

H2020-NMBP-SPIRE-2018

CE-SPIRE-02-2018

“Processing of material feedstock using non-conventional energy sources (IA)”

PowerPlatform: Establishment of platform infrastructure for highly selective electrochemical conversions

D7.1: Project website

This document is the PERFORM project website, deliverable 7.1 of the GA 820723, led by Sustainable Innovations (SIE) and created to provide information and access to papers and any other nonconfidential documentation related to the PERFORM project. The website is operational as of Month 3 and is designed to be the main information repository for the project, its objectives, results, the technology and all activities related to its developments/progress. Sustainable Innovations will contribute with material and inputs to the website, which will include a public and a private area. The website is included within the WP7 Dissemination, training & exploitation and it is an important part of the Dissemination and Communication plan.

Project details



Horizon 2020
European Union Funding
for Research & Innovation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 820723

Project acronym	Power platFORM (PERFORM)	Start / Duration	January, 19 (48 months)
Topic	CE-SPIRE-02-2018 Processing of material feedstock using non-conventional energy sources (IA)	Call identifier	820723
Type of Action	Innovation Action	Coordinator	TNO
Contact persons	Seda Çakir (Project coordinator TNO) seda.cakirbenthem@tno.nl Mariana Fernández (WP7 Communication leader SIE) marianafernandez@sustainableinnovations.co		
Website	www.performproject.eu		

Deliverable details			
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Title	Project website		
Work Package	WP 7 Dissemination, training and exploitation		
Dissemination level	CO	Nature	(Confidential)
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Deliverable responsible	MARIANA FERNÁNDEZ RENEDO – SIE	Contact person	marianafernandez@sustainableinnovations.co



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Date	Version	Name	Changes
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1 INTRODUCTION

Task 7.1 aims at proactively promoting the PERFORM project and its final results by providing targeted information to various audiences. The promotion activities will be part of the dissemination and communication plan, and this document presents the first step in achieving the partial objective.

A responsive website structure and design has been developed to be accessed from any device. The content and messages incorporated in the PERFORM website have been defined with the purpose of reaching different audiences, including: general public, scientific community, industry, and policymakers with the objective to benefit project results.

The design of the website has been developed by SIE with the collaboration of the whole consortium; it has been streamlined and presented in a way that is accessible by wide range of stakeholders. This document presents a detailed description of the website communication strategy, responsive design, look and feel, navigability, and content development process.

2 COMMUNICATION STRATEGY

The Communication Strategy for the public website will respect the Dissemination and Communication plan of the Project. The channels considered for mass dissemination to end-users included:

- Marketing media, the press, magazines, broadcast news, television, radio and Internet;
- PERFORM official website (will contain information and commercial material);
- Social media: LinkedIn & Twitter
- Media and press contacts or spokesmen/women;
- Newsletter, distributed every 12 months to update stakeholders;
- Publications in scientific and non-scientific journals;
- General communication material (brochures, flyers, etc.).

The execution of the website encompasses a variety of material allowing a successful communication amongst the partners, as well as the different audiences targeted. The following visual materials are part of the dissemination strategy:

- Creation of a visual identity, font and colour palette to be included in all graphic communication.
- Development of physical dissemination materials: publications, reports, brochure, catalogue.
- Development of social network group profiles.
- Participation in dissemination events: conferences, seminars, exhibitions, meetings.
- Press releases, radio and TV presence.

Regarding the PERFORM website, the communication strategy was designed around key questions that external visitors to the website may have:

WHY: Highlight the importance and purpose of the project.

WHAT: Provide a description and approach of the project.

WHO: Present the consortium that will perform the work to achieve these objectives.

HOW: Describe the process performed along the project's development.

2.1 Target Audiences

The website will be provided with information matching the particular interests and needs of each target group and subgroup. By creating clear headings and subheadings, readers will be able to seek out content that is most pertinent to them. By addressing technical language in a clear manner, it is the intention that the content be discernible for all audiences.

