

OPTIC FIBRE-BASED HYDROGEN LEAK CONTROL SYSTEMS



D6.3

Gender Action Plan

TECHNICAL REFERENCES

Project Acronym	OPHYCS
Project Title	OPTIC FIBRE-BASED HYDROGEN LEAK CONTROL SYSTEMS
Type	HORIZON-JU-RIA
Call Identifier	HORIZON-JTI-CLEANH2-2022-1
Topic	HORIZON-JTI-CLEANH2-2022-02-02
Project Coordinator	ENAGAS
Project Duration	36 months
Deliverable No.	D6.3
Dissemination Level	Public
Work Package	WP6 – Project Management
Task	T 6.1 - Project governance, decision making, Data Management and Gender Action Plans
Lead beneficiary	ENAGAS
Contributing beneficiary(ies)	ENAGAS, GERG, ALL BENEFICIARIES
Due date of deliverable	30/06/24
Actual submission date	28/06/24
Estimated PM for deliverable	

VERSIONS

Revision Version	Date	Changes	Changes made by Partner
1.0	28 June 2024	First release	Violeta Bescós Roy (ENA), Ludovico Mazzocco (GERG)

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1. EXECUTIVE SUMMARY

This deliverable represents the outcome of task 6.1 (WP6), consisting of creating a Gender Action Plan (GAP) for the OPTHYCS project development. The importance of including gender perspectives in this project reflects the general European strategy of guaranteeing gender practices to fulfill our equal transition goals. A Gender Action Plan is a document that works as a tool and mechanism for ensuring the gender-inclusive design and implementation of practices and solutions, and to create awareness of the Gender Equality strategy guidelines and objectives of the European Union.

The Gender Action Plan III^[5] provides the EU with a policy framework with five pillars of action for accelerating progress towards meeting international commitments and a world in which everyone has space to thrive, such as leading by example, measuring results, or ensuring that all new actions contribute to gender equality of women's empowerment.

The renewable energy sector remains one of the minor gender-diverse sectors, male-dominated, and where women earn lower wages than men.^{[6],[9]} But to speak beyond gender towards inclusion in the hydrogen sector, we can observe that two of the four "D" objectives regarding energy transition in the world are to digitalize the services and products and democratize access and participation in the energy markets, in addition to decentralizing systems and decarbonizing production and consumption. This means that all individuals should have the option to use renewable energy through democratization and digitalization. This is why our vision of a GAP goes beyond gender. We assume as a working principle that the intersectionality between gender and other variables such as age, cultural background, religion, capabilities, or sexual preferences should be achieved together as they construct people's identities, and they are so closely interconnected with human rights.

The way to approach the GAP for OPTHYCS was creating an initial picture of how OPTHYCS is in terms of diversity and inclusion to develop later the guidelines to ensure equal participation during the project.

2. INTRODUCTION

2.1. About OPHTYCS

OPHTYCS project aims to develop a new sensor technology that will lead to reinforce the safety level of H₂ applications, as well as to anticipate and therefore minimize H₂ releases and limit an eventual climate impact, from production to storage and distribution, both in new infrastructure, working with pure H₂, and in reused natural gas plants and pipelines, contributing to a safe and economically viable implementation of H₂ production, transportation and storage processes.

OPHTYCS will increase both the safe and cost-effectiveness while minimizing environmental impact of the operation with both pure and natural gas blended H₂ through the development of continuous and fast-response leak detectors based on optical fiber sensors technologies in remote locations.

These newly developed sensors will be able to adapt to existing facilities and new infrastructure and analyze and classify leak types and sources based on risk, location, leak impact, probability of severity, and predictability through continuous predictive maintenance combined with increased speed of response. This sensor technology will be tested in several use cases with both pure H₂ and H₂ blended with natural gas: open and closed pipelines, H₂ refueling stations (HRS), midstream sites, and existing natural gas wells; the results obtained in these use cases will be used to tailor solutions to safety, environmental, and economic considerations.

2.2. Participants

OPHTYCS is built upon past and ongoing national and international research efforts. The consortium partners count on vast collaborative and previous experiences in each of their areas and European Projects so that we can ensure effective use of knowledge already gathered in initiatives. OPHTYCS consortium unites 7 partners from 3 different European countries (Spain, France, Belgium) (Image 1), providing a multi-stakeholder point of view that covers the whole value chain of H₂ storage and distribution: TSOs, technology developers (sensors, software, interrogator), technological research centres and use case validators. The consortium was created carefully to group excellent partners together, which bring necessary knowledge, competence, experience, and critical mass which ensure the achievement of the objectives. In summary, OPHTYCS is formed by a well-balanced set of partners with vast experience and differentiated roles that complement each other to ensure project objectives and expected impacts.



