

Hydrogen Valleys

Topics in the Call 2025 & Lessons Learnt

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Hydrogen Valleys - Overview



Main Focus

- Demonstrate an ecosystem built on the complete value chain of hydrogen;
- Large and small-scale hydrogen valleys acting as testbeds to showcase first regional "hydrogen economies";
- Topic open to foster the emergence of the widest possible array of valleys configurations;
- Innovation in Hydrogen Valleys is not about the technology development of an application, but on system integration of hydrogen production, its distribution and storage, and its subsequent use (TRL $\geq 6-8$)



What is new

- Collaboration with the successful applicants under topic "HORIZON-JU-CLEANH2-2025-05-03 on 'Knowledge transfer and training of civil servants, safety officials, and permitting staff ...across Europe' is expected
- FAQs on Hydrogen Valleys [available](#)

Hydrogen Valleys - Overview

Topic	Type of Action	Budget** (M€)
HORIZON-JTI-CLEANH2-2025-06-01: Hydrogen Valleys (large-scale)	IA	20*
HORIZON-JTI-CLEANH2-2025-06-02: Hydrogen Valleys (small-scale)	IA	9*

***This is the maximum Clean Hydrogen JU contribution that may be requested – proposals requesting Clean Hydrogen JU contributions above this amount will not be evaluated.**

**The budget of the Call includes EUR 80 million from the REPowerEU Plan to support exclusively Hydrogen Valleys as follows:

- at least one large-scale Hydrogen Valley and one small-scale Hydrogen Valley from the Call 2025 ranking list will be selected for funding provided they meet the required thresholds
- additional Hydrogen Valleys proposals from the Call 2025 ranking list will be further selected for funding in order to optimise the use of this available budget

Hydrogen Valleys - Topics

HORIZON-JTI-CLEANH2-2024-06-01: Hydrogen Valleys (large-scale)



Develop and demonstrate a large-scale Hydrogen Valley with innovative approaches at system level



- Production of $\geq 4,000$ tonnes of clean H₂ per year using new hydrogen production capacity (GOs)
- ≥ 2 hydrogen applications from ≥ 2 sectors (energy, industry, transport), ≥ 2 years of operations
- Production plants may be distributed across the territories involved but should share common hydrogen supply infrastructure
- Costs for construction and commissioning phase of H₂ production technologies (e.g connection to the electricity grid, electricity costs) and other H₂ infrastructure (e.g HRS, storage, pipelines, etc) may be funded
- Costs of renewable energy plants (e.g., PV or wind plant) or related costs for operation of the Hydrogen Valley (e.g., electricity for electrolyzers) will not be funded



HORIZON-JTI-CLEANH2-2024-06-02: Hydrogen Valleys (small-scale)



Develop and demonstrate a small Hydrogen Valley with innovative approaches at system level



- Production of ≥ 500 tonnes of clean H₂ per year using new hydrogen production capacity (GOs)
- Supply more than one end sector or application (mobility, industry energy), ≥ 2 years of operations;
- Costs for construction and commissioning phase of H₂ production technologies (e.g connection to electricity grid, electricity costs) and other H₂ infrastructure (e.g HRS, storage, pipelines, etc) may be funded
- Costs of renewable energy plants (e.g., PV or wind plant) or related costs for operation of the Hydrogen Valley (e.g., electricity for electrolyzers) will not be funded

Hydrogen Valleys - Topics

Common elements applicable to Hydrogen Valley Topics

- Provide concrete project **implementation plans** with a clear calendar, defining the key phases of the implementation of the action;
- Provide a **funding plan** to ensure implementation of the project in synergies with other sources of funding;
- Clearly and coherently present the Hydrogen Valley (across the whole value chain) including the investments/actions supported directly by this topic as well as **other investments/actions supported by other funding /financing sources**;
- Demonstration of how **financial viability** is expected to be reached after two years of operation.
- Provide **evidence of the commitment** and role of public authorities and of any other necessary stakeholders (e.g. hydrogen off-takers) at least in the form of **Letters of Intent (LOI)**, remember to include as annexes;
- **Replicability and cooperation** between regions to facilitate transfer of knowledge across the EU with a focus on fostering replication of Hydrogen Valleys elsewhere
- **Scalability** showing how the valley is expected to grow
- Demonstrate **contribution to EU competitiveness and industrial leadership**

Detailed FAQs available

https://www.clean-hydrogen.europa.eu/document/download/3dfef268-f8d5-4c2e-b783-f634ec15b772_en?filename=FAQ%20-%20Call%20HORIZON-JTI-CLEANH2-2025%20-%202025-01-15.pdf



