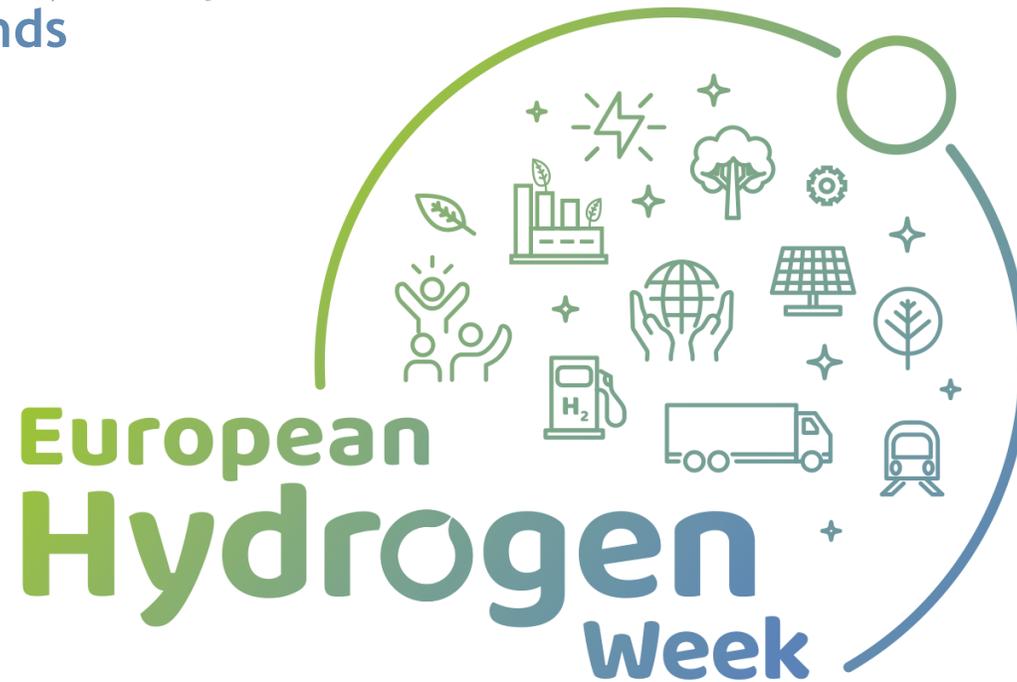


HEAVENN

H2 Energy Applications (in) Valley Environments
(for) Northern Netherlands



Patrick Cnubben

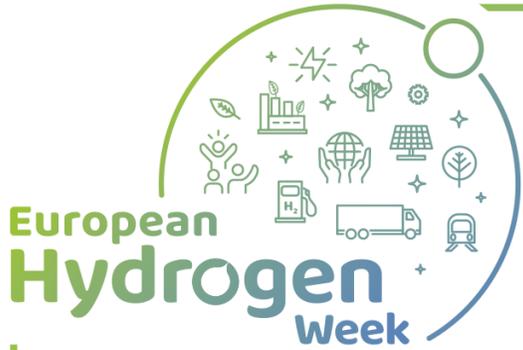
New Energy Coalition

[https://www.newenergycoalition.org/en/
green-hydrogen-economy/](https://www.newenergycoalition.org/en/green-hydrogen-economy/)
new website under construction

p.cnubben@newenergycoalition.org

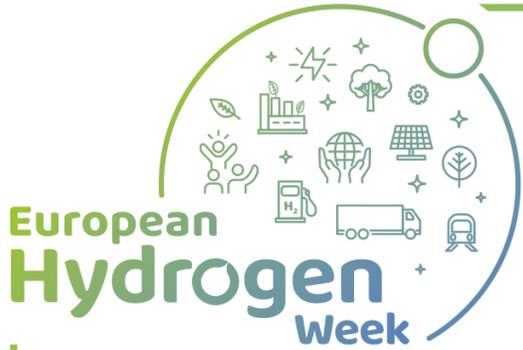
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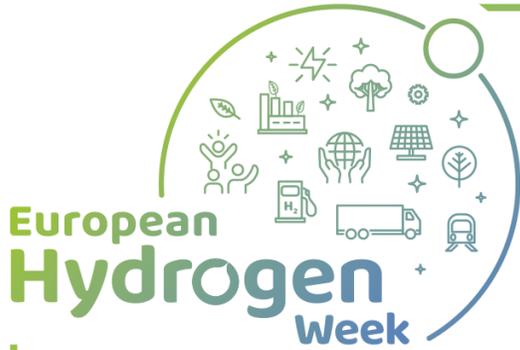
Project Overview