Image 1. Map of OPHTYCS Consortium partners

2.3. Deliverable objectives, why a Gender Action Plan?

As we know, in the last few years, countries across the globe realized the importance of working in terms of gender, inclusion, and equality to fulfill our transition goals. We understood that our level of interdependence makes others' welfare works towards our welfare. More specifically, this deliverable has the objective of:

- Be aligned with the European Union's goals and work towards gender and inclusion.
- To work as a tool and mechanism for ensuring the gender-inclusive design and implementation of OPTHYCS services and solutions.
- Create awareness (internally and externally) of the Gender Equality Strategy guidelines and objectives of the European Union.

In general, a Gender Action Plan should help to guide and navigate tough inclusion choices, resolve social conflict, prevent backsliding, provide for progressive realization, and build resilience in a world that otherwise risks remaining unequal, unstable, and unsustainable. In a nutshell this deliverable is a guide to foster innovation and make the energy transition more egalitarian, fair, and inclusive of all stakeholders and social strata by ensuring that the project first applies the best guidelines and approaches regarding inclusion. GAPs are NOT stand-alone projects or separate project components for women with different funding sources. GAPs mirror and are closely aligned with project outputs. They are necessary arrangements and monitoring and evaluation mechanisms.^[1]

3. WHERE IS THE WORLD ON GENDER

The SDG framework (**Sustainable Development Goals**) elaborated by the Department of Economic and Social Affairs of the United Nations and adopted by all United Nations Member States in 2015 provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), an urgent call for action by all developed and developing countries in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.^[2] But it is also a reminder that the transformational promise of the 2030 Agenda can only be achieved with the respect, protection, and fulfillment of **human rights**.

Promoting and protecting human rights is about empowering people to stand up for themselves and each other for equality and inclusive societies. This is how the power of human rights can foster and accelerate a transformative development agenda.^[3]

Communities that have endured discrimination have long called for their **voices to be heard**. Now the global conversation on inclusion is gaining momentum. Younger generations, taking up the charge from their forebears, have higher social justice and equity expectations.^[4] There is now a cohort who will not work for businesses that do not prioritize diversity, equity, and inclusion. The world over, populations are becoming more diverse, not less. And there is a global audience of millions ready to co-create the future of inclusive design, experiences, and marketing. While consumer, cultural and business trends flow in one direction, tides are pushing back. This is still a biased world in which 86% of Fortune 500 CEOs are White men and less than 1% identify as LGBTQ+. To genuinely deliver on equity, brands must empathize with marginalized communities' real-world struggles and use their power to dismantle systemic discrimination and oppression.^[4]

Some aspects are making the world look towards inclusion, such as *climate change*, a reality that not everyone lives in the same way, and that has shown the relationship and importance of working towards equality when we face a high percentage of people migrating to other countries due to climate adversities. **Digitalization**, as working

positively towards a more efficient world, leaves behind a part of society, such as the elderly or people with few resources. However, it is also a tool for people to protest and mobilize about topics related to inclusion. **Political inequalities** between countries also make Europe a vital challenge in adapting inclusion goals to each country's realities (Image 2). Finally, **transition times** have always been times of inequality, and instability and, sometimes, widen the length of inequalities between individuals; this is why the epoque we are living in today makes visible the things we have worked for but also the things we have not worked towards a transition where there is not only a place for everyone but a good place for everyone.

