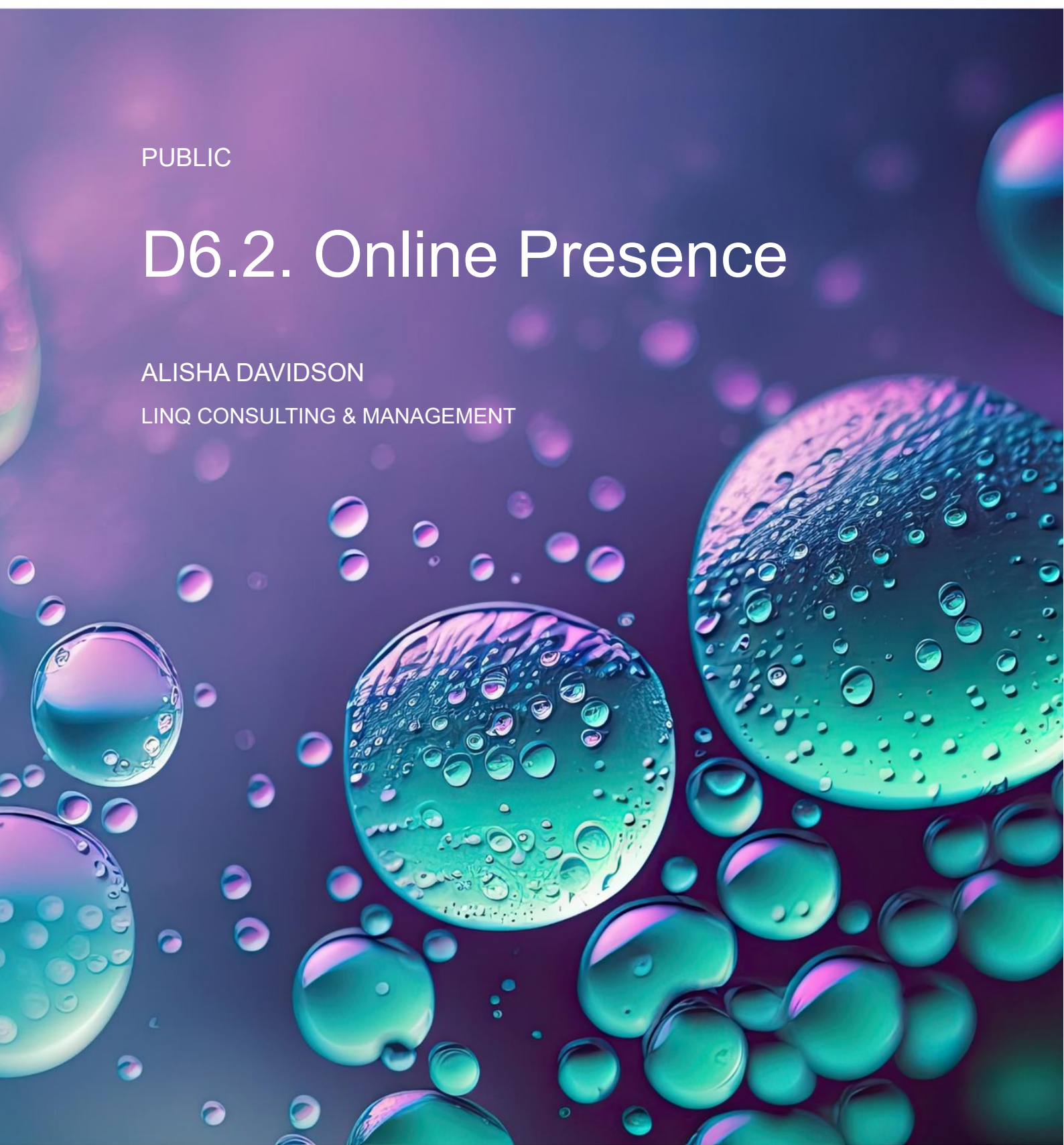


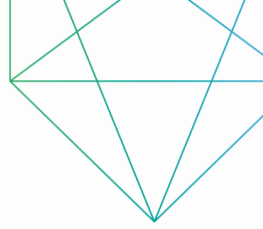
PUBLIC

D6.2. Online Presence

ALISHA DAVIDSON

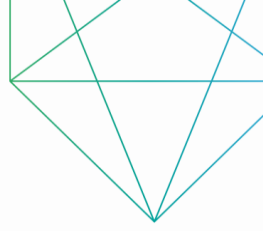
LINQ CONSULTING & MANAGEMENT





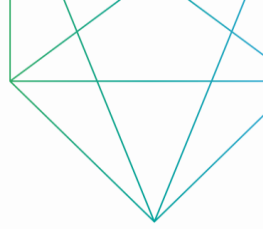
Deliverable information	
Authors	Alisha Davidson
Lead partner	Linq Consulting & Management
Relevant task	Task 6.1.
Version number	0.2
Version date	25 th July 2023