1. **How many** Hydrogen Valleys **projects** can be supported in the Call 2025?
2. Does **planned hydrogen production capacity** count towards the topic requirements of "new hydrogen production capacity"? I have already secured national funding for a hydrogen production plant that is already planned, can this count towards the hydrogen production requirements of the topic?
3. Do I need to provide **details for the parts of the Hydrogen Valley that are exclusively funded by sources other than the Clean Hydrogen JU**, e.g buses fully funded by a national funding programme? How to present costs in the proposal for Hydrogen Valleys that are being financed/funded using a combination of funding sources including Clean Hydrogen JU funding?
4. As for the **income generated by the action** - should we indicate here revenues from the sale of hydrogen from production hubs that will be created in the project?
5. What is the **timeframe** that the target of a new H2 production annually (500 or 4,000 tonnes) and its application in 2 sectors must be achieved?
6. Are (dual fuel) **combustion engines** eligible for funding under call topics 06-01 and 06-02 (Hydrogen valleys)?
7. What does the topic means by **clean hydrogen**?
8. We are in the process of gathering **Letters of Intent (LOI)** for the project. We are wondering if the LOI count towards to page limit? Or is there another way to attach them to the application, where they do not count in the page limit?
9. Which are the **costs related to the hydrogen production plant** for which the Clean Hydrogen JU can provide funding support?
10. What do you mean by " Proposals should demonstrate how **financial viability** is expected to be reached after two years of operation"?
11. Regarding **e-fuels** such as methanol, and in the context of Hydrogen Valleys topics, is it a valid production/carrier method and could it contribute to the end use requirements of the topic if, for instance, was used in transport applications as a replacement to fossil fuels? And can e-fuel production plants be funded by the Clean Hydrogen Partnership?

