

D3.2

Public information and engagement strategy



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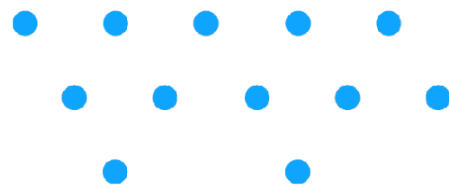
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1	26 September 2024	Diego Iribarren	Made minor revisions to terminology and improved overall consistency.
2	27 September 2024	María Panadero	Clarified details about the public engagement workshops.
3	14 October 2024	Marianna Franchino and Ilaria Schiavi	Expanded details on target audience profiles and monitoring mechanisms to enhance clarity and depth.

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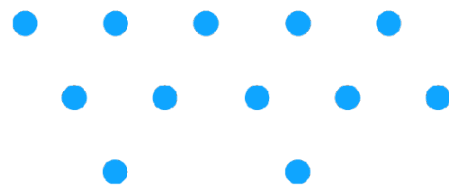
Partners' short names

ENVI	Parco Scientifico Tecnologico Per L'ambiente Environment Park Torino Spa
IMI	Institute for Methods Innovation
IME	Fundacion IMDEA Energia
APRE	Agenzia per la Promozione della Ricerca Europea
CNH2	Centro Nacional Del Hidrógeno
RIGP	Regionalna Izba Gospodarcza Pomorza
CLUSTER TWEED	Cluster Tweed
BH2C	Balkanski Vodoroden Klaster

Abbreviations

NIMBY	Not in My Backyard
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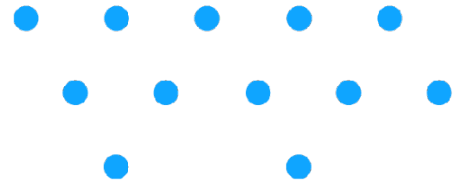




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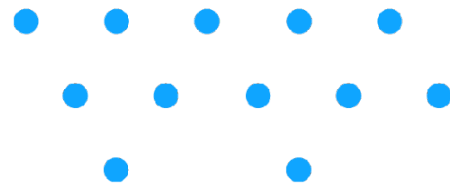




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Executive summary

The HYPOP public information and engagement strategy aims to enhance public understanding, trust, and participation in hydrogen technologies across Europe. By tailoring communication efforts to diverse audience profiles and addressing region-specific concerns, the strategy seeks to address knowledge gaps and foster a supportive environment for hydrogen as a key solution in the energy transition.

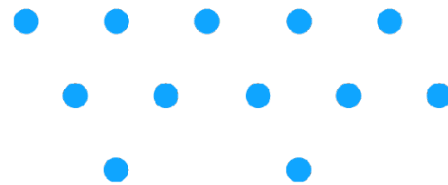
The strategy identifies four key audience profiles—**Eco-conscious tech enthusiasts**, **Informed optimists**, **Cautious sceptics**, and **Pragmatic realists**—and employs targeted communication strategies to engage them effectively. Engagement activities include six online co-creation workshops tailored to address regional needs, two international online events for broader stakeholder outreach, and a diverse mix of social media campaigns, webinars, and publications. These activities are designed to be inclusive, evidence-based, and regionally relevant to build trust and facilitate public engagement.

The strategy prioritises transparency, accessibility, and ethical standards, including GDPR-compliant data collection and multilingual materials. Success will be measured through feedback surveys, participation rates, and social media engagement metrics, ensuring the approach remains effective and responsive to public sentiment. Robust monitoring and evaluation mechanisms will inform ongoing adjustments and guide the development of public engagement guidelines.

Collaboration among project partners, stakeholders, and the public is central to amplifying the strategy's impact. By leveraging these partnerships, HYPOP aims to promote hydrogen as a trusted and essential component of Europe's sustainable energy future, contributing to long-term goals for energy independence, environmental resilience, and economic development.

This strategy positions HYPOP as a model for inclusive and impactful public engagement, fostering widespread acceptance and active participation in the hydrogen revolution.





1. Introduction

Overview and scope

This document outlines a strategy that aligns the overall WP objectives with the task-specific requirements for public engagement workshops. The strategy clarifies plans for delivering workshops that involve citizens, aiming to inform them and increase trust in hydrogen implementation. Key tasks include identifying stakeholders and specifying engagement activities designed to achieve these goals.

This strategy ensures that all activities align with the HYPOP project's core objectives—to enhance public acceptance and foster a supportive environment for the implementation of hydrogen technologies across Europe. By raising awareness, increasing understanding, and facilitating accessible platforms for dialogue and cooperation, we seek to equip citizens and stakeholders with the knowledge and tools necessary to actively participate in the hydrogen economy.

Public information and engagement objectives

The overarching objective of the HYPOP project—to elevate public awareness and trust in hydrogen technologies—translates into a series of specific, actionable goals for public engagement. These goals not only support the project's broad aims but also ensure that all engagement activities are methodically aligned with the needs of the stakeholders and the general public.

1. Enhance knowledge and awareness of hydrogen technologies

HYPOP aims to raise public awareness about hydrogen technologies. This strategy will focus on educational initiatives. This includes developing clear, accessible information materials, like videos and infographics, to increase understanding and awareness of hydrogen technologies and their benefits. The content will highlight hydrogen's role in reducing carbon emissions and supporting the energy transition.

2. Build citizens' trust through transparency and engagement

To build trust, transparency and active engagement with the public and stakeholders will be prioritised. This includes offering co-creation opportunities. Public engagement workshops will be key, allowing participants to voice concerns, ask questions, and join discussions on hydrogen technology development.

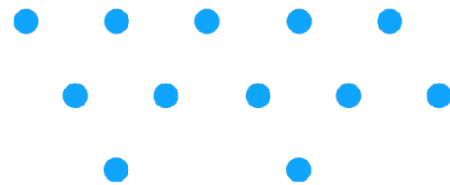
3. Facilitate citizens' participation in the hydrogen revolution

Guided by HYPOP's focus on guidelines and good practices, strategies will encourage and facilitate citizen participation. This includes outlining best practices for involving citizens and end-users to fully engage them in these processes. The aim is to gather input on their hopes, concerns, and expectations regarding hydrogen implementation, showing that their voices are heard and valued.

4. Develop public engagement best practices through feedback and evaluation

Measures will be integrated to evaluate the effectiveness of engagement activities across all WP3 tasks. This evaluation, using surveys and feedback, will refine strategies to enhance public trust and acceptance of hydrogen technologies. Results will inform *D3.4: Guidelines for public engagement on H₂ technologies' implementation*.





2. Integration of findings from WP1

WP1 findings provide critical insights into public perceptions, engagement levels, and knowledge gaps concerning hydrogen technologies across different EU countries and demographics. These findings provide the evidence base for the development of public engagement activities in WP3.

State-of-the-art analysis of public perceptions of hydrogen technology

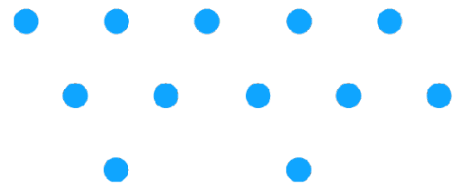
As part of WP1, a literature review¹ examined key findings from a wide range of existing studies on the public perceptions of hydrogen technology in the EU27 countries. This involved using Google Scholar to find relevant studies, focusing on those articles that included survey data regarding public opinions on hydrogen technologies. A total of 153 related studies were screened, and 28 were selected for analysis alongside two additional unique sources (relevant European hydrogen project reports) that were the result of hand searches. The table below summarises audience insights from each of the 30 linked sources that are relevant for the planned public engagement activities.

Table 1. Audience insights from the literature review

Reference in D1.2	Specific insights for audience engagement
1 Achterberg et al. 2010	<ol style="list-style-type: none"> [...] factual knowledge about hydrogen positively influences support, cultural predispositions hold more sway in determining public acceptance. [...] individuals with high trust in technology and environmental concerns exhibit stronger support for hydrogen technology. For those not really predisposed to favour hydrogen technology, more knowledge about it does not (or very meagerly) lead to more support. For those already inclined to support hydrogen technology...these people are extra motivated to support hydrogen.
2 Bögel et al. 2018	<ol style="list-style-type: none"> [...] early stages of technology diffusion, public attitudes are not yet strong enough to significantly influence reactions to communication campaigns to increase social acceptance or merely inform the public about hydrogen fuel cells.
3 Heinz & Erdmann, 2008	<ol style="list-style-type: none"> [...] people who are neutral about hydrogen technologies and seek more information are easier to educate and persuade than those who are already opposed. Indifference and a desire for more knowledge create an opportunity for effective communication, whereas opposition requires overcoming preconceived negative attitudes.
4 Barbier & Agnoletti, 2023	<ol style="list-style-type: none"> Those with higher knowledge of hydrogen saw it as more beneficial for the environment, while those with lower knowledge perceived greater problems with fossil fuels. [...] increasing knowledge about hydrogen's environmental impact and emphasising the importance of environmental issues can enhance public

¹ HYPOP D1.2 (2024). State-of-the-art analysis of public perceptions and reactions to hydrogen and fuel cell technologies [HYPOP]. Horizon Europe, Grant Agreement 101111933. Retrieved from <https://www.hypop-project.eu/wp-content/uploads/2024/07/D1.2.pdf>