Target group / Stakeholder	Targeted results/content
Bio-based companies, SPIRE and BBI stakeholders, Industrial sector (especially polymer manufacturers and end users), standardisation bodies (including ASTM)	Proof that renewable energy and bio-based raw materials can be used as cheap feedstock Proof that drop-in products have equal properties
Academic community: Research Centres and Universities	Progress and advancement in the state-of-the-art electrocatalytic conversion
Public organisations and NGOs	Educate on the benefits of the bio-based industry and defend the improvements this project might achieve
Consortia from other national and international projects related to PERFORM project	Find synergies among projects and achieve a wider spread of the project
The general public	Acknowledge of the existence of low-carbon (green) based materials; create consumer demand
Press, both general and content driven	Achieve a wide knowledge of the project and its benefits
Policymakers	Laws and regulation of bio-based chemicals standardisation and regulation



2.2 KPIs

The social media activities will start as the project kicks off once the website is activated. The publications and conferences presentations will take place as the project progresses and be published in the relevant locations on the website.

N.B. Publications and conference presentations are subject to project IP policy. Dissemination activities can be delayed as securing the business interests of any partner needs to be considered first.

The developed dissemination strategy will be continuously updated to ensure the maximum measurable project impact is achieved and the project website will be the central tool to track the progressive efficacy of the communication efforts.

Ambitious performance indicators have been established:



Dissemination	When	Target audience	KPI
Project website	M3-end	All audiences	Number of visits; Diffusion of the results; Average duration of the visits; Number of downloaded deliverables
Flyers and posters	M6-onwards	Contact network related to the project	Number of posters; Numbers of flyers; Number of events where they are distributed
Project newsletter	Every 12 months	All audiences	Number of contacts to be distributed; Number of new requests for newsletter after each update; Impact of the newsletter
Press releases	M1, M24, M48	All audiences	Number of press releases; How many people get the press releases
Scientific publications	Every 6 months	Academy and research community	Number of publications; Impact on the community; Number of visits for each publication; Impact factor of the journal; Further mention of the publication in other papers
Non-scientific publications	TBD	Enterprises, industrial and potential investors	Number of readers; Impact on the industrial sector; Impact on the commercialization of the PERFORM technologies
Workshops (including webinars)	From M45 across the demo sites	Industrials, investors, academic community, public authorities, policy makers	Number of attendances; Number of workshops; Stakeholders represented; Posterior valorisation of the workshop by means of feedback



Conferences (1 minimum)	TBD. Final conference	All audiences	Number of attendances; Number of conferences; Impact on the research
Social media diffusion and project webpage's blog)	M3-onwards	All audiences	Number of visits; Number of discussion groups that are created; Number of post; Number of mentions regarding the PERFORM project





3 WEBSITE STRUCTURE

3.1 Responsive Design

The PERFORM website <https://performproject.eu/> has been designed to respond to different user's behaviours and environments based on device, screen size and resolution, platform, and orientation. The website's functionality works and is adapted in different devices including: Smart Phones, Tablets (using Android, iOS or Linux operative systems).

3.2 Design & Functionalities

The design describes the appearance of the website from an end-user perspective. This considers the operations and ergonomics of the site including the layout, icons or visuals used to represent functions, such as opening and closing files, directories and application programmes, and the appearance and operation of menus.

The PERFORM Project website has privileged a modern layout and impacting images that represent the project's link to the electrochemical and alternative energies industry in green and blue colours as chosen by the Consortium during the logo review. The site invites visitors to navigate intuitively, learning more about the project's goals, approach, progress, news, among others (Figure 2).

The website follows the visual identity established for the project, using the typography and colours that best reflect the project developments and objectives.