Dissemination level	
X	PU – Public (fully open; automatically posted online)
	SEN – Sensitive (limited under the conditions of the Grant Agreement)



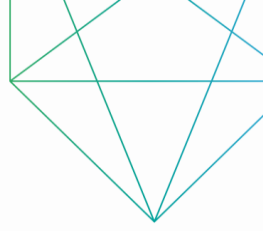
Executive summary

An online presence has been established for the OUTFOX project utilizing the branding identity created in **Deliverable 6.1**. This includes a dedicated website containing relevant information about OUTFOX's goals, scope, focus, and work progress, as well as members and initiatives involved, and social media platforms, YouTube, Twitter, and LinkedIn to provide updates to followers of the project's key milestones.



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1. OUTFOX website and the evaluation of the effectiveness

The OUTFOX website URL is: <http://www.outfoxproject.com/>

The website is dedicated to the OUTFOX project and it has been designed and implemented by Linq Consulting & Management (LINQ), WP6 lead, in cooperation with the project coordinator. The website was designed to create a communicate general information about the project and partners, latest results, and news items.

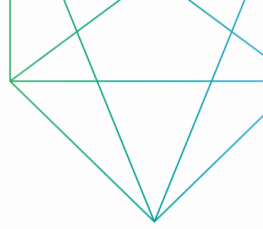
The effectiveness of the OUTFOX website will be regularly monitored and reported with quantifiable KPIs that allow LINQ and the consortium to assess the achievement of the website and the project's objectives. The KPIs for the OUTFOX website are:

- **At least one update per month.** This ensures that fresh and relevant content is consistently added to the website, keeping it up to date and engaging for visitors. These updates could include news articles, partner publications, public deliverables from OUTFOX, announcements, or any other content that is valuable to the target audience.
- **Number of hits from 10 hits/month in year 1 to 40 hits/month in year 4.** This measures the traffic or visits to the OUTFOX website over a four-year period. It sets specific targets for increasing the number of visits to the website.
- Number of pages a user visits per session is 1.1 for the first year and 1.2 for the following years.
- The bounce rate is 50% for the first year and 60% for the following years.

1.1 Website layout and structure

The project website reflects the general visual identity of the project and includes a homepage, six tabs and nine subpages. The subpages are:

- **About:** Divided into two sub-pages '**Project Overview**' and '**Consortium**'.
- **Research**
- **News & Events**
- **Resources:** Divided into two sub-pages '**Public Deliverables**' and '**Newsletters**'.
- **Contacts**

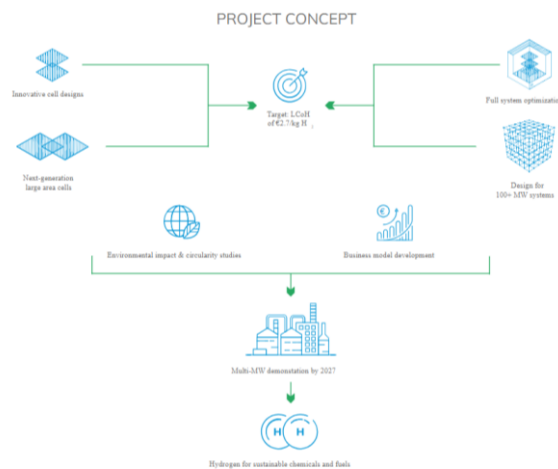


1.2 Homepage

The OUTFOX website's homepage is the main page of the website where visitors can find the tabs and hyperlinks to other pages on the site.

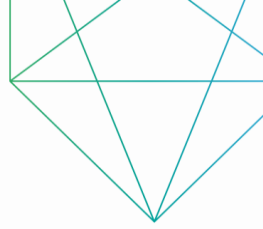
The homepage is divided into sections:

- **Project concept:** Taking the form of an infographic, a brief overview of the core idea and vision driving the OUTFOX project.



- **Project impact:** Figures, showing thanks to relevant data and icons the potential impact of the OUTFOX project





- **Project objectives:** A boxed text description outlining the key objectives to be achieved during the OUTFOX project.

