the defined pilot project scenarios. The Riga International Airport will investigate the H2 mobility solution implementation in the Airport infrastructure.

321 / 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	Electrify-Auto GmbH	19 / 250 characters
Organisation in English	Electrify-Auto, Ltd.	20 / 250 characters
Department in original language	Electrify-Auto GmbH	19 / 250 characters
Department in English	Electrify-Auto, Ltd.	20 / 250 characters

Partner location and website:

Address	Bouchéstraße 12 Halle 20	24 / 250 characters	Country	Germany
Postal Code	12435	5 / 250 characters	NUTS1 code	Berlin
Town	Berlin	6 / 250 characters	NUTS2 code	Berlin
Website	http://motionlab.berlin/	24 / 100 characters	NUTS3 code	Berlin

Partner ID:

Organisation ID type	Company registration number (Handelsregisternummer)			
Organisation ID	HRB19741	8 / 50 characters		
VAT Number Format	DE + 9 digits			
VAT Number	N/A <input checked="" type="checkbox"/>	0 / 50 characters		
PIC				0 / 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)	29.10 - Manufacture of motor vehicles		

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Yes
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Financial data	Reference period	01/01/2022	–	26/04/2022
	Staff headcount [in annual work units (AWU)]			
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]				0.00
Annual balance sheet total [in EUR]				0.00
Operating profit [in EUR]				0.00

Role of the partner organisation in this project:

The partner will provide technical expertise and technology competency about Hydrogen Cartridges and in collaboration with university partners prepare the pilot project scenarios and introduce these in the pilot project facilitator premises. Electrify Auto will co-lead the WP2 together with Riga Technical University. Electrify-Auto will finalise the hydrogen fueled passenger minibus prototype, integrate it with the cartridge refilling system and consult the public sector partners, i.e. the Freeport of Riga as well as Riga International Airport on the launch of hydrogen-based specialized transport that would make use of the cartridge filling system. Electrify Auto will evaluate the proposed technologies and consult on necessary adjustments in the launch of the technology.

782 / 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	Vēja enerģijas asociācija		25 / 250 characters
Organisation in English	Latvian Wind Energy Association		31 / 250 characters
Department in original language	N/A		3 / 250 characters
Department in English	N/A		3 / 250 characters
Legal status	b) Private		
Type of associated organisation	Interest group	Trade union, foundation, charity, voluntary association, club, etc. other than NGOs	

Associated organisation location and website:

Address	Kaļķu iela 7	12 / 250 characters	Country	Latvia
Postal Code	LV-1050	7 / 250 characters		
Town	Rīga	4 / 250 characters		
Website	https://wea.lv/en/			18 / 100 characters

Role of the associated organisation in this project:

Latvian Wind Energy Association is the voice of the growing wind industry in Latvia. As trade association advocates for and supports the industry through an active communication with the decision makers on a national level, stakeholders and public. Association facilitates creating a suitable legal framework for wind business in Latvia. Association has extensive cross-border collaboration network with other wind / renewable energy associations in BSR. Green hydrogen production is closely linked to the availability of well established renewable energy sources. Collaboration with association will help to map RES development needs and pathways associated with renewable energy supply for green Hydrogen production in H2 valleys. Association has supported this project with Letter of Support.

796 / 1,000 characters

2.3 Associated Organisation Details - AO 2

Associated organisation name and type:

Organisation in original language	Latvijas Elektroenerģētiķu un Energobūvnieku asociācija		55 / 250 characters
Organisation in English	Latvian Association of Electricians and Energy Builders		55 / 250 characters
Department in original language	N/A		3 / 250 characters
Department in English	N/A		3 / 250 characters
Legal status	b) Private		
Type of associated organisation	Interest group	Trade union, foundation, charity, voluntary association, club, etc. other than NGOs	

Associated organisation location and website:

Address	Šmerļa iela 1	13 / 250 characters	Country	Latvia
Postal Code	LV-1006	7 / 250 characters		
Town	Riga	4 / 250 characters		
Website	https://www.bleea.lv/			21 / 100 characters

Role of the associated organisation in this project:

Latvian Association of Electricians and Energy Builders is trade association uniting specialists, organizations and companies working in power supply building and maintenance industry. Association is supporting and promoting the development of power engineering and energy construction sector according to the latest world standards and policies, ensuring the upkeeping of the knowledge and certification of the industry specialists. Renewable energy and green hydrogen production technologies has brought a new challenges for the preparation and enhancing knowledge of the power engineers, electricians and builder in these energy sectors. Therefore Association is interested in the collaboration and learning from the Interreg project activities, particularly in areas of standards, codes and legislation update. Association has supported this project with Letter of Support.

877 / 1,000 characters

2.3 Associated Organisation Details - AO 3

Associated organisation name and type:

Organisation in original language	Latvijas Stivdorkompāniju asociācija		<small>37 / 250 characters</small>
Organisation in English	Latvian Stevedoring Company Association		<small>39 / 250 characters</small>
Department in original language	N/A		<small>3 / 250 characters</small>
Department in English	N/A		<small>3 / 250 characters</small>
Legal status	b) Private		
Type of associated organisation	Interest group	Trade union, foundation, charity, voluntary association, club, etc. other than NGOs	

Associated organisation location and website:

Address	Uriekstes iela 32	<small>17 / 250 characters</small>	Country	Latvia
Postal Code	LV-1005	<small>7 / 250 characters</small>		
Town	Riga	<small>4 / 250 characters</small>		
Website	www.facebook.com/Latvijas-Stivdorkomp%C4%81niju-asoci%C4%81cija-101721325736863			
		<small>80 / 100 characters</small>		

Role of the associated organisation in this project:

Latvian Stevedoring Company association as an umbrella organization unites Stevedoring associations of the three largest Latvian ports (Riga, Ventspils and Liepaja). Among the associated members are represented Freeports and Special Economic Zone Authorities, Railway companies and other representatives of logistics and port business. Among association objectives are active participation of the port development strategy which foresees facilitating green transition steps and working towards renewable energy hub creation at the freeport and special economic zone territories. Association therefore supports activities in H2 ecosystem and valleys development area. Association has supported this project with Letter of Support.

729 / 1,000 characters

2.3 Associated Organisation Details - AO 4

Associated organisation name and type:

Organisation in original language	Liepajas specialas ekonomiskas zonas pārvalde		45 / 250 characters
Organisation in English	The Board of Liepaja Special Economic Zone		42 / 250 characters
Department in original language	N/A		3 / 250 characters
Department in English	N/A		3 / 250 characters
Legal status	a) Public		
Type of associated organisation	Infrastructure and public service provi	Public transport, utility company (water supply, electricity supply, sewage, gas, waste collection, airport, port, railway, etc.)	

Associated organisation location and website:

Address	Feniksa iela 4	14 / 250 characters	Country	Latvia
Postal Code	LV-3401	7 / 250 characters		
Town	Liepaja	7 / 250 characters		
Website	www://liepaja-sez.lv/en			23 / 100 characters

Role of the associated organisation in this project:

The Board of Liepaja Special Economic Zone is the supreme collective institution for supervision and management of the Liepaja SEZ. Liepaja SEZ is governing the port of Liepaja operations. Manufacturing, the port, comprehensive railway network and the international airport are the cornerstones of Liepaja's industrial development. As large transport hub with extensive port operations Liepaja SEZ is interested in wroking towards decarbonization of its operations and therefore are supporting the activities of this Interreg project. Liepaja SEZ has signed Letter of Support.

576 / 1,000 characters

3. Relevance

3.1 Context and challenge

The European Union has set ambitious targets to reduce GHG emissions by 55% until 2020 and reach climate-neutrality by 2050. This energy transition faces challenges, as significant amounts of renewable energy must be installed and integrated, while securing the supply and resilience of the system is demanding. Energy end-use sectors, such as transport, must be decarbonized at scale.

Hydrogen is a versatile, clean, and safe energy carrier that can be used as fuel for mobility, power and heating or in industry as feedstock. It can be produced from (renewable) electricity and from carbon-abated fossil fuels. Baltic Sea Region has potential and ambitions to scale Renewable Energy generation to reach climate goals and most recently to rapidly enhance energy independence from fossil energy carriers. Intermittent nature of renewable energy can be solved by the introduction of Hydrogen as energy carrier. Hydrogen is also instrumental for production of low and zero carbon e-fuels and biofuels which can foster faster decarbonization of the transport sector including such hard to abate segments as Heavy transportation, Aviation, Maritime transport. However, to roll-out commercial Hydrogen use, ecosystem with demand and supply have to be formed and most importantly regionally integrated to reach scale and economic balance. Development of locally fit Hydrogen valley concepts will enable to create feasible and bankable roadmaps for practical implementation and further inter-connectivity to lay the foundation of Hydrogen Economies in the Baltic Sea Region.

1,569 / 2,000 characters

3.2 Transnational value of the project

The region of Baltic Countries and Poland lacks well established green hydrogen projects. Lack of proximity to such projects serves as a limiting factor for knowledge and awareness of the benefits these technologies can bring for the decarbonization of transport and other sectors of the economy. Joint regional collaboration and experience exchange with country (Germany) which has advanced in the area of green Hydrogen adaptation will speed up energy transition towards wider Renewable Energy production and adaptation of green Hydrogen as energy carriers serving mobility, heat, power and industrial needs.

