SESSÃO DE INFORMAÇÃO:

Aviso de Abertura de Candidaturas de 2022

HORIZON EUROPE

06 Abril 2022

Pedro GUEDES DE CAMPOS

Clean Hydrogen Joint Undertaking

Co-funded by the European Union

Clean Hydrogen Joint Undertaking

EU Institutional Public-Private Partnership (IPPP)

Industry
More than 315 members

Research community
over 103 members

To facilitate the transition to a greener EU society through the development of hydrogen technologies

Co-funded by the European Union

Projects in the Clean Hydrogen JU

Clean Hydrogen Partnership

H_2 Valleys

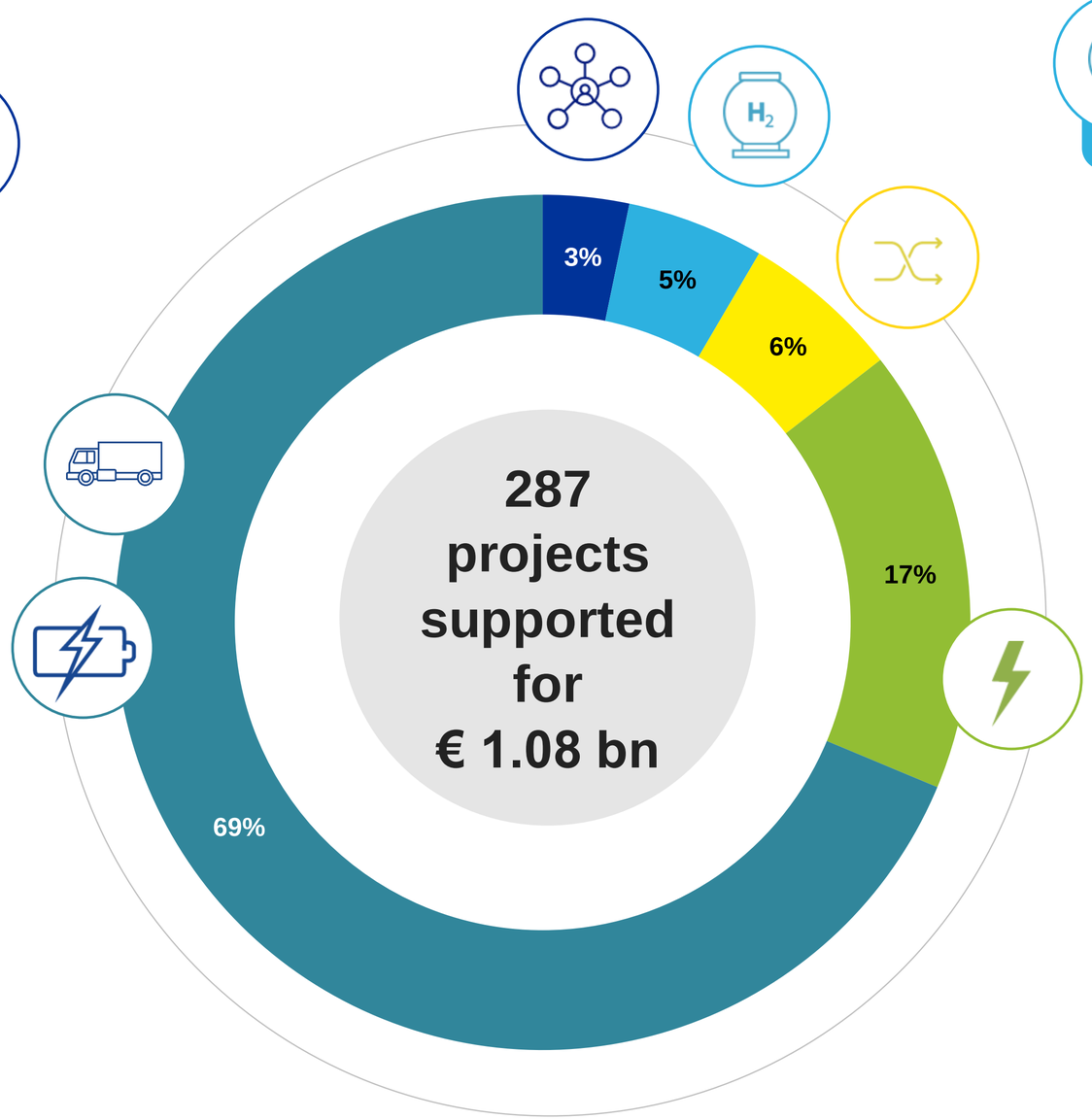
3 Projects
€ 35 mn

H_2 End Uses

Transport Applications

Clean Heat and Power

159 Projects
€ 739.6 mn



H_2 Storage & Distribution

22 Projects
€ 55.8 mn

Cross-cutting

46 Projects
€ 65 mn

H_2 Production

- Electrolysis
- Other routes

57 Projects
€ 181 mn

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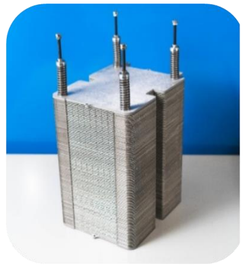
A 14 years journey of the Fuel Cells and Hydrogen JU

From research to delivering hydrogen solutions in the market: from individual applications to H2 Valleys



Manufacturing

Green H2 production

Buses

ships

Aviation

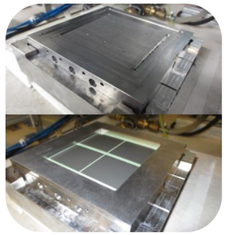
Research PoC

Domestic heat and power

Heat and power for industry

Heavy duty trucks

Logistics machinery



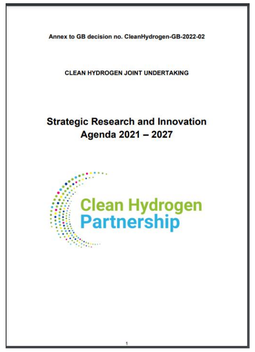
Materials

Gensets

Light duty vehicles

Trains

Clean Hydrogen Partnership
Continuation of the FCH 2 JU


Annex to GB decision no. CleanHydrogen-GB-2022-02

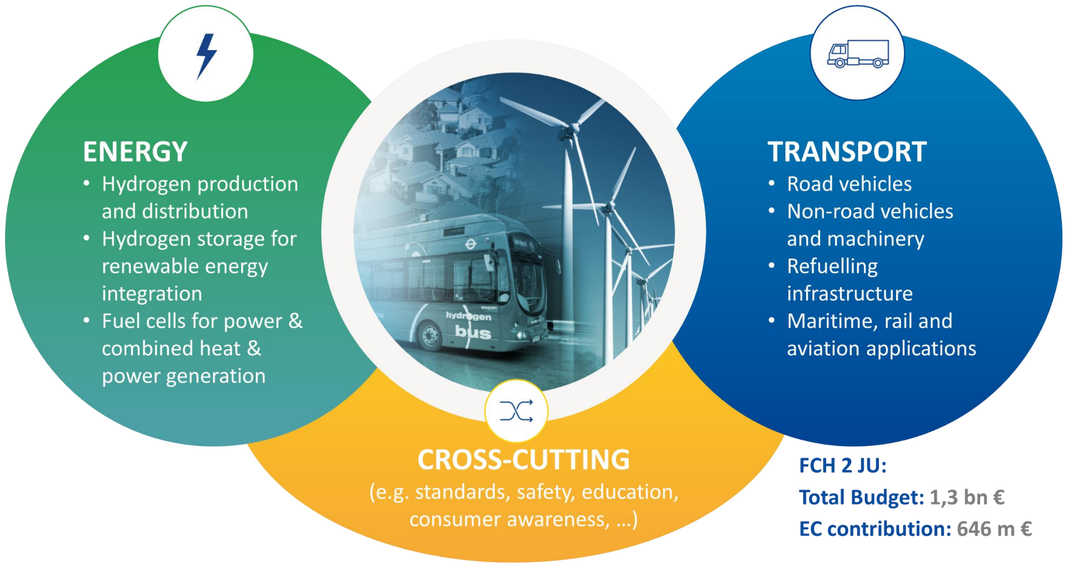
CLEAN HYDROGEN JOINT UNDERTAKING

Strategic Research and Innovation Agenda 2021 – 2027

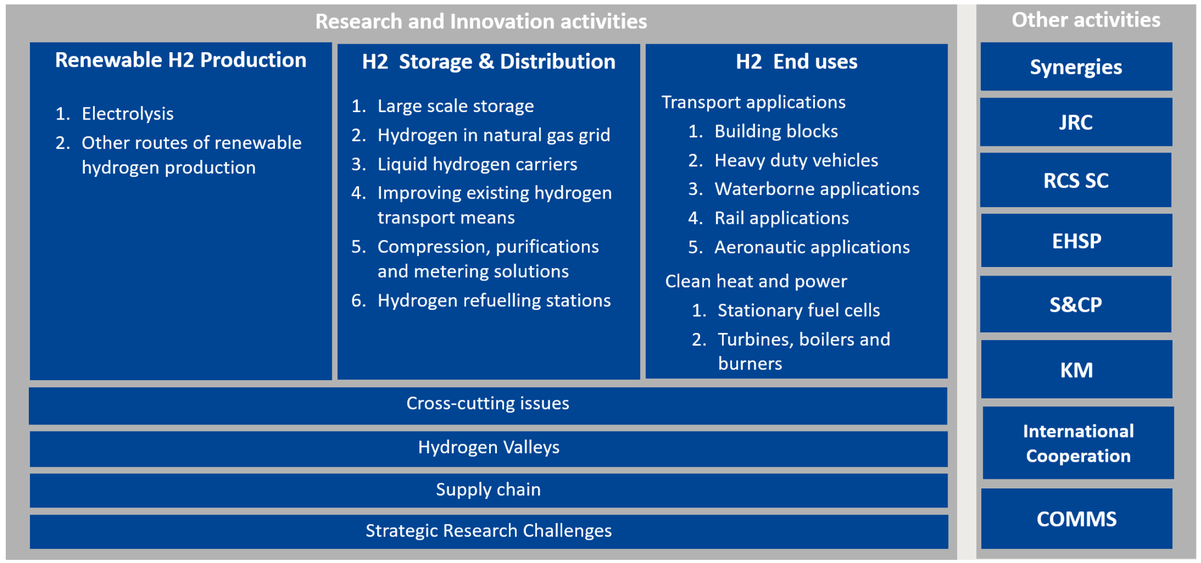
Clean Hydrogen Partnership

- Clean Hydrogen Partnership (legal name: Clean Hydrogen Joint Undertaking)
- Universal successor of the Fuel Cells and Hydrogen 2 Joint Undertaking (FCH 2 JU) and has taken over its legacy portfolio
- (HORIZON EUROPE) Budget: EUR 1 billion 2021-2027 (>50% increase compared to HORIZON 2020)

FCH 2 JU Programme structure



Clean Hydrogen JU Programme structure



Clean Hydrogen Partnership

Objectives

General

- Support the implementation of the Commission's Hydrogen Strategy
- Stimulate research and innovation on clean hydrogen production, distribution, storage and end use applications
- Strengthen the competitiveness of the EU clean hydrogen value chain
- Contribute to the EU ambitious 2030 and 2050 climate ambition

Specific

- Improve the cost-effectiveness, efficiency, reliability, quantity and quality of clean hydrogen solutions across entire value chain
- Strengthen the knowledge/capacity of scientific and industrial actors along the Union's hydrogen value chain while supporting the uptake of skills
- Demonstrations of clean hydrogen solutions with a view to local, regional and Union-wide deployment, aiming to involve stakeholders in all Member States and across entire value chain
- Increase public and private awareness, acceptance and uptake of clean hydrogen solutions