PROJECT OBJECTIVES

<p>Scaled up cells for SOEL</p> <p>Manufacture scaled-up cells with areas up to 900 cm², representing a 2-6 times boost in cell area, with performance validated in short stacks with > 0.85 A/cm² current density and over 6000 hours operating time.</p>	<p>Design and validation</p> <p>Use techno-economic analysis and simulations to design and validate a stack architecture that is compatible with low-cost manufacturing techniques and increases power capacity 8-fold per stack interface.</p>	<p>Manufacturing technology</p> <p>Develop an industrial scale, high throughput manufacturing process to produce >300 cm² cells with a reduced thickness of 300 microns and minimal total thickness variation < 25 microns.</p>
<p>Demonstration at 80 kW scale</p> <p>Build and operate two 80 kW pilot modules for 4000+ total hours to show achievement of performance targets at larger scales and with operation under intermittent and other industrial operating regimes.</p>	<p>Reduction in Levelized Cost of H₂</p> <p>Demonstrate the impact of the SOEL technology scalability and potential to achieve an LCOH of <€ 2.7/kg with comprehensive process evaluation and set up of follow-up projects for multi-MW SOEL demonstration.</p>	<p>Improved environmental impact</p> <p>Demonstrate the circularity, safety and sustainability of the stacks and components via a comprehensive life cycle analysis of relevant materials and processes, with designs focused on improved industrial usability.</p>

Footer Section: Located at the bottom of the webpage, it showcases Project logos, links to social media accounts, and acknowledgment of funding bodies.



1.3 About the project

1.3.1 Project Overview

The OUTFOX page provides partners and stakeholders with a comprehensive overview of the project. It includes a brief and clear background and context in which the project is developed, along with its main objectives



HOME ABOUT RESEARCH NEWS & EVENTS RESOURCES CONTACT

PROJECT OVERVIEW

SUMMARY



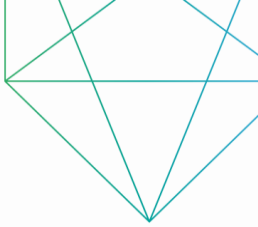
The primary objective of OUTFOX is to eliminate the restriction of scale in the implementation of SOEL (Solid Oxide Electrolysis) technologies and demonstrate their potential as the preferred option for producing green hydrogen. Through the integration of experimental findings up to the 80 kW scale and the identification of optimal cell and system designs, OUTFOX plans to equip SOEL for large-scale industrial systems of over 100 MW with a low Levelized Cost of Hydrogen (LCOH) of <€ 2.7/kg and suitability for mass manufacturing lines. The industrially-driven OUTFOX consortium will pool its expertise in cell, stack, and module development, along with manufacturing and full system evaluation, to advance the maturity of SOEL, and contribute to the objectives of the Clean Hydrogen JU SRIA. The overall sustainability will be enhanced by reducing normal material requirements, where OUTFOX will achieve current densities of at least 0.85 A/cm² using cells that are 25% thinner than the current state-of-the-art cells manufactured at high volumes.

Scaling up will be approached from two angles:

1. Developing and validating cells with geometrical areas of up to 900 cm² that are compatible with large-scale manufacturing techniques
2. Validating optimized design concepts up to the full module level with increased numbers of stacks per module.

The partners will test high current density operation with reference scale (144 cm²), industrial scale (>300 cm²), and next-generation (900 cm²) cells in single repeating units (SRU), short stacks of 18 cells, and 80 kW prototype systems, resulting in over 30,000 hours of SOEL operation. To provide comprehensive validation of the OUTFOX technology, two distinct 80 kW testing campaigns with two different stack configurations will be conducted at the Shell facilities in Amsterdam, Netherlands, with over 4,000 operating hours in total. This will offer crucial data for the design of a complete 100+ MW SOEL system, including the module configuration and all balance of plant requirements, in order to pave the way for a multi-MW demonstration after the project's conclusion.