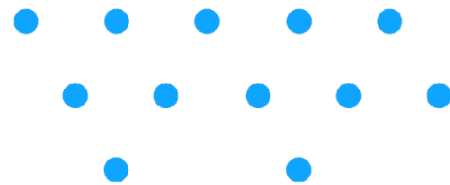
		acceptance of hydrogen storage.
5	Schönauer & Glanz, 2022.	<p>9. Younger respondents (15<65) show more tendencies for Not-In-My-Back-Yard (NIMBY) than older respondents (>65).</p> <p>10. Trust in stakeholders, particularly political and scientific entities, boosts acceptance levels, while low trust, especially in environmental NGOs, correlates with NIMBY attitudes.</p> <p>11. [...] sociodemographic factors, especially the variable age, as well as project-related factors, especially trust in stakeholders, have a high explanatory power.</p>
6	Zimmer & Welke, 2012	<p>12. [...] nearly 80% of Germans support the introduction of hydrogen vehicles. This positive outlook is contingent on hydrogen being produced in an environmentally friendly manner.</p> <p>13. Despite high awareness and favourable attitudes towards hydrogen-powered cars, the public lacks detailed knowledge about hydrogen and fuel cell technology.</p>
7	Achterberg et al. 2012	<p>14. [...] individuals with high trust in science and technology, positive information enhances support for hydrogen technology, whereas negative information diminishes it.</p> <p>15. [...] those with low trust in science and technology, providing positive or negative information does not significantly influence their evaluation of hydrogen technology.</p> <p>16. [...] "providing positive information fails to evoke a more favourable evaluation" among those inherently sceptical of science and technology.</p>
8	Zachariah-Wolff & Hemmes, 2006	<p>17. [...] 87% of respondents showed a favourable attitude towards using hydrogen combined with natural gas for home heating when exposed to positively skewed information about hydrogen.</p> <p>18. [...] acceptance rates differed when participants were provided with negative or neutral information, demonstrating the impact of media framing on public perception.</p> <p>19. [...] majority (87%) would support the use of hydrogen if it produced 10% less carbon dioxide than natural gas and maintained the same level of service, this support dropped to 67% if a 100-euro switch cost was involved, and to less than a third if safety was perceived to be slightly compromised.</p> <p>20. [...] public acceptance of hydrogen is very vulnerable to perceptions of decreased safety and thus can be easily swayed by any negatively coloured information presented by the media.</p>
9	Alanne, 2018	<p>21. [...] students' knowledge and perception on hydrogen technology [after a learning assignment] improve between the pre-assignment and the post-assignment surveys.</p>
10	Iribarren et al. 2016	<p>22. [...] strong public backing for establishing local hydrogen refuelling stations [in Spain], although there was a preference for these to be located away from residential areas.</p> <p>23. [...] while there is substantial support for hydrogen technologies, considerable work remains to address economic and infrastructural challenges</p>





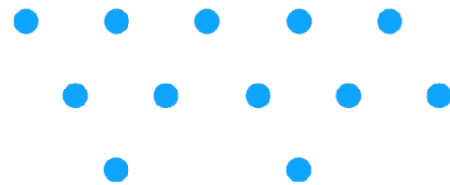
		to facilitate broader adoption.
11	Christidis et al. 2023	24. [...] if the government wishes to promote the adoption of alternative [hydrogen] motor unit passenger cars over Internal Combustion Engine ones, it will need to alleviate the perception of high purchase cost, promote the perception of technological maturity, and advance higher paid stable occupation, as this greatly affects the choice for a new car.
12	O'Garra et al. 2007	25. [...] public in all surveyed cities is willing to pay for the air pollution reductions associated with hydrogen buses, with an adjusted willingness to pay extra, ranging from €0.29 to €0.35 per single bus fare. 26. [...] this willingness spans different geographic locations, indicating a generally positive reception towards hydrogen buses, irrespective of the specific urban context.
13	Häußermann et al. 2023	27. [...] shows that acceptance hinges significantly on trust in scientific, governmental, the media and institutions that uphold distributive justice. 28. [...] methodologically sound participatory processes can promote acceptance, and active support in particular. 29. [...] recurrent positive participatory experiences can effectively foster trust. 30. [...] trust should be strengthened on a structural level, and green hydrogen acceptance should be understood as a matter of responsible innovation.
14	Achterberg. 2014	31. [...] increased awareness of the risks associated with science and technology among the educated may undermine support for technological advancements such as hydrogen technology.
15	Bigerna & Polinori. 2015	32. [...] 81% of respondents supported the trial of hydrogen buses, and 88% were willing to pay more for public transportation if it involved hydrogen technology.
16	Huijts, De Vries & Molin. 2019	33. [...] investigates the changes in public acceptance of a hydrogen fuel station in Arnhem, Netherlands, before and after its implementation...residents living near the station showed a significant increase in acceptability post-implementation, contrary to those living farther away, who showed no significant change. 34. [...] policy makers, project developers, and citizens should be aware that public acceptability can change after implementation among citizens that live in proximity to the technology.
17	Biruta et al. 2014	35. [...] lack of public awareness and information about hydrogen energy, with average ratings on various aspects of hydrogen technology knowledge and acceptance falling on the lower end of the scale. 36. [...] widespread support for hydrogen technology, with 70.1% of respondents showing favourability, [but] the public's detailed understanding of hydrogen energy applications in the economy and transport sector is notably low.
18	Wojtaszek, 2023	37. Respondents in [Poland and Germany] consider environmental friendliness and innovation as primary benefits of hydrogen energy.





		38. Hydrogen is recognised as a potential competitive energy source, although perceptions of reliability and cost-effectiveness vary between the two nations.
19	Dimants et al. 2012	39. [...] key findings include that 62% of respondents know hydrogen as an energy source, yet only 28% can clearly articulate its potential uses or benefits. 40. The study highlights a gap in effective communication, as demonstrated by the fact that 72% of respondents were uncertain about hydrogen's safety, pointing to a need for targeted educational campaigns.
20	Ingaldi & Klimecka-Tatar, 2020	41. [...] while there is a foundational understanding that hydrogen can be an eco-friendly energy source, 78% of respondents expressed concerns about its safety. This scepticism highlights a significant barrier to wider acceptance and adoption of hydrogen energy technologies. 42. Knowledge about hydrogen as an energy source, and its production safety and storage methods, is very low.
21	Apostolou & Welcher, 2020	43. [...] considerable awareness and interest in hydrogen vehicles [in Denmark], revealing that knowledge about hydrogen technology and environmental awareness significantly influence the public's willingness to adopt such vehicles. 44. [...] public's sensitivity to the high initial costs and the lack of refuelling infrastructure and media support, which are major barriers to adoption.
22	Delaney, 2021	45. [In Ireland] safety is viewed as a prerequisite to any transition, with the public trusting that hydrogen safety will be demonstrated before a transition and that a competent authority will act with safety in mind. 46. Increased costs to consumers can result in the widespread rejection of conversion 47. Concerns regarding cost far outweigh the environmental benefits of hydrogen among the public. 48. Trust is vital to a transition to hydrogen as it is a critical aspect of two parts of a transition: safety and information. 49. [...] if the public does not trust a source of information, they may reject a transition.
23	Huan et al. 2023	50. [...] participants often overestimate the risks associated with transportation and underestimate those related to production and storage. 51. The high proportion of neutral attitudes reflects the lack of public confidence in Hydrogen Fuelling Stations (HFS) safety [...] 52. [...] incorporating safety technology promotions on the bodies of heavy duty trucks, can be an effective measure to increase public acceptance of hydrogen energy.
24	Parente, Teixeira & Cerdeira, 2024	53. [...] strong preference for renewable hydrogen over non-renewable sources [...] 76.7% of stakeholders believe hydrogen must be produced from exclusively renewable sources, even if this results in higher costs.
25	Baur et al. 2022	54. General acceptance for hydrogen refuelling stations was comparatively high, reflecting broad support for this technology as part of Germany's energy



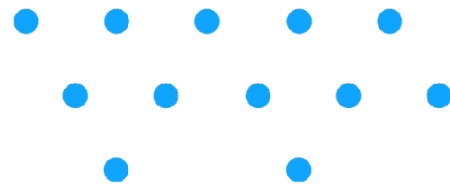


		<p>transition.</p> <p>55. [...] while still positive, local acceptance was slightly lower than general acceptance, demonstrating the common "general-local gap" where public support wanes when installation near residential areas is proposed.</p>
26	Gryz & Kaczmarczyk, 2021	<p>56. [...] reveal a significant interest among the [Polish] youth in embracing hydrogen technologies.</p> <p>57. [...] hydrogen is regarded as a promising energy carrier due to its high energy content and versatility in applications ranging from power generation to transportation.</p>
27	Moula, Nyári & Bartel, 2017	<p>58. [...] despite a significant governmental push towards biofuels, public knowledge and acceptance are crucial for broader adoption.</p> <p>59. [...] 63% of car owners prefer ideal future fuel to be non-biofuel based: 60% favour electricity, 20% hydrogen, and another 20% prefer hybrid solutions.</p>
28	Emmerich et al. 2020	<p>60. The study reveals that the general acceptance of hydrogen fuel stations [in Germany] hinges significantly on perceived environmental benefits and trust in the industrial stakeholders pushing their development, notably the automotive industry.</p> <p>61. [...] the presence of HFS in local settings tends to be more acceptable when there is significant trust in local municipalities.</p>
29	Altmann et al. 2004	<p>62. People strongly support hydrogen and fuel cells [across London (UK), Luxembourg, Berlin (Germany), Perth (Australia), and Oakland (USA)].</p> <p>63. [...] a significant group of people 'need more information' [because] the knowledge about hydrogen and fuel cells is rather low.</p>
30	Oltra, Sala et al. 2017	<p>64. [...] approximately 60% of respondents (Belgium, France, Germany, Norway, Slovenia, Spain, and the United Kingdom) support FCH applications, while 30% remain neutral, and nearly 10% oppose them.</p>

To complement the literature review, an extended secondary data analysis of the Public Opinion Survey on Hydrogen Awareness (Gallup International, 2023) was conducted². This survey involved a representative sample of 25,934 citizens aged 15 and above from all EU Member States. The analysis focused on eight key survey questions to establish a baseline understanding of individual-level determinants of public opinion on hydrogen technologies.