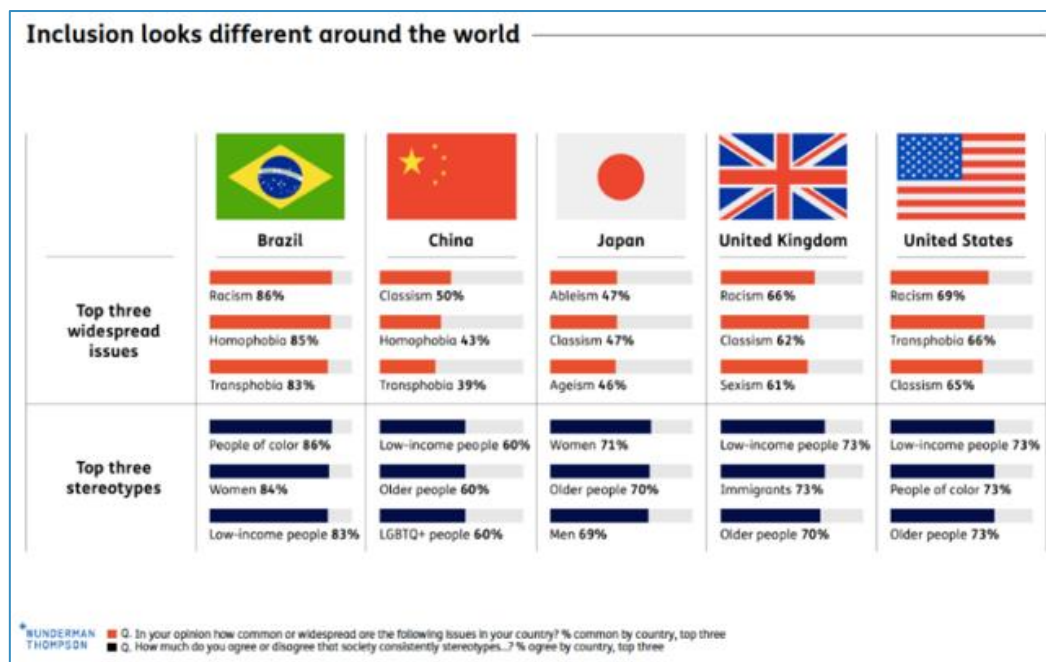


Image 2: Inclusion around the world. Wunderman Thompson 2022.

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4. EUROPEAN GENDER POLICY

No country in the world is on track to achieve gender equality and empower all women and girls, despite significant progress in advancing women's and girls' rights over the years. To address this, the European Commission and the High Representative of the Union for Foreign Affairs and Security Policy put forward ambitious plans to promote gender equality and women's empowerment through all external action of the European Union, the **Gender Action Plan III (2021-2025)**.^[5]

This external Gender Action Plan reflects the objectives of the **EU Gender Equality Strategy**, the first Commission strategy in the area of equality, which delivers on the commitments made by President von der Leyen in her political guidelines.

Josep Borrell, a high-representant of the European Union and vice president, says, "Ensuring the same rights to all empowers our societies. It makes them richer and more secure, which goes beyond principles or moral duties. The participation and leadership of women and girls are essential for democracy, justice, peace, security, prosperity, and a greener planet. With this new Gender Action Plan, we are pushing for more and faster progress towards gender equality".^[5]

The **Gender Action Plan III** provides the EU with a **policy framework** with five pillars of action for accelerating progress toward meeting international commitments and a world in which everyone has space to thrive:

1. 85% of all new actions throughout external relations will contribute to gender equality and women's empowerment by 2025.
2. Shared strategic vision and close cooperation with Member States and partners at multilateral, regional, and country levels.
3. GAP III calls for accelerating progress, focusing on the key thematic areas of engagement.
4. Leading by example.
5. Measuring results.

GAP III will promote a transformative and intersectional approach and mainstream gender in all policies and actions. It aims to address structural causes of gender inequality and gender-based discrimination, including by actively engaging men and boys in challenging gender norms and stereotypes. Finally, to leave no one behind, the action plan seeks to tackle all intersecting dimensions of discrimination, paying specific attention to women with disabilities, migrant women, and discrimination based on age or sexual orientation.

5. OUR VISION ABOUT DIVERSITY AND INCLUSION

In view of these arguments and the preliminary research conducted to develop this document our vision about gender goes beyond gender. We believe that the intersectionality between **gender** and other variables such as **age, cultural background, religion, capabilities, or sexual preferences** should be addressed together as they construct people's identities and are closely interconnected with human rights.

By working thinking of people's intersectional **identity**, we will be able to look further and wider to understand that individuals are more than their gender, or their religion and that identity or personality modifies the experience of life itself, that it is not something static. Most importantly, we know that people do not fit neatly into categories: identities are, of course, intersectional, overlapping in multiple ways.

As Rhonda Hadi, associate professor of marketing at the Saïd Business School at the University of Oxford, explains: "We should be thinking about people in a much richer, three-dimensional way, acknowledging that people rarely fit into neat categories".^[4] The civil rights advocate and critical race theory scholar Kimberlé Crenshaw initially coined intersectionality. It provides a lens through which to view the many ways oppression or privilege can converge and be amplified.