Figure 1: Visual identity

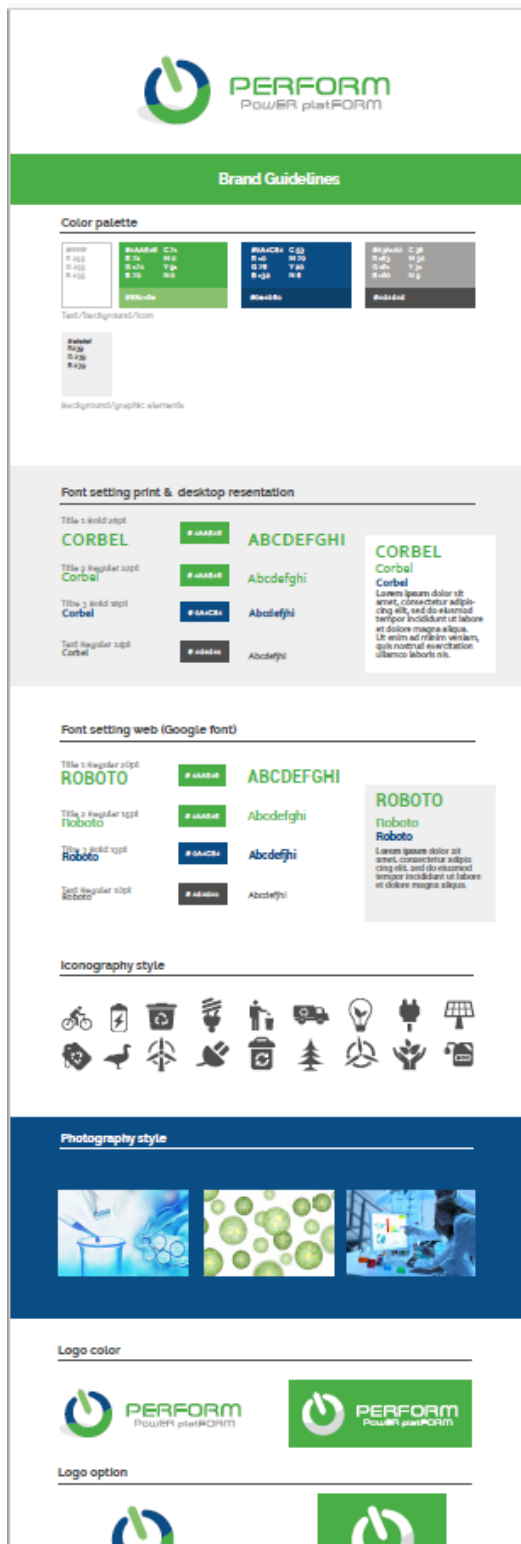