612 / 2,000 characters

3.3 Target groups

Target group	Sector and geographical coverage	Its role and needs
<div data-bbox="44 1444 400 1473" data-label="Text"> <p>Business support organisation</p> </div>	<div data-bbox="419 1205 954 1400" data-label="Text"> <p>With the project the business support organizations from Latvia and Estonia represent green technologies and specifically Hydrogen technologies network and collaboration platforms. The organizations operate in green-tech/hydrogen sectors and house a broad network both in the BSR and beyond. This network and collaboration opportunities in the region and sector are important for successful project implementation.</p> </div> <div data-bbox="837 1473 954 1496" data-label="Text"> <p>418 / 500 characters</p> </div>	<div data-bbox="970 1099 1501 1480" data-label="Text"> <p>The business support organizations are important stakeholders that support the project are responsible for successful implementation of Work Package 1 that includes full mapping of the Hydrogen ecosystems in Estonia, Latvia and Estonia. These partner organization have a wide reach and visibility of the stakeholders operating in the sector and can cover and execute the activities properly and in a timely manner. Furthermore, the Estonian Hydrogen Cluster has experience in these type of activities and will act actively in knowledge transfer to support the successful implementation of this Work package. Furthermore, these partners ensure successful project output dissemination and establishing of Hydrogen excellence hubs that further promote the switch towards a Hydrogen economy within the region as a sustainable way of reaching climate neutrality.</p> </div> <div data-bbox="1377 1512 1501 1534" data-label="Text"> <p>859 / 1,000 characters</p> </div>

Target group	Sector and geographical coverage	Its role and needs
<p>Regional public authority</p>	<p>The project includes regional public authority from Poland. This link is an important part of the consortium as it connects the Baltic Hydrogen ecosystems further to Poland and Central Europe, effectively extending the consortium geographical coverage. Furthermore, the authority includes clusters, research laboratories, technology and entrepreneurship incubators and science parks extending the sectoral reach of the consortium.</p> <p style="text-align: right;">431 / 500 characters</p>	<p>The effective role is to connect the regions and effectively implement the Baltic Sea Region strategy to in regard to PA Energy Action 3: Baltic synchronization and PA Transport Action 1: Improve connectivity of the regions. Furthermore, since the Polish region has already implemented development towards Hydrogen Valleys, it is important to transfer existing knowledge and development to the project. Furthermore, these partners ensure successful project output dissemination and establishing of Hydrogen excellence hubs that further promote the switch towards a Hydrogen economy within the region as a sustainable way of reaching climate neutrality.</p> <p style="text-align: right;">654 / 1,000 characters</p>
<p>Higher education and research instituti</p>	<p>University partners from Latvia and Lithuania are part of the consortium in order to facilitate innovation competency and academic background to the project. Since the project operates in energy and innovation, competency in R&D and innovation is instrumental.</p> <p style="text-align: right;">260 / 500 characters</p>	<p>The university partners actively work towards implementing the pilot scenarios and collaborate within the consortium to ensure safe and successful implementation of the technology. Furthermore, these partners ensure successful project output dissemination and establishing of Hydrogen excellence hubs that further promote the switch towards a Hydrogen economy within the region as a sustainable way of reaching climate neutrality. Additionally, the university partners establish a concept of educational courses to ensure educational foundation to prepare specialists for a Hydrogen Economy in the future.</p> <p style="text-align: right;">605 / 1,000 characters</p>
<p>Small and medium enterprise</p>	<p>SME partners ensure the technological competency and provide input and equipment for implementing successful pilot scenarios. The SME partner is from Germany closing the regional corridor of partners and providing best practices from Germany for testing and piloting.</p> <p style="text-align: right;">267 / 500 characters</p>	<p>The SME partners are experts in Hydrogen technology and provide the foundation for pilot projects. The SME partners in collaboration with university partners are to set up the pilot cases within public authorities to test and pilot hydrogen applications to promote and accelerate hydrogen introduction in operations in the Baltic Sea Region.</p> <p style="text-align: right;">341 / 1,000 characters</p>
<p>Infrastructure and public service provid</p>	<p>The infrastructure and public service providers are covered in Latvia and Lithuania and are carbon intensive operations that form the center piece of the green transition and require a shift in operations and energy. This target group covers port, airport and transport infrastructure.</p> <p style="text-align: right;">285 / 500 characters</p>	<p>Within the project these stakeholders will implement the pilot scenarios within their infrastructure and operations and both transition towards Hydrogen usage and test new Hydrogen application within their operations. In collaboration with university partners and SME partner the target group will implement main activities within Work Package 2.</p> <p style="text-align: right;">346 / 1,000 characters</p>

3.4 Project objective

Your project objective should contribute to:

Smart green mobility

The Baltic-H2-Economy project directly supports the programme objective to ensure the smooth movement of people and goods in and across urban and rural areas while saving resources by increasing efficiency, integrating different transport modes and accelerating digitization. In order to facilitate this objective, the project follows the Green Deal priority of transitioning to a Hydrogen Economy. This is done by first helping to tackle the H2 up-scaling and commercialization by conceptualization and introduction of Hydrogen Valleys. Hydrogen Valleys serve as an ecosystem, pooling stakeholders to solve the demand/supply and technology introduction problem that Hydrogen is mostly facing. Additionally, the project puts these Hydrogen Valleys in cross-boarder context between partner countries Estonia, Latvia, Lithuania, Poland and Germany, in order to establish a H2 Economy and Hydrogen Valley corridor that is interlinked. Secondly, the project pilots H2 Technology at Public, carbon intensive, industries - port facilities, airport facilities and transport. Within these pilots (that are implemented in context of the established Hydrogen Valleys concepts) a H2 Cartridge technology is tested in different use cases. These pilots allow the piloting stakeholders both to enter the H2 "sector" and test H2 scenarios within their infrastructure and business model. These scenarios are set-up with collaboration of University and SME partners and additionally, during this step, educational course material is established to create education basis at universities that can prepare specialists for a future H2 Economy. Thirdly, the project disseminates the H2 Valley concepts and roadmaps, piloted H2 technology and pilot results and higher education course materials via it's partners and partner networks, and also create H2 excellence hubs that remain after the project in order to promote, foster and accelerate a transition to smart and green mobility with Hydrogen.

1,978 / 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 Ship

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

The Baltic-H2-Economy project operates on several levels of the multi-modal mobility and transport sector. One of these sectors is PA Ship that aims to minimize ship-based pollution, while maximizing the positive impact of maritime transport on the region. With the project's activities with and within the Riga Free Port, the project promotes the objective of creating infrastructure for alternative fuels (Hydrogen) in the Baltic Sea region, as well as supporting measures that reduce emissions from ships operating in the Baltic Sea. This is achieved by piloting Hydrogen Cartridge Technology piloted on waterborne vessels as part of the project pilot project activities. The project addresses Action 2: Support research on emerging thematic challenges related to clean shipping and its impact on the environment and wildlife in the Baltic Sea and Action 3: Support development of shore-side facilities to enhance clean shipping measures including infrastructure for alternative fuels.

993 / 1,500 characters

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

The Baltic-H2-Economy project supports objectives of PA Energy, as transitioning to clean and sustainable energy. The project supports this target with up-taking new Hydrogen energy infrastructure and introducing opportunity for renewable energy with green Hydrogen. The project addresses in PA Energy Action 1: Streamlining efforts on energy efficiency in the region by deepening regional cooperation by following an interlinked approach to H2 Valleys in the region to promote establishing a H2 Economy in the region, which also addresses Action 3: Baltic synchronization. Furthermore Action 4: Increasing the share of renewable energy including marine renewable energy by establishing pilot scenarios in the Riga Free Port area with focus on using renewable energy in marine applications.

Within PA Transport the project supports improvements in facilitating a sustainable and efficient transport system in the Baltic Sea Region. The project addresses in PA Transport Action 1: Improve connectivity of the regions and cooperation with third countries by establishing interlinked H2 Valley concepts, Action 2: Development of measures towards climate-neutral and zero pollution transport by introducing Hydrogen technologies in carbon intensive sectors and areas, as well as Action 3: Facilitate innovative technologies & solutions in the Baltic Sea region, by introducing a H2 Cartridge technology that can form a back-bone technology in H2 applications and usage in the region.

1,477 / 1,500 characters

3.6 Other political and strategic background of the project

Strategic documents

With the Green Deal, the EU moves away from its dependency on fossil fuel, and H2 will play a key role in our future energy systems, and for delivering on the aim set out in the Green Deal of achieving carbon-neutrality in the EU by 2050. Many experts are forecasting that H2 will be at the very heart of this transition. But the first question is what form and applications of hydrogen is best suited to realize this ambition. This project will focus and lay a basis on these issues in the BSR.

497 / 500 characters

One of the most relevant goals of the EU Hydrogen Strategy is the build-up of additional hydrogen production capacity (i.e. building electrolyzers). The EU Hydrogen Strategy targets require a very rapid scale up in electrolyser production capacity. The Baltic-H2-Economy project will directly support these targets by establishing detailed and integrated H2 Valleys in the Baltic Sea Region, providing a road-map and understanding for swifter roll-out of both H2 production capacity and demand.

494 / 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
<p>Pre-feasibility study for the conversion of a minibus from diesel to hydrogen power source (No. VP-V-2021/11)</p> <p>109 / 200 characters</p>	<p>Innovation Voucher Program (Latvian Investment and Development Agency)</p> <p>70 / 200 characters</p>	<p>In 2021 the sister company of Electrify-Auto, i.e. SIA eMobility accomplished the pre-feasibility study for the conversion of the existing electric passenger minibus prototype into a hydrogen powered passenger minibus. The calculations were later used by the company, which together with Electrify-Auto GmbH in Germany created the feasibility study and are now proceeding with the common prototype construction from the own funds. The prototype will be finalized and launched within the proposed project, as well as integrated with the cartridge charging system.</p> <p>563 / 1,000 characters</p>
<p>Energy saving through "Smart Living" solutions</p> <p>46 / 200 characters</p>	<p>The total sum of project is 386 536.41 EUR, of which 328 555.94 EUR is funded by ERDF.</p> <p>86 / 200 characters</p>	<p>Smart Living is a new Estonia-Latvia programme project and main objectives are aimed to promote the concept of Smart Living. With this project we will raise public awareness about environmentally friendly lifestyle and smart use of energy resources in Latvia and Estonia, combining knowledge and competence of organization in both countries. The project focuses directly on informing Latvian and Estonian societies on the possibilities to save energy resources, as well as addressing Estonian and Latvian real managers regarding the use of renewable energy resources.</p> <p>567 / 1,000 characters</p>
<p>BEE Lab to boost entrepreneurship</p> <p>33 / 200 characters</p>	<p>The total sum of project is 586 185.76 EUR, of which 498 257.88 EUR is funded by ERDF.</p> <p>86 / 200 characters</p>	<p>BEE Lab (Project No: LLI-157) is Interreg V-A Latvia Lithuania Programme project "Boost regional Entrepreneurship by Enabling cross border cooperation" which aims to promote entrepreneurship in Rietavas, Talsi, Saldus, Kuldiga and Liepaja municipalities enabling an exchange of good practices and developing a network of skilled business support actors in Latvia and Lithuania.</p> <p>377 / 1,000 characters</p>
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3.10 Horizontal principles

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

4. Management

Allocated budget

15%

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 project will implement and follow the "waterfall" project management methodology, as the target is set and the project structure is planned and defined. In order to keep regular progress reporting and precise execution of tasks, the consortium partners will meet on a regular basis at partner meetings - at least once per month. Executive decisions critical to project execution are resolved within the steering committee, which consists of one representative per project partner.