- Call year: 2019
- Call topic: FCH-03-1-2019: H2 Valley
- Project dates: 01/01/2020 - 31/12/2025
- % stage of implementation 01/11/2019: 15 %
- Total project budget: approx. 83.000.000 €
- FCH JU max. contribution: 20.000.000 €
- Other financial contribution: 20.000.000 €



Project Overview

- Partners: Gasunie, Nouryon, Engie, Groningen Seaports, Emmtec, Green Planet, Qbuzz, Total, Shell, NAM, EBN, Qbuzz, Lenten Scheepvaart, Municipality Groningen, Municipality Emmen, Municipality Hoogeveen, HyEnergy Transtore, Energy, Bytesnet, H2Tec, UVO Vervoer, Rijksuniversiteit Groningen, NPRC, Hinicio, Aragon Hydrogen Foundation, European Maritime Center, EWE, Hydrogen Valley Denmark, Hydrogen Ireland, European Research Institute for Gas and Energy Innovation

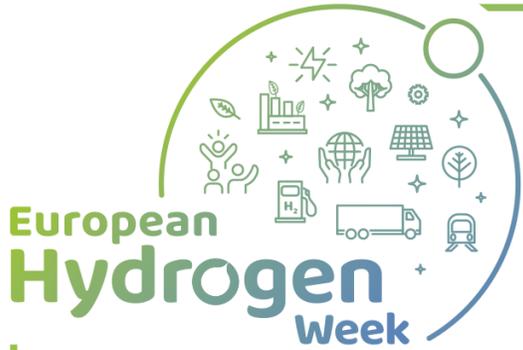


Project Summary

Main Objectives

Strategic Objective

- Establishing a H2 ecosystem in NN region, integrating H2 initiatives in a systemic approach, to demonstrate sector coupling and FCH uses cases at a regional level
- 100% Green H2 production
- Integrating in total eleven FCH applications from four sectors
 - Industrial demand initial 2.800 tpa rising to 7.200 tpa
 - Heat and power demand: 315 tpa rising to > 500 tpa
 - Mobility demand: 350 tpa rising to > 700 tpa

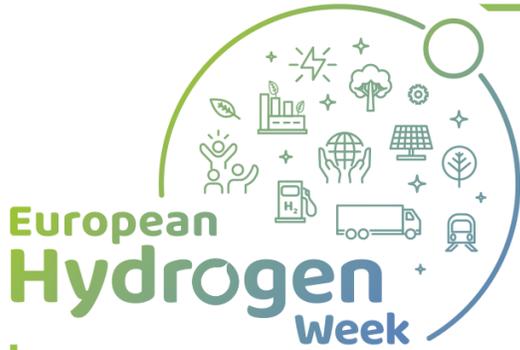


Project Summary

- Ensuring deployment of appropriate infrastructure for distributing H2 to local end-uses across the region and integrating H2 supply with industry, mobility and energy (i.e. heat and power)

Socioeconomic and environmental

- New jobs – regional development - it is estimated that HEAVENN has the potential to create a minimum of 15,000 jobs in the region
- The large scale H2 hub is economically viable and operated after the end of the funded project
- Reducing 50% GHG emission

