

Horizon Europe Funding Opportunities – 2022

CLEAN HYDROGEN JOINT UNDERTAKING

ISERD is the interface between the Israeli government and the EU, for all the activities of the Framework Programme. Our goal is to promote participation of Israeli entities in European research and innovation (R&I) activity and to increase Israel's scientific and industrial collaboration with the European R&I ecosystem. ISERD holds events, information days, and [monthly Orientation Presentations](#), providing more information about funding opportunities

Horizon Europe (HEU)

[HEU](#) is a 95.5-billion-euro funding programme for R&I, that covers all major scientific and technological disciplines, and encourages collaborative projects (consortia) for a joint goal.

- Consortium –
 - ✓ At least 3 partners from 3 different countries participating in the programme
 - ✓ Out of the 3, at least one partner must be from an EU country
 - ✓ A partner can be any legal entity – university, company, agency, organisation, etc...

- Funding Tools –

Action	Funding*	Technology Readiness Level	Main Characteristics
RIA – Research & Innovation Action	100% + 25%	Low TRL (4-6)	Basic and applied research , technology development and integration, testing and validation - small-scale prototype in laboratory or simulated environment
IA – Innovation Action	70% + 25%	High TRL (6-8)	Prototyping , testing, demonstrating, piloting, large-scale product validation and market replication
CSA - Coordination & Support Action	100% + 25%		Networking , coordination or support services , policy dialogues and mutual learning exercises and studies

* Non-profit: always 100% + 25% overhead

For further Information:

Asaf Aharon | Asaf.Aharon@iserd.org.il | +972-3- 5118120

Topic	Expected TRL	Project Budget [M€]	No. of Projects	Action	Deadline [dd.mm.yyyy]
PILLAR 1: RENEWABLE HYDROGEN					
HORIZON-JTI-CLEANH2-2022 -01-01: Development and validation of pressurised high temperature steam electrolysis stacks (Solid Oxide Electrolysis)	2-4	2.5	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -01-02: Development and validation of pressurised high temperature steam electrolysis stacks (Proton Conducting Ceramic Electrolysis)	2-4	2.5	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -01-03: Development of low temperature water electrolyzers for highly pressurised hydrogen production	2-5	2.5	2	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -01-04: Design for advanced and scalable manufacturing of electrolyzers	4-5 (MRL*)	2	2	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -01-05: Scaling up of cells and stacks for large electrolyzers	3-5	6	1	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -01-06: Efficiency boost of solar thermochemical water splitting	4-6	4	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -01-07: Bringing renewable hydrogen MW scale off grid installations closer to technical and financial maturity	7	9	1	IA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -01-08: Integration of multi MW electrolyzers in industrial applications	6-8	18	1	IA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -01-09: Scaling up technologies for Solid Oxide Electrolysis Cells (SOEL)	4-6	3	2	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -01-10: Demonstrating offshore production of green hydrogen	5-7	20	1	IA	20.9.2022

Topic	Expected TRL	Project Budget [M€]	No. of Projects	Action	Deadline [dd.mm.yyyy]
PILLAR 2: HYDROGEN STORAGE AND DISTRIBUTION					
HORIZON-JTI-CLEANH2-2022 -02-01: Compatibility of Distribution non-steel metallic gas grid materials with hydrogen	3-5	2.5	1	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -02-02: Hydrogen and H2NG leak detection for continuous monitoring and safe operation of HRS and future hydrogen/H2NG networks	3-5	2.5	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -02-03: Validation of a high-performance hydrogen liquefier	3-5	5	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -02-04: Ammonia to renewable Hydrogen: efficient system for ammonia cracking	3-5	3	1	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -02-05: Efficient system for dehydrogenation of liquid organic hydrogen carriers	3-5	3	1	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -02-06: Development of large scale LH2 containment for shipping	2-5	6.5	1	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -02-07: Increased hydrogen capacity of GH2 road trailers	3-5	2.5	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -02-08: Development of novel or hybrid concepts for reliable, high capacity and energy-efficient H2 compression systems at real-world scale	7	5	1	IA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -02-09: Sampling methodology and quality assessment of HRS	3-5	4	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -02-10: Implementing new/optimised refuelling protocols and components for high flow HRS	3-6	4	2	RIA	31.5.2022
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	3-6	7	1	IA	20.9.2022