484 / 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.

All partners will follow guidelines set on EU, national and organizational level to ensure proper and economic implementation of project activities and procurement tasks. In case of specific questions about equipment necessary, external reputable consultants regarding Hydrogen technology will be involved to ensure correct and proper specifications and procurement. Furthermore financial experts will be used if necessary.

425 / 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.

The project partners will inform all target groups and beyond about project activities and actively share and disseminate the project progress and results to any interested stakeholders. Furthermore the partners will implement events and also use social media to further promote both the project as well as decarbonisation and hydrogen importance to reach Green Deal objectives.

378 / 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										
	<table border="1"> <thead> <tr> <th>Number</th> <th>Group of Activity Name</th> </tr> </thead> <tbody> <tr> <td>1.1</td> <td>Full mapping of H2 ecosystem and national, regional needs and pain-points in regard to H2 Valleys</td> </tr> <tr> <td>1.2</td> <td>Hydrogen Valley concept and strategy and integrated BSR H2 Economy concept strategy development</td> </tr> <tr> <td>1.3</td> <td>Technology pilot scenario development and finalization based on established concepts and strategies</td> </tr> </tbody> </table>	Number	Group of Activity Name	1.1	Full mapping of H2 ecosystem and national, regional needs and pain-points in regard to H2 Valleys	1.2	Hydrogen Valley concept and strategy and integrated BSR H2 Economy concept strategy development	1.3	Technology pilot scenario development and finalization based on established concepts and strategies		
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2	WP2 Piloting and evaluating solutions										
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3	WP3 Transferring solutions										
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3.3	Technology transfer to project partners and other stakeholders										

Work plan overview

	Period: 1	2	3	4	5	Leader
WP.1: WP1 Preparing solutions						PP2
A.1.1: Full mapping of H2 ecosystem and national, regional needs and pain-points in regard to H2 Valleys						PP3
D.1.1: Hydrogen ecosystem mapping report	D					PP3
A.1.2: Hydrogen Valley concept and strategy and integrated BSR H2 Economy concept strategy development						PP3
O.1.2: H2 Valley concepts and strategy	O					PP3
A.1.3: Technology pilot scenario development and finalization based on established concepts and strategies						PP1
D.1.3: Pilot project scenarios	D					PP1
WP.2: WP2 Piloting and evaluating solutions						PP1
A.2.1: Pilot project set-up, preparation and procurement based on developed pilot project scenarios						PP1
D.2.1: Pilot project preparation report		D				PP1
A.2.2: Implementation of Hydrogen Cartridge technology pilot scenario at Freeport of Riga						PP4
O.2.2: Pilot vessel retrofitting and pilot testing / pilot project report at Riga Free Port				O		PP4
A.2.3: Implementation of Hydrogen Cartridge technology pilot scenario at Riga International Airport						PP7
O.2.3: Pilot project report at Riga International Airport				O		PP7
A.2.4: Evaluation of pilot projects, adjustment of Hydrogen Cartridge technology and/or pilot scenarios						PP8
D.2.4: Evaluation report of Hydrogen Cartridge Technology		D	D	D		PP8
WP.3: WP3 Transferring solutions						PP5
A.3.1: Establishing H2 awareness raising and technology transferring hubs						PP5
D.3.1: H2 excellence hubs					D	PP5
A.3.2: Durability plan development and definition of the long-term business model						PP6
D.3.2: Durability plan					D	PP6
A.3.3: Technology transfer to project partners and other stakeholders						PP8
D.3.3: Technology transfer report					D	PP8

Outputs and deliverables overview

Code	Title	Description	Contribution to the output	Output/ deliverable contains an investment
------	-------	-------------	----------------------------	--

D 1.1	Hydrogen ecosystem mapping report	The deliverable contains mapping of the Hydrogen stakeholder ecosystem within Estonia, Latvia and Lithuania. This mapping demonstrates the different stakeholders in the ecosystem, their needs, pains and how they can integrate in an H2 Valley and furthermore a H2 Economy. Mapping will demonstrate the decarbonization potential and pathways combining renewable energy generation and green hydrogen technologies / solutions on one side and taking into account economical feasibility criteria (e.g. economies of scale) on the other side. Based on this stakeholder mapping an overview is established that can be used to further create the H2 conceptualization in collaboration with partners and external experts.	O.1.2: H2 Valley concepts and strategy	
O 1.2	H2 Valley concepts and strategy	The output created is a Hydrogen Valley concept for Estonia, Latvia and Lithuania. Within this context a Hydrogen Valley is a geographical area – a city, a region, an island or an industrial cluster - where several hydrogen applications are combined together into an integrated hydrogen ecosystem that consumes a significant amount of hydrogen, improving the economics behind the project. Within this scope the entire hydrogen value chain: production, storage, distribution and final use are covered. The output generated presents comprehensive insights into the dynamics and how the Valley should function within each country as well as how they interlink and form an effective Hydrogen Valley corridor between countries, further extending to Poland and Germany. The concept and further strategy presented in this output contains information on technologies deployed, funding details, stakeholder management, barriers and project success factors. The integrated Baltic Sea Region Hydrogen Economy strategy establishes a foundation that allows to integrate the development towards usage of Hydrogen in the whole region. The output let's stakeholders understand the status quo of the situation in the region and shows how it can integrate effectively. It allows for smart choices on development, as a full picture is given to stakeholders, taking into account local specifics and advantages, such as potential for large scale seasonal geological storage of green hydrogen. Furthermore, the strategy allows to synchronize on technology, standards and common practices used, avoiding an asynchronous development that can lead to uneconomical development and investments, lack of skilled and qualified workforce. Ultimately implementation of strategy can help to alleviate the energy poverty among population, foster socioeconomic behavioral transition towards prosumerism and becoming active participants of Hydrogen Economy.		
D 1.3	Pilot project scenarios	The deliverable is an pilot scenario plan for each of the pilot project partnerships: 1) Riga Free Port; 2) Riga International Airport. For each of the pilot project partnerships a set of criteria and KPIs is developed that form the foundation of the pilot project for the Hydrogen technology. The goal of the pilot project scenarios is to establish a set of different aspects that can be measured and tested within the pilot projects that both reflect the Hydrogen technology to be tested, but at the same time cover aspects of Hydrogen operation in the respective setting. This approach is chosen to ensure availability of data of regional stakeholders gather on the implementation of Hydrogen processes. As an example in case of Freeport of Riga in order to realize the potential and financial feasibility of retrofitting a diesel-powered pilot and service vessel to H2 fuel cell application, it is necessary to carry out the pilot study performing required calculations and build a simulation model. Each new type of the diesel engine needs to undergo the engineering phase when the final scope of the activities can be presented and realized. The outcome of activities which shall be conducted under this pilot scenario include: - Assessment report of Legislative requirements towards electric and H2 powered marine transport, - Certification parameters to be controlled with regards of overall pilot and service vessel design: - Technical design and calculations: - Integration design description based on the results of legislative and technical parameter analysis. - Cost-benefit analysis of the retrofitting and total cost of operation vs. H2 fuel cell vessel new build.	O.2.2: Pilot at Riga Port O.2.3: Pilot at Riga Airport	
D 2.1	Pilot project preparation report	The deliverable is a report that can be disseminated on pathways how to introduce Hydrogen technologies within the organizations and what things should be considered, when starting to introduce Hydrogen based technology, processes and applications. The deliverable supports and allows afterwards a more comprehensive and understandable approach to Hydrogen introduction in the region.	O.2.2: Pilot at Riga Port O.2.3: Pilot at Riga Airport	
O 2.2	Pilot vessel retrofitting and pilot testing / pilot project report at Riga Free Port	The output is comprised of retrofitting, test running of pilot vessel with hydrogen fuel cell propulsion with hydrogen cartridge fuel supply technology along with deployment of refueling (cartridge swap) solutions. Technical test run parameters of all elements of ecosystem in real-world scenarios are part of the output with aim for further improvements and dissemination. Project is supplemented by a report on the introduction of Hydrogen Cartridge technology and piloting of Hydrogen usage in the premises of Riga Free Port. The report contains an overview of the before situation within the premises, description of intended pilot project and its KPIs, overview of pilot project preparation, overview of pilot project implementation during the project, recommendation for other organizations introducing similar scenarios, climate impact analysis of pilot project on operations.		
O 2.3	Pilot project report at Riga International Airport	The output is comprised of a report on the introduction of Hydrogen Cartridge technology and piloting of Hydrogen usage in the premises of Riga International Airport. The report contains an overview of the before situation within the premises, description of intended pilot project and its KPIs, overview of pilot project preparation, overview of pilot project implementation during the project, recommendation for other organizations introducing similar scenarios, climate impact analysis of pilot project on operations.		