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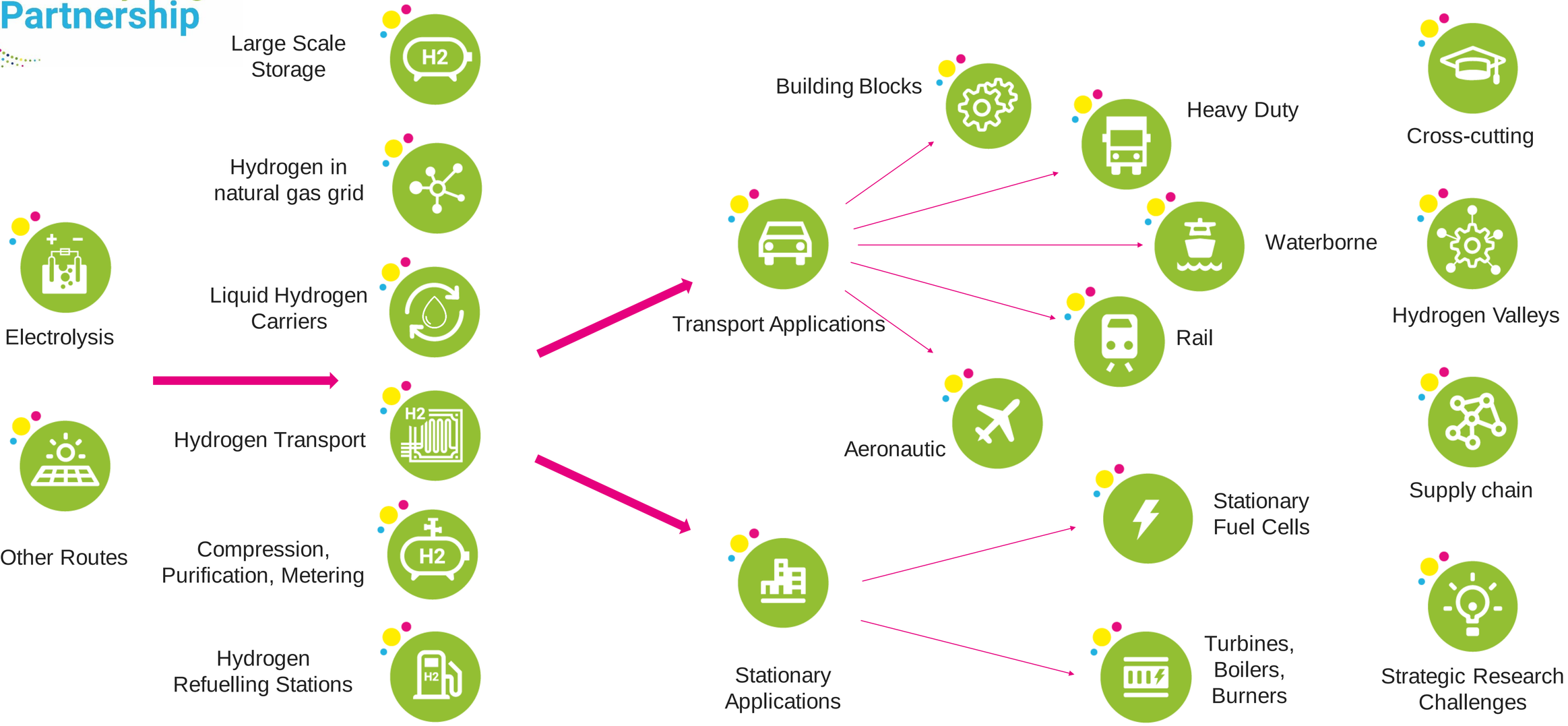
SRIA: Research & Innovation Activities

Clean Hydrogen Partnership



Co-funded by the European Union

Clean Hydrogen Partnership

Clean Hydrogen Partnership
SRIA: Key Performance Indicators (KPIs) - Overview

Annex 2 - State-of-the-art and future targets – Renewable Hydrogen production

Table 2: KPIs for Alkaline Electrolysis (AEL)

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
1	Electricity consumption @ nominal capacity	kWh/kg	50	49	48
2	Capital cost	€/(kg/d)	1,250	1,000	800
		€/kW	600	480	400
3	O&M cost	€/(kg/d)/y	50	43	35
4	Hot idle ra				
5	Cold start				
6	Degrac				
7	Current				
8	Use of cri materials a				

Table 3: KPIs for Proton Exchange Membrane Electrolysis (PEMEL)

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
1	Electricity consumption @ nominal capacity	kWh/kg	55	52	48
2	Capital cost	€/(kg/d)	2,100	1,550	1,000
		€/kW	900	700	500
3	O&M cost	€/(kg/d)/y	41	30	21
4	Hot idle ramp time	sec	2	1	1
5	Cold start ramp time	sec	30	10	10
6	Degradation	%/1,000h	0.19	0.15	0.12
7	Current density	A/cm²	2.2	2.4	3
8	Use of critical raw		2.5	1.25	0.25

Notes:

(General for system): Standard bound output of hydrogen meeting ISO 1468 boundary conditions are different.

All KPIs are interdependent and shoul

KPI-1: Electrical energy demand at n energy required for cooling.

all system KPIs: input of AC power and tap water; output of m purity 5. Correction factors may be applied if actual boundary

ble 2).

ng for a single company, as per current definition.

n production rate when starting the device from cold start from

n run at nominal capacity. For example, 0.125%/1,000h results h 8,000 operating hours per year.

l should to be met simultaneously.

operating temperature and pressure and nominal hydrogen

t (SOA 2.0 mg/cm²) and platinum as the cathode catalyst (SOA

Table 8: KPIs for biological production

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
1	System carbon yield	kg H_2 / kg COD	0.012	0.015	0.021
2	Reactor production rate	kg H_2/m³/d	7.5	15	>15
3	Reactor scale	m³	3	10	100
4	System capital cost	€/(kg/d)	450	400	350
5	System operational cost	€/kg	3.2	3	2.5

Notes:

KPI-1: System carbon yield: Kg H_2 obtained from biomass fed to the reactor expressed in Kg COD (Chemical Oxygen Demand). Max theoretically obtainable is 0.041 KgH_2/kg.

KPI-2: kg H_2 produced per day per m³ of reactor volume

KPI-3: Reactor size measured in m³ of fermenter

KPI-4: Capital cost of plant divided by the nominal hydrogen production. Capital cost includes all the cost related to all the equipment necessary for the normal operation of the plant. Based on an estimated production of 949,200 m³ H_2 per year, therefore the capacity of the reference plant is 232 kg H_2/d.

KPI-5: Operation and maintenance cost averaged over the first 10 years of the system. Routine maintenance and "wear and tear" (rotating parts, cleaning of equipment...) considering a lifespan of 20 years. Costs such as water use, personnel and chemicals are included. The fermenter size is assumed as 200 m³, treating 100 tons of food waste per day.

Unit	SoA	Targets	
	2020	2024	2030
Wh/kg	40	39	37
	9.9	9	8
/(kg/d)	3,550	2,000	800
€/kW	2,130	1,250	520
(kg/d)/y	410	130	45
sec	600	300	180

Table 9: KPIs for solar thermal production

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
1	Hydrogen production rate*	kg/m²/d	1.13	2.16	4.11
2	System capital cost	k€/(kg/d)	29.99	15.19	7.41
3	System operational cost	€/kg	1.17	0.59	0.30

Notes:

* Boundary conditions: location with direct normal irradiation (DNI) of 2500 kWh/m²/year. Output of hydrogen meeting ISO 14687-2 at a pressure of 15 bar and hydrogen purity 5.0.

KPI-2: System capital cost for a specific hydrogen production rate based on kg of hydrogen generated per day at a given cumulative DNI per year. Capital cost should include all the cost related to all the equipment necessary for the normal operation of the plant.

KPI-3: O&M cost averaged over the first 10 years of the system. Routine maintenance and "wear and tear" (rotating parts, cleaning of equipment, etc). Electricity costs for operation of auxiliary units included. System level losses such as heliostat collector area losses, replacement parts, operation, and maintenance are included in the cost calculations.

Annex 3 - State-of-the-art and future targets – Hydrogen storage and distribution

Table 11: KPIs for hydrogen storage

No	Parameter	Unit	SoA		Targets
			2020	2024	2030
	Underground storage – Depleted gas fields				
1	Capital cost	€/kg	n/a	10	5
	Underground storage – Salt Caverns				
2	Gas field size	ton (100% H_2)	880	>1000	>3000
3	Capital cos				
4	Storage siz				
5	Capital cos				

Notes:

Depleted gas field: pressure hydroger

Salt cavern: underground hydrogen considered (100% H_2)

Aboveground storage: hydrogen stor container, skeleton trailer, etc.) and st

KPI-1: Capital costs include all neces purification. The costs are referred to t

KPI-3: Based on the working mass of

KPI-4: Storage density of more than pipes, per-stressed concrete containe

KPI-5: Co purificatio

(KPI-4) ar

Table 13: KPIs for hydrogen transportation

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
	Hydrogen Pipelines				
1	Total capital investment	M€ /km	1.1	1	0.9
2	Transmission pressure	bar	90	100	120
3	H_2 leakage	%	na	0	0
	Road transport of compressed hydrogen				
4	Tube trailer payload	kg	850	1,000	1,500
5	Tube trailer CAPEX	€/kg	650	450	350
6	Operating pressure	bar	300	500	700
	Road transport of liquid hydrogen				
7	LH2 tank trailer payload	kg	3500	4000	4000
8	LH_2 tank trailer capex	€/kg	>200	200	100
			0.3-0.6	0.3	0.1

Table 15 KPIs for hydrogen refuelling stations

No	Parameter		Unit	SOA	Targets	
				2020	2024	2030
1	Energy consumption	700 bar	kWh/kg	5	4	3
		350 bar		3.5	2.5	2
		LH_2		0.5	0.5	0.3
2	Availability	700 bar	%	96	98	99
		350 bar		97	98	99
		LH_2		95	97	99
3	Mean time between failures	700 bar	d	48	72	168
		350 bar		96	144	336
		LH_2		144	216	504
4	Annual maintenance cost	700 bar	€/kg	1	0.5	0.3
		350 bar		0.66	0.35	0.15
		LH_2		1	0.5	0.3
5	Labour	700 bar	person h/kh	70	28	16
		350 bar		42	17	10
		LH_2		70	28	16
6	CAPEX for the HRS 700 bar (200-1,000 kg/d)	700 bar	k€ / (kg/day)	2-6	1.5-4	1-3
		350 bar		0.8-3.5	0.65-2.5	0.5-2
		LH_2		2-6	1.5-4	1-3
7	HRS contribution in hydrogen price	700 bar	€/kg	4	3	2
		350 bar		2.5	2	1.25
		LH_2		4	3	2

Notes:

KPI-1: Station energy consumption per kg of hydrogen dispensed when the station is loaded at 80% of its daily capacity – For HRS which stores H_2 in gaseous form, at ambient temperature, and dispense H2 at 700bar in GH_2 from a source of >30 bar hydrogen.

KPI-2: Percent of hours that the hydrogen refuelling station is able to operation versus the total number of hours that it is intended to be able to operate (consider any amount of time for maintenance or upgrades as time at which the station should have been operational).

KPI-3: Mean time between failures (MTBF). How long the HRS will run before failing. A filling failure is stated when the fuelling cannot reach 80% of the reservoir capacity.

KPI-4: Parts and labour based on a 200 kg/day throughput of the HRS. Includes also local maintenance infrastructure. Does not include the costs of the remote and central operating and maintenance centre.