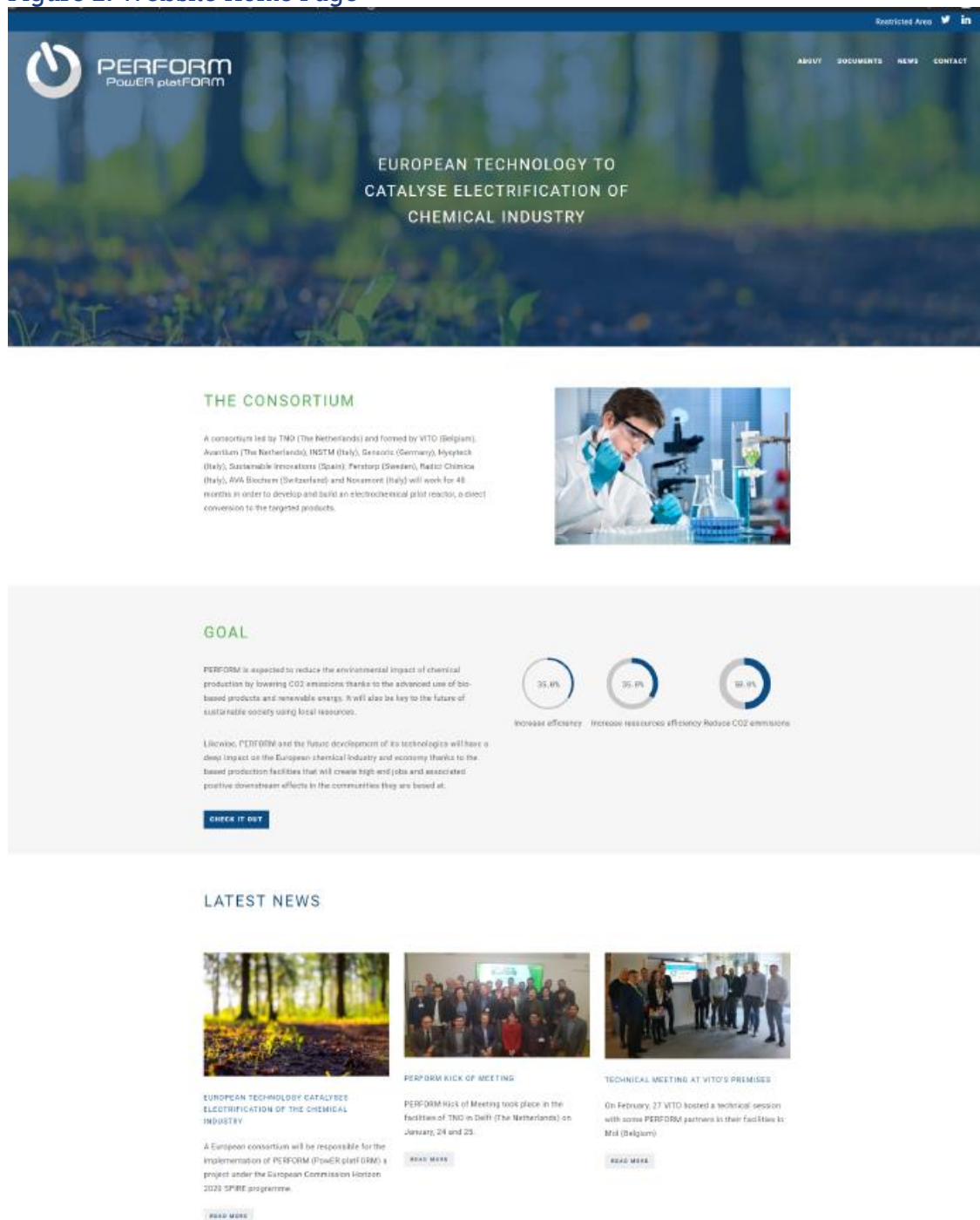