D 2.4	Evaluation report of Hydrogen Cartridge Technology	The deliverables (one per Period) are reports that contain an overview and the pilot project progress and challenges paired with continuous risk assessment of the technology being tested. The deliverables are intended for effective monitoring of the pilot tests and potential continuous improvements both on the test scenarios as well as on the technology to maximize the positive effect of the pilot project.	O.2.2: Pilot at Riga Port O.2.3: Pilot at Riga Airport	
D 3.1	H2 excellence hubs	The H2 excellence hubs ensure the long-term continuity of the project outputs and deliverables and ensure active support for Hydrogen introduction in the Baltic Sea Region. The Hubs will include demonstrator equipment and set of informative tools (portal, workshops, seminars) that establish foundation for knowledge and awareness of hydrogen and hydrogen technologies, helps to disseminate project outcomes and attract more stakeholders to the Hydrogen ecosystem. Since the effective uptake and commercial use of Hydrogen requires educational and explanation work on all levels, within the project also H2 excellence hubs are created as trusted source that address the many questions from various stakeholders about implementation of Hydrogen solutions. The excellence center will provide both informative and technical insights to stakeholders of national, regional, industry, academic and general public levels - effectively targeting the learning curve about Hydrogen application in energy and mobility. Furthermore the excellence hubs will incorporate the outputs and learning from this project and ensure durability and further effective use. The excellence hubs will continue to promote the implementation of the Hydrogen Valley concepts and strategies and further straighten the objects of the Baltic Sea Region Strategy.	O.2.2, O.2.3, O.2.4, O.1.2	
D 3.2	Durability plan	The durability plan is a tool to ensure durability of other outputs and deliverables of the project. In order to have a framework for the durability plan, it will be directly linked to the H2 excellence hubs established in Work Package 3. The durability plan includes information on how to make the outcomes of the project last beyond project implementation and foster their further replication in BSR. The project partners will describe the activities which keep the solutions functional after the end of the project and plan necessary human and financial resources for that process. The respective durability plan activities will be carried out in the post project phase. The durability plan will be directly linked to the excellence hubs and include them in the "business model" on how to ensure continuity of the project and its outcomes.	O.2.2, O.2.3, O.2.4, O.1.2	
D 3.3	Technology transfer report	The report includes an overview with communication and transfer approaches of the ready solutions to the target groups outside project partnership - organizations that were so far not connected closely to the project. The report covers activities undertaken to facilitate technology and project output transfer to other organizations.	O.2.2, O.2.3, O.2.4, O.1.2	

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
Work package leader 2

5.4 Work package budget

Work package budget

5.5 Target groups

Target group	How do you plan to reach out to and engage the target group?
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	Target group	How do you plan to reach out to and engage the target group?
1	<p>Business support organisation</p> <p>With the project the business support organizations from Latvia and Estonia represent green technologies and specifically Hydrogen technologies network and collaboration platforms. The organizations operate in green-tech/hydrogen sectors and house a broad network both in the BSR and beyond. This network and collaboration opportunities in the region and sector are important for successful project implementation.</p> <p>418 / 500 characters</p>	<p>The business support organizations are directly involved in the activities and of creating the Hydrogen Valley mapping, concept creation and working towards the creation of the regional strategy. The stakeholders are involved by in direct interaction via work-groups that work towards the establishing of the work package goals.</p> <p>328 / 1,000 characters</p>
2	<p>Regional public authority</p> <p>The project includes regional public authority from Poland. This link is an important part of the consortium as it connects the Baltic Hydrogen ecosystems further to Poland and Central Europe, effectively extending the consortium geographical coverage. Furthermore, the authority includes clusters, research laboratories, technology and entrepreneurship incubators and science parks extending the sectoral reach of the consortium.</p> <p>431 / 500 characters</p>	<p>The regional public authorities are directly involved in the activities and of creating the Hydrogen Valley mapping, concept creation and working towards the creation of the regional strategy. The stakeholders are involved by in direct interaction via work-groups that work towards the establishing of the work package goals.</p> <p>326 / 1,000 characters</p>
3	<p>Higher education and research institution</p> <p>University partners from Latvia and Lithuania are part of the consortium in order to facilitate innovation competency and academic background to the project. Since the project operates in energy and innovation, competency in R&D and innovation is instrumental.</p> <p>260 / 500 characters</p>	<p>The higher education and research institutions are directly involved in the activities and of creating the Hydrogen Valley mapping, concept creation and working towards the creation of the regional strategy. The stakeholders are involved by in direct interaction via work-groups that work towards the establishing of the work package goals.</p> <p>340 / 1,000 characters</p>
4	<p>Small and medium enterprise</p> <p>SME partners ensure the technological competency and provide input and equipment for implementing successful pilot scenarios. The SME partner is from Germany closing the regional corridor of partners and providing best practices from Germany for testing and piloting.</p> <p>267 / 500 characters</p>	<p>The small and medium enterprises participating in the activities and are direct facilitator of sharing their needs/pains in regard to the ecosystem and therefore this target group participates in the activities.</p> <p>212 / 1,000 characters</p>
5	<p>Infrastructure and public service provider</p> <p>The infrastructure and public service providers are covered in Latvia and Lithuania and are carbon intensive operations that form the center piece of the green transition and require a shift in operations and energy. This target group covers port, airport and transport infrastructure.</p> <p>285 / 500 characters</p>	<p>The infrastructure and public service providers are directly involved in the activities and of creating the Hydrogen Valley mapping, concept creation and working towards the creation of the regional strategy. The stakeholders are involved by in direct interaction via work-groups that work towards the establishing of the work package goals.</p> <p>341 / 1,000 characters</p>

5.6 Activities, deliverables, outputs and timeline

No.	Name
1.1	Full mapping of H2 ecosystem and national, regional needs and pain-points in regard to H2 Valleys
1.2	Hydrogen Valley concept and strategy and integrated BSR H2 Economy concept strategy development
1.3	Technology pilot scenario development and finalization based on established concepts and strategies

WP 1 Group of activities 1.1

5.6.1 Group of activities leader

Group of activities leader

A 1.1

5.6.2 Title of the group of activities

Full mapping of H2 ecosystem and national, regional needs and pain-points in regard to H2 Valleys 97 / 100 characters

5.6.3 Description of the group of activities

Within this task the mapping of the pain-points of the project partners is established. Assessment shall determine main challenges and their root causes for introduction and widespread adaptation of the green hydrogen ecosystem elements. Analysis will cover aspects ranging from the general awareness among businesses, authorities and public about hydrogen technologies, to availability of renewable energy at valley locations, legal / permitting framework and availability of skilled and trained future workforce. Basic assumptions around economic of production, storage, distribution and consumption of green hydrogen will be taken into account to form basis for further techno-economic analysis, LCOH, TCO (total cost of ownership) calculations. Aspect of the reduction of GHG, CO2 footprint via introduction of green hydrogen ecosystem elements vs. status quo or other alternatives will be taken into account as well. To On a side note, energy security assessment, i.e. security of supply chains of the existing fossil energy sources vs. locally produced renewable energy / green hydrogen will be important aspect of study. Based on the pain-points or needs assessment, a better concept of the H2 Valley integration can be established as it will address the specific challenges at the organizations. The main focus is on Estonia, Latvia and Lithuania, whereas the partners from Poland and Germany provide their experience, lessons learned and practical input. 1,463 / 3,000 characters

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

D 1.1

Title of the deliverable

Hydrogen ecosystem mapping report 33 / 100 characters

Description of the deliverable

The deliverable contains mapping of the Hydrogen stakeholder ecosystem within Estonia, Latvia and Lithuania. This mapping demonstrates the different stakeholders in the ecosystem, their needs, pains and how they can integrate in an H2 Valley and furthermore a H2 Economy. Mapping will demonstrate the decarbonization potential and pathways combining renewable energy generation and green hydrogen technologies / solutions on one side and taking into account economical feasibility criteria (e.g. economies of scale) on the other side. Based on this stakeholder mapping an overview is established that can be used to further create the H2 conceptualization in collaboration with partners and external experts. 708 / 2,000 characters

Which output does this deliverable contribute to?

O.1.2: H2 Valley concepts and strategy 38 / 100 characters

5.6.6 Timeline

	Period: 1	2	3	4	5
WP.1: WP1 Preparing solutions					
A.1.1: Full mapping of H2 ecosystem and national, regional needs and pain-points in regard to H2 Valleys					
D.1.1: Hydrogen ecosystem mapping report					

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 3 - Tartu BT Park OÜ

A 1.2

5.6.2 Title of the group of activities

Hydrogen Valley concept and strategy and integrated BSR H2 Economy concept strategy development

95 / 100 characters

5.6.3 Description of the group of activities

Within this task the H2 Valley concepts based on inputs from ecosystem mapping (activity 1.1.) are generated with support of expert consultancy agents of the fields of renewable energy, hydrogen / PtX technologies and decarbonization policies. Altogether within Estonia, Latvia and Lithuania H2 Valley concepts are created that focus around high energy and carbon intensive areas. E.g. at transport hubs (ports / airports) H2 Valley concept can well integrate with objectives set out at European TEN-T, TEN-E (BEMIP Electricity / BEMIP Gas (with future adaptation for H2)), AFIR. The output are corresponding H2 Valley roll out strategies that form the framework for the following pilot tests, as well as an integrated H2 Economy strategy for the Baltic Sea Region.

In particular when assessing the valley concept at transport hubs following aspects and activities will be foreseen:

- assessment of financial, legal and environmental requirements for decarbonization in the transport hub (e.g. port)
- assessment of current legal and permitting landscape with identification of improvement scope,
- assessment of the wider H2 and alternative fuels ecosystem establishment at the transport hub to foster existing and anticipated needs of the businesses operating within the transport hub ecosystem to decarbonize their and their partner operation,
- assessment of possible alternative fuel, technology solutions and applications in the transport hub,
- technical, economic, and environmental feasibility and risk assessment,
- definition of clear objectives for introduction of H2 value chain at the transport hub,
- clear roadmap and budget for short and long-term activities.

On top of that the H2 valley concept will strive to be well aligned and will contribute to the implementation of the following particular EU and local sustainable development and growth objectives:

- European Union'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 and ReFuelEU Aviation set of proposals, to ensure sector carbon-neutrality by 2050,
- Development of TEN-T infrastructure and the fulfilment of the objectives of the Sustainable Development Strategy of local countries,
- Contribute to the EU Proposed Mission "Mission Starfish 2030: Restore our Ocean and Waters" which is backed, e.g. by Latvian Investment and Development Agency via Special Program "Mission Sea 2030".