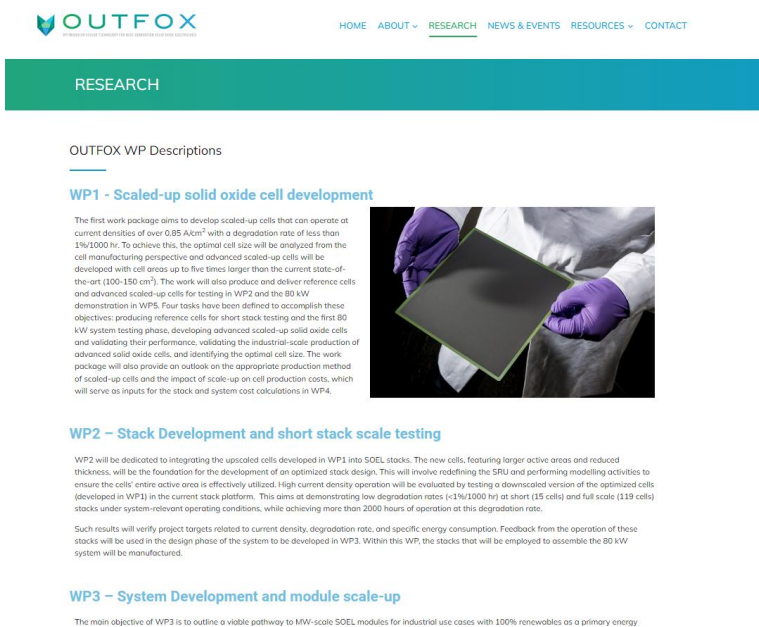
1.3.2 Consortium

The Consortium page lists the OUTFOX project partners, giving a short description of their organizations, as well as their areas of work and the specific work package(s) they are responsible for within the project.

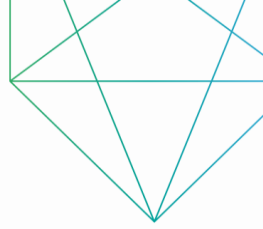
<p>TNO</p> <p>TNO, located in the Netherlands, is one of largest RTOs in Europe and also a founding member of the VoltaChem program, which is a public-private shared innovation program supporting chemical industry, energy sector and equipment suppliers & licensors to move towards a climate neutral future. With its extensive network, TNO possesses significant knowledge and experience in coordinating collaborative research projects, as well as developing solid oxide fuel cell technologies, large-scale hydrogen production using various electrolysis technologies, and production of SOEL cells up to 800 cm². TNO is the Project Coordinator and leads WP1 - Scaled-up solid oxide development and WP7 - Project Coordination, and contributes to WP2 - Stack development and short stack scale testing, and WP4 - Impact of SOE scale-up: Techno-economic analysis, Circularity, and Roadmap to pilot(s) within the project.</p>	
<p>VTT</p> <p>VTT, located in Finland, is one of Europe's largest RTOs, driven by a core mission to develop sustainable solutions for customers and society. VTT has world-class expertise in hydrogen system integration, cell characterization, equipment research and development for solid oxide fuel cells and electrolyzers, and process scale-up and piloting, as well as hydrogen safety assessments. Their primary responsibility will involve validating the manufactured stacks with improved characteristics, such as increased cell area, decreased cell thickness, and increased current density. VTT will analyze the validation results to improve the cell, stack, and system-level applications. In this project, VTT will lead WP2 - Stack development and short stack scale testing and contribute to WP3 - System development and module scale-up and WP4 - Impact of SOE scale-up: Techno-economic analysis, Circularity, and Roadmap to pilot(s).</p>	
<p>Politecnico di Milano (POLIMI)</p> <p>Politecnico di Milano (POLIMI) is the main technical university in Italy. The Group of Energy Conversion Systems (EGCS) of the Department of Energy is a prominent research group renowned for the expertise in process modelling, techno-economic system evaluations, and life-cycle assessments. Their knowledge base covers advanced configurations of conventional technologies, such as thermal cycles and combustion, as well as development of innovative technologies, like electrochemical devices, membrane reactors, and hybrid systems. POLIMI has conducted several investigations into optimal system layouts for heat integration in reversible solid-oxide cell systems and improved performance of hybrid power generation plants. Additionally, they possess extensive experience in life-cycle analysis and well-to-wheel assessment. In this project, their main responsibility is modelling and simulation for system assessment, and driving the roadmap definition in collaboration with other project partners. POLIMI will lead WP4 - Impact of SOE scale-up: Techno-economic analysis, Circularity, and Roadmap to pilot(s), and contribute to WP3 - System development and module scale-up and WP5 - 80 kW Validation.</p>	
<p>Fondazione Politecnico di Milano (FPM)</p> <p>Fondazione Politecnica di Milano (FPM) was established in 2003 at the behest of Politecnico di Milano, together with the city's major institutions and the regional government of Lombardy, with the support of several important business companies. FPM is actively engaged in enhancing the University's development path of accessible innovation and to share the many strengths that define its research in the fields of engineering, architecture, and</p>	

1.4 Research

The Research page provides a comprehensive breakdown of the various work packages, outlining their specific objectives and connections to other packages within the project, giving visitors a profound understanding of the project's structure.