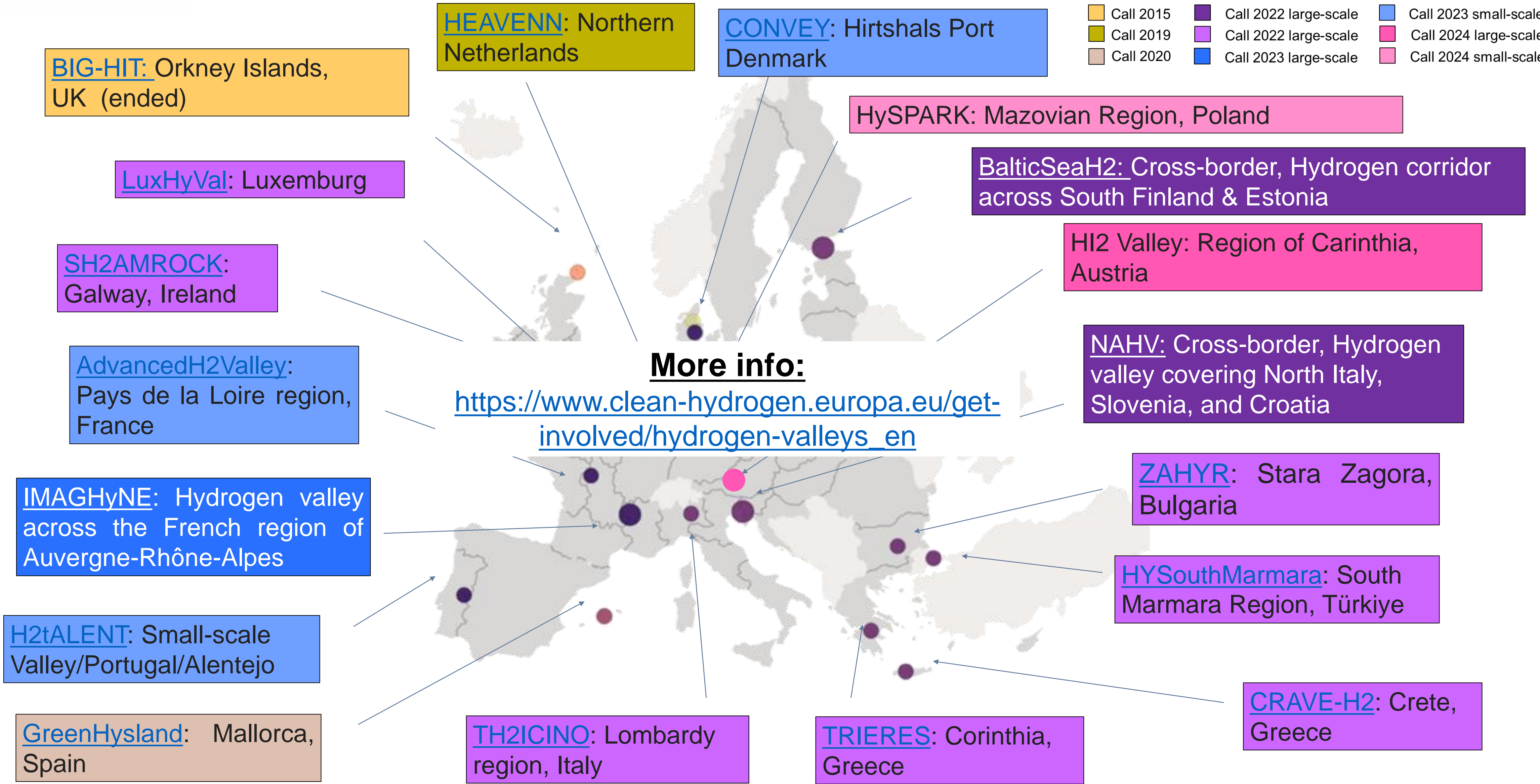
Hydrogen Valleys Calls

Lessons learnt

Hydrogen Valleys supported by the Clean Hydrogen Partnership

Different scales, hydrogen production mainly via electrolysis, diverse end- uses

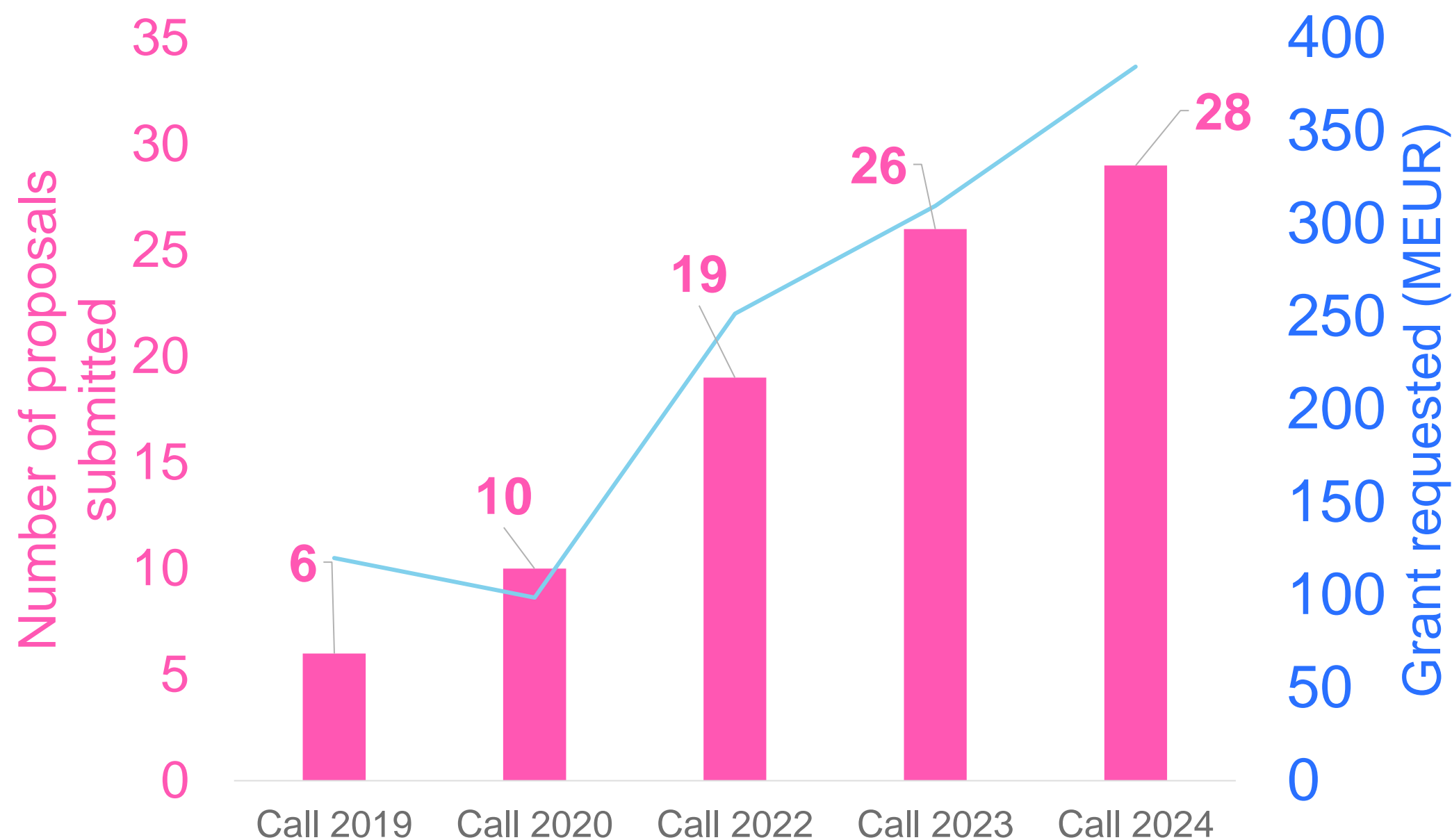
- Call 2015
- Call 2019
- Call 2020
- Call 2022 large-scale
- Call 2022 large-scale
- Call 2023 large-scale
- Call 2023 small-scale
- Call 2024 large-scale
- Call 2024 small-scale