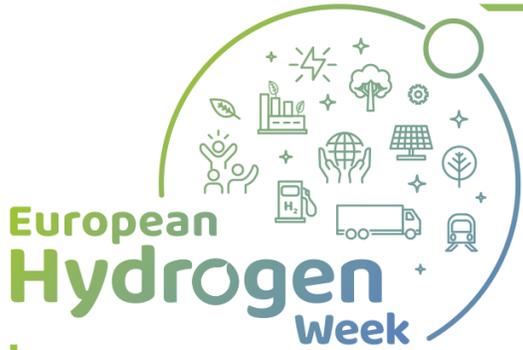


Project Summary

Global positioning vs international state-of the art

- The HEAVENN project offers a robust approach to construct a regional Hydrogen Valley model.
- Analysis in the context of the **Mission Innovation Hydrogen Valley Platform*** shows that HEAVENN is positioned in the top 5 tier of Hydrogen Valleys globally: <https://www.h2v.eu> (launch December 2020)
- HEAVENN is collaborating with other European Hydrogen Valley projects like Big Hit and the upcoming Green Hyslands project.

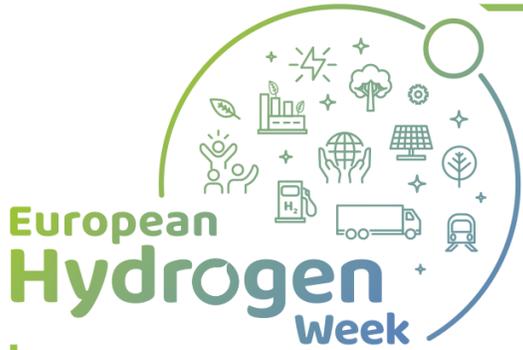
**The Hydrogen Valleys Platform has been prepared for the Fuel Cells and Hydrogen 2 Joint Undertaking. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme, Hydrogen Europe and Hydrogen Europe Research.*



Project Summary

Application and market area

Industry, domestic and industrial process heat, back-up power transport (cars, light duty and heavy duty vehicles, coaches, refuse trucks, inland water boats/barges including HRS)



Project Progress/Actions - Aspects (up to 3)

Example and explanation in the next slide



Achievement to-date

01.01.2020



31.12.2025

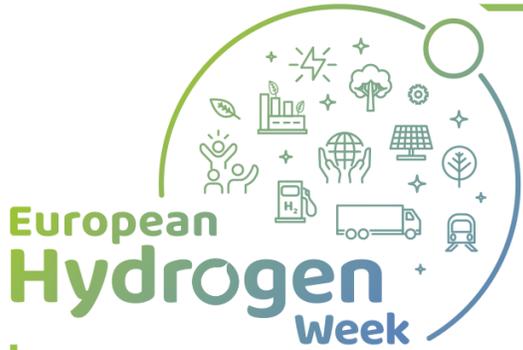
25%

50%

75%

General progress YTD 19.11.2020

- Project Coordination M1 - M72
- Preparation for Deployment M1 - M36
- Site Installation and Commissioning: M1 - M48
- Operation, Infrastructure Analysis and Data management: M19 - M72
- Impact analysis and business models: M1 - M72
- Studie enabling future roll out: M1 - M72
- Communication, dissemination, exploitation plans and activities; M1 - M72



Risks, Challenges and Lessons Learned

Risks:

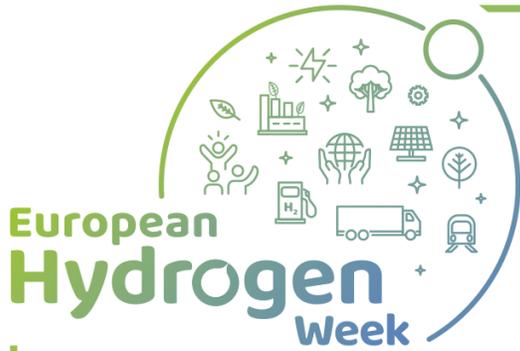
- Main risk factor is delay of critical installation components due to COVID-19 delays
- Realisation of electrolysers may suffer delay
- Delay in construction activities due to social distancing at work sites
- Together with relevant partners alert on fitting mitigation measures
- For now all occurring delays seems to be mitigated with the project period

Challenges:

- Having the vehicles available on time (COVID-19), production capacity at OEM's

Lessons learned:

- A lot of outside interests to partake or becoming connected. Now additional effort to connect these (offtaker) initiatives to key partners and public stakeholders