The literature review and secondary analysis revealed varying degrees of societal acceptance, influenced by regional specifics and overarching cultural predispositions. Results indicate that while there is foundational support for hydrogen technology, this support is conditional. Effective public engagement will have to address remaining safety concerns and infrastructural, jurisdictional, and logistical challenges (especially in residential areas) to combat the “Not in My Backyard” (NIMBY) phenomenon and to enhance understanding.

² HYPOP D1.3 (2024). Identification of the main individual-level determinants of public understanding and acceptance of FCH technologies [HYPOP]. Horizon Europe, Grant Agreement 101111933. Retrieved from <https://www.hypop-project.eu/wp-content/uploads/2024/07/D1.3.pdf>

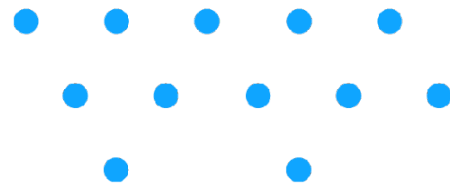


Below is a simplified correlation table that clusters key concepts related to public acceptance and perception of hydrogen technology, identified through a literature review and secondary data analysis. The table indicates whether these concepts have a positive or negative correlation with support for hydrogen technology.

Table 2. Correlations among audience insights from literature review and secondary data analysis

Concept	Specific factor	Correlation direction
Knowledge and awareness	Factual knowledge about hydrogen	Positive
	Low knowledge about hydrogen safety	Negative
	Knowledge about hydrogen as eco-friendly	Positive
	General low knowledge about hydrogen	Negative
	Improved knowledge post-education/assignment	Positive
Predispositions	Initial support for hydrogen	Positive
	Initial opposition to hydrogen	Negative
	Indifference but seeking more knowledge	Positive
	Neutral attitudes with need for information	Positive
	Negative media framing	Negative
	Positive information for those with high trust in science	Positive
	Negative information for those with low trust in science	No effect
Trust and institutional influence	Trust in technology and environmental concerns	Positive
	Trust in stakeholders (political, scientific)	Positive
	Low trust in NGOs and environmental organisations	Negative
	Trust in industry and municipalities for local projects	Positive
	Trust in hydrogen production safety	Positive
	Perceived risks and low trust in safety	Negative
Socio-demographic	Age-related Not-In-My-Back-Yard (NIMBY) tendencies (younger)	Negative
	Support for hydrogen in older age groups	Positive
Economic and infrastructural concerns	High perceived initial costs	Negative
	Willingness to pay for hydrogen benefits	Positive
	Lack of infrastructure (e.g., refuelling stations)	Negative
Environmental impact and concerns	Perceived environmental benefits of hydrogen	Positive
	Preference for renewable hydrogen	Positive





	Concerns about fossil fuels	Positive
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Analysis of public engagement with H₂ via social media channels

From October 2023 to January 2024, a comprehensive analysis of social media platforms, including Facebook, X (formerly Twitter), Reddit, and YouTube, along with Google Trends data, was conducted³. By tracking keywords such as “hydrogen fuel cell,” “green hydrogen,” and “renewable energy,” the study aimed to gauge public interest and sentiment regarding hydrogen energy.

This analysis revealed a mosaic of engagement levels across the EU27, with certain countries displaying a more pronounced interest in specific hydrogen energy-related topics. This highlights the need to tailor these strategies to each member state's unique interests, concerns and cultural contexts.

A mix of national initiatives or local discourse likely influenced the differences between countries, with varying degrees of scepticism and enthusiasm observed across them. Indeed, public interest was inclined toward the technological aspects of hydrogen, such as hydrogen fuel cells and vehicles, suggesting curiosity and potential readiness among the public to embrace hydrogen-based solutions. However, there was a noticeable gap in public engagement with topics related to hydrogen energy infrastructure and policies, indicating a potential area for targeted awareness and educational initiatives.

Recommendations for public engagement efforts

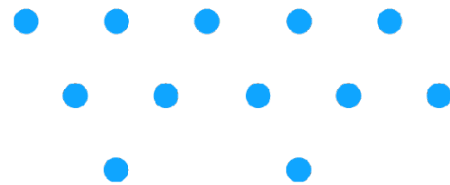
The following table provides a summary of the findings from WP1 that are relevant to this strategy:

Table 3. WP1 recommendations for public engagement efforts

Insights from WP1	Public engagement aim	Practical implementation	Metric
Widespread support for hydrogen energy, but limited knowledge of the technologies behind it	Deepen understanding of hydrogen fuel cells, -vehicles, processes, and hydrogen energy technologies in simple, layperson's terms.	Workshops to include simple, engaging technology explanations or demonstrations (videos/infographics).	Pre-post survey feedback should demonstrate a clear deepening of understanding and increased knowledge of hydrogen technologies.

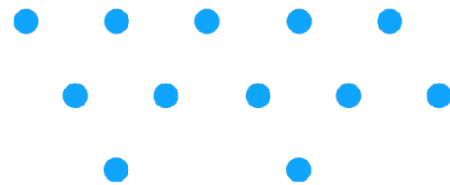
³ HYPOP D1.4 (2024). Analysis of public engagement with H₂ via social media channels across the EU27 [HYPOP]. Horizon Europe, Grant Agreement 101111933. Retrieved from <https://www.hypop-project.eu/wp-content/uploads/2024/07/D1.4.pdf>





<p>Address safety concerns, infrastructural concerns, and misconceptions</p>	<p>Address safety concerns about hydrogen, especially its reputation for being 'explosive,' and ease worries about planned infrastructure in residential areas (the NIMBY effect).</p>	<p>Partners will showcase successful hydrogen projects in the EU, explaining key processes like transportation, pipelines, and storage to clear up misconceptions. They will also openly discuss safety concerns and how they are being managed to build trust.</p>	<p>After the event, participants should have a better understanding of safety procedures and the real impacts of hydrogen infrastructure, especially in residential areas. Feedback should also indicate increased awareness of common misconceptions.</p>
<p>Address differing, region-specific interests and concerns</p>	<p>Adapt initiatives to fit the demographics and regional context of each country, ensuring they resonate with diverse European communities.</p>	<p>Partners should address specific regional interests and concerns about local hydrogen projects that may directly impact participants.</p>	<p>After the workshops, post-survey feedback must show that participants are now well informed about local hydrogen projects and are able to demonstrate knowledge on how region-specific safety or other concerns are being addressed.</p>
<p>Women generally reported to have a lower overall familiarity with hydrogen technologies</p>	<p>Actively include women in public engagement activities to increase awareness and to decrease the gender disparity.</p>	<p>Use insights to improve access and inclusivity for women in the workshops, aiming for a 60:40 female-to-male participant ratio.</p>	<p>Women participants should show increased confidence in their scientific knowledge of hydrogen technologies in post-survey feedback.</p>
<p>Leverage existing local and national hydrogen success stories</p>	<p>Showcase real-world examples of successful EU hydrogen implementations to demonstrate viability and benefits, helping convert awareness into informed support.</p>	<p>Workshops should feature statistics and details about large-scale EU hydrogen projects (e.g. NorthH2 in the Netherlands), to highlight benefits, safety, and procedures of the green hydrogen economy, alongside local examples.</p>	<p>Participants should report greater awareness of successful large-scale hydrogen projects in the growing green economy (in post-survey).</p>





<p>Highlight the environmental benefits of hydrogen technologies</p>	<p>Highlight the environmental benefits and safety features of hydrogen technologies, emphasising their potential as a sustainable energy solution.</p>	<p>The workshops will build on existing support for hydrogen by showcasing emission reductions from known projects, EU policies promoting the hydrogen economy, positive environmental impact assessments, and public enthusiasm for hydrogen mobility (HFCVs).</p>	<p>Participants can identify specific environmental benefits of hydrogen technologies in post-survey feedback.</p>
<p>Involve relevant roleplayers to increase transparency and trust</p>	<p>Involve industry experts, academics, NGOs, community members, and policymakers to enrich discussions, share expertise, and increase transparency in promoting hydrogen technologies.</p>	<p>The workshops will invite hydrogen industry experts, policymakers, and government officials to ensure open dialogue between citizens, industry, and government.</p>	<p>Participants should report feeling more familiar with policymakers and industry leaders, and understand why they advocate for hydrogen, in post-survey feedback.</p>

Relevant findings from other tasks

Finally, other findings relevant to this work come from Task 3.1, where a social life cycle assessment of a hydrogen bus transport system is being conducted. This system involves both onsite hydrogen production in a refuelling station and hydrogen use in a fuel cell bus. Relevant findings include:

- High relevance of product-specific supply chain definition. In the addressed system around 70 entities are covered.
- Social impacts behaviour in terms of hotspots identification depends on the considered specific social indicator(s). In the addressed system, some indicators are dominated by the first-tier activity (i.e. bus transport service) while others are dominated by activities in the extended tiers (e.g. manufacturing of components).
- Engaging citizens requires effective reporting of the social impact results, while maintaining scientific robustness.

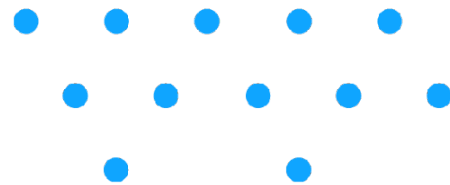
3. Audience profiles

Based on insights from WP1 findings, four broad audience profiles were identified:

Eco-conscious tech enthusiast

The **eco-conscious tech enthusiast** is typically between 25 and 45 years old, college-educated, and often resides in urban areas where renewable energy initiatives are prominent. This audience is highly knowledgeable about hydrogen and its environmental benefits, with a strong trust in science, technology, and environmental organisations. They actively seek renewable energy solutions and are





willing to pay a premium for technologies that align with their eco-friendly values. Their support for hydrogen technology is driven by its potential to reduce reliance on fossil fuels and its promise as a sustainable energy source. Positive attitudes within this group are reinforced by credible, science-backed information that highlights hydrogen's role in combating climate change.