2,714 / 3,000 characters

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

O 1.2

Title of the output

H2 Valley concepts and strategy

31 / 100 characters

Description of the output

The output created is a Hydrogen Valley concept for Estonia, Latvia and Lithuania. Within this context a Hydrogen Valley is a geographical area – a city, a region, an island or an industrial cluster - where several hydrogen applications are combined together into an integrated hydrogen ecosystem that consumes a significant amount of hydrogen, improving the economics behind the project. Within this scope the entire hydrogen value chain: production, storage, distribution and final use are covered. The output generated presents comprehensive insights into the dynamics and how the Valley should function within each country as well as how they interlink and form an effective Hydrogen Valley corridor between countries, further extending to Poland and Germany. The concept and further strategy presented in this output contains information on technologies deployed, funding details, stakeholder management, barriers and project success factors.

The integrated Baltic Sea Region Hydrogen Economy strategy establishes a foundation that allows to integrate the development towards usage of Hydrogen in the whole region. The output let's stakeholders understand the status quo of the situation in the region and shows how it can integrate effectively. It allows for smart choices on development, as a full picture is given to stakeholders, taking into account local specifics and advantages, such as potential for large scale seasonal geological storage of green hydrogen. Furthermore, the strategy allows to synchronize on technology, standards and common practices used, avoiding a asynchronous development that can lead to uneconomical development and investments, lack of skilled and qualified workforce. Ultimately implementation of strategy can help to alleviate the energy poverty among population, foster socioeconomic behavioral transition towards prosumerism and becoming active participants of Hydrogen Economy.

1,924 / 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?
<p>Target group 1</p> <p>Regional public authority</p> <p>The project includes regional public authority from Poland. This link is an important part of the consortium as it connects the Baltic Hydrogen ecosystems further to Poland and Central Europe, effectively extending the consortium geographical coverage. Furthermore, the authority includes clusters, research laboratories, technology and entrepreneurship incubators and science parks extending the sectoral reach of the consortium.</p>	<p>The outputs allow for an informed collaboration on Hydrogen implementation and potential of the regions and serves as an instrument to synchronize development and further investments in the sector. Since the target group includes a wide array of stakeholders that operate in the sector, information of the regional potential and directions of development provide and platform for collaboration opportunities that can be disseminated and work can be built around.</p> <p style="text-align: right;">462 / 1,000 characters</p>
<p>Target group 2</p> <p>Business support organisation</p> <p>With the project the business support organizations from Latvia and Estonia represent green technologies and specifically Hydrogen technologies network and collaboration platforms. The organizations operate in green-tech/hydrogen sectors and house a broad network both in the BSR and beyond. This network and collaboration opportunities in the region and sector are important for successful project implementation.</p>	<p>Business support organizations work towards strengthening the ecosystem and with a full overview of the situation, potential and pains/needs the organizations can better organize their work and identify more opportunities for their members. This allows the target group to better understand the dynamics of the sector, the direction of development and organizations can better adapt to a new energy reality and streamline their development.</p> <p style="text-align: right;">440 / 1,000 characters</p>
<p>Target group 3</p> <p>Small and medium enterprise</p> <p>SME partners ensure the technological competency and provide input and equipment for implementing successful pilot scenarios. The SME partner is from Germany closing the regional corridor of partners and providing best practices from Germany for testing and piloting.</p>	<p>The SME target group can benefit from an ecosystem mapping and understand potential collaboration partners within the sector and plan development accordingly. The document allows also for an accelerated growth in the sector and ensure that the target group can adjust operation to one or another technological field of expertise.</p> <p style="text-align: right;">327 / 1,000 characters</p>
<p>Target group 4</p> <p>Higher education and research institution</p> <p>University partners from Latvia and Lithuania are part of the consortium in order to facilitate innovation competency and academic background to the project. Since the project operates in energy and innovation, competency in R&D and innovation is instrumental.</p>	<p>The sector brings many approaches to research and a clear concept in the region as well as strategy gives this target group an understanding how to adjust focus areas and what kind of expertise to provide respectively. A strategy also ensures that universities can adjust teaching programmes appropriately to an expected demand of a the developing sector.</p> <p style="text-align: right;">355 / 1,000 characters</p>

Target groups	How will this target group apply the output in its daily work?
<p>Target group 5</p> <p>Infrastructure and public service provider</p> <p>The infrastructure and public service providers are covered in Latvia and Lithuania and are carbon intensive operations that form the center piece of the green transition and require a shift in operations and energy. This target group covers port, airport and transport infrastructure.</p>	<p>This target group will be able to adjust operations and understand how they will fit into the "Big picture" of an Hydrogen Valley and in the regional strategy, and accordingly develop their organization strategies and adjust daily operations as well as long-term operations.</p> <p style="text-align: right;">275 / 1,000 characters</p>

Durability of the output

The Hydrogen Valley concepts and strategies are whole and independent work documents that can be used by stakeholders on all levels to start introducing an effective switch to Hydrogen technologies and uptake of clean Hydrogen as a future-proof fuel. The concepts and strategies can be further implemented for policy planning solving demand/supply issues in a informed and controlled way to avoid resistance due to lack of data and information.

443 / 1,000 characters

5.6.6 Timeline

	Period: 1 2 3 4 5				
WP.1: WP1 Preparing solutions					
A.1.2: Hydrogen Valley concept and strategy and integrated BSR H2 Economy concept strategy development					
O.1.2: H2 Valley concepts and strategy					

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

A 1.3

5.6.2 Title of the group of activities

99 / 100 characters

5.6.3 Description of the group of activities

Based on the collective outputs of Tasks in WP1, the test scenarios to be piloted within WP2 are finalized and KPIs established. From the aspects which will be considered are requirements for implementation of alternative fuel infrastructure according to EU regulation in transport hubs (e.g. ports) and pilot scenarios will address feasible introduction of H2 and other green fuel infrastructure in the transport hub operations. The pilot scenario development and it's feasibility study is necessary to conduct clear comparison of available alternative fuels and solutions, develop clear objectives and roadmap for implementation of H2 and other green fuel infrastructure and application in the foreseen hydrogen valley (transport hubs). Selection of most suitable technologies and prioritization of sites with highest overall environmental, financial, and economic benefits along with considering the impacts on the Hub's competitiveness and performing in-depth risk and benefit assessment. The pilot scenario feasibility study will include the following activities:

- assessment of possible alternative fuel, technology solutions and application in the valley (hub),
- technical, economic, and environmental feasibility and risk assessment,
- assessment of current legal and permitting landscape with identification of improvement scope,
- assessment of the wider H2 ecosystem establishing at the port to foster existing and anticipated needs of the business operating within the freeport to decarbonize their operation,
- 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.

1,794 / 3,000 characters

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

D 1.3

Title of the deliverable

Pilot project scenarios

23 / 100 characters

Description of the deliverable

The deliverable is an pilot scenario plan for each of the pilot project partnerships: 1) Riga Free Port; 2) Riga International Airport. For each of the pilot project partnerships a set of criteria and KPIs is developed that form the foundation of the pilot project for the Hydrogen technology. The goal of the pilot project scenarios is to establish a set of different aspects that can be measured and tested within the pilot projects that both reflect the Hydrogen technology to be tested, but at the same time cover aspects of Hydrogen operation in the respective setting. This approach is chosen to ensure availability of data of regional stakeholders gather on the implementation of Hydrogen processes.

As an example in case of Freeport of Riga in order to realize the potential and financial feasibility of retrofitting a diesel-powered pilot and service vessel to H2 fuel cell application, it is necessary to carry out the pilot study performing required calculations and build a simulation model. Each new type of the diesel engine needs to undergo the engineering phase when the final scope of the activities can be presented and realized.

The outcome of activities which shall be conducted under this pilot scenario include:

- Assessment report of Legislative requirements towards electric and H2 powered marine transport,
- Certification parameters to be controlled with regards of overall pilot and service vessel design:
- Technical design and calculations:
- Integration design description based on the results of legislative and technical parameter analysis.
- Cost-benefit analysis of the retrofitting and total cost of operation vs. H2 fuel cell vessel new build.

1,680 / 2,000 characters

Which output does this deliverable contribute to?

O.2.2: Pilot at Riga Port O.2.3: Pilot at Riga Airport

56 / 100 characters

5.6.6 Timeline

Period: 1 2 3 4 5

WP.1: WP1 Preparing solutions

A.1.3: Technology pilot scenario development and finalization based on established concepts and strategies

D.1.3: Pilot project scenarios

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 1 - Riga Technical University

Work package leader 2 PP 8 - Electrify-Auto, Ltd.