Exploitation Plan/Expected Impact

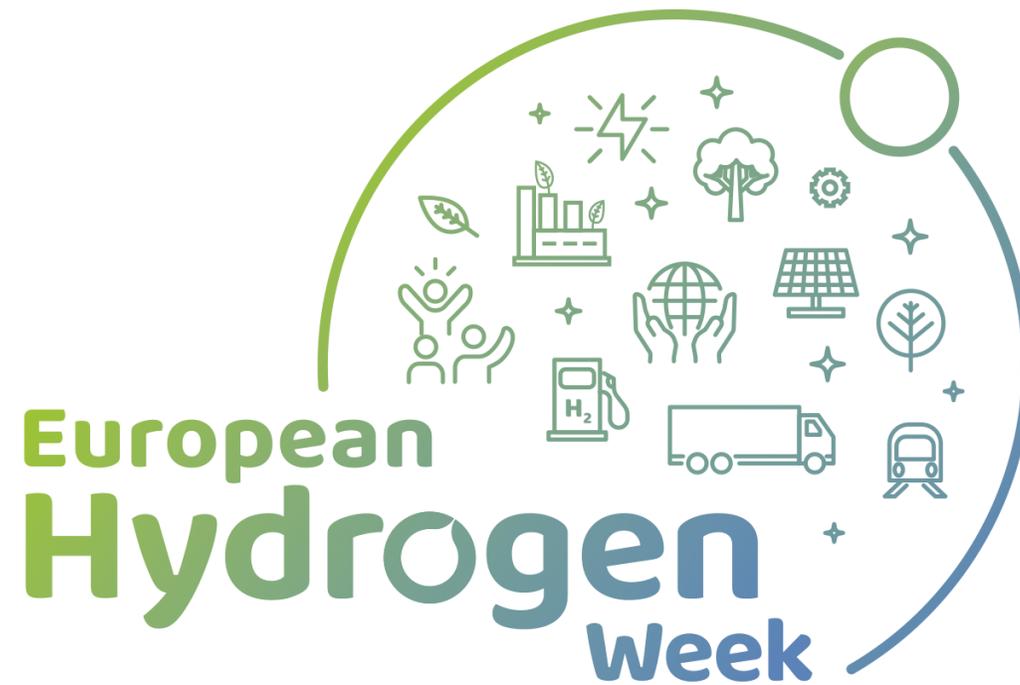
Exploitation

Internal and External

- Presentation of the results of viability studies to stakeholders, discussion and networking activity
- Presentation of the results of technical operation and cluster's activities roll-out, group discussion and networking activity
- Networking and retrieving additional information to elaborate the roadmap, bilateral discussion, working sessions with stakeholders
- Set up a webinar cycle to inform citizens in the regions to includes them in the Hydrogen transition

Impact

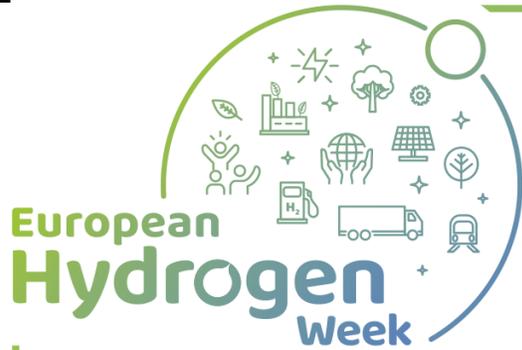
- On regional smart specialisation in the North Netherlands region
- On sector coupling and the larger penetration of RES
- Facilitating successful business models through initiation of a regional H2 ecosystem
- RCS
- Environmental and societal impacts
- Employability
- EU level and other regions



European
Hydrogen
Week

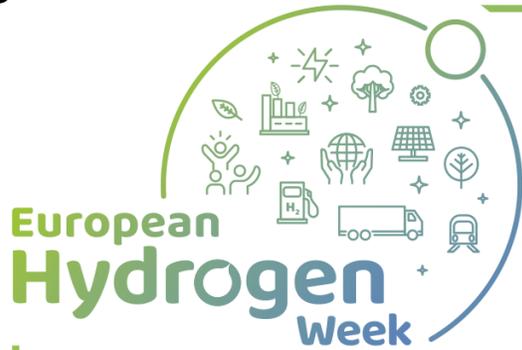
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Communications Activities