KPI-5: Person-hours of labour for the system maintenance per 1,000 h of operations over the station complete lifetime.

KPI-6: Total costs incurred for the construction or acquisition of the hydrogen refuelling station, including on-site storage. Exclude land cost & excluding the hydrogen production unit. Target ranges refer to stations' capacity between 200-1,000 kg/d. CAPEX is dependent on the size of the station, the number of dispensers, the profile of consumption required, the need for buffers, the design.

KPI-7: Contribution of the HRS to the final cost of the hydrogen dispensed, amortisation and O&M costs included. Hydrogen production and transport is not considered. Public subsidies are excluded.

Annex 4 - State-of-the-art and future targets – Hydrogen end use: transport applications

Table 16 KPIs for fuel cell technology for Heavy-Duty-Vehicles

No	Parameter	Unit	SOA	Targets	
			2020	2024	2030
	Fuel Cell Building Blocks				
1	FC module CAPEX	€/kW	1,500	<480	<100
2	FC mo availab				
3	FC stack d				
4	FC stack				
5	Power d				
6	PGM loa				
7	Storage tan CAPEX (CG H_2)				
8	Storage tan CAPEX (LH				
9	Gravimetric capacity (C				
10	Conformab				
11	Gravimetric Capacity LH				
12	LH_2 tank vo Capacity				

Notes:

KPI-1: FC module is defir (recirculation, humidifier, 2030.

KPI-3: The durability targe

KPI-4: FC stack cost incl end-plates. Linked to FC

Table 17 KPIs for Maritime

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
	Fuel Cells for ships				
1	FC power rating	MW	0.5	3	10
2	Hydrogen bunkering rate	ton H_2 /h	0	2	20
3	Maritime FCS lifetime	h	20,000	40,000	80,000
4	Product design reaching type approval	number	0	15	40
5	PEMFC system CAPEX	EUR/kW	2.000	1,500	1.000

Notes:

KPI-1: Power output of fuel cell based power generation (FC system output power)

KPI-2: Bunkering capacity of hydrogen in compressed, liquid form or as part of another hydrogen carrier (shore to ship infrastructure).

KPI-3: Lifetime of integrated fuel cell systems in maritime conditions and associated operation profile, not excluding the replacement of fuel cell stacks and system components at SoA intervals.KPI-4: Type approval on FC and H2 storage solutions. To allow products to be used for maritime propulsion beyond prototype phase, products need to be type approved.

KPI-4: Type approval is a procedure for the approval of the product design for compliance with classification or flag administration requirements. The type approval is a mandatory requirement for critical apparatus installed on any classified vessel.

KPI-5: CAPEX of PEMFC for shipping per kW of power at certain (low) production volume. FC module is defined as FC stack plus air supply system, cooling system, internal engine control unit, media manifold and other BoP (recirculation, humidifier, sensors, DC-DC converter, etc).

Table 18 KPIs for Trains

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
	Fuel Cells for Trains				
1	FC stack durability	h	15,000	20,000	30,000
2	FC stack cost	€/kW	n/a	n/a	<50
3	Areal power density	W/cm² @ V	n/a	1.0@ 0.675	1.2@ 0.675
4	PGM loading	g/kW	0.4	High TRL 0.35	High TRL 0.30 Low TRL < 0.25

KPI-5: Power density in W/cm² (referring to the active geometric area of the electrodes) at a defined cell voltage. Linked to FC stack efficiency, PGM Loading. Low TRL figures are also valid for all types of end-use applications, not only HDV vehicles (as per the Building Blocks, Section 3.4.1).

KPI-6: Ratio of the PGM loading (in mg/cm²) over the power density (in W/cm²) at a defined operating point in voltage. Linked to FC stack cost, FC stack Power density, FC stack efficiency. Low TRL figures are also valid for all types of end-use applications, not only HDV vehicles (as per the Building Blocks, Section 3.4.1).

Annex 5 - State-of-the-art and future targets – Hydrogen end use: stationary applications

Table 20: KPIs for SO stationary fuel cells (SOFC)

No	Parameter		Unit	SoA	Targets	
				2020	2024	2030
	System					
1	CAPEX	<5 kWe	€/kW	10,000	6,000	3,500
		5-50 kWe		10,000	5,000	2,500
		51-500 kWe		10,000	5,000	2,000
2	O&M cost	<5 kWe	€ct/kWh	10	8	2.5
		5-50 kWe		12	7	2.0
		51-500 kWe		10	5	1.5
3.1	Electrical Efficiency η_{el}	<5 kWe	% LHV CH_4	35-55 (90)	55 (90)	55 (90)
		5-50 kWe		55 (85)	58 (85)	62 (85)
		51-500 kWe		55 (85)	60 (85)	65 (85)
3.2	Elec Efficie					
4	Avail					
5						
6	Degra					
7	St					
8	Syst efficien					

Notes:

Standard boundary output of electrical p pipeline (above 99% exclude larger fuel c fuel cells running in

KPI-1: Capital cost a in steady state oper in capital cost. Cost

Table 22: KPIs for Turbines (DLE combustion)

No	Parameter	Unit	SoA 2020	Target 2024	Target 2030
1	H_2 range in gas turbine fuel	% mass	0 – 5	0 – 23	0 - 100
		% vol.	0 - 30	0 - 70	0 - 100
2	NO_x emissions		(30% vol H2)	(70% vol H_2)	(100% H_2)
		NO_x ppmv@15%O_2dry	<25	<25	<25
		NO_x mg/MJ fuel	31	29	24
3	Max. H_2 fuel content during start-up	% mass	0.7	3	100
		% vol.	5	20	100
4	Max. efficiency reduction in H_2 operation	% points	10@30% H2	10@70% H2	10@100% H2
5	Minimum ramp rate	% load / min	10@30% H2	10@70% H2	10@100% H2
6	Ability to handle H_2 content fluctuations	% mass / min	±1.4	±2.21	±5.11
		% vol. / min	±10	±15	±30

Notes:

KPI-1: Hydrogen percentage content in gas turbine fuel, by mass (volume).

Boundary Conditions: applicable only to DLE technology. WLE technologies are not in scope. While state-of-the-art gas turbines can already handle 20% hydrogen by vol (blended in natural gas), development of gas turbines (and more specifically combustors)

Annex 6 - State-of-the-art and future targets – Cross-cutting issues

Table 23: KPIs on recycling processes

No	Parameter	Unit	SoA	Targets	
			2020	2024	2030
1	Minimum CRMs/PGMs (other than Pt) recycled from scraps and wastes	%	n/a	30	50
2	Minimum Pt recycled from scraps and wastes	%	n/a	95	99
3	Minimum ionomer recycled from scraps and wastes	%	n/a	70	80

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Clean Hydrogen Partnership

Call for proposals 2022
HORIZON-JTI-CLEANH2-2022

Call: HORIZON-JU-CLEANH2-2022

- Hydrogen production
- Hydrogen distribution
- Transport
- Heat and Power
- Cross-cutting
- Hydrogen Valleys

Total budget: €300.5 mn

41 topics

41 topics available

10 - Renewable Hydrogen Production

11 - Hydrogen Storage and Distribution

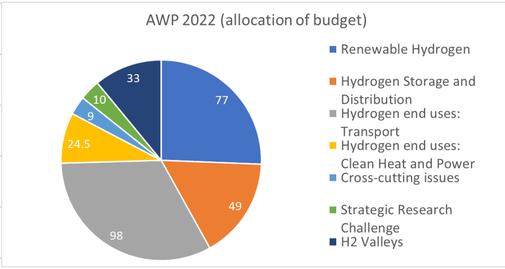
8 - Transport

4 - Heat and Power

5 - Cross-cutting

2 - Hydrogen Valleys

1 - Strategic Research challenge



The topics will be grouped into 10 Innovation Actions (IA), 29 Research and Innovation Actions (RIA) and 2 Coordination and Support Actions (CSA). 6 Innovation Actions (IA) are considered of strategic importance and are selected as **flagship projects,** expected to have a significant impact in accelerating the transition to a hydrogen economy.

Synergies with other European partnerships and programmes, as well as with Member States and regional programmes are at the core of a number of topics.

	Budget (EUR 300.5 million)	Publication	Deadline
First deadline	179.5	1st March 2022	31st May 2022
Second deadline	121.0	1st March 2022	20th September 2022

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Types of Actions and funding rates

RIA - Research and Innovation Actions

Activities that aim primarily to establish new knowledge or to explore the feasibility of a new or improved technology, product, process, service or solution. This may include **basic and applied research**, technology development and integration, testing, demonstration and validation of a small-scale prototype in a laboratory or simulated environment.

funding rate max.**100%**

IA- Innovation Actions

Activities that aim directly to produce plans and arrangements or designs for new, altered or improved products, processes or services. These activities may include prototyping, testing, demonstrating, **piloting, large-scale product validation and market replication**.

funding rate max.**70%***

*Funding 100% for non-profit legal entities

CSA - Coordination and Support Action

Activities that contribute to the objectives of Horizon Europe. This **excludes R&I activities**. Also eligible are bottom-up **coordination actions which promote cooperation** between legal entities from Member States and Associated Countries **to strengthen the European Research Area**, and which receive no EU co-funding for research activities

funding rate max.**100%**

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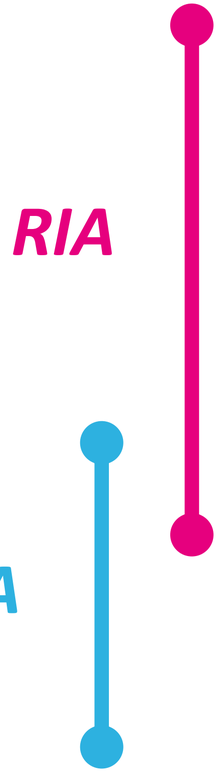
Technology readiness levels (TRL)