5.4 Work package budget

Work package budget 50%

5.4.1 Number of pilots

Number of pilots 3

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	<p>Business support organisation</p> <p>With the project the business support organizations from Latvia and Estonia represent green technologies and specifically Hydrogen technologies network and collaboration platforms. The organizations operate in green-tech/hydrogen sectors and house a broad network both in the BSR and beyond. This network and collaboration opportunities in the region and sector are important for successful project implementation.</p> <p>418 / 500 characters</p>	<p>The regional public authorities actively involve and expand the scope and potential stakeholders in the activities, in order to allow for better dissemination later on. Furthermore the the support organizations scout follow-up and expansion project and collaboration opportunities to further build upon the Baltic-H2-Economy project. Furthermore, the stakeholders participates to actively connect the Baltic regional activities with the Hydrogen ecosystem activities in Poland and Germany.</p> <p>489 / 1,000 characters</p>
2	<p>Regional public authority</p> <p>The project includes regional public authority from Poland. This link is an important part of the consortium as it connects the Baltic Hydrogen ecosystems further to Poland and Central Europe, effectively extending the consortium geographical coverage. Furthermore, the authority includes clusters, research laboratories, technology and entrepreneurship incubators and science parks extending the sectoral reach of the consortium.</p> <p>431 / 500 characters</p>	<p>The regional public authorities actively involve and expand the scope and potential stakeholders in the activities, in order to allow for better dissemination later on. Furthermore the the support organizations scout follow-up and expansion project and collaboration opportunities to further build upon the Baltic-H2-Economy project. Furthermore, the stakeholders participates to actively connect the Baltic regional activities with the Hydrogen ecosystem activities in Poland and Germany.</p> <p>489 / 1,000 characters</p>
3	<p>Higher education and research institution</p> <p>University partners from Latvia and Lithuania are part of the consortium in order to facilitate innovation competency and academic background to the project. Since the project operates in energy and innovation, competency in R&D and innovation is instrumental.</p> <p>260 / 500 characters</p>	<p>The Higher education and research institution actively participate in setting up the pilot project in collaboration with Small and medium enterprise partners and the Infrastructure and public service provider. Furthermore the target group examines the skills needs to work in an Hydrogen technology context.</p> <p>307 / 1,000 characters</p>
4	<p>Small and medium enterprise</p> <p>SME partners ensure the technological competency and provide input and equipment for implementing successful pilot scenarios. The SME partner is from Germany closing the regional corridor of partners and providing best practices from Germany for testing and piloting.</p> <p>267 / 500 characters</p>	<p>The Small and medium enterprise actively participate in setting up the pilot project in collaboration with Higher education and research partners and the Infrastructure and public service provider. The Small and medium enterprise target group provides specific expertise on Hydrogen solutions and actively implements the Technology to be piloted.</p> <p>346 / 1,000 characters</p>
5	<p>Infrastructure and public service provider</p> <p>The infrastructure and public service providers are covered in Latvia and Lithuania and are carbon intensive operations that form the center piece of the green transition and require a shift in operations and energy. This target group covers port, airport and transport infrastructure.</p> <p>285 / 500 characters</p>	<p>The Infrastructure and public service provider actively participate in setting up the pilot project in collaboration with Small and medium enterprise partners and higher education and research institutions. The infrastructure providers provide data and guidance in implementing the pilot projects on their premises.</p> <p>317 / 1,000 characters</p>

5.6 Activities, deliverables, outputs and timeline

No.	Name
2.1	Pilot project set-up, preparation and procurement based on developed pilot project scenarios
2.2	Implementation of Hydrogen Cartridge technology pilot scenario at Freeport of Riga
2.3	Implementation of Hydrogen Cartridge technology pilot scenario at Riga International Airport
2.4	Evaluation of pilot projects, adjustment of Hydrogen Cartridge technology and/or pilot scenarios

WP 2 Group of activities 2.1

5.6.1 Group of activities leader

Group of activities leader

A 2.1

5.6.2 Title of the group of activities

92 / 100 characters

5.6.3 Description of the group of activities

Set-up of pilot projects based on Work Package 1 outputs. Project partners prepare their organizations, integrate equipment, outline requirements and steps for pilot location preparation and perform up-skilling of involved personnel to implement the designed H2 Technology pilot projects at the respective stakeholders premises. After joint implementation of this activity the target groups are ready to launch the pilot projects and continue with Work Package 2 implementation. The set-up and development of the pilot project scenarios is specifically designed as a separate activity, as in to jointly assess any specifics that may be necessary or should be considered, in order to maintain a high success level chance. Additionally, the joint scenario development and preparation also allows for better understanding of other aspects of the pilot, therefore ensuring better dissemination from all target groups and higher project exposure.

941 / 3,000 characters

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

D 2.1

Title of the deliverable

32 / 100 characters

Description of the deliverable

The deliverable is a report that can be disseminated on pathways how to introduce Hydrogen technologies within the organizations and what things should be considered, when starting to introduce Hydrogen based technology, processes and applications. The deliverable supports and allows afterwards a more comprehensive and understandable approach to Hydrogen introduction in the region.

384 / 2,000 characters

Which output does this deliverable contribute to?

56 / 100 characters

5.6.6 Timeline

Period: 1 2 3 4 5

WP.2: WP2 Piloting and evaluating solutions

A.2.1: Pilot project set-up, preparation and procurement based on developed pilot project scenarios					
D.2.1: Pilot project preparation report					

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 4 - Freeport of Riga Authority

A 2.2

5.6.2 Title of the group of activities

Implementation of Hydrogen Cartridge technology pilot scenario at Freeport of Riga

82 / 100 characters

5.6.3 Description of the group of activities

Implementation of the designed pilot at Freeport of Riga projects based on outputs of activity 2.1. Project partners jointly implement the pilot projects and monitor KPIs and ensure continuous improvement if necessary. The progress and results are evaluated based on KPIs established and partners exchange information about the process. The interim progress and results are used to establish already the base for transferring solutions to the target groups.

Particular steps for the pilot foresees adaptation and implementation of the results of the feasibility study on retrofitting the Port Fleet's pilot vessel "Dore", operated by Freeport entity RBF, to H2 fuel cell application as the pilot project objective. The vessel has been in operation since 2005, has overall length of 16.25m, GT of 56 tons and is equipped with 600 kW diesel engine MTU 12V200M60 reaching maximum sea speed of 8.0 knt.

The activities shall be conducted under this pilot:

- Specific technical design for pilot vessel "Dore" retrofit to electric propulsion powered by H2 fuel cell cartridge application.
- Retrofitting of the vessel with electric propulsion engine and H2 fuel cell cartridge application.
- Deploy infrastructure at RBF piers for H2 fuel cell cartridge handling.
- Organize the safety and employee training for the management of the vessel and H2 fuel cell cartridges.
- Initiate the piloting of the vessel in real-world scenarios
- Perform detailed performance assessment and comparison to diesel engine operation.
- Conduct operational and economic evaluation of the pilot project.

1,581 / 3,000 characters

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

O 2.2

Title of the output

Pilot vessel retrofitting and pilot testing / pilot project report at Riga Free Port

84 / 100 characters

Description of the output

The output is comprised of retrofitting, test running of pilot vessel with hydrogen fuel cell propulsion with hydrogen cartridge fuel supply technology along with deployment of refueling (cartridge swap) solutions. Technical test run parameters of all elements of ecosystem in real-world scenarios are part of the output with aim for further improvements and dissemination.

Project is supplemented by a report on the introduction of Hydrogen Cartridge technology and piloting of Hydrogen usage in the premises of Riga Free Port. The report contains an overview of the before situation within the premises, description of intended pilot project and its KPIs, overview of pilot project preparation, overview of pilot project implementation during the project, recommendation for other organizations introducing similar scenarios, climate impact analysis of pilot project on operations.

883 / 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?
<p>Target group 1</p> <p>Infrastructure and public service provider</p> <p>The infrastructure and public service providers are covered in Latvia and Lithuania and are carbon intensive operations that form the center piece of the green transition and require a shift in operations and energy. This target group covers port, airport and transport infrastructure.</p>	<p>The target group will implement the piloted scenario in their daily operations based on generated data of performance and climate impact as well as other factors established that let stakeholders evaluate the viability of the piloted technology.</p>

245 / 1,000 characters

Durability of the output

The project partner will ensure the continuity of the pilot project results and scenarios tested and include (based on KPIs and viability) in the long term plans of the organization.

182 / 1,000 characters

5.6.6 Timeline

Period: 1 2 3 4 5

WP.2: WP2 Piloting and evaluating solutions

A.2.2: Implementation of Hydrogen Cartridge technology pilot scenario at Freeport of Riga

O.2.2: Pilot vessel retrofitting and pilot testing / pilot project report at Riga Free Port



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 7 - SJSC Riga International Airport

A 2.3

5.6.2 Title of the group of activities

Implementation of Hydrogen Cartridge technology pilot scenario at Riga International Airport

92 / 100 characters

5.6.3 Description of the group of activities

Implementation of the designed pilot at Riga International Airport projects based on outputs of activity 2.1. Project partners jointly implement the pilot projects and monitor KPIs and ensure continuous improvement if necessary. The progress and results are evaluated based on KPIs established and partners exchange information about the process. The interim progress and results are used to establish already the base for transferring solutions to the target groups. In particular Airports pilot scenario focuses on the hydrogen mobility solutions for transportation of the staff around the airport territory and other mobility solutions with aim to decarbonize airport operations.

682 / 3,000 characters

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

O 2.3

Title of the output

Pilot project report at Riga International Airport

50 / 100 characters

Description of the output

The output is comprised of a report on the introduction of Hydrogen Cartridge technology and piloting of Hydrogen usage in the premises of Riga International Airport. The report contains an overview of the before situation within the premises, description of intended pilot project and its KPIs, overview of pilot project preparation, overview of pilot project implementation during the project, recommendation for other organizations introducing similar scenarios, climate impact analysis of pilot project on operations.

521 / 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 infrastructure and public service providers are covered in Latvia and Lithuania and are carbon intensive operations that form the center piece of the green transition and require a shift in operations and energy. This target group covers port, airport and transport infrastructure.	The target group will implement the piloted scenario in their daily operations based on generated data of performance and climate impact as well as other factors established that let stakeholders evaluate the viability of the piloted technology.

245 / 1,000 characters

Durability of the output

The project partner will ensure the continuity of the pilot project results and scenarios tested and include (based on KPIs and viability) in the long term plans of the organization.

182 / 1,000 characters

5.6.6 Timeline



5.6.7 This deliverable/output contains productive or infrastructure investment

WP 2 Group of activities 2.4

5.6.1 Group of activities leader

Group of activities leader

A 2.4

5.6.2 Title of the group of activities

Evaluation of pilot projects, adjustment of Hydrogen Cartridge technology and/or pilot scenarios 96 / 100 characters

5.6.3 Description of the group of activities

Joint evaluation of KPIs gathered in Work Package 2 pilot project activities. Within this activity the partners generate continuous recommendations and improvements to be implemented within the test scenarios or the technology. The various improvements and scenario variants allow other target groups outside the project understand details and better implement similar activities on their premises. 398 / 3,000 characters

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

D 2.4

Title of the deliverable

Evaluation report of Hydrogen Cartridge Technology 50 / 100 characters

Description of the deliverable

The deliverables (one per Period) are reports that contain an overview and the pilot project progress and challenges paired with continuous risk assessment of the technology being tested. The deliverables are intended for effective monitoring of the pilot tests and potential continuous improvements both on the test scenarios as well as on the technology to maximize the positive effect of the pilot project. 409 / 2,000 characters

Which output does this deliverable contribute to?