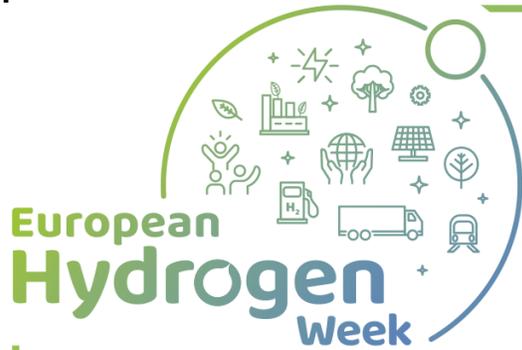
- 17-18 October 2019: Announcement Hydrogen Valley project during Wind meets Gas international conference
- 1 January 2020: project Start
- 30 March: Presentation Dutch Cabinet Vision on Hydrogen (including relation to Heavenn)
- 2 July: Kick Off (Webinar)
- 30 October: Launch North Netherland Hydrogen Investment Plan
- 5 November: Online presentation feasibility study project Hooegeveen
- 10 November: Announcement public contribution from province Drenthe to Hooegeveen part of Heavenn and State contribution
- 16 November: Announcement public contribution from province Drenthe to Emmen part of Heavenn
- 17 November: Kick off Part II
- 18 November: General Assembly



Synergies With Other Projects And Programmes

Interactions with projects funded under EU programmes

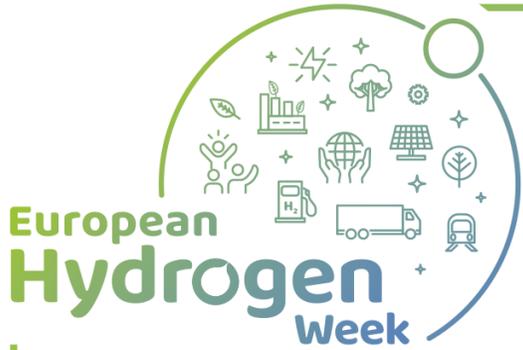
- Big Hit: www.bighit.eu
- TSO2020: <http://tso2020.eu/>
- Highvelocity: <http://highvlocity.eu/>
- JIVE/JIVE2: <https://www.fuelcellbuses.eu>
- CertifHy: www.certifhy.eu
- Djewel: <https://djewels.eu/>
- ITEG: <http://www.emec.org.uk/projects/hydrogen-projects/iteg/>
- SEREH: <https://sereh.eu/sereh>
- Store and Go: www.storeandgo.info
- Green Hyslands: under construction



Synergies With Other Projects And Programmes

Interactions with national and international-level projects and initiatives

- Smart Specialisation European Hydrogen Valleys Platform: <https://s3platform.jrc.ec.europa.eu/hydrogen-valleys>
- Mission Innovation Hydrogen Valley Platform: <https://www.h2v.eu>
- Ara Ake: <https://www.araake.co.nz/>
- Hydrohub Megawatt Test Centre: <https://ispt.eu/projects/hydrohub-megawatt-test-centre/>
- Several IPCEI initiatives