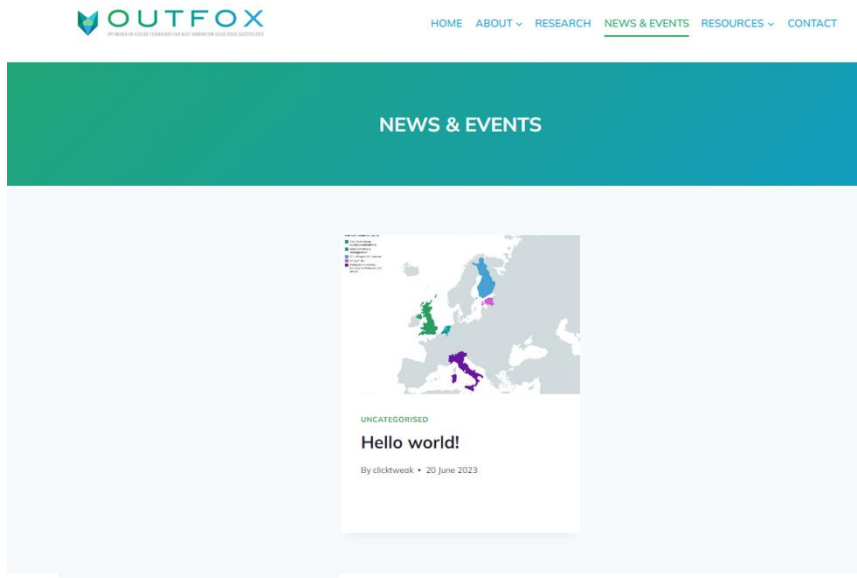


The screenshot shows the website's navigation bar with 'RESEARCH' highlighted. Below is the 'OUTFOX WP Descriptions' section. The first entry is 'WP1 - Scaled-up solid oxide cell development', which includes a detailed text description and an image of a person in a lab coat holding a green square cell. The second entry is 'WP2 - Stack Development and short stack scale testing', followed by 'WP3 - System Development and module scale-up'.



1.5 News & Events

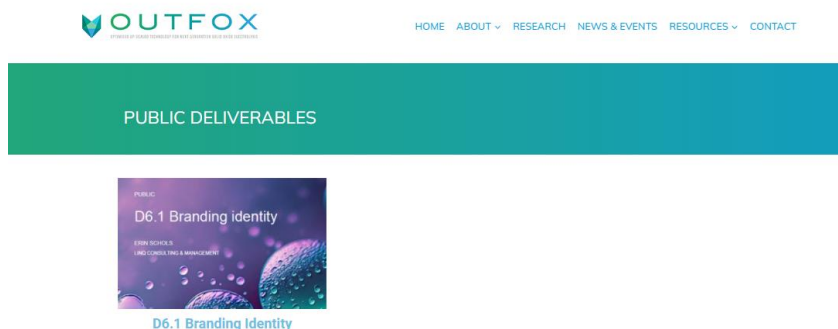
The News & Events page includes the blog posts published by the OUTFOX consortium throughout the project in chronological order as well as information about upcoming events related to the OUTFOX project. The item preview includes the title, article image, date of publication and author. The news items can be opened by clicking on their titles.



1.6 Resources

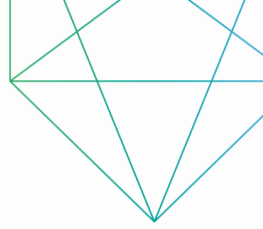
1.6.1 Public Deliverables

The Public Deliverables page includes all the public deliverables submitted by the OUTFOX consortium throughout projects 48 month duration.