This audience profile includes:

- Technologists working in the renewable energy sector who are directly involved in developing and implementing green technologies, such as engineers designing hydrogen fuel cells.
- University students and graduates in environmental sciences, who are often highly aware of the latest advancements in sustainable energy.
- Members of environmental and conservation NGOs, such as Greenpeace or local advocacy groups.
- Science communicators, including those managing blogs or social media channels dedicated to sustainability.
- Consumers who actively invest in green technologies, such as solar panels or electric vehicles.

Informed optimist

The **informed optimist** is generally over 50 years old, with a background in higher education, often in fields like engineering or science. They tend to live in small towns or rural areas, particularly in regions where renewable energy projects are emerging. This group possesses a strong understanding of hydrogen and its potential as a renewable energy source. They place significant trust in established institutions, such as local government and industry, to manage the safe and effective deployment of hydrogen technology. Their support is driven by a belief in the environmental and economic benefits of hydrogen, particularly its role in reducing dependence on fossil fuels. They are likely to back hydrogen initiatives if these are framed as part of a broader, trustworthy effort to transition to renewable energy.

This audience profile includes:

- Engineers and scientists with a background in STEM fields, many of whom have experience working on renewable energy projects or infrastructure.
- Community leaders advocating for local renewable energy initiatives—such as town officials supporting wind or solar farms—.
- Educators in science and technology, whether at schools, universities, or informal learning institutions.
- Members of local science clubs or associations, who frequently engage in discussions about emerging technologies.
- Investors in green technology, who evaluate the feasibility of renewable energy projects.

Cautious sceptic

The **cautious sceptic** is typically aged between 35 and 55, with a varied educational background, often including some college education, and usually residing in suburban or semi-rural areas. This group has moderate knowledge about hydrogen but harbours concerns about its safety and associated costs. They tend to be distrustful of new technologies unless clear evidence of safety and reliability is provided. Initial costs are a significant consideration, and they require convincing proof





of hydrogen's cost-effectiveness in the long term. Their attitudes are heavily influenced by media framing and perceived risks, leaving them neutral or mildly supportive of hydrogen technology but in need of further reassurance.

This audience profile includes:

- Members of environmental lobby groups or activists who focus on ensuring renewable energy projects, including hydrogen initiatives, meet safety and environmental standards.
- Concerned citizens who live near planned hydrogen infrastructure—such as storage facilities or refuelling stations—.
- Members of the general public with limited knowledge of hydrogen technologies, who often rely on media coverage to form their opinions.
- Technologists from competing renewable sectors, like wind or solar energy, who may view hydrogen as a competitor for resources and investment.

Pragmatic realist

The **pragmatic realist** is typically aged 40 to 60, with a background in vocational or technical training, living in suburban or rural areas, especially where industry or energy jobs are common. They have a good understanding of hydrogen technology but are more focused on its practical and economic benefits than environmental ideals. They are sceptical of new technologies unless they offer clear, immediate advantages, like cost savings or job creation. For them, reliability and proven success matter more than innovation, and they're likely to support hydrogen if it's presented as a stable, cost-effective alternative that benefits their local economy.

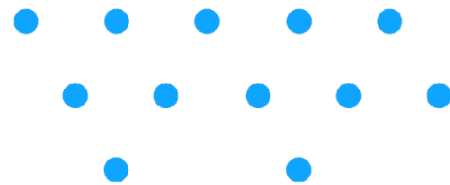
This audience profile includes:

- Technical and vocational workers in industries such as manufacturing, construction, or logistics, who are interested in how hydrogen technologies can create local job opportunities or streamline operational costs.
- Entrepreneurs, such as small business owners seeking cost-effective energy solutions to reduce overhead expenses.
- Politicians and policymakers who focus on practical, economically driven energy solutions to meet community or regional development goals.

4. Targeted communications

Effective communication is critical to ensuring the success of public engagement activities related to hydrogen technologies. The diversity of audience profiles and regional contexts requires a tailored approach to engagement, where messages and methods are aligned with the specific needs, interests, and concerns of different stakeholder groups. This section provides an overview of two key elements of the targeted communications strategy: engagement strategies for distinct audience profiles and country-specific messaging based on findings from WP1. Together, these approaches will enhance public understanding, acceptance, and support for hydrogen technologies across various demographics and regions.





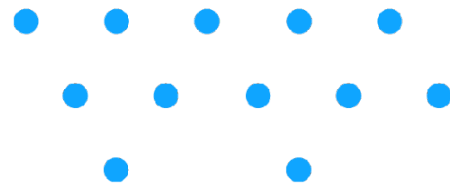
Targeted communications of audience profiles

Table 4 outlines specific engagement strategies for each of the audience profiles identified through the WP1 analysis. These strategies are designed to align with the characteristics, preferences, and communication habits of each group, ensuring that messages resonate and inspire action. By using tailored communication channels, messaging techniques, and engagement formats, these strategies will help address the unique concerns and motivations of each audience segment, from tech-savvy early adopters to cautious sceptics.

Table 4. Targeted communications for each audience profile

Profile 1: Eco-conscious tech enthusiast	
Engagement strategy	To engage this audience, it is essential to focus on providing detailed, scientifically grounded information that underscores hydrogen’s environmental advantages and technological progress. Campaigns should emphasise hydrogen’s contribution to achieving climate goals, supported by endorsements from trusted scientific and environmental organisations. Messaging should also highlight the long-term benefits of investing in hydrogen technologies, positioning them as key to a sustainable future.
Priority channels	<ul style="list-style-type: none"> • Social media platforms (especially platforms like LinkedIn, Twitter/X, Instagram) • Webinars and virtual events • Environmental blogs and forums • Scientific publications
Recommendations	<ul style="list-style-type: none"> • Use visually engaging content, such as infographics and videos, to highlight the environmental benefits of hydrogen • Share science-backed articles and reports on trusted platforms • Promote webinars and virtual events where they can engage with experts and peers on the topic of hydrogen technology
Key WP1 recommendations addressed	Highlighting success stories (e.g., NortH2). Targeting knowledge gaps through accessible, data-driven content. Building trust in science-backed solutions.
Profile 2: Informed optimist	
Engagement strategy	To engage this audience, it is important to highlight hydrogen’s role in reducing local environmental impacts and contributing to community sustainability goals. Emphasising the involvement of trusted institutions and industry partnerships in ensuring the success and safety of hydrogen projects will resonate strongly with them. Showcasing examples of successful hydrogen implementations in similar communities will further strengthen their support. Additionally, providing opportunities for them to engage in local hydrogen projects, such as town hall meetings or participatory planning sessions, will align with their values of responsibility, innovation, and community well-being, making them more likely to actively support and advocate for hydrogen technology.
Priority channels	<ul style="list-style-type: none"> • Newsletters and local publications • Town hall meetings and local workshops • Webinars and virtual events





Recommendations	<ul style="list-style-type: none"> ● Focus on detailed case studies of successful hydrogen projects ● Emphasise the role of trusted institutions and partnerships ● Encourage participation in local discussions and decision-making processes through town hall meetings and local workshops
Key WP1 recommendations addressed	Highlighting regional success stories. Increasing transparency through trusted institutions. Addressing local sustainability and safety concerns.

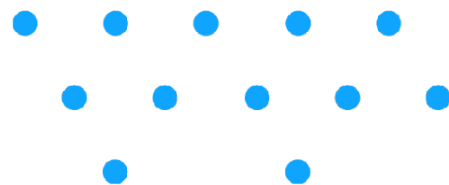
Profile 3: Cautious sceptic

Engagement strategy	To engage this audience, communication should prioritise addressing safety concerns head-on, showcasing robust safety measures and real-world examples of safe hydrogen use. Transparent cost comparisons, demonstrating hydrogen's economic viability over time, will be crucial. Building trust through endorsements from local, trusted figures and institutions is essential, as is providing balanced media coverage that acknowledges their concerns while offering factual, reassuring information about hydrogen's benefits. Offering informational sessions where they can directly interact with hydrogen technology and its proponents will further help to assuage their scepticism and build their confidence in its adoption.
Priority channels	<ul style="list-style-type: none"> ● Local news outlet ● YouTube and video content ● In-person information sessions ● Webinars and virtual events
Recommendations	<ul style="list-style-type: none"> ● Provide clear, fact-based information in a straightforward manner ● Highlight local safety initiatives and real-world examples of successful hydrogen projects ● Use trusted local figures in testimonials and endorsements
Key WP1 recommendations addressed	Tackling safety misconceptions and affordability concerns. Increasing trust through transparency and trusted voices. Providing accessible, region-specific engagement.

Profile 4: Pragmatic realist

Engagement strategy	To engage with this audience, messaging should focus on the economic benefits of hydrogen, such as lower energy costs and job opportunities. Highlighting successful, reliable projects in similar communities will appeal to them. Address their practical concerns directly, comparing hydrogen with traditional energy sources in terms of cost and reliability. Endorsements from industry experts and local leaders who understand their concerns will also be effective. The key is to position hydrogen not just as a green option but as a practical, economically wise choice for the future.
Priority channels	<ul style="list-style-type: none"> ● Local industry events ● Local government and business-led publications ● Webinars and virtual events





Recommendations	<ul style="list-style-type: none"> • Use practical, straightforward language that focuses on economic benefits and reliability • Provide direct comparisons with traditional energy sources • Highlight job creation and local economic impacts in communications targeted at this group
Key WP1 recommendations addressed	Emphasising job creation and economic benefits. Demonstrating hydrogen's reliability and cost-effectiveness. Leveraging local success stories.