TRL 1 – basic principles observed

TRL 2 – technology concept formulated

TRL 3 – experimental proof of concept

TRL 4 – technology validated in lab

TRL 5 – technology validated in relevant environment

TRL 6 – technology demonstrated in relevant environment

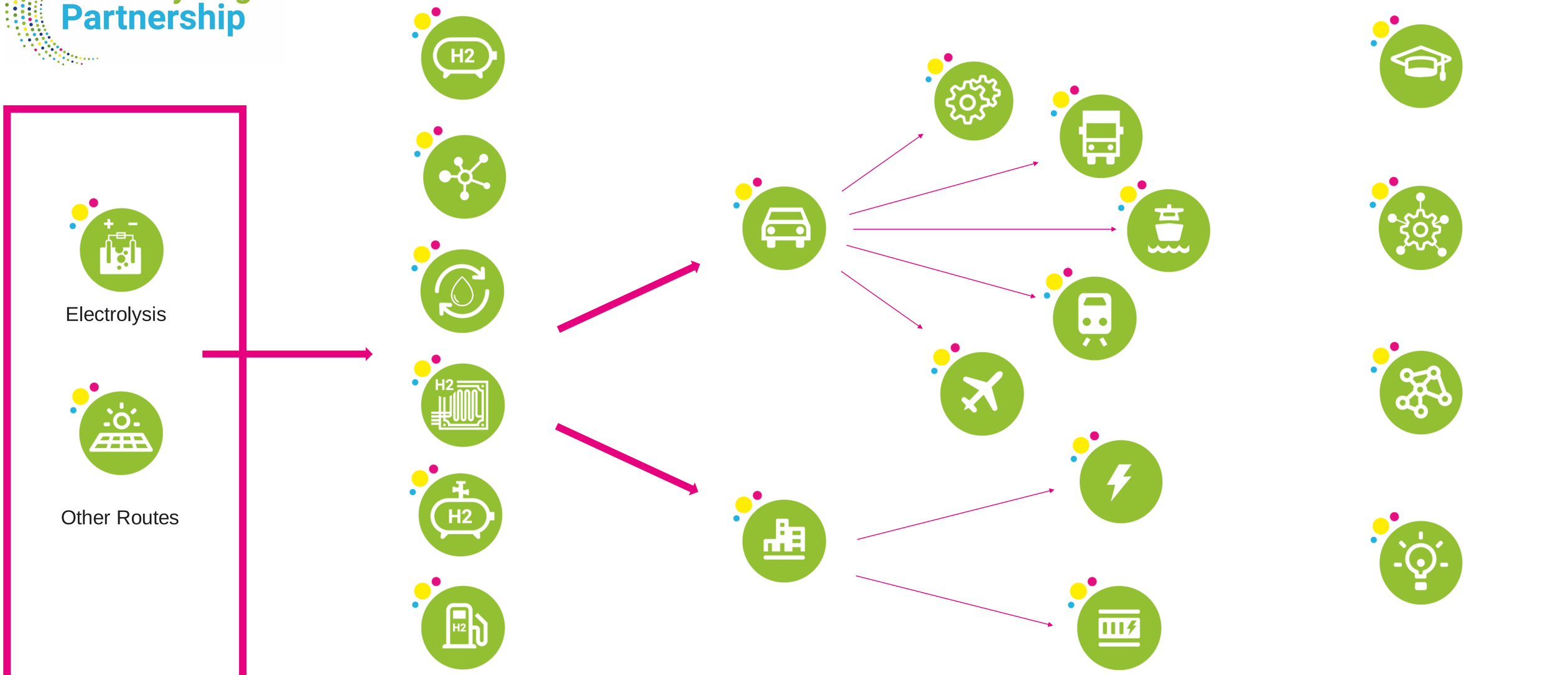
TRL 7 – system prototype demonstration in operational environment

TRL 8 – system complete and qualified

TRL 9 – actual system proven in operational environment

Manufacturing Readiness Level applies instead for Topics 01.04 and 04-01

SRIA: Research & Innovation Activities



EUROPEAN PARTNERSHIP
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Renewable Hydrogen Production Overview

Main Focus

- Cost reduction and efficiency increase for renewable hydrogen production routes:
  - New LT and HT electrolyser designs for high pressure operation
  - Larger cell electrolyser stacks
  - Large scale electrolysers in industry, off-grid and offshore
  - Improved efficiency solar thermochemical H2 production.

What is new

- Circularity
- Improved electrolyser manufacturing

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Clean Hydrogen Partnership

Renewable Hydrogen Overview

Topic HORIZON-JTI-CLEANH2-2022-x	Type of Action	Ind. Budget (M€)	Deadline
01-01: Development and validation of pressurised high temperature steam electrolysis stacks (SOE)	RIA	2.5	31/05/2022
01-02: Development and validation of pressurised high temperature steam electrolysis stacks (Proton Conducting Ceramic Electrolysis)	RIA	2.5	31/05/2022
01-03: Development of low temperature water electrolysers for highly pressurised hydrogen production	RIA	2 x 2.5	31/05/2022
01-04: Design for advanced and scalable manufacturing of electrolysers	RIA	2 x 2	20/09/2022
01-05: Scaling up of cells and stacks for large electrolysers	RIA	6	20/09/2022
01-06: Efficiency boost of solar thermochemical water splitting	RIA	4	31/05/2022
01-07: Bringing renewable hydrogen MW scale off-grid installations closer to technical and financial maturity	IA	9	31/05/2022
01-08: Integration of multi-MW electrolysers in industrial applications	IA	18	20/09/2022
01-09: Scaling-up technologies for SOEL	RIA	2 x 3	31/05/2022
01-10: Demonstrating offshore production of renewable hydrogen	IA	20	20/09/2022

Renewable Hydrogen - Topics

HORIZON-JTI-CLEANH2-2022-01-08: Integration of multi-MW electrolysers in industrial applications

Demonstrate electrolyser technologies beyond state-of-the-art in a specific industrial application

- >25MW electrolyser, LT or HT
- Possible innovations: possibly supply two customers; use of O2 and heat; grid services; footprint reduction
- Includes a go-no go decision, then 2-year operation
- Investigate synergies with Process4Planet or Clean Steel Partnerships

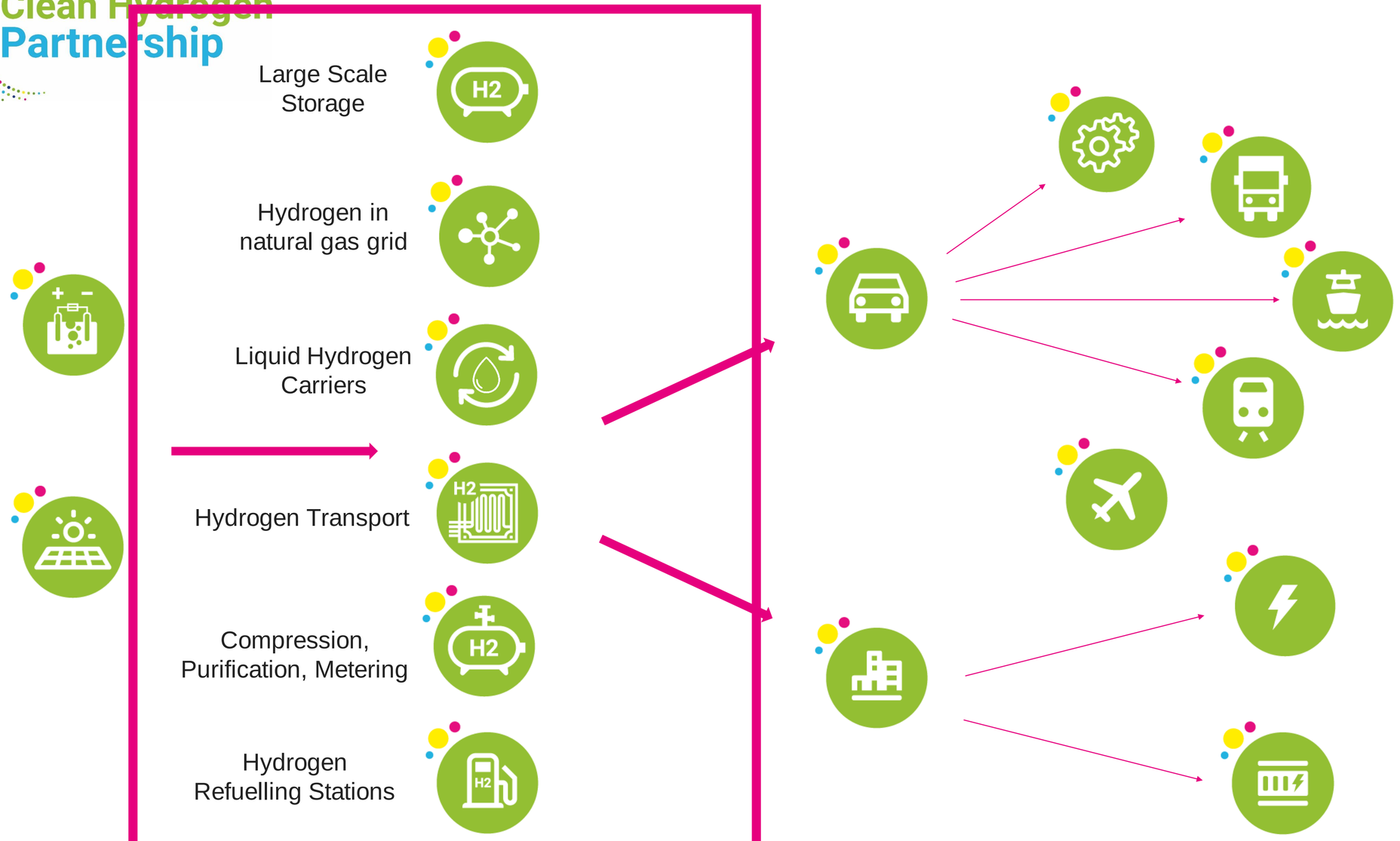
HORIZON-JTI-CLEANH2-2022-01-10: Demonstrating offshore production of renewable hydrogen

Design, construct and integrate a >5MW electrolyser in an offshore infrastructure

- Re-use existing offshore oil/gas infrastructure or develop new – export wind energy as H2
- Safety aspects, remote control, autonomous operation, inspection & maintenance
- Design, construction & 2 years operation, assessment of performance (degradation, OPEX and maintenance costs), economic viability of using existing offshore infrastructure or building new

SRIA: Research & Innovation Activities

Clean Hydrogen Partnership



Production

Distribution and Storage

End-use

Horizontal Activities

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Hydrogen Storage and Distribution Overview

Main Focus

- Improved hydrogen carriers
- Preparing hydrogen refuelling stations for the demands of Heavy-Duty applications
- Scaling-up innovative hydrogen compression solutions

What is new

- Next generation liquefaction units and large scale liquid H2 storage for **shipping**.
- Developing increased capacity tube trailers
- Improving quality control for Hydrogen dispensed in HRS

Co-funded by the European Union

Hydrogen Storage and Distribution Overview

Topic HORIZON-JTI-CLEANH2-2022-x	Type of Action	Ind. Budget (M€)	Deadline
02-01: Compatibility of Distribution non-steel metallic gas grid materials with hydrogen	RIA	2.5	20/09/2022
02-02: Hydrogen and Hydrogen/Natural gas mixture leak detection system for continuous monitoring and safe operation of HRS and future Hydrogen/Natural gas mixture networks	RIA	2.5	31/05/2022
02-03: Validation of a high-performance hydrogen liquefier prototype	RIA	5	31/05/2022
02-04: Ammonia to Renewable Hydrogen: efficient system for ammonia cracking	RIA	3	20/09/2022
02-05: Efficient system for dehydrogenation of liquid organic hydrogen carriers	RIA	3	20/09/2022
☆ **02-06**: Development of large scale LH2 containment for shipping	RIA	6.5	20/09/2022
02-07: Increased hydrogen capacity of GH2 road trailers	RIA	2.5	31/05/2022
02-08: Development of novel or hybrid concepts for reliable, high capacity and energy-efficient H2 compression systems at real-world scale	IA	5	31/05/2022
02-09: Sampling methodology and quality assessment of HRS	RIA	4	31/05/2022
02-10: Implementing new/optimised refuelling protocols and components for high flow HRS	RIA	2 x 4	31/05/2022
☆ **02-11**: Dev. and demo of mobile and stationary compressed HRS for inland shipping and short-distance maritime operations	IA	7	20/09/2022

Hydrogen Storage and Distribution - Topics

HORIZON-JTI-CLEANH2-2022-02-06: Development of large scale LH2 containment for shipping

To develop and validate containment concepts intended for the bulk shipping of liquid hydrogen

- Concept selection for large scale LH_2 containment to be used in shipping
- Detailed design, construction, and testing of a scaled-down prototype of at least 10 t LH2 capacity
- General Approval for the LH_2 containment system by one of the major IACS classification societies

HORIZON-JTI-CLEANH2-2022-02-11: Development and demonstration of mobile and stationary compressed hydrogen refuelling solutions for application in inland shipping and short-distance maritime operations

To focus on either a stationary (pipe-to-ship) or on a floating (ship-to-ship or platform-to-ship) solution

- Demonstrate smart and safe logistics solutions and develop a market standard to support front-running shipping projects.
- Techno-economic analysis of the proposed solution.
- Standardisation of the developed engineering solutions, including components such as refueller, connections, nozzles, as well as of fuelling protocols, is also a key priority.
- Synergies with HORIZON-JTI-CLEANH2-2022-03-05 – inland shipping flagship.