By creating opportunities to work on the construction of this identity, we will not leave any variable behind, and the intersectionality will make that one growth is everyone's growth. For all this, we believe that the role of brands, organizations, and individuals is to work towards empowerment, inclusion, and equality of intersectional identity, which includes gender, age, sex preferences, cultural background, religion, and capabilities.

6. GENDER, DIVERSITY, AND INCLUSION IN THE ENERGY SECTOR

The energy sector has historically been a male-dominated field, and its workforce needs to be more representative of the population and workforce at large. On average, there are 76% fewer women than men working in the energy sector, a significant difference from the average 8% gap seen in the total workforce, according to 2018 data from 29 countries (22 IEA members). The energy sector remains one of the least gender-diverse sectors, male-dominated, and women earn lower wages than men.^[6]

The barriers women face in the energy sector are similar to those they face elsewhere in the economy. However, there is an urgency for countries to attract and retain a diverse workforce in the energy sector to ensure innovation and the inclusive perspectives needed to navigate the low-carbon energy transition successfully. The sector's transformation towards sustainable clean energy sources provides a golden opportunity for greater gender diversity.^[6]

The challenges of the energy sector are more pressing since the sector is going through a process of transformation (as many other industries); clean energy transitions will require innovative solutions and business models to be adopted and greater participation from a diverse talent pool and women are key drivers of innovative and inclusive solutions. Also, the transition must be inclusive; otherwise, at the system level, it would not work. We need all.

Regarding inclusion in the energy sector, we can observe that one of the main objectives regarding energy in the world is to digitalize the services and products to achieve the energy transition goals and to democratize access and participation in the energy markets. This means that all individuals should have the option to use renewable energy through democratization and digitalization. However, we are far from this objective. Only in Europe today, people aged 65 or over represent 21%^[7] of the population and that many of them struggle with digital technologies, especially the elderly (over 80). How can we design a transition facilitating the inclusion of segregated populations? How can we ensure that we are not leaving anyone behind?

The EU aging reflects in different statistical indicators: the evolution of the share of the elderly population, the old age dependency ratio, and the median age, to give some examples. Looking first at the development of the percentage of the elderly in the population: in 2020, 21 % of the population was aged 65 and over, compared with 16 % in 2001, and it is estimated to get to 28.5% in 2050. The share of those aged 80+ almost doubled between 2001 and 2020.^[7] Also, a relatively high share of older people in the EU lives in rural areas; this distribution may have an essential bearing on policymakers when assessing access to various services for older people.^[8]

7. DIVERSITY AND INCLUSION IN OPHYCS

To analysis of the inclusion situation on the OPHYCS project and the design of the Gender Action Plan was based on the analysis of the project consortium regarding gender and decision-making.

The first action was to analyze the number of women vs. men participating in the project, and how many of them had decision-making roles. This analysis was taken from the consortium excel file updated on June 16th, 2024. As can be seen in Image 3, from the total of the consortium, which are 36 people involved from different countries, 81% are men and 19% are women. However, 29% of the project's women, 2 in total, are leading a work package lead versus 3 men (10%), and half of the WPs are led by women.



Image 3. OPHYCS consortium gender and leading split.

8. HOW TO WORK TOWARDS INCLUSION: INCLUSION ACTION PLAN

After analysing the data gathered and adapting it to the OPTHYCS project, we selected some initiatives we believe are **reachable** and **relevant**. We categorized them to match the deliverable objectives and the European Union goals.

The three categories (Image 4) we propose have a twofold orientation: inside and outside the consortium (the latter comprising actions towards participants, society, researchers, etc.) Both orientations are reciprocally affected.

- a) **Empathy:** Everything should start with accepting and understanding the other's diversity and richness. In the OPTHYCS project, we encourage you to consider the valuable part of the difference between the rest of the partners, participants, etc. and work towards it so that they feel included and considered.
- b) **Connection:** Once we have empathized with others, we are ready to connect in a meaningful and effective way to boost the power of diversity. Fostering interrelations among partners or the rest of society through the proper channels and formats is critical to making people feel part of and promoting innovative and relevant solutions.
- c) **Visibility:** Finally, we have to enhance the power of diversity and collaboration that has led us to the success of the consortium and the solutions proposed. This role model empowers different collectives to act and get involved in sectors like energy, where inclusion and diversity are urgently needed to rethink the system. Visualizing it fosters transparency and leads to empathy, closing the virtuous loop.