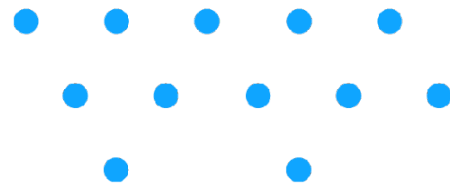
Country-specific communications

Table 5 provides targeted messaging recommendations for each country involved in the project, based on the findings from WP1. This table draws on data about public awareness, attitudes, and engagement levels across the EU, ensuring that communication efforts are contextually relevant and responsive to regional variations. By addressing specific concerns and focusing on country-specific opportunities, these messages will foster greater public trust and acceptance of hydrogen technologies

Table 5. Country-specific key messages

Country	Summary of findings	Key messages
Italy	<ul style="list-style-type: none"> • High awareness and familiarity with hydrogen energy, with 90% having heard of it and 36% familiar with it. • Positive views on hydrogen as a sustainable energy source (74% agreement) and as a solution for energy dependence (89% agreement). • Low opposition to hydrogen as a safe energy source (15% disagreement). 	<ul style="list-style-type: none"> • Hydrogen is a safe and sustainable energy source with strong public support in Italy. • Embracing hydrogen can significantly reduce the country's energy dependence and promote environmental sustainability. • Hydrogen is a clean energy source that helps to significantly lower carbon footprints.
Poland	<ul style="list-style-type: none"> • High awareness of hydrogen energy, with 88% having heard of it and 36% familiar with it. • Strong positive views on hydrogen's potential to reduce energy dependence (88% agreement) and its sustainability. 	<ul style="list-style-type: none"> • Poland is on the path to becoming a leader in hydrogen energy by 2030, with strong public support. • Integrating hydrogen with renewable energy sources will enhance the country's energy independence and sustainability. • Hydrogen is produced from renewable sources, making it a clean and sustainable energy option.
Belgium	<ul style="list-style-type: none"> • Mixed awareness levels, with 85% having heard of hydrogen energy but only 22% familiar with it. • Moderate agreement on hydrogen's sustainability and safety, but with some scepticism about its overall benefits. 	<ul style="list-style-type: none"> • Hydrogen is a versatile and powerful energy source that is driving the transition to a cleaner future. • Local and national hydrogen energy projects have shown substantial benefits in various sectors, from transportation to industry. • Hydrogen energy systems have a track





		record of safety and efficiency, supported by scientific and industry research
Spain	<ul style="list-style-type: none"> Moderate awareness and familiarity with hydrogen energy, with 84% having heard of it and 20% familiar with it. Positive views on hydrogen as a sustainable energy source (70% agreement) and as a safe energy source (66% agreement). Low opposition to hydrogen, with 20% disagreeing with its safety. 	<ul style="list-style-type: none"> Hydrogen is key to reducing energy dependence and promoting sustainability in Spain. The safety of hydrogen is backed by extensive testing and adherence to international safety standards. There are many successful local and national hydrogen projects that have significantly reduced carbon emissions.
Ireland	<ul style="list-style-type: none"> Moderate awareness and familiarity with hydrogen energy, with 79% having heard of it and 20% familiar with it. Positive views on hydrogen's sustainability and energy dependence, with 86% agreement on its potential to reduce energy dependence. 	<ul style="list-style-type: none"> Hydrogen technology is becoming more accessible and is integral to our sustainable energy landscape. Hydrogen is a versatile and powerful energy source that is driving the transition to a cleaner future.
Bulgaria	<ul style="list-style-type: none"> High awareness, with 86% having heard of hydrogen energy and 33% familiar with it. Mixed views on hydrogen's sustainability and safety, with a significant portion of the population still unfamiliar with its benefits and safety. 	<ul style="list-style-type: none"> Understanding how hydrogen works and its benefits is essential for embracing a sustainable energy future. Real-world examples demonstrate how hydrogen can provide clean, reliable energy solutions for local communities. Hydrogen is a safe energy source with rigorous safety standards and protocols in place.

It is advisable that any public information and engagement activity incorporates a combination of the strategies outlined in tables 4 and 5, ensuring a comprehensive and cohesive approach that maximises impact across diverse audiences and regions.

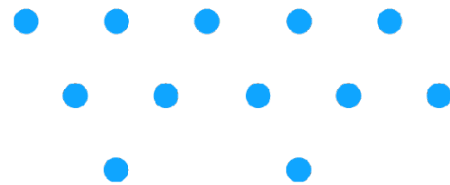
5. Engagement channels

Social media platforms (e.g., X, LinkedIn, Instagram)

Social media platforms are ideal for reaching the **Eco-conscious tech enthusiast**, who is active online and engaged with environmental and technological content. With approximately 63% of the world's population using social media as of July 2024⁴, these platforms provide an excellent opportunity to reach other audience profiles as well. Campaigns should be tailored to specific messaging suited to each platform, ensuring that the identified audience segments are effectively engaged.

⁴ Statista (2024). Number of internet and social media users worldwide as of October 2024. Retrieved from: <https://www.statista.com/statistics/617136/digital-population-worldwide/#:~:text=As%20of%20July%202024%2C%20th ere.population%2C%20were%20social%20media%20users>





The WP1 social media content analysis (D1.4) focused primarily on X (formerly Twitter) and Reddit, which revealed different dynamics on each platform. X tends to host political or ideological conversations, making it a valuable space to reach not only the **Eco-conscious tech enthusiast** but also the **Cautious sceptic**. X’s emphasis on real-time news discussions makes it ideal for event-driven engagement, such as policy announcements or industry developments. On the other hand, Reddit, with its more closed-off, moderated forums, may not be as effective for broad knowledge dissemination but excels in detailed technical discussions.

For broader reach, platforms like **Facebook** are likely to resonate with older audience profiles such as the **Informed optimist** and **Pragmatic realist**. Facebook offers a trusted space for sharing detailed information and community-driven discussions. **LinkedIn**, designed for professional networking, is an essential channel for disseminating higher-level knowledge, especially among tech-focused professionals and those involved in policy or industry. Additionally, **YouTube** and **Instagram**, which prioritise visual content, can capture attention through engaging infographics, short videos, and animations that explain hydrogen technologies in simple, visually appealing terms.

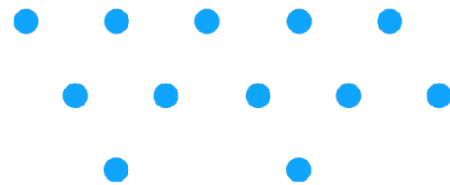
Project partners will share responsibility for leveraging their own social media accounts on platforms such as **X**, **LinkedIn**, **YouTube**, **Facebook**, and **Instagram**. By combining their efforts, partners can reach a broader, more diverse audience to maximise accessibility and inclusivity.

To optimise the effectiveness of social media campaigns, partners should leverage their own networks and use the recommendations from WP1. The table below provides an overview of the recommended social media channels, the audience profiles they best reach, and the types of content and actions that can be employed to maximise engagement.

Table 6. Social media channels and audience alignment

Channel	Audience profiles	Recommended content types	Specific actions
LinkedIn	<ul style="list-style-type: none"> Eco-conscious tech enthusiast Informed optimist 	<ul style="list-style-type: none"> Science-backed articles Industry news Success stories, Infographics 	<ul style="list-style-type: none"> Share professional posts about hydrogen projects Publish white papers Promote webinars targeting experts
Twitter/X	<ul style="list-style-type: none"> Eco-conscious tech enthusiast Cautious sceptic 	<ul style="list-style-type: none"> Event-driven news Live updates Videos Expert quotes 	<ul style="list-style-type: none"> Post updates during events Share safety statistics and infographics addressing concerns
Instagram	<ul style="list-style-type: none"> Eco-conscious tech enthusiast Cautious sceptic 	<ul style="list-style-type: none"> Infographics Short videos Visual storytelling 	<ul style="list-style-type: none"> Share reels or stories highlighting hydrogen’s environmental benefits and safety features
Facebook	<ul style="list-style-type: none"> Informed optimist Pragmatic realist 	<ul style="list-style-type: none"> Local project updates Community discussions Visual posts 	<ul style="list-style-type: none"> Promote town hall meetings and workshops Create polls or Q&A threads on hydrogen adoption





YouTube	<ul style="list-style-type: none"> • Cautious sceptic • Pragmatic realist 	<ul style="list-style-type: none"> • Explainer videos • Testimonials • Case studies 	<ul style="list-style-type: none"> • Upload demonstrations of hydrogen technology • Share testimonials from trusted voices
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To optimise social media campaigns, partners should follow the recommendations for targeted engagement outlined in WP1’s D1.4, including:

- Using social media to communicate accurate, simple-to-understand information on hydrogen technologies to address knowledge gaps and counter misconceptions.
- Tailoring strategies to account for geographic, demographic, and socio-political variability in different EU countries.
- Leveraging event-driven peaks (e.g., policy announcements or new hydrogen projects) for maximum impact.
- Targeting campaigns at demographics with lower awareness of hydrogen technology.
- Emphasising hydrogen’s environmental, sustainability, and safety benefits.
- Championing local and national hydrogen success stories and case studies.
- Collaborating with partner organisations, industry stakeholders, academia, and non-governmental organisations to increase impact and reach.