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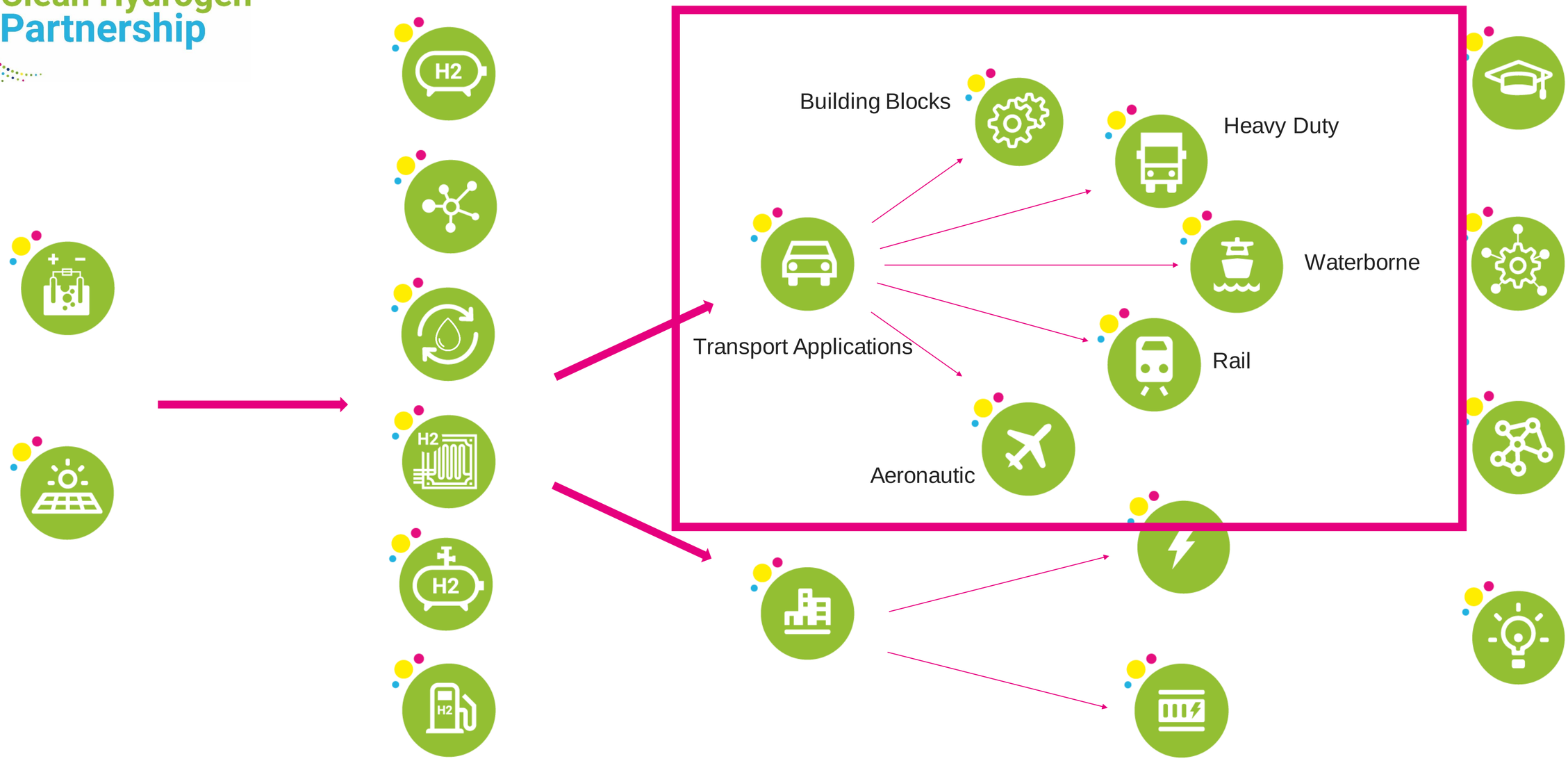
SRIA: Research & Innovation Activities

Clean Hydrogen Partnership



Production | **Distribution and Storage** | **End-use** | **Horizontal Activities**

Co-funded by the European Union

Transport Overview

Main Focus

- Adaptation of key FC system components for heavy duty applications
- Push toward aviation propulsion: upscaling stack and LH2 storage
- Bringing the learnings from first demonstrations (inland vessels and trucks) to fleets

What is new

- Large scale demonstration of trucks
- Decarbonisation of the inland waterways
- Cooperation with Connecting Europe Facility for Transport work programme (AFIF)
- Synergies with HORIZON-JTI-CLEANH2-2022-02-11 – compressed HRS for inland shipping and short-distance maritime

Co-funded by the European Union

Transport Overview

Topic HORIZON-JTI-CLEANH2-2022-x	Type of Action	Ind. Budget (M€)	Deadline
03-01: Development and optimisation of reliable and versatile PEMFC stacks for high power range applications	RIA	2 x 3.5	20/09/2022
03-02: Innovative and optimised MEA components towards next generation of improved PEMFC stacks for heavy duty vehicles	RIA	2 x 3	31/05/2022
03-03: Large scale demonstration of European H2 Heavy Duty Vehicle along the TEN-T corridors	IA	30	31/05/2022
03-04: Liquid hydrogen tanks for heavy-duty vehicles	RIA	2 x 2.5	31/05/2022
03-05: Large scale demonstration of hydrogen fuel cell propelled inland waterway vessels	IA	15	31/05/2022
03-06: Development and optimisation of a dedicated Fuel Cells for Aviation: from dedicated stack (100s kW) up to full system (MWs)	RIA	20	31/05/2022
03-07: Development of specific aviation cryogenic storage system with a gauging, fuel metering, heat management and monitoring system	RIA	10	31/05/2022
03-08: Development and optimisation of a dedicated Fuel Cells for Aviation: disruptive next-gen high temperature Fuel Cells technology for future aviation	RIA	5	31/05/2022

Transport - Topics

HORIZON-JTI-CLEANH2-2022-03-03: Large scale demonstration of European H2 Heavy Duty Vehicle along the TEN-T corridors

Deployment and operation in real-life conditions of 150 FCH trucks.

- Trucks rigid or tractors
- Minimum range for 50% of the trucks: 600 km and at least 65% of the fleet should be long haul: > 37 tons
- Trucks to be operated for a minimum of 2 years, yearly minimum milage 40,000/60,000 km (distribution/long haul)
- Solid data monitoring strategy
- Deployment along the core and comprehensive TEN-T corridors – complementary proposal to CEF Transport for the HRS funding

HORIZON-JTI-CLEANH2-2022 -03-05: Large scale demonstration of hydrogen fuel cell propelled inland waterway vessels

Deployment of 5 inland waterway vessels with fuel cells and electric propulsion.

- Retrofitting and/or new build with a focus on converting ship types with the highest impact on emissions
- FC power >500kW and preferably at 1 MW scale (modular and easy-to-scale solution)
- Bunker hydrogen in at least 2 different ports
- Deployment along the core and comprehensive TEN-T corridors – complementary proposal to CEF Transport for the HRS funding

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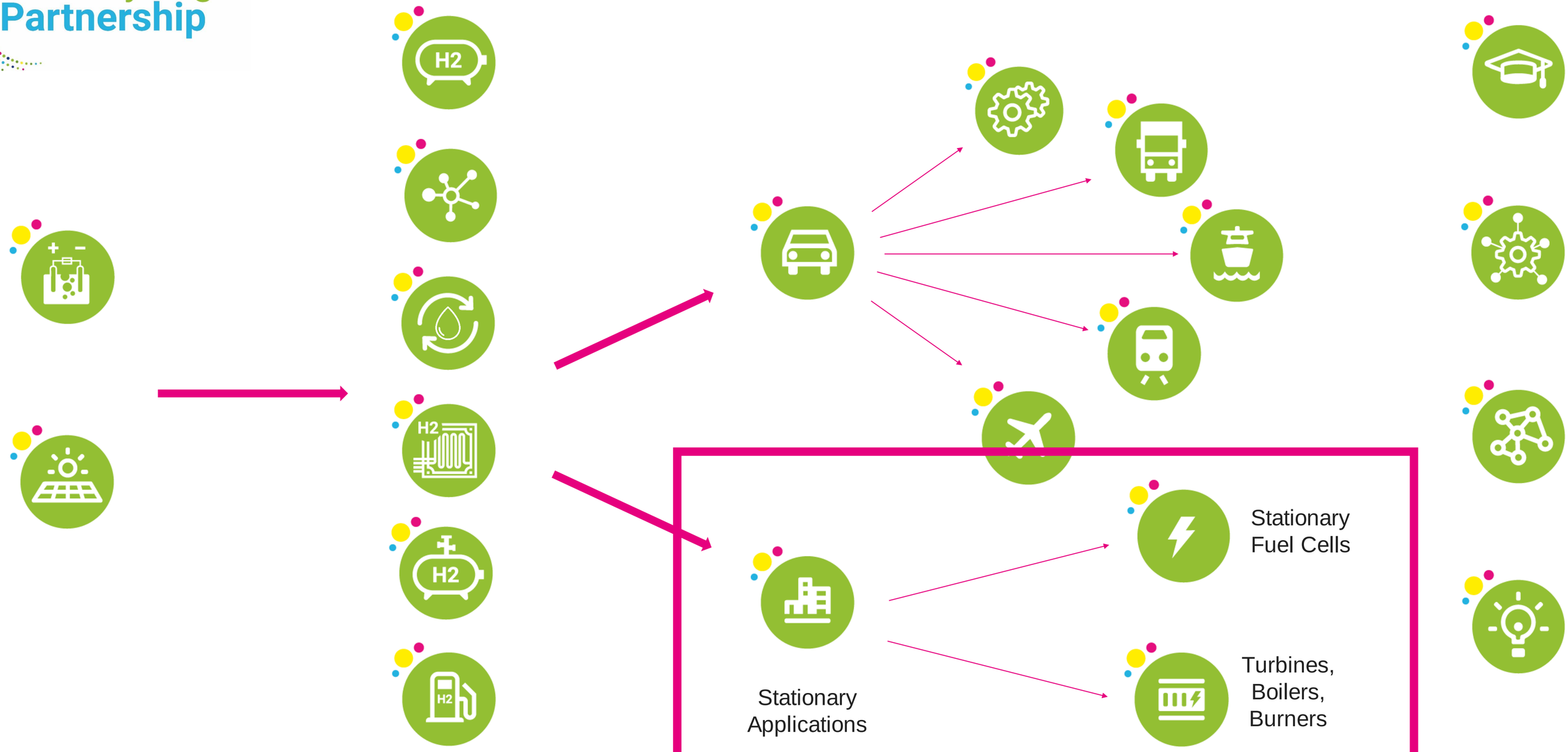
SRIA: Research & Innovation Activities



Co-funded by the European Union

Clean Heat and Power Overview

Main Focus

- Cost reduction through manufacturing
- Fuel and technology diversification
- Enhanced system flexibility

What is new

- Automation of manufacturing, equipment manufacturers at the core of the action
- Gas turbines running on 0-100% H2 in gas

Co-funded by the European Union

Clean Heat and Power Overview

Topic HORIZON-JTI-CLEANH2-2022-x	Type of Action	Ind. Budget (M€)	Deadline
☆ **04-01**: Design and industrial deployment of innovative manufacturing processes for solid oxide fuel cells systems and fuel cell components	IA	7	20/09/2022
04-02: Ammonia powered fuel cell system focusing on superior efficiency, durable operation and design optimization	RIA	4	31/05/2022
04-03: Reversible SOC system development, operation and energy system (grid) integration	RIA	5.5	31/05/2022
04-04: Dry Low NOx combustion of hydrogen-enriched fuels at high-pressure conditions for gas turbine applications	RIA	2 x 4	31/05/2022