Figure 2: Website Home Page



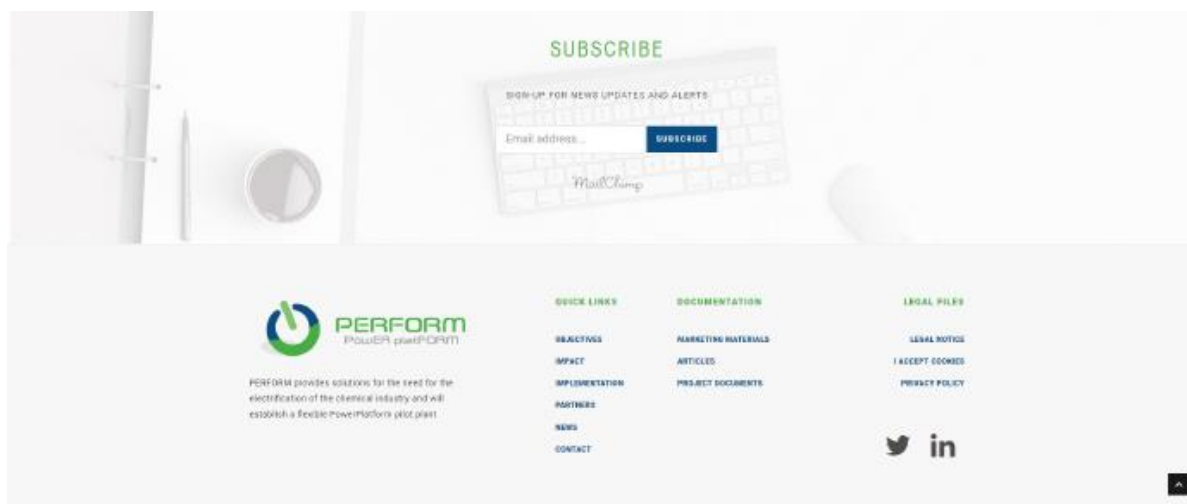
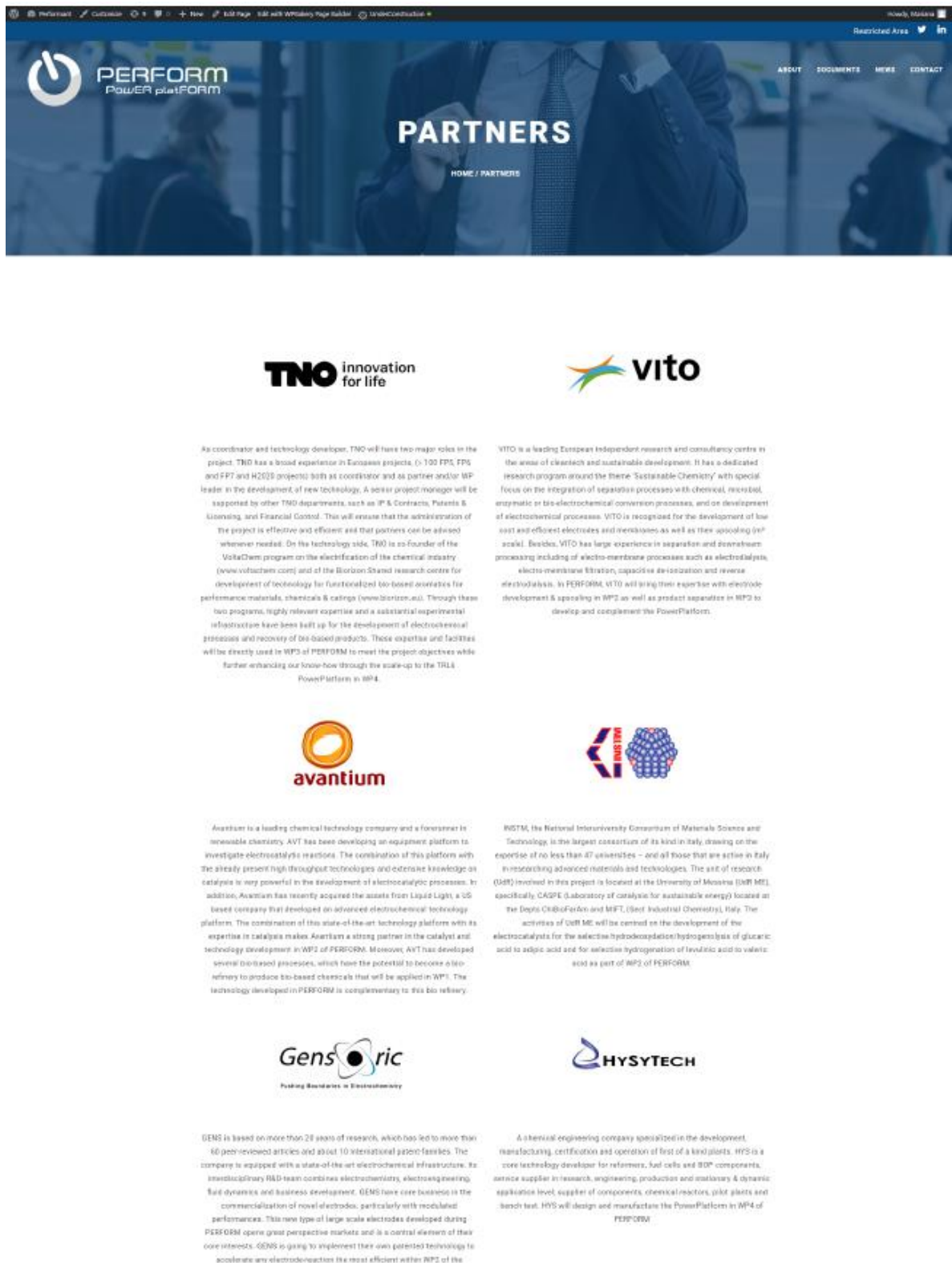


Figure 3: About → Partners



The screenshot shows the 'PARTNERS' page of the PERFORM website. The header includes the PERFORM logo and navigation links: ABOUT, DOCUMENTS, NEWS, CONTACT. The main heading is 'PARTNERS' with a sub-link 'HOME / PARTNERS'. Below this, there are four partner profiles, each with a logo, name, and a brief description of their role in the project.