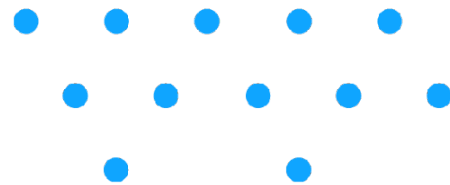
The following table shows the current reach of HYPOP partners' social media channels:

Table 7. HYPOP partners’ social media numbers (as of November 2024)

HYPOP partner	Followers					TOTAL
	Facebook	X	LinkedIn	YouTube	Instagram	
ENVI	3,000	574	5,000	775	810	10,159
IMI	396	333	773	N/A	N/A	1,502
IME	45	2,087	9,000	22	1,063	12,217
APRE	7,000	2,808	14,000	3,090	N/A	26,898
CNH2	1,100	2,113	11,000	62	1,788	16,063
RIGP	3,300	N/A	2,000	112	N/A	5,412
CLUSTER TWEED	N/A	906	N/A	63	N/A	969
BH2C	No social media channels available					
TOTAL	14,841	8,821	41,773	4,124	3,661	73,220

Social media reach and impact can be significantly increased if stakeholder organisations outside of HYPOP agree to share relevant campaign posts. This organic sharing could be driven by shared interests with organisations such as the **European Commission** (950,000 followers on Instagram, 2 million on LinkedIn), the **Clean Hydrogen Partnership** (10,000 followers on X, 43,000 on LinkedIn),





and large-scale EU hydrogen projects like **NorthH2** in the Netherlands (4,000 followers on LinkedIn), **Everfuel** in Denmark (4,800 followers on X, 16,000 on LinkedIn), and **Holland Hydrogen 1**, promoted by Shell (950,000 followers on Instagram).

Webinars and virtual events

Webinars and virtual events are a key engagement channel for reaching **Eco-conscious tech enthusiasts**, **Informed optimists**, and especially the **Cautious sceptics**, who may be most sceptical or uncertain about hydrogen technologies. These online sessions provide an interactive platform where participants can engage directly with experts, address their concerns, and gain a clearer understanding of hydrogen's benefits, safety, and practical applications.

Six **online workshops** will be held across Italy, Poland, Spain, Ireland, Belgium, and Bulgaria. The primary objective is to engage European citizens in discussions and activities related to hydrogen (H₂) technologies, fostering greater public understanding and trust in their implementation. Each workshop will be tailored to address the specific concerns and knowledge gaps of the region, ensuring that participants walk away with a comprehensive understanding of hydrogen and its role in the energy transition. These workshops are particularly important for **Cautious sceptics**, as they provide the opportunity to ask questions, receive transparent information, and interact with local experts who understand their concerns. Engagement channels, including social media posts, website updates, and partner networks, will be used to share the results and outcomes of online workshops, further extending the reach and impact of HYPOP's public engagement efforts.

To ensure the workshops are engaging and effective, skilled facilitators will lead the sessions, supported by subject matter experts to address specific questions. Facilitators will guide discussions and ensure that content is delivered in an accessible and engaging manner. Supporting speakers may include hydrogen technology experts, safety specialists, and representatives from hydrogen valleys, companies, and public authorities, who will provide deeper insights into technical, practical, and policy-related aspects of hydrogen technology. Safety experts can address misconceptions with transparent explanations, while policymakers and industry representatives can highlight affordability, reliability, and community benefits. Clear, concise presentations, relatable examples of successful hydrogen projects, and interactive Q&A sessions will help build trust and foster meaningful dialogue with participants. The indicative agenda for these workshops can be found in Appendix A.

In addition to the online workshops, the project team will host two **international online events** targeting a broader audience, including decision-makers in the energy sector, communication experts, technicians, company representatives, and project managers seeking to enhance their hydrogen awareness campaigns. These events will provide valuable insights and tools to improve engagement efforts, with expert speakers sharing best practices and lessons learned from the project. The sessions are designed to benefit both technical and non-technical participants, including **Informed optimists**, who appreciate detailed case studies and expert-led discussions, and **Cautious sceptics**, who require clear, evidence-based information to build trust. By addressing diverse audience needs, these events aim to maximise the impact of hydrogen awareness efforts across multiple sectors. The indicative agenda for these events can be found in Appendix B.





Environmental blogs and forums

Targeting the Eco-conscious tech enthusiast through blogs and forums dedicated to sustainability and renewable energy is another effective strategy. This audience frequently visits these platforms, making them ideal for publishing articles, opinion pieces, and case studies that highlight the environmental benefits of hydrogen. Active participation in forum discussions allows for direct engagement, where questions can be answered and concerns addressed. Building relationships with influencers in the environmental space is also crucial; collaborating with them to co-create content or guest post on popular blogs can significantly enhance credibility and reach within this community.

Scientific publications

For the **Eco-conscious tech enthusiast**, scientifically grounded information is key. Publishing reports, articles, and papers in respected scientific journals or on trusted online platforms can effectively capture their attention. This audience seeks data-driven insights and innovations, so leveraging peer-reviewed studies, white papers, and comprehensive analyses of hydrogen's role in combating climate change and contributing to energy transitions will resonate deeply. Sharing these publications via professional networks such as LinkedIn further amplifies reach within this group.

Newsletters and local publications

The **Informed optimist** relies on local, trusted sources of information. Newsletters and local publications can serve as credible outlets to deliver detailed case studies and updates on hydrogen projects in their region. These channels allow for more in-depth content that can explain how hydrogen technology contributes to community sustainability goals. Highlighting partnerships between local government, industry, and trusted institutions will further reinforce trust and support for hydrogen initiatives.

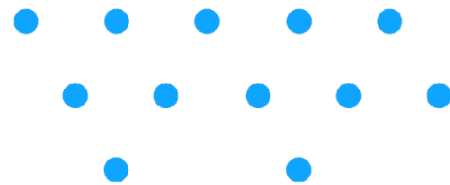
Town hall meetings and local workshops

For **Informed optimists**, personal engagement is key. Town hall meetings and local workshops provide an opportunity for them to participate in discussions about hydrogen technology and its impact on their community. These sessions should showcase successful hydrogen implementations, explain local sustainability benefits, and provide a platform for residents to ask questions and voice their opinions. Encouraging direct participation in local hydrogen initiatives will further solidify their support.

Local news outlets

Reaching the **Cautious sceptic** through local news outlets ensures that hydrogen technology is presented in a format they trust. By providing fact-based, straightforward news stories that address safety concerns and economic viability, this channel allows for balanced media coverage. Local news stories should highlight real-world examples of safe hydrogen projects in their region, offering tangible evidence of its benefits. Endorsements from local trusted figures, such as community leaders or safety officials, are especially important for this group.





YouTube and video content

Short, engaging videos are highly effective for addressing the concerns of the **Cautious sceptic**. Videos that clearly explain hydrogen's safety measures, its cost benefits, and real-world examples of success can help alleviate their doubts. As part of the project, partners are producing interview videos featuring their roles and expectations within HYPOP, as well as interviews with experts addressing key questions such as: "What is hydrogen?", "Why choose green hydrogen over other types?", and "What are hydrogen's advantages and applications in the energy transition?" These expert videos also cover practical topics like safety measures in hydrogen transport and how hydrogen compares to conventional fuels.

YouTube serves as an ideal platform to showcase these visual demonstrations, expert testimonials, and success stories, which can then be amplified through social media and local news outlets for greater reach.

In-person information sessions

For **Cautious sceptics**, face-to-face interactions are key to building trust. Organising local in-person information sessions where they can see hydrogen technology in action, interact with experts, and ask questions directly will help address their concerns about safety and cost. These sessions should focus on practical demonstrations and provide clear, factual information about the long-term benefits and security of hydrogen technology.

Local industry events

The **Pragmatic realist** is most effectively reached through local industry events, where hydrogen's economic and practical benefits can be demonstrated. These events allow for direct comparison with traditional energy sources and showcase hydrogen's reliability and job creation potential. Exhibitions, demonstrations, and discussions led by industry experts can help establish hydrogen as a viable, economically sound alternative. Events focused on local development projects, energy innovations, or technical advancements are particularly relevant for this audience.

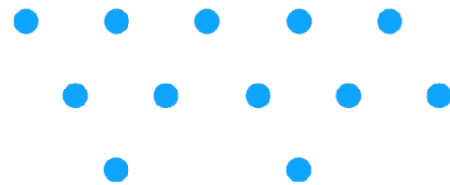
Local government and business-led publications

Local government and business-led publications are trusted by the **Pragmatic realist**. Content in these publications should emphasise the economic benefits of hydrogen, highlighting lower energy costs, job opportunities, and success stories from similar communities. By providing clear, practical examples of how hydrogen technology can benefit their local economy, these publications can help overcome scepticism and position hydrogen as a reliable, proven alternative.

6. Feedback, monitoring and evaluation

Ensuring GDPR compliance and adherence to ethical standards is paramount in the execution of public engagement workshops. These measures will be applied to all workshop activities to uphold these principles:





- All participants will register through a secure platform that adheres to the highest standards of data protection. During the registration process, participants will be informed about the purpose of data collection, how it will be used, and their rights regarding their personal data. This ensures that all participants provide informed consent before any data is collected. The informed consent document can be found in Appendix C.
- To evaluate changes in participants' understanding and perceptions of hydrogen technologies, an online survey will be distributed at two stages: registration and post-workshop feedback. During the registration process, participants will be asked questions to assess their familiarity with hydrogen technologies, initial perceptions, and awareness of local projects or national strategies. These questions aim to establish a baseline understanding and identify existing knowledge gaps. In the feedback survey, participants will be asked similar questions to evaluate changes in their understanding and awareness, along with questions designed to capture reflections on the workshop's impact and effectiveness in addressing misconceptions. To ensure accessibility and inclusivity, all surveys will be translated into the local languages of the participating countries. The specific questions used for both registration and feedback surveys are detailed in Appendices D and E. This approach ensures robust evidence of whether the workshop led to a clear deepening of understanding and increased knowledge of hydrogen technologies, enabling the project team to assess its effectiveness and identify areas for improvement.
- To maintain transparency, a summary of the feedback collected and subsequent adjustments made to engagement strategies will be shared with participants and stakeholders, ensuring accountability and demonstrating that their input is valued. This feedback will inform the development of public engagement guidelines (D3.4).

In addition to workshop-specific feedback, partners are recommended to monitor engagement across the activities and channels they use to disseminate materials or share workshop outcomes. This could include tracking metrics such as social media interactions (likes, shares, comments, and reach), attendance at online events, or website traffic. These insights can provide valuable complementary data on public sentiment and the effectiveness of engagement strategies, helping to refine future approaches.