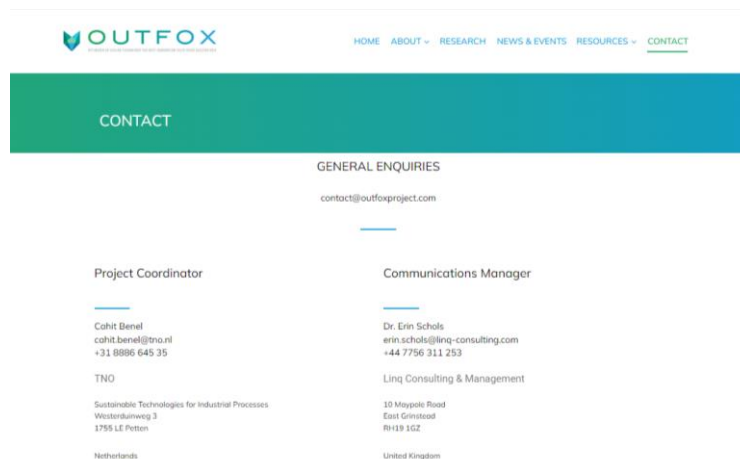
1.6.2 Newsletters

The Newsletter page will feature links to all published newsletters throughout the OUTFOX project, allowing the target audience and stakeholders the option to sign up for the OUTFOX newsletter.



1.7 Contacts

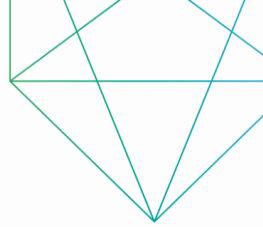
The contacts page includes an email for general project enquiries contact@outfoxproject.com, the contact details of the Project Coordinator (TNO) and the Communications Manager (LINQ).



2. OUTFOX social media and the evaluation of the effectiveness

In month 6 of the project, the OUTFOX consortium launched its various social media platforms including LinkedIn, Twitter and YouTube Channel.

The OUTFOX project's social media outlets contributes to showcasing the project's outcomes, with effort being made to demonstrate how EU funding is tackling societal challenges with particular focus on the benefits of producing green hydrogen with solid oxide electrolyzers (SOELs) to a broad audience, including the general public and audiences outside the specialist fields of the project. At the same time, the social media channels will allow experts in the field of SOELs to engage with the consortium.



Each of the OUTFOX project’s social media accounts will be updated regularly to build up followers and the mailing list with the goal of being able to communicate information quickly to a broad audience.

The effectiveness of the each page is regularly monitored and reported thanks to the development of quantifiable KPIs that allow LINQ and the consortium to assess the achievement of the social media objectives. The KPIs for the OUTFOX project’s social media pages are:

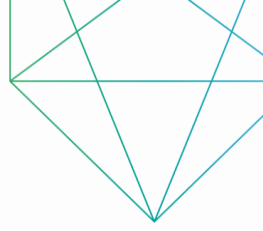
- A minimum of 420 posts by M48 across all channels (*minimum 10 per month*).
- The number of followers across all channels increases by at least 6% every year, achieving at least 1000 followers across all channels by M48.
- The number of impressions and unique impressions increases by at least 4% every year.
- The LinkedIn and Twitter pages have an average engagement rate of 4% every year.
- At least 1 piece of news about OUTFOX or its partners’ activities, are published on the OUTFOX LinkedIn and Twitter channels every month.

2.1. Social media tags and hashtags

To enhance social media visibility and engagement, it is important to utilize the appropriate tags and hashtags throughout the duration of the OUTFOX project. Table 1 highlights the relevant social media tags and hashtags that should be utilized through the duration of the project.

Table 1: Social media tags and hashtags to be utilised with each OUTFOX social media accounts.

Project Hashtags	Twitter Tags	Accounts to follow on LinkedIn and Twitter
#greenhydrogen #hydrogen #cleanhydrogen #sustainability #SOEL #SOE #Scale-up #SolidOxideElectrolyzer #Power-2-Hydrogen #electrochemistry #electrolysis #EU #renewables #energytransition #cleanenergy	@CleanHydrogenEU @TNO_Research @VTTFinland @ConvionFuelCell @ElcogenEU @polimi @LinqConsulting @VoltaChem @H2Europe	Clean Hydrogen Partnership LinkedIn Hydrogen Europe LinkedIn Hydrogen Europe Research LinkedIn VoltaChem LinkedIn VoltaChem (@VoltaChem) / Twitter VTT LinkedIn Hydrogen Council European Electrolyser and Fuel Cell Forum The Electrochemical Society The BotH2nia network IREC Hydrogen Insight H2 View H2 Bulletin