Overview of former Calls

Quality of proposals has increased
Increased interest in Large-scale Valleys
Almost all EU MS have submitted proposals

Number of proposals (elig/adm) in Hydrogen Valleys Calls



Call 2023:

- **26** eligible/admissible proposals, **7** large –scale, **19** small scale
- **19%** proposal above the threshold, **1** large-scale, **3** small-scale
- Overall, expected impact of the proposals is good / very good BUT a large number of proposals either:
 - passed Impact and implementation criteria but failed Excellence
 - passed Excellence and Impact but failed on Implementation

Call 2024:

- **28** eligible/admissible proposals, **13** large –scale, **15** small scale
- **28%** proposals above the threshold, 4 large-scale, 4 small-scale
- The majority of proposals below the threshold, have an insufficient Excellence (concept and/or maturity)
- **15** countries with no Valleys supported by the JU applied to the Call

Lessons learnt: Excellence

Insufficient starting point, unmaturing proposals

EXCELLENCE

- Clarity and pertinence of the **project's objectives**, and the extent to which the proposed work is ambitious, and goes beyond the state-of-the-art.
- Soundness of the proposed **methodology**, including the underlying concepts, models, assumptions, inter-disciplinary approaches, appropriate consideration of the **gender dimension** in research and innovation content, and the quality of **open science practices** including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate.

Soundness of hydrogen to decarbonise a certain geography not sufficiently supported by evidences/early studies

Technology maturity (SoA) not adequately demonstrated -> undermines the credibility of having a functional Valley by the end of the project

Methodology not sufficiently explained, e.g:

- Elements of the Hydrogen Valley supported by other funding sources briefly mentioned and connection to proposal not explained;
- Interaction (including governance) between production, storage, distribution and end-use cases not clearly explained, do we have a Hydrogen Valley?;
- Techno-economic considerations not covered -> is the starting point mature enough?;
- Quantification of hydrogen produced in the project not provided;
- Renewable nature of the hydrogen to be produced/used in the Hydrogen Valley not sufficiently explained / demonstrated;
- Hydrogen off-takers not sufficiently identified
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Lessons learnt: Implementation

Credibility of the Implementation plans

QUALITY AND EFFICIENCY OF THE IMPLEMENTATION

- Quality and effectiveness of the **work plan**, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.
- Capacity and role of each **participant**, and extent to which the **consortium** as a whole brings together the necessary expertise.

Work Plans do not demonstrate how the project objectives will be met

- a clear calendar for the implementation and validation of the use cases is not presented
- tasks in the work packages not clearly identified nor leading to the implementation of the Hydrogen Valley (lack of details, too general, etc.)
- exclusion from the work plan of key elements of the Hydrogen Valley (especially for the implementation/monitoring of elements for which costs will be covered by other funding schemes)
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Critical risks for implementation

Cost information too general, breakdowns insufficiently detailed

Funding plan/strategy not clearly presented

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Synergies and combination of funding