By integrating robust feedback mechanisms and encouraging the monitoring of engagement activities, the project team can ensure that public outreach remains effective, relevant, and responsive to participants' concerns and evolving public sentiment.

7. Risk management

Effective risk management is essential to ensure the success of all engagement activities outlined in this strategy, from public workshops to social media campaigns and dissemination efforts. The table below identifies potential risks associated with these activities, including those specific to workshops, webinars, social media channels, and resource sharing. For each risk, corresponding mitigation strategies are outlined to provide clear guidance on how to address challenges proactively. This comprehensive approach aims to support project partners in maintaining the effectiveness, inclusivity, and impact of the public engagement strategy across all channels.

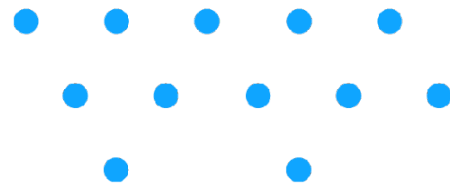




Table 8. Potential risks

Potential risk	Risk description	Mitigation strategy
Low participant turnout	Fewer participants than expected, impacting the effectiveness of the workshops or webinars	<ul style="list-style-type: none"> • Intensify marketing efforts through social media, newsletters, and partner networks • Engage local organisations and influencers to promote the event • Send reminders to registered participants
Technical issues	Problems with the online platform, audio, video, or internet connectivity during workshops or webinars	<ul style="list-style-type: none"> • Conduct thorough testing of technical setups before the event • Have technical support available during the sessions • Provide clear instructions for participants on using the online platform
Participant engagement	Difficulty in keeping participants engaged during workshops, webinars or online events	<ul style="list-style-type: none"> • Use interactive activities and breakout sessions to maintain interest • Provide engaging and visually appealing content • Skilled facilitators to guide discussions and activities
Data privacy concerns	Issues related to the collection and management of participant data during any engagement activity	<ul style="list-style-type: none"> • Ensure compliance with GDPR and other relevant data protection regulations • Use secure platforms for data collection and management • Clearly communicate data usage policies to participants
Language barriers	Challenges in communication due to participants speaking different languages	<ul style="list-style-type: none"> • Provide materials in multiple languages • Ensure facilitators are capable of managing multilingual discussions
Time zone differences	Difficulties in scheduling due to varying time zones across Europe	<ul style="list-style-type: none"> • Choose times that are convenient for the majority of participants • Record sessions and provide access to recordings for those unable to attend live
Lack of interest in/understanding	Audiences may find the topic unengaging or not relevant to their interest	<ul style="list-style-type: none"> • Highlight the importance and relevance of hydrogen technologies in promotional materials • Tailor content to address specific interests and concerns of different participant groups • Use real-world examples and case studies
Resource limitations	Limited resources (e.g., budget, personnel) to effectively deliver engagement activities	<ul style="list-style-type: none"> • Leverage partnerships and collaborations to share resources





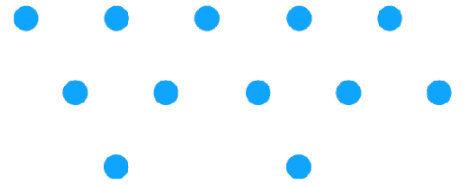
Social media content fatigue	Audiences may ignore repetitive or overly technical content on social media platforms	<ul style="list-style-type: none"> • Diversify content formats (e.g., videos, infographics, testimonials) • Schedule posts to align with engagement peaks (e.g., events, policy announcements)
Lack of social media reach	Posts may fail to gain traction due to poor targeting or insufficient sharing by partners	<ul style="list-style-type: none"> • Use analytics to refine targeting and posting strategies • Encourage partners to actively share and amplify posts through their networks
Dissemination gaps	Inconsistent sharing of resources or outcomes across channels	<ul style="list-style-type: none"> • Establish clear dissemination roles for partners to ensure coverage • Use a shared calendar for posting and resource-sharing deadlines
Negative sentiment online	Social media posts may attract negative or sceptical comments	<ul style="list-style-type: none"> • Monitor and respond to comments promptly with factual and transparent information • Collaborate with trusted voices (e.g., local influencers, experts) to reinforce credibility
Misinformation spread	Misinterpretation or deliberate spreading of inaccurate information about hydrogen technologies	<ul style="list-style-type: none"> • Monitor online discussions and provide corrective information promptly • Ensure that all shared content is clear, accurate, and evidence-based
Unexpected cancellations / no-shows	Last-minute cancellations or no-shows by participants	<ul style="list-style-type: none"> • Clearly communicate cancellation policies and procedures
Inaccurate participant data capturing	Errors in the registration process leading to incorrect participant information	<ul style="list-style-type: none"> • Use reliable registration platforms and tools • Verify participant information through confirmation emails • Regularly update and maintain participant databases

8. Conclusion

This public information and engagement strategy is designed to enhance public understanding, trust, and participation in hydrogen technologies across Europe. By tailoring communication efforts to specific audience profiles, addressing regional needs, and leveraging diverse engagement channels, the strategy ensures an inclusive and impactful approach. Special emphasis is placed on transparency, addressing safety concerns, and fostering public trust through evidence-based communication and active dialogue.

Success will be measured through mechanisms such as feedback surveys conducted after workshops and events, social media engagement metrics, and participation rates across the various activities.

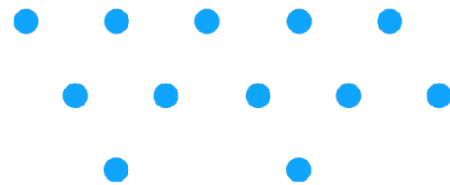




These tools will provide valuable insights into public sentiment, knowledge gains, and the overall effectiveness of the strategy, ensuring it remains responsive to the needs of diverse audiences.

Collaboration among project partners, stakeholders, and the public is essential for amplifying the strategy's impact. By working together, HYPOP aims to create a supportive environment that accelerates the adoption of hydrogen technologies, contributing to Europe's long-term goals for sustainability, energy independence, and economic resilience. With this strategy, HYPOP seeks to position hydrogen as a trusted and integral component of the sustainable energy landscape.





9. Appendix A: Indicative agenda for online public engagement workshops⁵

Introduction (15 min) (Plenary)

- Welcome and introduction.
- Brief overview of the workshop's objectives and agenda.
- Icebreaker activity: Quick poll on participants' initial thoughts on hydrogen systems. Starter questions should be based on the country-specific fact sheets. Example of starter questions: Do you believe hydrogen is a safe energy source? Can hydrogen significantly impact our future energy needs? Are hydrogen technologies environmentally friendly?

Understanding hydrogen technologies (20 min) (Plenary)

- Brief intro to HYPOP project and H2 technology context.
- How hydrogen systems work: A simple explanation.
- Benefits and challenges of hydrogen as an energy source.
- Country-specific facts: an overview of perceptions, policies and current projects.

Debunking myths vs facts (20 min) (Breakout groups)

- *Introduction to the activity:* Participants will share their perceptions, concerns, and questions about hydrogen systems.
- Facilitators address common myths and misconceptions (based on WP1 results and participants' inputs).

Break (10 min)

Future perspectives on hydrogen technologies (20 min) (Breakout groups)

- *Introduction to the activity:* Participants will write a short fictional newspaper article on hydrogen technologies, highlighting potential, challenges, and relevance to Europe and/or their local context.
- Provide each group with country-specific fact sheets, statistics, etc.
- Allow groups to brainstorm, draft, and finalise their articles.

Discussion and feedback (10 min) (Plenary)

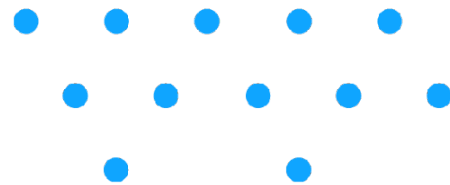
- Groups share their articles.
- Facilitate a discussion on the different perspectives and angles presented in the articles.
- Provide feedback and highlight key takeaways.

Q/A and open discussion (15 min) (Plenary)

- Q/A session
- Recap the main points discussed during the workshop.
- Share resources for further reading (HYPOP website etc.).
- Encourage participants to share their knowledge with their communities.
- Distribute feedback form (survey link).
- Thank participants for their time and engagement.

⁵ This agenda has an approximate length of 115 minutes. Partners can adjust activities as needed to fit within the 90 to 120-minute timeframe.