2.2. LinkedIn

The LinkedIn URL is: www.linkedin.com/company/outfox-eu



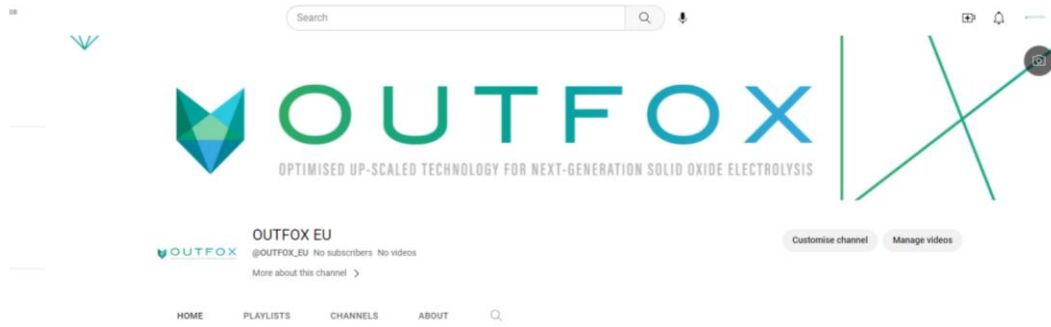
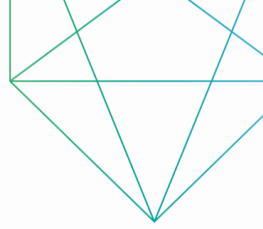
2.3. Twitter

The Twitter URL is: https://twitter.com/OUTFOX_EU.



2.4. YouTube

The YouTube URL is: <https://www.youtube.com/channel/UCavQT3lyhA3h0leXZDxqbGg>.



3. The OUTFOX Visual Identity

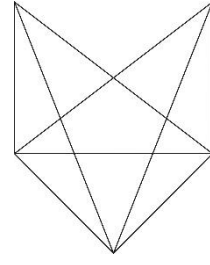
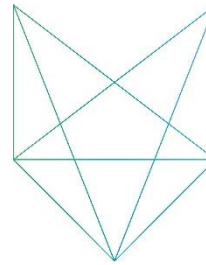
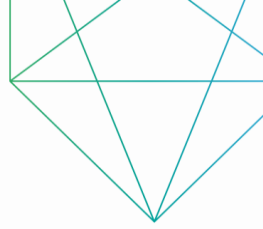
During the first 6 months of the project, LINQ, in close cooperation with the project partners, developed different versions of the OUTFOX project logo and templates for reports and presentations. The project's visual identity supports the OUTFOX process by contributing to differentiating it from similar projects and conveying its core objectives.

3.1. The OUTFOX logo

In month 3 of the project, LINQ in cooperation with the entire consortium, developed the final version of the official OUTFOX logo.

The OUTFOX project partners received different versions of the logo, shown below and including a white version, in different formats and different sizes, as well as detailed guidelines on how to use them in a different context.