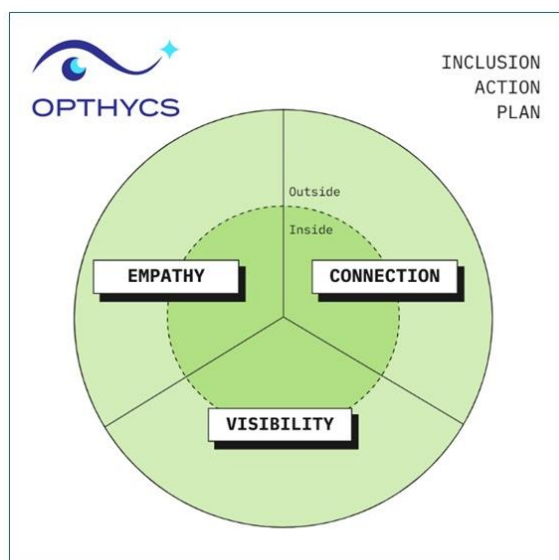


Image 4. Inclusion Action Plan Framework

8.1. Initiatives and responsibilities

An action plan must be a guide to ensure that the initiatives are considered and practiced during the project. This is why a description of the activities, and the response is key for the Inclusion Action Plan (IAP) monitoring to track the progress and keep the consortium updated. A list of 15 initiatives structured in the three areas and organized under the internal or external focus is presented in Table 1. Those initiatives are taken from the workshop conducted with the project partners and iterated to provide a simple but effective Inclusion Action Plan for the OPTHYCS project.

AREA	SCOPE	WHAT	HOW	WHO
EMPATHY	INSIDE	OPHYCS's one language	Ensure information and complex concepts are communicated in an inclusive and understandable language adapted to the audience in internal communications or events.	All
	OUTSIDE	User friendly language	Ensure complex concepts and words is translated to understandable and inclusive language for the many of the society to allow accessibility to participate and/or learn from the project	All
		Usable services	Ensure OPHYCS services are usable and understandable for all kind of users despite their age, energy literacy, etc. and that are adapted to the local context.	All
CONNECTION	INSIDE	New integrant onboarding	When there is someone new in the meetings, provide space at the beginning to introduce him/herself.	Consortium meeting leaders & all
	OUTSIDE	Accessible communication channels	Ensure we use different communication methods/channels (online and offline) to reach all ages and minority collectives.	
VISIBILITY	INSIDE	Last but not least	Encourage the use of the hand risen reaction to coordinate participation in online meetings. Meeting coordinators should provide 5-10min at the end of every meeting to allow everyone who wants to participate and contribute to have a last chance.	Meeting leaders & all
	OUTSIDE	Remarkable people in remarkable days	Ensure that OPHYCS publishes on key international days like women day, women in science day, etc. and that we take the chance to show role models in energy, tech and science that are attractive for new generations.	Communication (WP5)

Table 1. Inclusion Action Plan Initiatives

8.2. Measurement and KPIs

Project coordinators and established partners with inclusion responsibilities will be advised of their role and the proposed initiative to take into action.

Attitudes on meetings:

- In case there is someone new, let them introduce themselves to the consortium.
- Ask at the end if there is someone who wants to add or share something, anything about the project.

Communication KPIs:

- Review technical language on OPHYCS website and publications.
- Review inclusive language on OPHYCS website and publications.
- At least one publication regarding women in the energy sector and OPHYCS position.

9. CONCLUSIONS

OPHYCS Inclusion Action Plan is a path to define how to manage inclusion and gender during the project, both at the consortium level to avoid bias and at the demo level to provide an inclusive solution where diversity is representative. This plan should always be created with people, not for people, so everyone's involvement and acknowledgment are crucial to success. This type of plan inside Horizon Europe projects are an intelligent way to accelerate more sustainable and equitable development. This is why we need to work towards facilitating the path to work on what composes identity. To achieve that, we propose that the intersectionality between gender and other variables such as age, cultural background, religion, capabilities, or sexual preferences should be addressed together as they construct people's identities and are closely interconnected with human rights.

Organizations at all levels should work towards ensuring this in every sector or industry. Indeed, renewable energy has historically been a male-dominated field, and its workforce needs to be more representative of the population and workforce at large, especially in leading positions.^[9] To this extent, the gender repartition among OPTHYCS leaders is well-balanced. However, there are nuances and things to work towards inclusion, such as ensuring everyone is heard. Thus, communication efforts inside OPTHYCS and external communications are vital to creating trust and relationship building.

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