10. Appendix B: Indicative agendas for international events

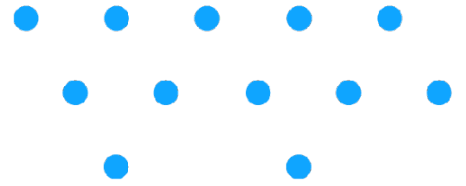
Webinar 'Raising Awareness of Hydrogen: Best Practices from the HYPOP Project'

<p>Introduction (5 min) (Plenary)</p> <ul style="list-style-type: none"> • Welcome and introduction. • Brief overview of the webinar's objectives and agenda. <p>Hydrogen's role in Europe's energy future (10 min) (Plenary)</p> <ul style="list-style-type: none"> • Discussing hydrogen's importance in the EU's energy and climate strategy. • How hydrogen serves as a bridge in the transition to renewable energy sources. <p>Key insights from the HYPOP (25 min) (Plenary)</p> <ul style="list-style-type: none"> • Presentation of the main findings from the HYPOP project. • Insights into how different sectors—industrial, governmental, and public—can collaborate to drive hydrogen adoption. • Overview of SLCA results. <p>Challenges and opportunities (10 min) (Plenary)</p> <ul style="list-style-type: none"> • Identifying the socio-economic, technical, and regulatory hurdles that currently impede hydrogen's broader uptake. • Looking beyond the HYPOP project. <p>Q/A session (5 min) (Plenary)</p> <ul style="list-style-type: none"> • Allow participants to ask questions and seek clarifications on the topics discussed. <p>Conclusion (5 min) (Plenary)</p> <ul style="list-style-type: none"> • Recap the main points discussed during the webinar. • Thank participants for their attendance and encourage feedback for future webinars. <p>= 1 hour</p>

Webinar 'Engaging Non-Technical Audiences: Best Practices for Energy Communication'

<p>Introduction (5 min) (Plenary)</p> <ul style="list-style-type: none"> • Welcome and introduction. • Brief overview of the webinar's objectives and agenda. <p>Understanding your audience (10 min) (Plenary)</p> <ul style="list-style-type: none"> • Identifying and segmenting non-technical audiences. • Tailoring messages to different audience segments. <p>Simplifying complex concepts (5 min) (Plenary)</p> <ul style="list-style-type: none"> • Techniques for breaking down technical information. • Using analogies and storytelling to make content relatable. <p>Visual communication tools (10 min) (Plenary)</p> <ul style="list-style-type: none"> • Importance of visuals in explaining energy topics. • Best practices for using infographics, charts, and diagrams. • Examples of effective visual communication in the energy sector. <p>Engagement strategies (10 min) (Plenary)</p> <ul style="list-style-type: none"> • Interactive methods to engage non-technical audiences. • Utilising social media, webinars, and community events. • Case studies of successful public engagement campaigns. <p>Handling questions and misconceptions (10 min) (Plenary)</p> <ul style="list-style-type: none"> • Strategies for addressing common misconceptions about energy topics.
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- Techniques for effectively answering audience questions.

Q/A session (5 min) (Plenary)

- Allow participants to ask questions and seek clarifications on the topics discussed.

Conclusion (5 min) (Plenary)

- Recap the main points discussed during the workshop.
- Thank participants for their attendance and encourage feedback for future events.

= 1 hour





11. Appendix C: Participant informed consent

The HYPOP project is pleased to invite you to join our live online workshop “Hydrogen technologies: Exploring facts, myths and future perspectives” on **[date]** from **[time]**.

The following statements are meant to ensure you have adequate information about how your responses to this registration and feedback after the co-creation workshop will be used and what will happen to the data you provide:

- Partners in the HYPOP consortium may use my information to communicate with me about further events or workshops.
- My responses to this event registration and feedback survey will be confidentially stored and used for project purposes.
- My identity will not be disclosed for commercial use by a third party or made public without my explicit consent.
- My participation is voluntary, I can withdraw at any time and ask for any personally identifiable information to be deleted.
- The information I provide about myself is confidential by default.
- After anonymisation, the data I submit may be published as an open dataset.

Please indicate whether you understand and agree with the statements above, and consent to participate in this survey:

- I consent to participate in this event and for any data that I submit to be used for event-related purposes.

In addition, please also indicate whether you opt-in to these unique considerations:

- Yes, you may add me to [HYPOP's community](#) and contact me about participating in project-related activities such events, workshops, relevant initiatives and activities.
- Yes, you may use the contact details I provide to keep me updated on event results.
- Yes, you may contact me to participate in other future projects.

Please indicate whether you consent regarding photography, video or audio recordings from participation in the project:

- I consent to my image, video, and voice being recorded during project activities, and used under the conditions mentioned in the above statements.

HYPOP has received funding from the Clean Hydrogen Partnership and the European Union's Horizon Europe: Climate, Energy and Mobility programme under grant agreement No. 101111933. HYPOP's partners ensure that processing activities take place in compliance with Regulation 2016/679 (GDPR).





12. Appendix D: Participant registration form

Contact information

Q1 First name

Q2 Last name

Q3 Primary email address

Tell us more about yourself

We are asking these questions to understand better the diversity within the pool of participants in this workshop.

Q4 Gender

- Male
- Female
- Non-binary
- A gender not listed here
- Prefer not to say

Q5 Age (enter as a whole number, e.g. 20)

Q6 What is your current employment status?

- Employed full-time or part-time
- Self-employed
- Unemployed
- Student
- Retired
- Other (please specify)

If Employed or Self-employed: What is your current job title/role?

If Student: What is the primary focus of your studies?

Q7 What are you hoping to gain from this event?

Q8 Do you require any assistance to fully participate in this virtual workshop?

- Yes
- No
- Unsure
- Prefer not to say

If yes: What accommodation will help you fully participate in this workshop?





Q9

[Likert Scale (5-point: Not at all Familiar - Extremely Familiar)]	Not at all Familiar	Slightly Familiar	Somewhat Familiar	Moderately Familiar	Extremely Familiar	Not applicable / No opinion
How familiar are you with hydrogen energy technologies?						

Q10 What comes to mind when you think of hydrogen energy?

[Textarea]

Q11 Please indicate the extent to which you agree or disagree with the following statements about hydrogen as an energy source. Select the option that best represents your view.

[Likert Scale (5-point: Strongly agree - Strongly disagree)]	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable / No opinion
Hydrogen is a safe energy source						
Hydrogen is a sustainable energy source						
Hydrogen is as polluting as Diesel or gasoline						

Q13 Are you aware of any local hydrogen projects in your country?

[Textarea]

Q14 Are you familiar with your country's national hydrogen strategy or policy?

- I don't know if we have one
- I know there is a strategy/policy but I am not familiar with it
- I am familiar with my country's hydrogen strategy/policy

Please click Submit to send your responses.





13. Appendix E: Participant feedback template

Thank you for participating in the live online workshop “Hydrogen technologies: Exploring facts, myths and future perspectives”.

The following statements are meant to ensure you have adequate information about how your responses to this feedback survey will be used and what will happen to the data you provide:

- Partners in the HYPOP consortium may use my information to communicate with me about further events or workshops.
- My responses to this feedback survey will be confidentially stored and used for project purposes.
- My identity will not be disclosed for commercial use by a third party or made public without my explicit consent.
- My participation is voluntary, I can withdraw at any time and ask for any personally identifiable information to be deleted.
- The information I provide about myself is confidential by default.
- After anonymisation, the data I submit may be published as an open dataset.

Please indicate whether you understand and agree with the statements above, and consent to participate in this survey:

- Yes, I understand, agree, and am willing to participate in this survey.

HYPOP has received funding from the Clean Hydrogen Partnership and the European Union’s Horizon Europe: Climate, Energy and Mobility programme under grant agreement No. 101111933. HYPOP’s partners ensure that processing activities take place in compliance with Regulation 2016/679 (GDPR).

Please click Next to continue

[PAGE BREAK]

We are asking these questions again to **match your registration responses with feedback results**. Your responses will be anonymised before any data or results are published as an open dataset.

Q1 First name

Q2 Last name

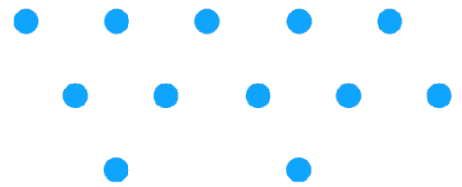
Q3 Primary email address

Q4 Gender

- Male
 Female
 Non-binary
 A gender not listed here
 Prefer not to say

Q5 Age (enter as a whole number, e.g. 20)





Q6 Did you attend the co-creation workshop?

- Yes
- No

Q7 What comes to mind when you think of hydrogen energy?

[Textarea]

Q8 Please indicate the extent to which you agree or disagree with the following statements about hydrogen as an energy source. Select the option that best represents your view.

[Likert Scale (5-point: Strongly agree - Strongly disagree)]	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable / No opinion
Hydrogen is a safe energy source						
Hydrogen is a sustainable energy source						
Hydrogen is as polluting as Diesel or gasoline						

Q9 Are you aware of any local hydrogen projects in your country?

[Textarea]

Q10 Are you familiar with your country's national hydrogen strategy or policy?

- I don't know if we have one
- I know there is a strategy/policy but I am not familiar with it
- I am familiar with my country's hydrogen strategy/policy

Q11 Did the workshop highlight any misconceptions you might have had about hydrogen energy?

- Yes
- No
- Unsure
- Prefer not to say

If yes: Please elaborate.

Q12 What activities or events do you think would be most effective to help people learn about and understand hydrogen energy technologies? Tick all that apply.

- Hands-on demonstrations and exhibitions





- Community workshops
- Public lectures and Q&A sessions
- Virtual webinars and live-streamed events
- Social media campaigns
- Newsletters and local publications
- Other (please specify)

For each pair of words below, please select the point between them that best describes your views of the event:

Q13 The co-creation workshop was...

	3	2	1	0	1	2	3	
Fascinating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Boring
Worthless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Valuable
Useless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Useful
Important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unimportant
Irrelevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Relevant

Q14 Using the response options below, please indicate your views about the co-creation workshop you attended.

[Likert Scale (5-point: Strongly agree - Strongly disagree)]	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable / No opinion
I was disappointed with the workshop.						
I found the workshop confusing.						
The workshop was poorly						





delivered by the speaker(s).						
I felt uncomfortable asking questions at this workshop.						
I enjoyed the workshop.						
This workshop was a poor use of time.						
I was able to actively participate.						
My contribution to the process was valued.						
The process was badly managed.						
I have a clear understanding of the expectations for my contribution to the process.						
I needed more information to fully participate.						
All voices have been heard and considered.						

Q15 Any other thoughts or feedback about the HYPOP co-creation workshop you would like to offer?

[Textarea]

Please click Submit to send your responses.





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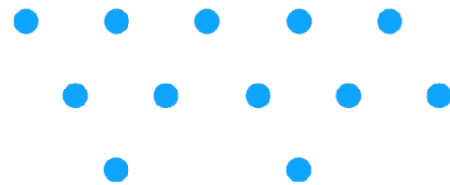
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