PILLAR 3.1: HYDROGEN END USES: TRANSPORT APPLICATIONS

Topic	Expected TRL	Project Budget [M€]	No. of Projects	Action	Deadline [dd.mm.yyyy]
HORIZON-JTI-CLEANH2-2022 -03-01: Development and optimisation of reliable and versatile PEMFC stacks for high power range applications	3-5	3.5	2	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -03-02: Innovative and optimised MEA components towards next generation of improved PEMFC stacks for heavy duty vehicles	2-4	3	2	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -03-03: Large scale demonstration of European H2 Heavy Duty Vehicle along the Ten-T corridors	7-8	30	1	IA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -03-04: Liquid hydrogen tanks for heavy-duty vehicles	4-6	2.5	2	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022-03-05: Large scale demonstration of hydrogen fuel cell propelled inland waterway vessels	6-8	15	1	IA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -03-06: Development and optimisation of a dedicated Fuel Cells for Aviation: Development of dedicated stack (100s kW) with the objective of MWs full system	4-6	20	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -03-07: Development of specific aviation cryogenic storage system with a gauging, fuel metering, heat management and monitoring system	1-3 (CFRP) 2-4 (system)	10	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022-03-08: Development and optimisation of a dedicated Fuel Cells for Aviation: disruptive next-gen high temperature Fuel Cells technology for future aviation	2-4	5	1	RIA	31.5.2022

PILLAR 3.2: HYDROGEN END USES: CLEAN HEAT AND POWER

HORIZON-JTI-CLEANH2-2022 -04-01: Design and industrial deployment of innovative manufacturing processes for solid oxide fuel cells systems and fuel cell components	4-7(MRL*)	7	1	IA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -04-02: Ammonia powered fuel cell system focusing on superior efficiency, durable operation and design optimisation	3-5	5.5	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -04-03: Reversible SOC system development, operation and energy system (grid) integration	3-5	6	1	RIA	31.5.2022

Topic	Expected TRL	Project Budget [M€]	No. of Projects	Action	Deadline [dd.mm.yyyy]
HORIZON-JTI-CLEANH2-2022 -04-04: Dry Low NOx combustion of hydrogen-enriched fuels at high-pressure conditions for gas turbine applications	4-6	4	2	RIA	31.5.2022
HORIZONTAL 1: CROSS-CUTTING					
HORIZON-JTI-CLEANH2-2022 -05-01: Public understanding of hydrogen and fuel cell technologies	N/A	1	1	CSA	20.9.2022
HORIZON-JTI-CLEANH2-2022-05-02: Safety of cryogenic hydrogen transfer technologies in public areas for mobile application	N/A	2	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -05-03: Safe hydrogen injection management at network-wide level: towards European gas sector transition	3-6	3	1	RIA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -05-04: Development of validated test methods and requirements for measuring devices intended for measuring NG/H2 mixtures	4	2	1	RIA	31.5.2022
HORIZON-JTI-CLEANH2-2022 -05-05: Research & Innovation co-operation with Africa on hydrogen	N/A	1	1	CSA	31.5.2022
HORIZONTAL 2: HYDROGEN VALLEYS					
HORIZON-JTI-CLEANH2-2022 -06-01: H2 Valleys (large-scale)	6-8	25	1	IA	20.9.2022
HORIZON-JTI-CLEANH2-2022 -06-02: H2 Valleys (small-scale)	6-8	8	1	IA	20.9.2022
HORIZONTAL 4: STRATEGIC RESEARCH CHALLENGES					
HORIZON-JTI-CLEANH2-2022 -07-01: Addressing the sustainability and criticality of electrolyser and fuel cell materials	2-4	10	1	RIA	31.5.2022

*Manufacturing Readiness Levels (MRL)