TNO innovation for life

As coordinator and technology developer, TNO will have two major roles in the project. TNO has a broad experience in European projects, (> 100 FP5, FP6 and FP7 and H2020 projects) both as coordinator and as partner and/or WP leader in the development of new technology. A senior project manager will be supported by other TNO departments, such as IP & Contracts, Patents & Licensing, and Financial Control. This will ensure that the administration of the project is effective and efficient and that partners can be advised whenever needed. On the technology side, TNO is co-founder of the VoltaChem program on the electrification of the chemical industry (www.voltachem.com) and of the Horizon 55 and research centre for development of technology for functionalized bio-based materials for performance materials, chemicals & coatings (www.biorizon.eu). Through these two programs, highly relevant expertise and a substantial experimental infrastructure have been built up for the development of electrochemical processes and recovery of bio-based products. These expertise and facilities will be directly used in WP3 of PERFORM to meet the project objectives while further enhancing our know-how through the scale-up to the TRL4 PowerPlatform in WP4.

vito

VITO is a leading European independent research and consultancy centre in the area of cleantech and sustainable development. It has a dedicated research program around the theme 'Sustainable Chemistry' with special focus on the integration of separation processes with chemical, microbial, enzymatic or bio-electrochemical conversion processes, and on development of electrochemical processes. VITO is recognized for the development of low cost and efficient electrodes and membranes as well as their upscaling (up scale). Besides, VITO has large experience in separation and downstream processing including of electro-membrane processes such as electrodialysis, electro-membrane filtration, capacitive deionization and reverse electrodialysis. In PERFORM, VITO will bring their expertise with electrode development & upscaling in WP2 as well as product separation in WP3 to develop and complement the PowerPlatform.

avantium

Avantium is a leading chemical technology company and a forerunner in renewable chemistry. AVT has been developing an equipment platform to investigate electrocatalytic reactions. The combination of this platform with the already present high throughput technologies and extensive knowledge on catalysts is very powerful in the development of electrocatalytic processes. In addition, Avantium has recently acquired the assets from Liquid Light, a US based company that developed an advanced electrochemical technology platform. The combination of this state-of-the-art technology platform with its expertise in catalysis makes Avantium a strong partner in the catalyst and technology development in WP2 of PERFORM. Moreover, AVT has developed several distributed processes, which have the potential to become a bio-refinery to produce bio-based chemicals that will be applied in WP3. The technology developed in PERFORM is complementary to this bio refinery.

INSTM

INSTM, the National Interuniversity Consortium of Materials Science and Technology, is the largest consortium of its kind in Italy, drawing on the expertise of no less than 47 universities – and all those that are active in Italy in researching advanced materials and technologies. The unit of research (UAR) involved in this project is located at the University of Messina (UAR ME), specifically, CAGPE (Laboratory of catalysis for sustainable energy) located at the Dept. Chim.Farad. and MFT, (Dept. Industrial Chemistry), Italy. The activities of UAR ME will be centered on the development of the electrocatalysts for the selective hydrodeoxygenation/hydrogenolysis of glucaric acid to adipic acid and for selective hydrogenation of levulinic acid to valeric acid as part of WP2 of PERFORM.

Gensoric
Pushing Boundaries in Electrochemistry

GENS is based on more than 28 years of research, which has led to more than 60 peer-reviewed articles and about 10 international patent families. The company is equipped with a state-of-the-art electrochemical infrastructure. Its interdisciplinary R&D team combines electrochemists, electroengineering, fluid dynamics and business development. GENS have core business in the commercialization of novel electrodes, particularly with modulated performances. This new type of large scale electrodes developed during PERFORM opens great perspective markets and is a central element of their core interests. GENS is going to implement their own patented technology to accelerate any electrocatalytic the most efficient within WP2 of the

HYSYTECH

A thermal engineering company specialized in the development, manufacturing, certification and operation of first of a kind plants. HYS is a core technology developer for reformers, fuel cells and BOP components, service supplier in research, engineering, production and stationary & dynamic application level, supplier of components, chemical reactors, pilot plants and bench test. HYS will design and manufacture the PowerPlatform in WP4 of PERFORM.