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Clean Heat and Power - Topics

HORIZON-JTI-CLEANH2-2022-04-01: Design and industrial deployment of innovative manufacturing processes for Solid Oxide Fuel Cells systems and fuel cell components

Automation of time-consuming manufacturing steps and time/resource efficient quality control

- adaptation & development of manufacturing processes on prototype tool, progress measured by increase in Market Readiness Level (MRL)
- automation/equipment manufacturer/s at the core => beneficial to all SOC manufacturers
- several manufacturing processes can be targeted
- synergies with Made in Europe partnership to be explored
- target: stack production cost <800 €/kW @ annual production volume of 100 MW (single manufacturing line)

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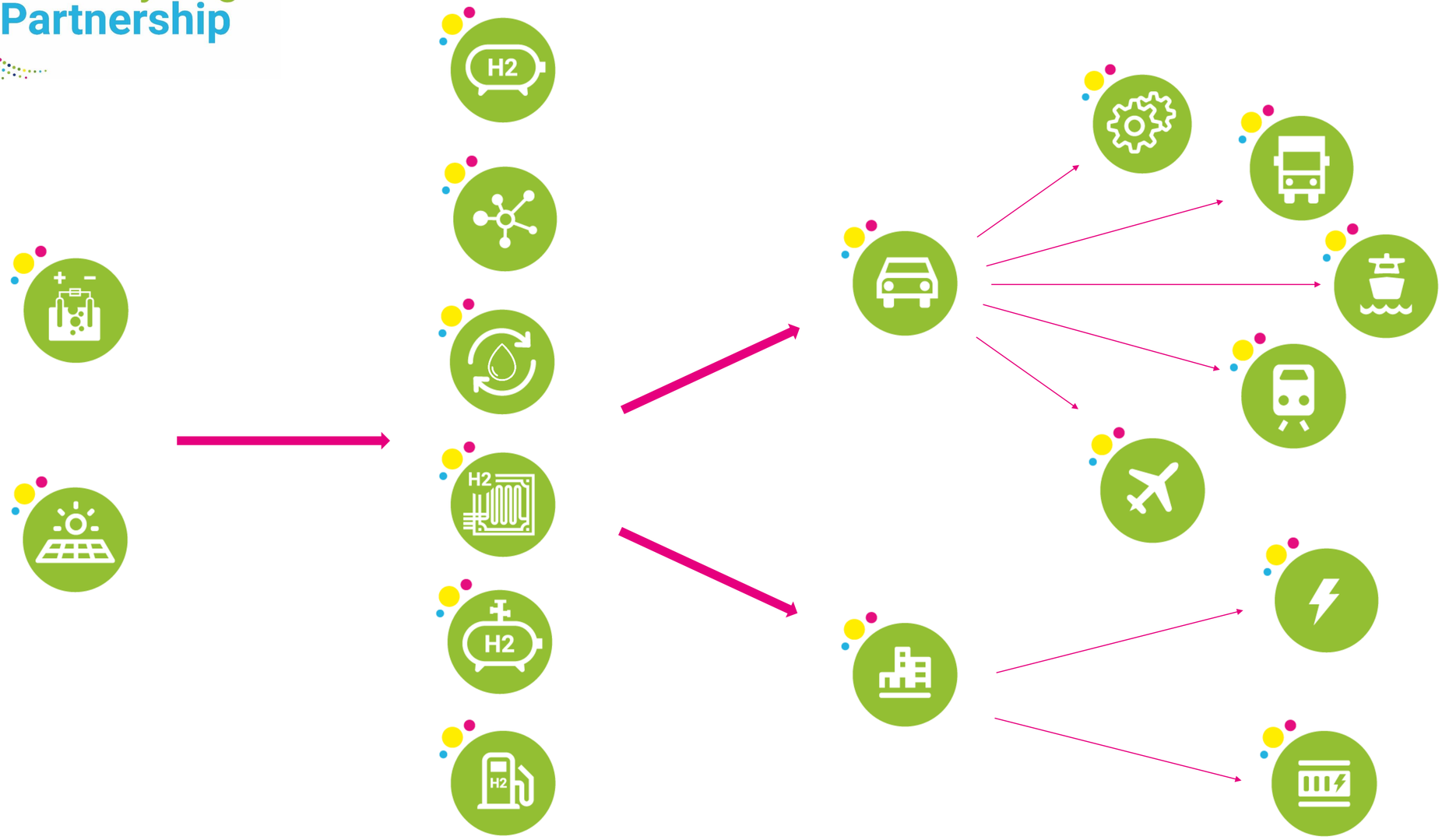
SRIA: Research & Innovation Activities

Clean Hydrogen Partnership



Production

Distribution and Storage

End-use

Cross-cutting

Hydrogen Valleys

Supply chain

Strategic Research Challenges

Horizontal Activities

Cross-cutting Issues - Overview

Main Focus

- Raise public awareness and trust towards Fuel Cells and Hydrogen technologies
- Safety-related aspects of (i) Cryogenic H_2 transfers for mobile applications, (ii) H_2 injection management at network-wide level
- Test methods and requirements for measuring devices in the gas network
- Support cooperation with the African continent

What is new

- Guidance for raising awareness and trust in the public and key stakeholders in Europe
- Addressing safety aspects on (i) new distribution applications, and (ii) network management
- Test methods and limits and tolerances for currently used devices
- Shape future cooperation with African countries on renewable H_2 tech.

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Cross-cutting Issues Overview

Topic HORIZON-JTI-CLEANH2-2022-x	**Type of Action**	**Ind. Budget (M€)**	**Deadline**
05-01: Public understanding of hydrogen and fuel cell technologies	CSA	1	20/09/2022
05-02: Safety of cryogenic hydrogen transfer technologies in public areas for mobile applications	RIA	2	31/05/2022
05-03: Safe hydrogen injection management at network-wide level: towards European gas sector transition	RIA	3	20/09/2022
05-04: Development of validated test methods and requirements for measuring devices intended for measuring NG/H2 mixtures	RIA	2	31/05/2022
05-05: Research & Innovation co-operation with Africa on hydrogen	CSA	1	31/05/2022

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Hydrogen Valleys & Strategic Research Challenges Overview

Topic HORIZON-JTI-CLEANH2-2022-x	**Type of Action**	**Ind. Budget (M€)**	**Deadline**
06-01: Hydrogen Valleys (large-scale)	IA	25	20/09/2022
06-02: Hydrogen Valleys (small-scale)	IA	8	20/09/2022

Topic HORIZON-JTI-CLEANH2-2022-x	**Type of Action**	**Ind. Budget (M€)**	**Deadline**
☆ **07-01:** Addressing the sustainability and criticality of electrolyser and fuel cell materials	RIA	10	31/05/2022

Hydrogen Valleys - Topics

HORIZON-JTI-CLEANH2-2022-06-01: Hydrogen Valleys (large-scale)

Develop, deploy and demonstrate a large-scale H_2 Valley with interlinkages outside its boundaries

- Production of ≥ 5,000 tonnes of renewable H_2 per year using new hydrogen production capacity (GOs)
- ≥ 2 FCH applications from ≥ 2 sectors (energy, industry, transport)
- Demonstrate: existing/new H_2 markets, contribution to economic growth, impact and replicability, commitment of stakeholders
- Financing structure and strategy describing the business model, including envisaged sources of co-funding/co-financing needed

HORIZON-JTI-CLEANH2-2022-06-02: Hydrogen Valleys (small-scale)

Develop, deploy and demonstrate a smaller H_2Valley (particular attention to areas of Europe with no/limited presence of H_2Valleys)

- Production of ≥ 500 tonnes of renewable H_2 per year (GOs)
- Supply more than one end sector or application (mobility, industry energy); >20% H_2 produced for each of the 2 main applications
- Demonstrate: existing/new H_2 markets, contribution to economic growth, impact and replicability and commitment of stakeholders
- Financing structure and strategy describing the business model, including envisaged sources of co-funding/ co-financing needed

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Strategic Research Challenges - Topic

HORIZON-JTI-CLEANH2-2022-07-01: Addressing the sustainability and criticality of electrolyser and fuel cell materials

Removing the CRMs and materials of environmental concerns from electrolysers and fuel cells

- Development of low or free-CRM catalysts and poly/perfluoroalkyls-free ionomers according to SRIA's KPIs
- Improvement of CRM and ionomer recycling from scraps, wastes and end-of-life equipment
- Three innovative solutions for each PEM, AEM, AEL, PCC and SOC technologies
- Breakthroughs in electrocatalysts, coatings, electrode architectures and cell designs
- Life cycle analyses

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Clean Hydrogen Partnership

Flagship projects

expected to have significant impact in accelerating the transition to a hydrogen economy, to demonstrate the viability of clean hydrogen solutions at scale

Topic HORIZON-JTI-CLEANH2-2022-x	**Full Cap. Costs** (9)	**Seal of Excell ence** (2)	**Limited JU funding** (6)	(10)	**Dead line**
01-08: multi-MW electrolysers in industrial applications	X			X	20/09
01-10: offshore RES to H2	X			X	20/09
03-03: HD Trucks along TEN-T	X		X	X	31/05
03-05: H2 (FC) inland waterway vessels (TEN-T)	X		X	X	31/05
06-01: H2Valleys (large)	X	X	X	X	20/09
06-02: H2Valleys (small)	X	X	X	X	20/09

Complex projects requiring special conditions and preparation (in particular on synergies with CEF/regional funds)

Further guidance provided by the Programme Office (contact us!)

- **Six Innovation Actions considered of strategic importance** (combined budget of EUR 116 million)
- Normally, **first-of-a-kind demonstration at scale, in real operational environment of the different generations of hydrogen products (including sectoral integration such as Hydrogen Valleys).**
- Concrete **synergies with other programmes and instruments** (such as other partnerships or other instruments at EU, national or regional level)

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Novelties in the call conditions

Full capitalised costs for purchases

(equipment, infrastructure or other assets purchased specifically for the action)

For the topics listed below, in line with the Clean Hydrogen JU SRIA, mostly **large-scale demonstrators or flagship projects specific equipment, infrastructure or other assets purchased specifically for the action (or developed as part of the action tasks) can exceptionally be declared as full capitalised costs.**

Seal of Excellence

For **two topics in the Call (related to H2 Valleys)** the 'Seal of Excellence' will be awarded to applications exceeding all of the evaluation thresholds set out in this Annual Work Programme but cannot be funded due to lack of budget available to the call.