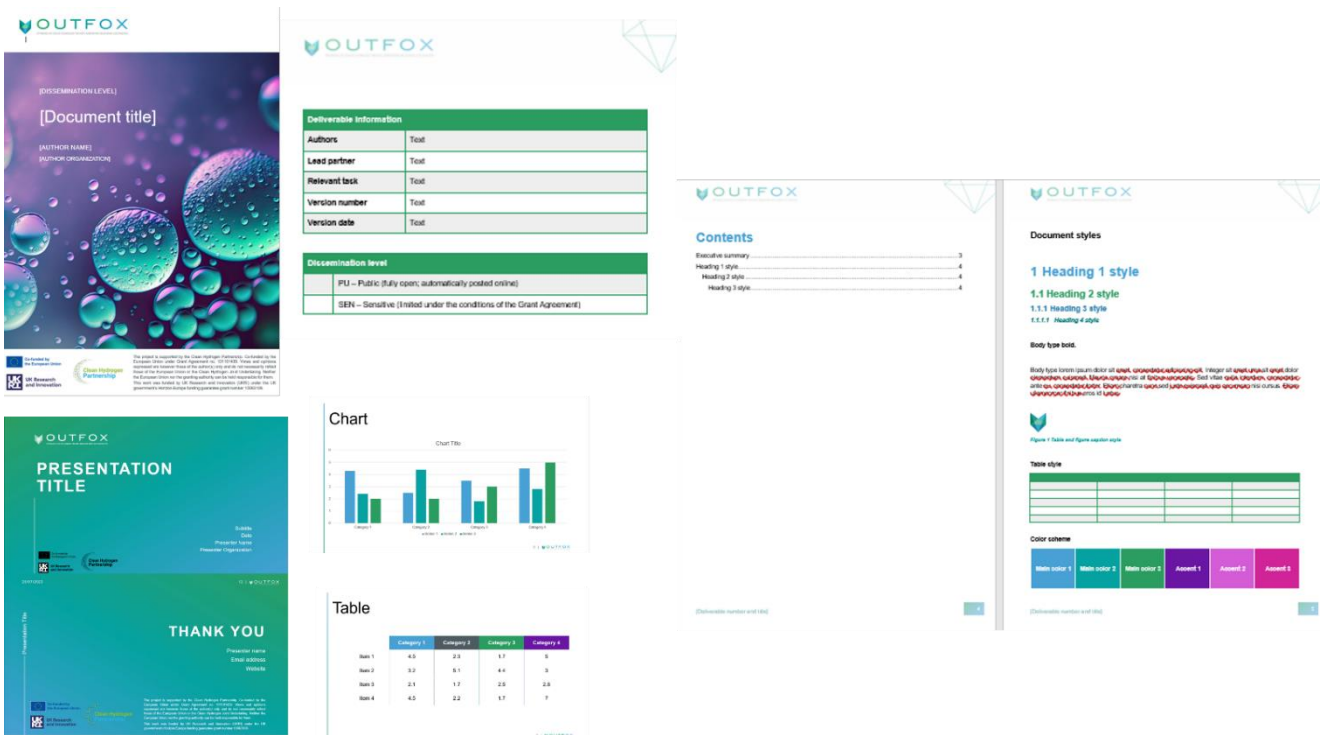


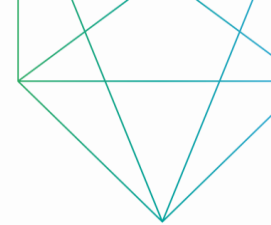


3.2. The OUTFOX Templates

In month 4, LINQ developed different templates for reports, general presentations and public conferences. The templates include word files for project reports and a PowerPoint file for general presentations.

The templates will be used by the consortium for different purposes throughout the project.





4. Personal Data Collection

The OUTFOX consortium complies with the privacy legislation and the General Data Protection Regulation (GDPR).

4.1. Collecting Personal Data

The OUTFOX consortium collects personal data that users voluntarily provide or that is shared by third parties in relation to a requested service. The types of data collected may vary between partners and external persons.

For partners, the personal data collected may include contact information (such as names, email addresses, and phone numbers), professional details (including affiliation and job title), and communication records (such as correspondence, meeting minutes, and project-related discussions).

For external persons, such as those who sign up for newsletters or attend events, the personal data collected may include contact information (names, email addresses, and phone numbers), subscription preferences, and consent for receiving newsletters or event-related communications. Additionally, event-related information such as registration details, attendance records, and feedback may be collected. Optional demographic information, such as age, gender, and location, may be requested on a voluntary basis. Interactive data, including click-through rates, engagement with newsletters, and event participation details, may also be collected.

It is important to note that the OUTFOX consortium ensures the secure processing of personal data and adheres to applicable data protection regulations, respecting privacy and obtaining necessary consent.

4.2. Processing Personal Data

The OUTFOX consortium only collects the personal data needed to carry out a service requested by the users (or by third parties).

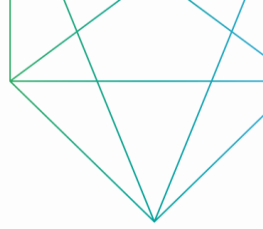
The OUTFOX consortium processes the data it is given only:

- If users have explicitly given their permission to do so;
- If it is necessary to process the data in order to provide a service requested by the users
- If it is legally obliged to process the data (e.g. EC funding projects);
- If it is necessary for a legitimate purpose or in the public interest or (e.g. European Parliament entrance permission).

4.3. Treating Personal Data

Sensitive personal data (e.g. ID or passports numbers) are always treated as confidential and never made public.

The personal data are only used for the service requested by the users (e.g. newsletter)



The OUTFOX consortium doesn't pass on users contact details to third parties for commercial purposes.

4.4. Keeping Personal Data

The OUTFOX consortium will only retain users' data for the duration necessary to provide the consortium's services (e.g. organizing meetings and managing follow-up projects). Once the data is no longer required for its intended purpose, all personal data will be deleted.

4.5. Updating or unsubscribing Personal Data

If users want to view or update any of their contact details, or delete any data, they can send us an email at info@ling-consulting.com. Users will also be able to directly unsubscribe from the mailing list through a link provided at the bottom of each newsletter.

Users have the right to be 'forgotten'. To request this, they can contact info@ling-consulting.com