PERFORM project:



Perstorp is one of the world leading specialty chemical companies focusing on sustainable coating, adhesives, food and food and plastic material market segments. Our ambition is to achieve fully free material production at Perstorp in year 2030. We develop continuously new products and application based on sustainable raw material and energy. Green chemicals produced via electrochemical route create valuable assets along the development path and toward fulfillment of the ambition. In PERFORM Perstorp will contribute with formulation testing of the produced material and being an expert on what is relevant on industrial scale in WPS.



An Italian manufacturer with over 70 years of history, is a leading worldwide producer of a wide range of chemical intermediates, polyamide polymers, engineering plastics, synthetic fibres and monomers. The Group capitalizes on its excellence and know-how in chemicals to develop and realize products for numerous applications in a variety of industrial sectors, including automotive, apparel, furnishings, sport, electrical/electronics, household appliances, consumer goods and construction.



AVA Biochem is a specialty chemicals company and produces the premium platform chemical 5- Hydroxymethylfurfural (5 HMF) from renewable biomass. AVA's major task will be the analysis of the economic viability of the processes tested. This will be in WP 5 with AVA being the WP leader. Analysis will include market evaluation and competitive review.



Founded in 1985, NOVAMONT is now worldwide leader in the sector of bioplastics and involved in the development of bioproducts such as biopolymers, biochemicals and cosmetic ingredients from renewable sources. NOVAMONT's mission is to develop materials and biotechnologies through the integration of chemistry and agriculture, by starting up bioenterprises in the local areas and providing application solutions that ensure efficient use of resources throughout their entire life cycle, with advantages for the social, economic and environmental system. In WPS of PERFORM, NOVAMONT will evaluate adipic acid into the formulation of bio-based and biodegradable polyesters.



Sustainable Innovations Europe is a Spanish engineering SME, whose technical team has more than 10 years of experience in European research collaborative projects. The company main goal is to fill the gap between research activities and market implementation, that is to say turning sustainable ideas into profitable and environmentally friendly business models. SIE expertise lies on research to market, business strategies and sustainable communication, helping organizations promote their innovations under a sustainable and circular economy thinking method. The core competences offered by SIE, which are associated with the connection between research activities, are structured in four main pillars: Research/Market, Business Strategy, Communication and Capacity Building, that can be summarized on the knowledge in legal and economic barriers for the market uptake combined with the dissemination & communication of new technologies at European and international level.



PERFORM provides solutions for the need for the electrification of the chemical industry and will establish a flexible PowerPlatform pilot plant.

QUICK LINKS:

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[NEWS](#)
[CONTACT](#)