O.2.2: Pilot at Riga Port O.2.3: Pilot at Riga Airport 54 / 100 characters

5.6.6 Timeline

	Period: 1	2	3	4	5
WP.2: WP2 Piloting and evaluating solutions					
A.2.4: Evaluation of pilot projects, adjustment of Hydrogen Cartridge technology and/or pilot scenarios					
D.2.4: Evaluation report of Hydrogen Cartridge Technology					

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 5 - Klaipeda State University of Applied Sciences

Work package leader 2 PP 6 - Rzeszow Regional Development Agency

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	<p>Business support organisation</p> <p>With the project the business support organizations from Latvia and Estonia represent green technologies and specifically Hydrogen technologies network and collaboration platforms. The organizations operate in green-tech/hydrogen sectors and house a broad network both in the BSR and beyond. This network and collaboration opportunities in the region and sector are important for successful project implementation.</p> <p>418 / 500 characters</p>	<p>The business support organisations along with regional public authorities and the higher education and research institution develop H2 excellence hubs that perform as dissemination and durability points for the project. Organizations interact in work groups and develop necessary plans and implementation processes. The target group actively partakes in the information and result dissemination. Regular asynchronous communication channels is used between partners to maintain information exchange and informed decisions and process management. Furthermore target groups engage in meetings (digital or in-person) to maintain contact and exchange development progress.</p> <p>668 / 1,000 characters</p>
2	<p>Regional public authority</p> <p>The project includes regional public authority from Poland. This link is an important part of the consortium as it connects the Baltic Hydrogen ecosystems further to Poland and Central Europe, effectively extending the consortium geographical coverage. Furthermore, the authority includes clusters, research laboratories, technology and entrepreneurship incubators and science parks extending the sectoral reach of the consortium.</p> <p>431 / 500 characters</p>	<p>The regional public authorities along with business support organisations and the higher education and research institution develop H2 excellence hubs that perform as dissemination and durability points for the project. Organizations interact in work groups and develop necessary plans and implementation processes. The target group will focus competency and establish networks that span and connect the Baltics and Poland and Germany in order to promote an integrated H2 Valley concept. The target group actively partakes in the information and result dissemination. Regular asynchronous communication channels is used between partners to maintain information exchange and informed decisions and process management. Furthermore target groups engage in meetings (digital or in-person) to maintain contact and exchange development progress.</p> <p>842 / 1,000 characters</p>
3	<p>Higher education and research institution</p> <p>University partners from Latvia and Lithuania are part of the consortium in order to facilitate innovation competency and academic background to the project. Since the project operates in energy and innovation, competency in R&D and innovation is instrumental.</p> <p>260 / 500 characters</p>	<p>The higher education and research institutions along with business support organizations and regional public authorities and the develop H2 excellence hubs that perform as dissemination and durability points for the project. Organizations interact in work groups and develop necessary plans and implementation processes. Furthermore, in collaborative work and practical surveying and understanding the specific needs of introducing H2 technology in operations, the target group will establish course material information with focus to Hydrogen solution implementation. Regular asynchronous communication channels is used between partners to maintain information exchange and informed decisions and process management. Furthermore target groups engage in meetings (digital or in-person) to maintain contact and exchange development progress.</p> <p>840 / 1,000 characters</p>
4	<p>Small and medium enterprise</p> <p>SME partners ensure the technological competency and provide input and equipment for implementing successful pilot scenarios. The SME partner is from Germany closing the regional corridor of partners and providing best practices from Germany for testing and piloting.</p> <p>267 / 500 characters</p>	<p>The target group actively partakes in the results dissemination and supports the Infrastructure and public service provider in establishing durability to the pilot projects and ensure successful technology transfer to the Infrastructure and public service provider. Regular asynchronous communication channels is used between partners to maintain information exchange and informed decisions and process management. Furthermore target groups engage in meetings (digital or in-person) to maintain contact and exchange development progress.</p> <p>537 / 1,000 characters</p>

	Target group	How do you plan to reach out to and engage the target group?
5	<p>Infrastructure and public service provider</p> <p>The infrastructure and public service providers are covered in Latvia and Lithuania and are carbon intensive operations that form the center piece of the green transition and require a shift in operations and energy. This target group covers port, airport and transport infrastructure.</p> <p style="text-align: right;"><small>285 / 500 characters</small></p>	<p>Infrastructure and public service providers work closely in collaboration with all project partners to successfully implement the pilot projects. Regular asynchronous communication channels is used between partners to maintain information exchange and informed decisions and process management. Furthermore target groups engage in meetings (digital or in-person) to maintain contact and exchange development progress.</p> <p style="text-align: right;"><small>417 / 1,000 characters</small></p>

5.6 Activities, deliverables, outputs and timeline

No.	Name
3.1	Establishing H2 awareness raising and technology transferring hubs
3.2	Durability plan development and definition of the long-term business model
3.3	Technology transfer to project partners and other stakeholders

WP 3 Group of activities 3.1

5.6.1 Group of activities leader

Group of activities leader PP 5 - Klaipeda State University of Applied Sciences

A 3.1

5.6.2 Title of the group of activities

Establishing H2 awareness raising and technology transferring hubs

66 / 100 characters

5.6.3 Description of the group of activities

Project partners create a communication plan and disseminate the project information accordingly. Communication and dissemination activities are focused on the extended stakeholders scope identified and covered by the project within T1.2. To facilitate technology and information dissemination beyond the scope of the project, H2 awareness raising and technology transferring hubs are established. Hubs design shall serve needs of large target groups within business community, authorities (local and national) and general public.

530 / 3,000 characters

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

D 3.1

Title of the deliverable

H2 excellence hubs

18 / 100 characters

Description of the deliverable

The H2 excellence hubs ensure the long-term continuity of the project outputs and deliverables and ensure active support for Hydrogen introduction in the Baltic Sea Region. The Hubs will include demonstrator equipment and set of informative tools (portal, workshops, seminars) that establish foundation for knowledge and awareness of hydrogen and hydrogen technologies, helps to disseminate project outcomes and attract more stakeholders to the Hydrogen ecosystem.

Since the effective uptake and commercial use of Hydrogen requires educational and explanation work on all levels, within the project also H2 excellence hubs are created as trusted source that address the many questions from various stakeholders about implementation of Hydrogen solutions. The excellence center will provide both informative and technical insights to stakeholders of national, regional, industry, academic and general public levels - effectively targeting the learning curve about Hydrogen application in energy and mobility. Furthermore the excellence hubs will incorporate the outputs and learning from this project and ensure durability and further effective use. The excellence hubs will continue to promote the implementation of the Hydrogen Valley concepts and strategies and further straighten the objects of the Baltic Sea Region Strategy.

1,331 / 2,000 characters

Which output does this deliverable contribute to?

O.2.2, O.2.3, O.2.4, O.1.2

26 / 100 characters

5.6.6 Timeline

Period: 1 2 3 4 5

WP.3: WP3 Transferring solutions

	1	2	3	4	5
A.3.1: Establishing H2 awareness raising and technology transferring hubs					
D.3.1: H2 excellence hubs					

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

A 3.2

5.6.2 Title of the group of activities

74 / 100 characters

5.6.3 Description of the group of activities

Joint development of durability plan that includes a long-term business model for the pilot project and the H2 Valley concepts developed. The durability will focus on integrating the outputs of the project into follow-up projects and frameworks in order to move from an isolated pilot project as part of a H2 Valley to the next stage with several integrated stakeholders as well as cross-border integration of H2 Valleys forming basis for region wide Hydrogen Economy.

468 / 3,000 characters

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



D 3.2

Title of the deliverable

15 / 100 characters

Description of the deliverable

The durability plan is a tool to ensure durability of other outputs and deliverables of the project. In order to have a framework for the durability plan, it will be directly linked to the H2 excellence hubs established in Work Package 3.

The durability plan includes information on how to make the outcomes of the project last beyond project implementation and foster their further replication in BSR. The project partners will describe the activities which keep the solutions functional after the end of the project and plan necessary human and financial resources for that process. The respective durability plan activities will be carried out in the post project phase. The durability plan will be directly linked to the excellence hubs and include them in the "business model" on how to ensure continuity of the project and its outcomes.

844 / 2,000 characters

Which output does this deliverable contribute to?

26 / 100 characters

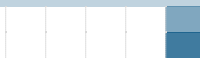
5.6.6 Timeline

Period: 1 2 3 4 5

WP.3: WP3 Transferring solutions

A.3.2: Durability plan development and definition of the long-term business model

D.3.2: Durability plan



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

A 3.3

5.6.2 Title of the group of activities

62 / 100 characters

5.6.3 Description of the group of activities

Within this task the pilot projects are closed and adjusted to ensure technology transfer for the project partners to ensure continued use of the technology. Other stakeholders are addressed within the H2 awareness raising and technology transferring hubs in order to facilitate the technology and development concepts based on KPIs and test scenario results. Hub performance design is based on continuous improvement loop thus enabling its sustainable performance after to completion of main project.

501 / 3,000 characters

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

D 3.3

Title of the deliverable

26 / 100 characters

Description of the deliverable

The report includes an overview with communication and transfer approaches of the ready solutions to the target groups outside project partnership - organizations that were so far not connected closely to the project. The report covers activities undertaken to facilitate technology and project output transfer to other organizations.

334 / 2,000 characters

Which output does this deliverable contribute to?