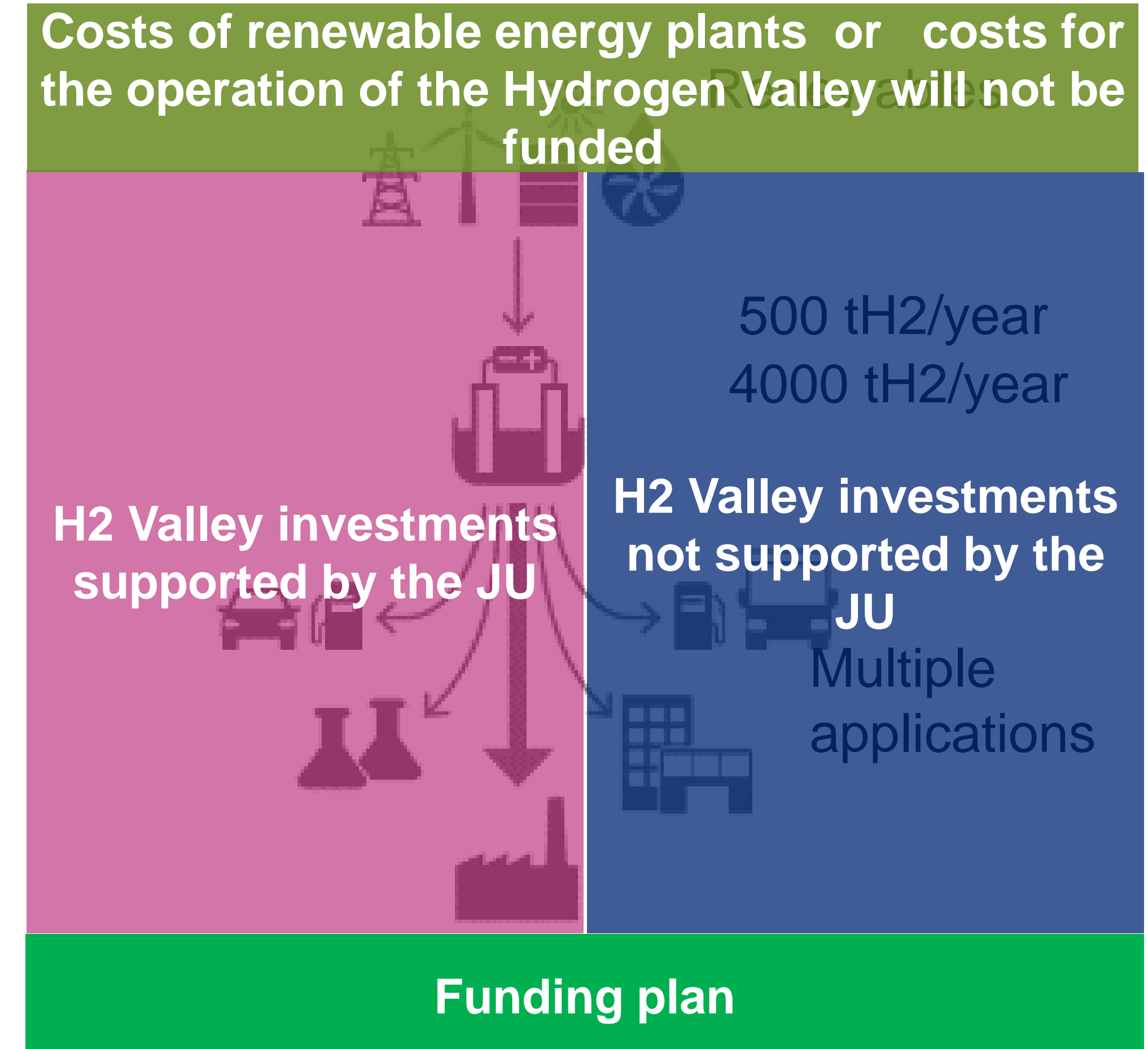
Hydrogen Valleys require significant investments (JU funding covers only a fraction) -> co-funding from other sources needed

Present the H2 Valley across the whole value chain including:

- investments/actions supported directly **by the JU**;
- investments/actions supported (exclusively) **by other sources**

Necessary to, **convincingly**, address all elements of the Hydrogen Valley that are necessary to respond to the topic requirements

Provide a **funding plan** to ensure implementation of the project in synergies with other sources of funding and/or commitment from the partners to provide own funding



- Pay attention to the **starting point** of your proposal -> maturity of the proposed ecosystem;
- **Propose credible techno-economic** solutions supported with evidences;
- Be concrete and comprehensive when drafting the **implementation plans of the project** -> demonstrate it will lead to reaching the objectives of the project;
- **Justify and detail in a sufficient manner specially the larger costs** items;
- Ensure the proposal puts together **a coherent and credible Hydrogen Valley concept**

Use the 70 pages you have available
wisely

Do not forget to involve and evidence the commitment and role of
stakeholders (dedicated Annex available)