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Novelties in the call conditions

Maximum EU/JU funding per topic

- **Additional eligibility criterion to limit the Clean Hydrogen JU requested contribution**
- For actions performed at high TRL level, including demonstration in real operation environment and with important involvement from industrial stakeholders and/or end users such as public authorities
- Expected to leverage co-funding as commitment from stakeholders. e.g. through the private investment or co-funding from regional/local funds

Involvement of private members

- **Additional eligibility criterion to ensure that one partner in the consortium is a member of either Hydrogen Europe or Hydrogen Europe Research**
- For topics targeting actions for large-scale demonstrations, flagship projects and strategic research actions, where the industrial and research partners of the JU play a key role in accelerating the commercialization of hydrogen technologies

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Synergies

Opportunities for synergies – for all applicants (in particular flagship projects)

- Possibilities for **complementary funding from other R&I-relevant EU, national or regional programmes** (such as European Structural and Investment Funds, Recovery and Resilience Facility, Just Transition Fund, Connecting Europe Facility, Innovation Fund, Modernisation Fund, LIFE, InvestEU, etc.), as well as private funds or financial instruments.
- Encouraged to consult **the national recovery and resilience plans in order to identify specific mentions of synergies with Horizon Europe** and to detect further opportunities for complementarity between the plans' rich R&I portfolio and the Framework Programme.
- Specific opportunities for **synergies with other partnerships** have been included in some topics' description.
- Whenever synergies are foreseen, they should be reflected in **a financing structure and strategy describing the business model, including envisaged sources of co-funding/co-financing and in line with state-aid rules.**

Call 2022 specific requirements:

- Two flagship topics (deployment of hydrogen trucks and inland vessels) in the Call 2022 strongly recommend **synergies/complementary funding for the H2 refuelling infrastructure from the Connection Europe Facility for Transport** (realisation of the alternative fuels targets for hydrogen along the TEN-T networks)
- Additional two flagship topics (Hydrogen Valleys) strongly recommend **synergies/complementary funding from regional/local funding** and foresee the awarding of a 'Seal of Excellence' to applications which cannot be funded due to lack of budget, therefore increased chances to find alternative funding in other Union programmes, including those managed by national or regional Managing Authorities.

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Safety Plans and Guarantee of Origin

Safety Plans

- For all topics **a ‘safety by design’ approach should be considered**. In particular, for topics involving Innovation Actions proposals should provide **a preliminary draft on ‘hydrogen safety planning and management’ at the project level,** which will be further developed during project implementation (deliverables to be reviewed by the European Hydrogen Safety Panel)
- For topics involving Research and Innovation Actions or Innovation Actions, projects should foresee to **report any safety-related event that may occur during the project implementation to the European Commission's Joint Research Centre (JRC) dedicated database HIAD** through mailbox JRC-PTT-H2SAFETY@ec.europa.eu

CertifHy

- For some of the topics involving Innovation Actions it is expected that **Guarantees of Origin (GOs) will be used to prove the renewable character of the hydrogen that is produced/used.**

Projects with hydrogen production/consumption:

- Issuance/purchase and subsequent cancellation of GOs from the relevant Member State issuing body;
- If the latter is not yet available, the consortium may proceed with the issuance/purchase and cancellation of non-governmental certificates (e.g CertifHy).

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Explicit encouragement for International Collaboration

Mission Innovation 2.0

For some identified topics, **proposals are expected to contribute towards the activities of Mission Innovation 2.0 - Clean Hydrogen Mission**. Cooperation with entities from Clean Hydrogen Mission member countries, which are neither EU Member States nor Horizon Europe Associated countries, is encouraged.

In recognition of the benefits that international collaboration can bring, encouragement of international collaboration beyond EU Member States and Horizon Europe Associated Countries could be foreseen.

A particular example is topic ***HORIZON-JTI-CLEANH2-2022-05-05: Research & Innovation co-operation with Africa on hydrogen***, in which additional eligibility criteria have been introduced to allow African countries to

i) participate in proposal,

ii) be eligible for funding and

iii) ensure a sufficient geographical coverage of the African continent.

Summary of novelties/call conditions elements to pay attention to:

- EU competitiveness and **industrial leadership**
- Opportunities for **synergies**
- Contribution to the **monitoring framework** (TRUST database)
- **International Collaboration**
- Involvement of **private members** (HE/HER)
- **Limited JU funding**/contribution
- **Safety** plans
- **Guarantees of origin** of hydrogen
- Regulation, Codes and Standards
- Activities developing **test protocols**
- Sustainability and **circularity**

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Evaluation by independent experts

European Commission database of experts

Register through the **Funding & tender opportunities Portal and notify us with your interest**

25% new experts

Selection of experts

- High level of skill, experience and knowledge
- Independence and absence of conflict of interest

And **a balance** in terms of:

- geographical diversity
- gender
- where appropriate, the private and public sectors, and
- an appropriate ‘rotation’ from year to year.

Large fields of expertise

In principle, each proposal will be examined by **at least three experts**

Network with fellows

Presence of **one or more independent observers**

Experts that have a **conflict of interests** will be excluded by us !

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/work-as-an-expert

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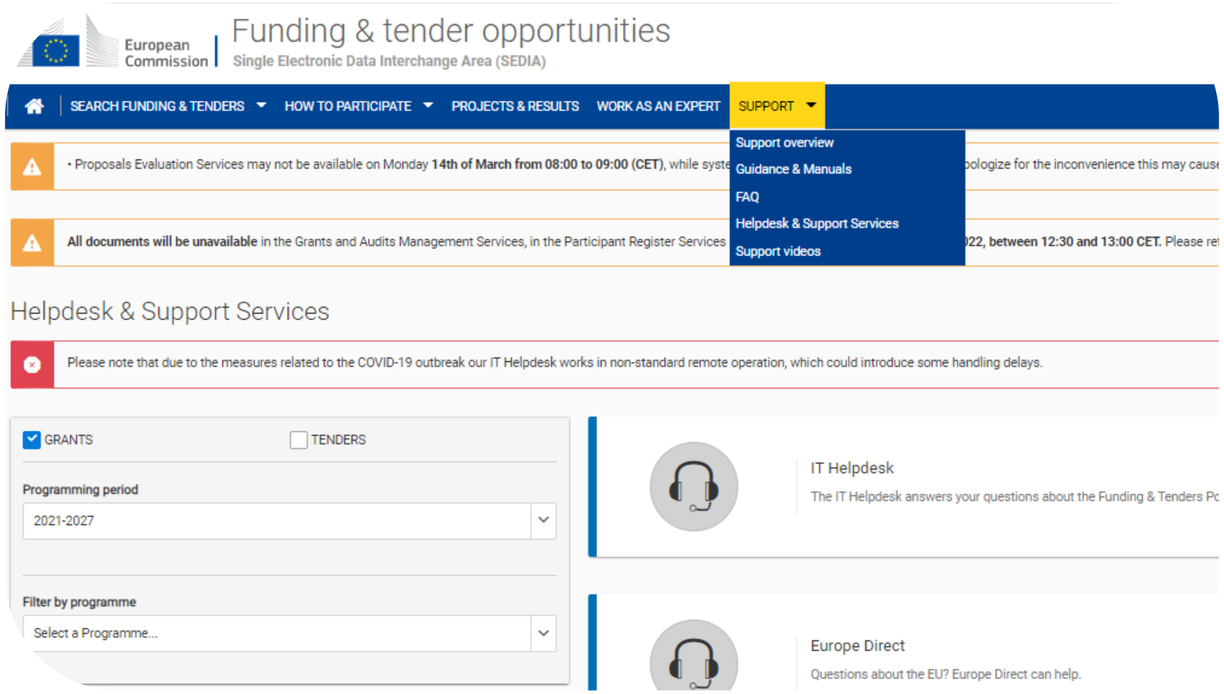
Resources and Support

Funding and Tenders Opportunities Portal

Get Support

- Online Manual is your guide on the procedures from proposal submission to managing your grant
- Funding & Tender Portal FAQ find the answers to most frequently asked questions on submission of proposals, evaluation and grant management
- Research Enquiry Service enquiries about the validation process of the legal entities
- PROJECTS@clean-hydrogen.europa.eu



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Rules for participation, call conditions, evaluation and submission

Pedro GUEDES DE CAMPOS

Clean Hydrogen Joint Undertaking

Co-funded by the European Union

Applicable rules

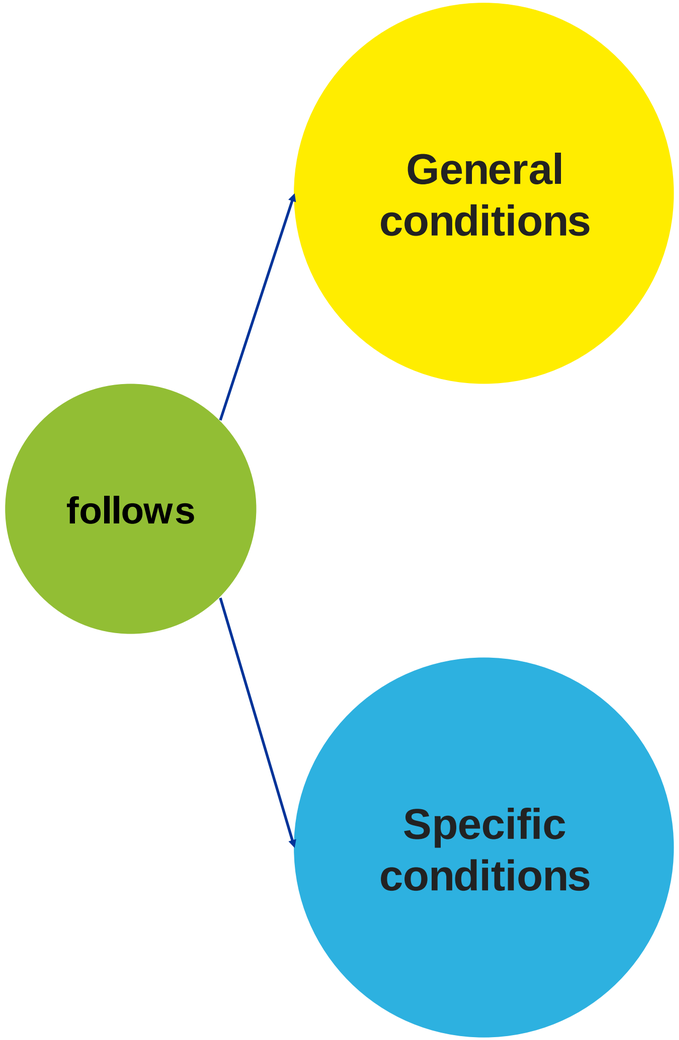
HorizonEU

Call: HORIZON-JU-CLEANH2-2022

Total budget: EUR 300.5 mn

Publication date: 1st March 2022
Opening of submission: 31st March 2022

Deadlines:
- 31st May 2022 (26 topics)
- 20th September 2022 (15 different topics)



General Annexes to Horizon Europe

- Admissibility (Annex A)
- Eligibility (Annex B)
- Financial and operational capacity and exclusion (Annex C)
- Award criteria (Annex D)
- Documents (Annex E)
- Procedure (Annex F)

Others importants aspects:
- TRL, Gender equality plan

Work Programme 2022

May introduce additional eligibility criteria:
- Maximum contribution per topic
- Consortium composition
- Participation of African countries

Annexes A, B and E – Admissibility, eligibility and documents

A proposal is **ADMISSIBLE**, when:

- **Submitted** electronically via the Funders & Tenders Portal **on time**
- **Readable**, accessible and printable
- **Complete** (admin data, proposal description, **operational capacity**, etc.)
- Must include a **plan for the exploitation and dissemination** of the results
- Consist of 2 parts:
  - **Part A:** administrative and budgetary data
  - **Part B:** technical description

Respect page limit for Part B!
CSA = 30 pages
RIA = 45 pages
IA = 70 pages

A proposal is **ELIGIBLE**, when:

- In **line with the topic and call conditions**, with exclusive focus on civil applications
- **Complies with consortium composition**:

RIA and IA	- At least one independent legal entity established in a Member State - And at least two other independent legal entities, each established in different Member States or Associated Countries.
CSA	- At least one legal entity established in a Member State or Associated Country

+ Additional Conditions in the AWP

https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/europe-world/international-cooperation_en#countries-and-regions

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International participation and Eligibility for funding

Applicants from all over the world can participate (except entities subject to EU restrictive measures – see EU Sanctions map)

Yet, to be eligible for funding, applicants must be established in one of the eligible countries, i.e.:

- The EU members states and their overseas countries and territories
- Countries associated to Horizon Europe
- Low and middle-income countries: Afghanistan, Algeria, … , Zambia, Zimbabwe
- **Exceptionally**, any other country, **if**
  - Their country is explicitly identified in the call for proposals as being eligible for funding
  - The Clean Hydrogen JU considers that their **participation** as a beneficiary **is essential** for implementing the project

Countries of African Union for topic 05-05

If not eligible for funding, applicants will have to participate at their own cost.
These participants should **explain in the proposal how their funding will be secured**.