26 / 100 characters

5.6.6 Timeline

	Period: 1 2 3 4 5				
WP.3: WP3 Transferring solutions					
A.3.3: Technology transfer to project partners and other stakeholders					
D.3.3: Technology transfer report					

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	3	N/A	N/A	RCR 104 - Solutions taken up or up-scaled by organisations	3	The established Hydrogen Valley concepts and strategies allow stakeholders to understand the ecosystem and development potential and align their business operations and long-term objectives accordingly. Therefore a safer development landscape is established and organizations are more viable to uptake Hydrogen solutions in their operations.
RCO 116 – Jointly developed solutions	3	O.1.2: H2 Valley concepts and strategy	Specific and targeted concepts and strategies for H2 Valley implementation in the Baltic Sea Region (Estonia, Latvia, Lithuania) are instrumental to kick-start adoption of commercial use of Hydrogen and accelerating the switch to sustainable energy for industry and mobility. Currently, there is no roadmap and understanding how the ecosystem can work. H2 Valley form the backbone in this regard and solve the initial supply/demand problem. Furthermore, an integrated regional roadmap that integrates all partner countries, including Poland and Germany, ultimately form an H2 Economy that is a main vertical to climate neutrality according to the Green Deal. <small>658 / 1,000 characters</small>			Furthermore, organizations implementing the solutions are to continue the usage of the solutions in their operations. However, with successfully piloted solutions and the active empowerment of the ecosystem with the Hydrogen excellence hubs, the amount of external organizations up-scaling by introducing similar scenarios is very high. <small>679 / 2,000 characters</small>
		O.2.2: Pilot vessel retrofitting and pilot testing / pilot project report at Riga Free Port	Jointly developed and implemented water vessel with adaption to Hydrogen usage as a source of energy. The implemented vessel pilots the hydrogen cartridge technology and demonstrate viability of the usage of such technology and helps the target groups to accelerate hydrogen technology up-scaling. <small>297 / 1,000 characters</small>			
		O.2.3: Pilot project report at Riga International Airport	Jointly developed and implemented vehicle adaption to Hydrogen usage as a source of energy. The implemented vessel pilots the hydrogen cartridge technology and demonstrate viability of the usage of such technology and helps the target groups to accelerate hydrogen technology up-scaling. <small>288 / 1,000 characters</small>			

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	12	PSR 1 - Organisations with increased institutional capacity due to their participation in cooperation activities across borders		<p>Organizations participating in the partnership and in the project activities operate within the triple helix matrix and include public sector, academia and industry. Furthermore, in order to effectively use the project outputs, business support organizations are included in the project.</p> <p>Within the project the academic organizations greatly increase their capacity in practical Hydrogen project introduction as well as adapting their academic portfolio according to real life needs of the industry.</p> <p style="text-align: right;">500 / 1,500 characters</p>
			30	<p>In order to effectively use the project outputs, business support organizations are included in the project. These organization extend the reach of the project partnership and effectively promote the project outputs to external organizations. Other organization that will be reached are ministries, associations, other business support organizations, industry stakeholders. All mentioned stakeholders ultimately benefit from the H2 Valley concepts and strategies and allow increased institutional and organizational capacity, as it gives direct planning potential and understanding about the H2 ecosystem on both national and regional level in the Baltic Sea Region. Furthermore, the expertise and experience of piloting Hydrogen solutions in the region provides other stakeholders with comprehensive lessons learned that can be translated to other organizations and start a green transition to Hydrogen.</p> <p style="text-align: right;">904 / 1,500 characters</p>

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	Riga Technical University	Active 22/09/2022	24,000.00	196,075.44	29,411.32
2 - PP	Green and Smart Technology Cluster	Active 22/09/2022	0.00	106,637.52	15,995.63
3 - PP	Tartu BT Park OÜ	Active 22/09/2022	0.00	112,227.39	16,834.11
4 - PP	Freeport of Riga Authority	Active 22/09/2022	0.00	101,758.08	15,263.71
5 - PP	Klaipeda State University of Applied Sciences	Active 22/09/2022	0.00	97,751.06	14,662.66
6 - PP	Rzeszow Regional Development Agency	Active 22/09/2022	0.00	92,232.86	13,834.93
7 - PP	SJSC Riga International Airport	Active 22/09/2022	0.00	106,637.52	15,995.63
8 - PP	Electrify-Auto, Ltd.	Active 22/09/2022	0.00	158,236.32	23,735.45
Total			24,000.00	971,556.19	145,733.44

No. & role	Partner name	CAT3 - Travel & accommodation	CAT4 - External expertise & services	CAT5 - Equipment	Total partner budget
1 - LP	Riga Technical University	29,411.32	125,000.00	125,000.00	528,898.08
2 - PP	Green and Smart Techno	15,995.63	0.00	50,000.00	188,628.78
3 - PP	Tartu BT Park OÜ	16,834.11	25,000.00	50,000.00	220,895.61
4 - PP	Freeport of Riga Authority	15,263.71	50,000.00	400,000.00	582,285.50
5 - PP	Klaipeda State University	14,662.66	25,000.00	125,000.00	277,076.38
6 - PP	Rzeszow Regional Devel	13,834.93	0.00	50,000.00	169,902.72
7 - PP	SJSC Riga International	15,995.63	0.00	550,000.00	688,628.78
8 - PP	Electrify-Auto, Ltd.	23,735.45	0.00	0.00	205,707.22
Total		145,733.44	225,000.00	1,350,000.00	2,862,023.07

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. Riga Technical U	Specialist support	CAT4-PP1-E-0	Independent expert consultancy for developing national H2 Valley concept and strategy in Latvia <small>95 / 100 characters</small>	No	1.2	50,000.00
1. Riga Technical U	Specialist support	CAT4-PP1-E-0	Independent expert consultancy for developing integrated H2 Valley/Economy concept in BSR <small>89 / 100 characters</small>	No	1.2	75,000.00
3. Tartu BT Park O	Specialist support	CAT4-PP3-E-0	Independent expert consultancy for developing national H2 Valley concept and strategy in Estonia <small>96 / 100 characters</small>	No	1.2	25,000.00
5. Klaipeda State U	Specialist support	CAT4-PP5-E-0	Independent expert consultancy for developing national H2 Valley concept and strategy in Lithuania <small>98 / 100 characters</small>	No	1.2	25,000.00
4. Freeport of Riga	Specialist support	CAT4-PP4-E-0	Independent expert consultancy for projecting the marine vessel retrofitting <small>77 / 100 characters</small>	No	2.2	50,000.00
Total						225,000.00

7.1.2 Equipment

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value
4. Freeport of Riga	Other specific equip	CAT5-PP4-H-0	Equipment and implementation of to establish Hydrogen-ready vessel for pilot project testing <small>92 / 100 characters</small>	No	2.2	400,000.00
7. SJSC Riga Intern	Vehicles	CAT5-PP7-G-0	Equipment and implementation of to establish Hydrogen-ready vehicle for pilot project testing <small>93 / 100 characters</small>	No	2.3	300,000.00
7. SJSC Riga Intern	Other specific equip	CAT5-PP7-H-0	Small scale Hydrogen on-site production unit <small>44 / 100 characters</small>	No	2.3	250,000.00
1. Riga Technical U	Other specific equip	CAT5-PP1-H-0	H2 excellence hub equipment and technology demonstrator units (incl. laboratory equipment) <small>90 / 100 characters</small>	No	3.1	125,000.00
5. Klaipeda State U	Other specific equip	CAT5-PP5-H-0	H2 excellence hub equipment and technology demonstrator units (incl. laboratory equipment) <small>90 / 100 characters</small>	No	3.1	125,000.00
2. Green and Smart	Other specific equip	CAT5-PP2-H-0	H2 excellence hub equipment and technology demonstrator units <small>61 / 100 characters</small>	No	3.1	50,000.00
3. Tartu BT Park O	Other specific equip	CAT5-PP3-H-0	H2 excellence hub equipment and technology demonstrator units <small>61 / 100 characters</small>	No	3.1	50,000.00
6. Rzeszow Region	Other specific equip	CAT5-PP6-H-0	H2 excellence hub equipment and technology demonstrator units <small>61 / 100 characters</small>	No	3.1	50,000.00
Total						1,350,000.00

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	<input type="text"/>	Please select		0.00
						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	Riga Technical University	Active 22/09/2022	LV	ERDF	80.00 %	528,898.08	423,118.46	105,779.62	For each partner, the State aid relevance and applied aid measure are defined in the State aid section
2-PP	Green and Smart Technology Cluster	Active 22/09/2022	LV	ERDF	80.00 %	188,628.78	150,903.02	37,725.76	
3-PP	Tartu BT Park OÜ	Active 22/09/2022	EE	ERDF	80.00 %	220,895.61	176,716.48	44,179.13	
4-PP	Freeport of Riga Authority	Active 22/09/2022	LV	ERDF	80.00 %	582,285.50	465,828.40	116,457.10	
5-PP	Klaipeda State University of Applied Sciences	Active 22/09/2022	LT	ERDF	80.00 %	277,076.38	221,661.10	55,415.28	
6-PP	Rzeszow Regional Development Agency	Active 22/09/2022	PL	ERDF	80.00 %	169,902.72	135,922.17	33,980.55	
7-PP	SJSC Riga International Airport	Active 22/09/2022	LV	ERDF	80.00 %	688,628.78	550,903.02	137,725.76	
8-PP	Electrify-Auto, Ltd.	Active 22/09/2022	DE	ERDF	80.00 %	205,707.22	164,565.77	41,141.45	
Total ERDF						2,862,023.07	2,289,618.42	572,404.65	
Total						2,862,023.07	2,289,618.42	572,404.65	

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	502,278.80	401,823.02	502,278.80	401,823.02
Period 2	1,000,000.03	800,000.02	1,000,000.03	800,000.02
Period 3	491,908.56	393,526.84	491,908.56	393,526.84
Period 4	421,917.84	337,534.27	421,917.84	337,534.27
Period 5	421,917.84	337,534.27	421,917.84	337,534.27
Total	2,862,023.07	2,289,618.42	2,862,023.07	2,289,618.42