Project Overview

Call year:
2019

Call topic:
FCH-03-1-2019:
H2 Valley

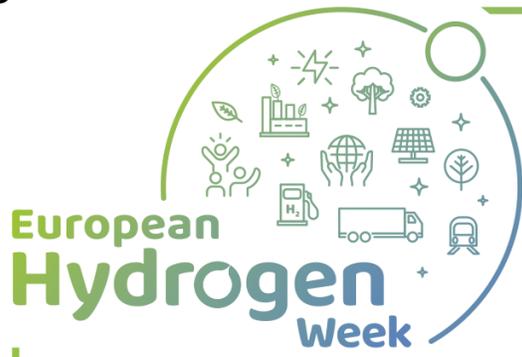
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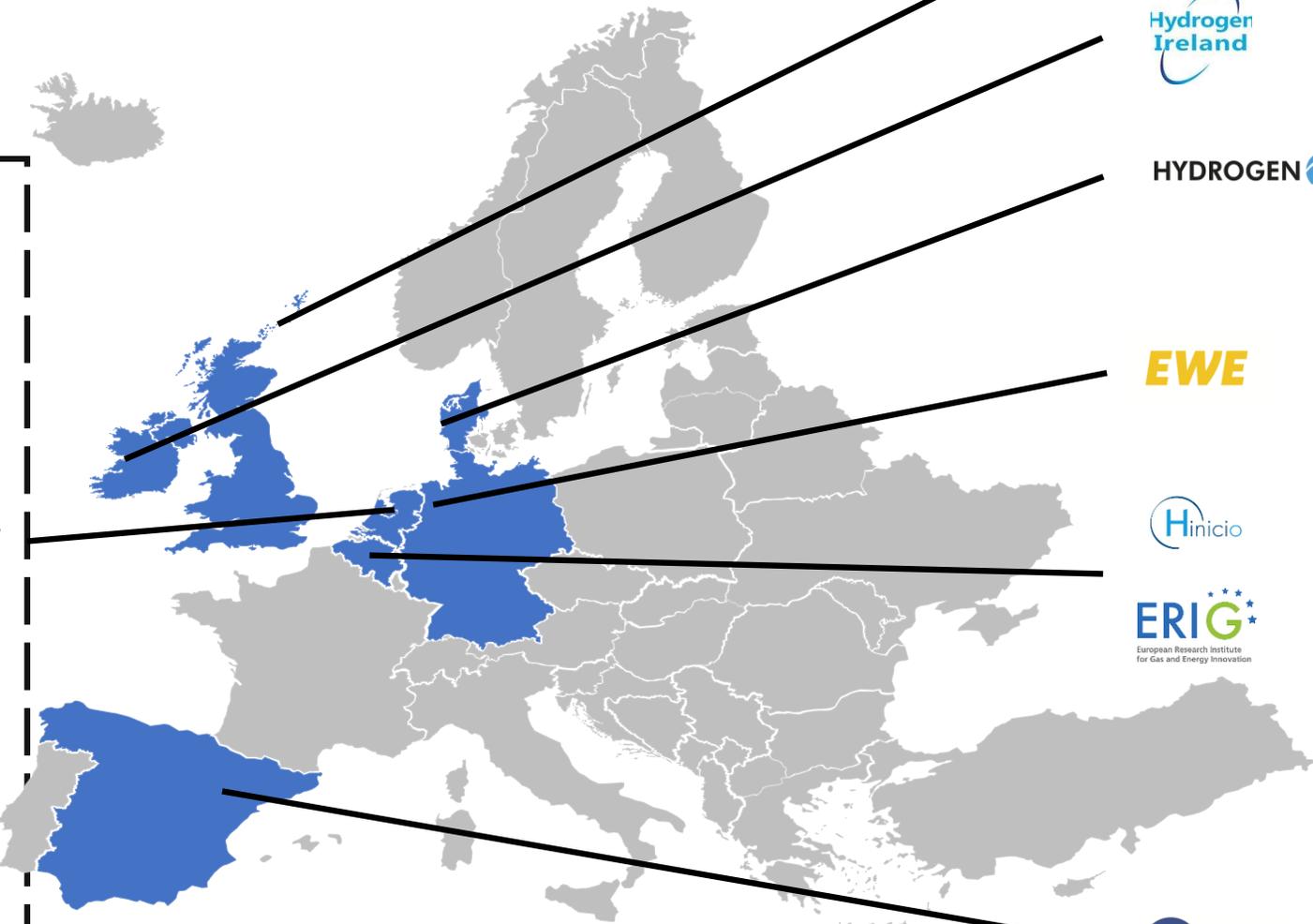
HEAVENN

15% stage of implementation
01/11/2020

FCH JU max. contribution:
20.000.000 €
Other financial contribution:
20.000.000 €



Partners



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