Gender equality plan, and other considerations

Gender Equality Plan

As an **ELIGIBILITY** criterion, public bodies, research organisations and higher education establishments from Member States and Associated Countries are required to have in place a gender equality plan, covering:

Self-declaration in the proposal

Process:

- Publication: a formal document published on the institution's website and signed by the top management;
- Dedicated resources: commitment of resources and expertise in gender equality to implement the plan
- Data collection and monitoring: sex/gender disaggregated data on personnel (and students, for the establishments concerned) and annual reporting based on indicators
- Training: awareness raising/training on gender equality and unconscious gender biases for staff and decision-makers

Content

- work-life balance and organisational culture
- gender balance in leadership and decision-making
- gender equality in recruitment and career progression
- integration of the gender dimension into research and teaching content
- measures against gender-based violence, including sexual harassment.

Additional possible considerations by evaluators

- Dual use and **exclusive focus on civil applications** – simple check via a separate question
- Respect of the "**Do No Significant Harm**" principle, under criteria Excellence + Impact
- Robustness of **Artificial Intelligence** based systems, under criterion Excellence

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Annex C – Financial and operational capacity and exclusion

Financial Capacity:

- Coordinator completes a self-assessment at the proposal stage

Operational Capacity (including operational resources - human, technical and other) - Scored by the experts under implementation, based on partners information:

- Qualifications and experience of staff
- Description of the consortium participants
- List of EU-funded actions/projects in the last 4 years

Capacity and role of each participant, and the extent to which the consortium as a whole brings together the necessary expertise

Each individual participant has, or exceptionally will have in due time, competence and experience to carry out its tasks in the proposed work plan?

Exclusion:

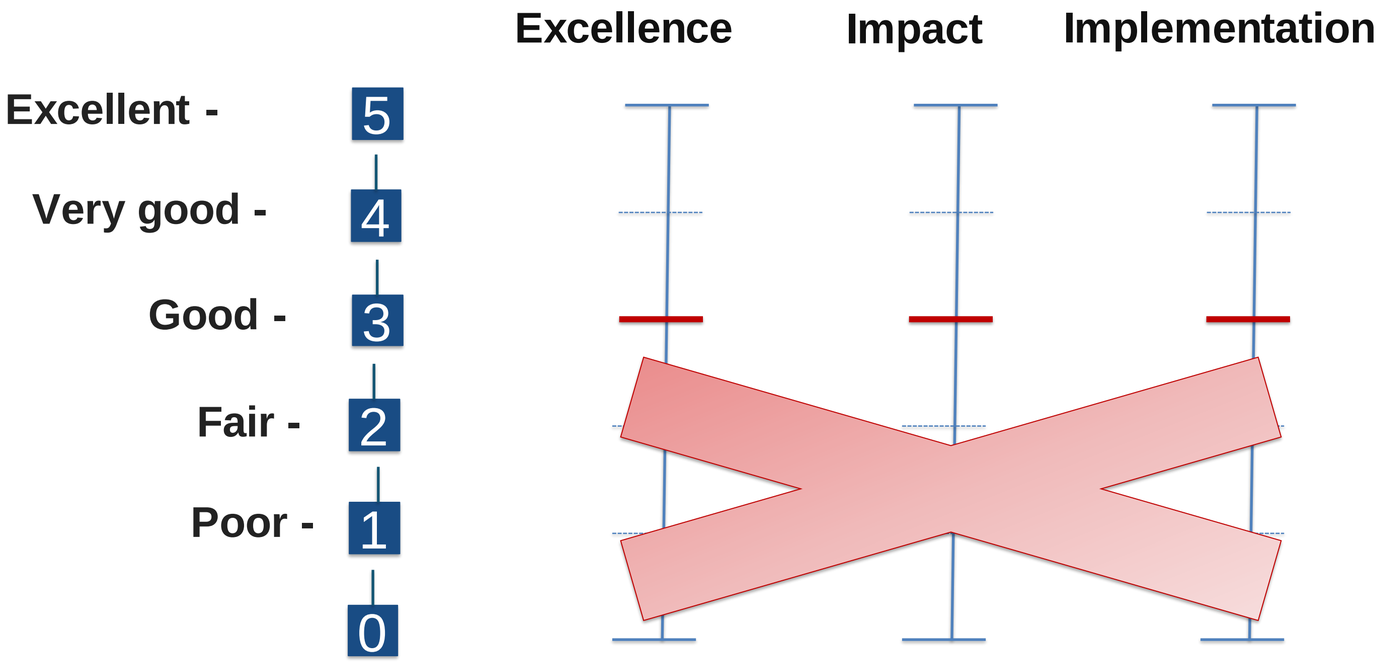
- If subject to EU administrative sanctions or in exclusion situations
- Misrepresented information or involved in the call preparation and create a distortion of competition

Annex D – Award criteria, scores, weighting and thresholds

The proposals will be evaluated against the following **award criteria**:

- **Excellence**
- **Impact**
- Quality and efficiency of the **implementation**

Evaluation grid available in Annex D



Thresholds apply to:

- Individual criterion, score must be ≥ 3
- Overall score must be ≥ 10

Seal of Excellence

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Applicable rules

HorizonEU

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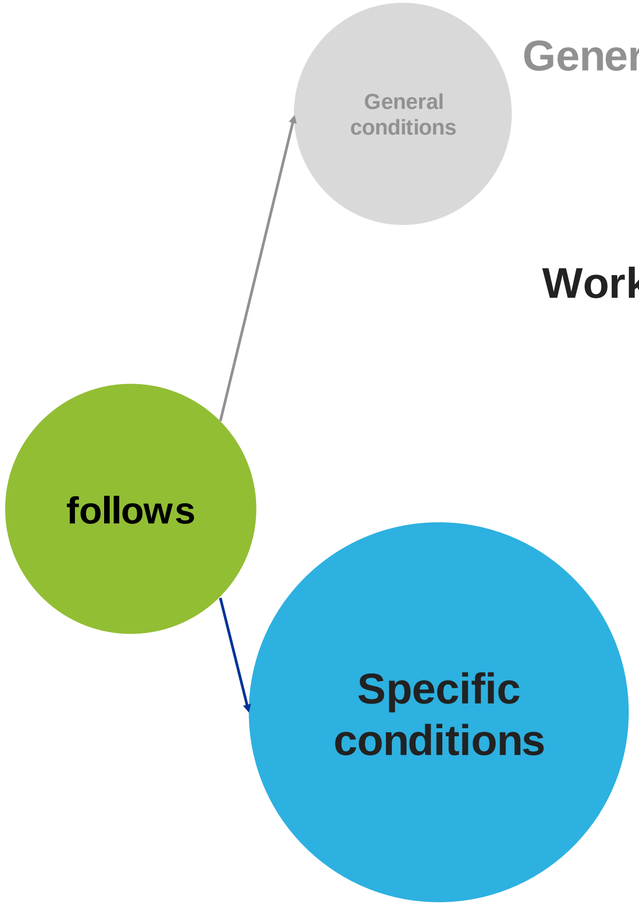


General Annexes to Horizon Europe

Work Programme 2022

- **Maximum contribution per topic** (relevant for 6 topics):

"*The maximum Clean Hydrogen JU contribution is …. proposals requesting JU contribution above this amount will not be evaluated*"

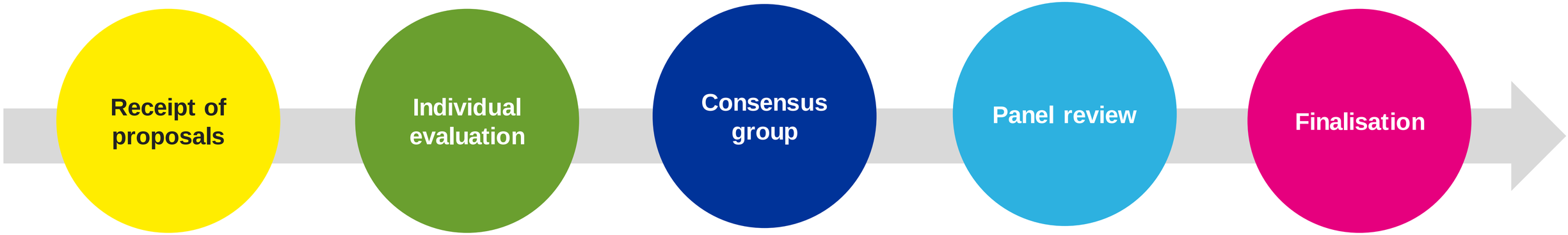
- **Consortium composition** (relevant for 10 topics):

"At least one partner in the consortium must be a member of either Hydrogen Europe or Hydrogen Europe Research"

- **Participation of African countries (relevant for 1 topic)**

"... Participants in the African Union are exceptionally eligible for EU funding"

Submission and Evaluation process



Admissibility/eligibility check

Allocation of proposals to evaluators

Experts assess proposals **individually**.

Minimum of three experts per proposal (but often more than three).

All individual experts discuss together to agree on a **common position**, including comments and scores for each proposal.

The panel of experts reach an **agreement** on the scores and comments for all proposals within a call, checking **consistency across the evaluations**.

if necessary, resolve cases where evaluators were unable to agree.

Rank the proposals with the same score

The Clean Hydrogen JU reviews the results of the experts' evaluation and puts together the **final ranking list**.

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Application form (proposal template)


Horizon Europe Programme

Standard Proposal Template (RIA, IA)

Application forms (Part A)
Project proposal – Technical description (Part B)

Version 1.0
10 March 2021

Disclaimer
This document is aimed at informing potential applicants for Horizon Europe funding. It serves only as an example. The actual Web forms and templates, provided in the online submission system under the Funding and Tenders Portal, might differ from this example.

The proposal contains **two parts**:

Part A
Administrative Forms

- Part A (web-based administrative forms) is generated by the IT system. It is based on the information entered by the participants through the submission system in the Funding & Tenders Portal.

Part B
Technical Description

- Part B is the narrative part that includes three sections that each correspond to an evaluation criterion. Part B needs to be uploaded as a PDF document following the templates downloaded by the applicants in the submission system for the specific call or topic.

New features in the Horizon Europe proposal

NEW FIELDS IN PART A

- **Researchers table** – needed to follow up researchers careers (HE indicator)
- Role of participating organisation
- Self-declaration on **gender equality plan**

FIELDS MOVED FROM PART B TO PART A

- Ethics self-assessment
- Security questionnaire (**NEW!** in all HE proposals)
- Information on participants' previous activities related to the call

NEW IN PART B

- Glossary of terms.
- Consistency on the use of terminology is ensured in all project phases (from WP to proposal and reporting)
- Extensive explanations on what exactly should be included in each section.

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8 months for time to grant, from call deadline to signature of the grant agreement

Call deadline		**Signature of Grant Agreement**
31st May 2022	➔	31st January 2023
20th Sept. 2022	➔	20th May 2023

Quality of the proposal is key !

- The experts evaluate each proposal as submitted
- The experts do not recommend substantial modifications
- If the experts identify significant shortcomings, they must reflect those in a lower score for the relevant criterion

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Clean Hydrogen Partnership

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