DOCUMENTATION

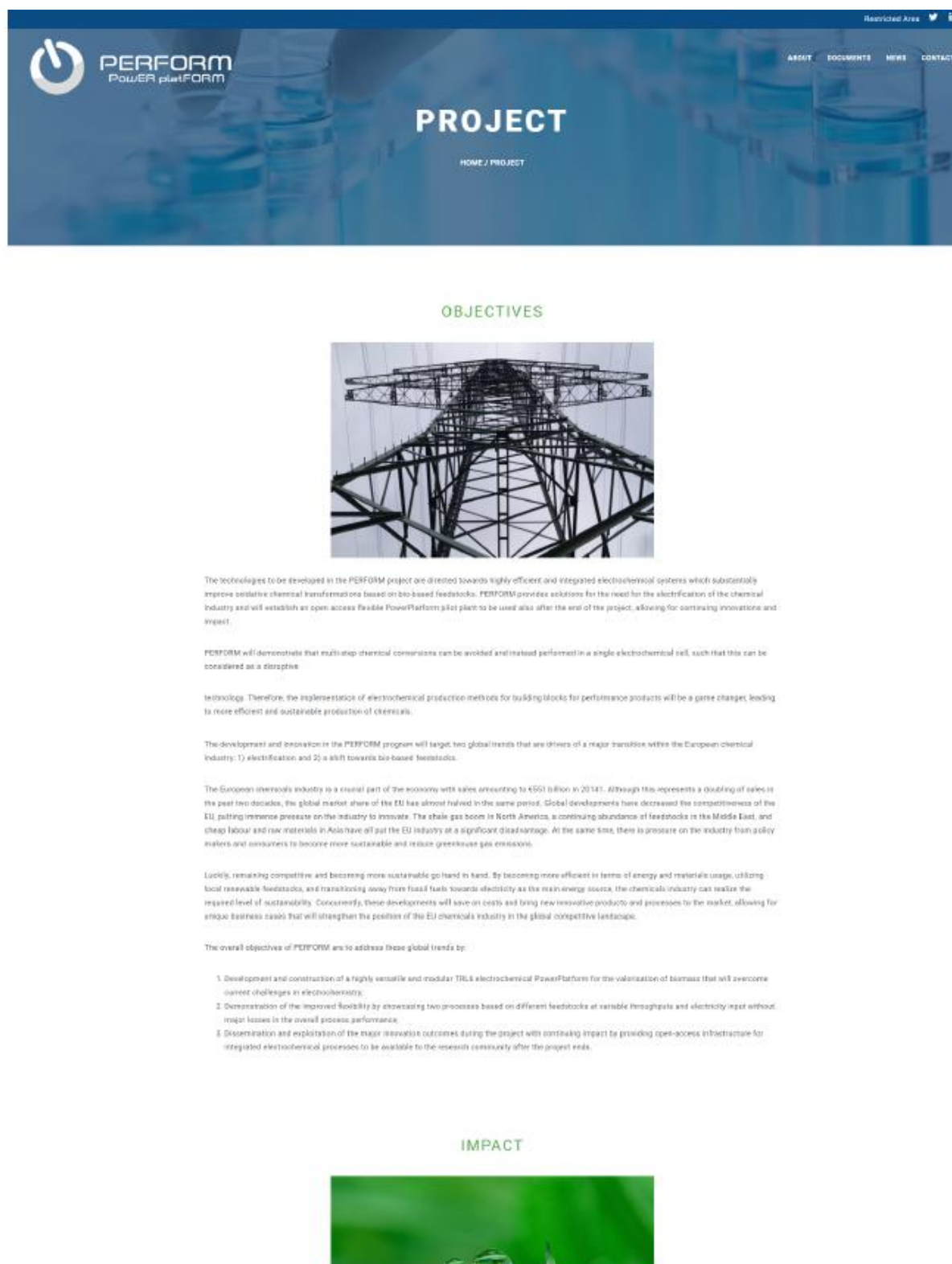
[MARKETING MATERIALS](#)
[ARTICLES](#)
[PROJECT DOCUMENTS](#)

LEGAL FILES

[LEGAL NOTICE](#)
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[PRIVACY POLICY](#)



Figure 4: About → Project





The expected impact of the PERFORM project derives from its multi-level approach that includes a combined integration between electrification, reduction of process complexity, avoiding the use of corrosants through system integration, innovation in processes and bio-based use of feedstocks, as well as the development of a flexible PowerPlatform pilot plant platform.

PERFORM is expected to reduce the environmental impact of chemical production by lowering CO₂ emissions thanks to the advanced use of bio-based products and renewable energy. It will also be key to the future of sustainable society using local resources.

Likewise, PERFORM and the future development of its technologies will have a deep impact on the European chemical industry and economy thanks to the based production facilities that will create high end jobs and associated positive downstream effects in the communities they are based at.

IMPLEMENTATION



The breakdown of proposal activities into work packages (WPs) and tasks, and the specification of WP and task leaders assure a good management of the activities to reach the expected results with success. PERFORM consists of eight (8) WPs that include the necessary activities to ensure the proposal objectives are implemented and the expected impacts are met.

WP1: Feedstock Platform Analysis (AYT)

The main objective of WP1 is to analyse and characterize feedstock composition and purity as well as to investigate which pretreatment steps are needed.

WP2: Electrode Platform Innovation (INSTM)

WP2 is dedicated to developing the catalytic electrodes for the oxidation (anode) and reduction (cathode) parts of the paired electrocatalytic reactor. Furthermore, the ThermoLab™ platform (direct electrode heating system) is modularized and scaled to match projects requirements and future sustainability.

WP2 will also work on the selection of electrode and catalyst materials and preparation of the electrodes for anode and cathode for both lines, on the identification of the optimal operating conditions of the anode reaction to ensure efficient and sustained product yield and stable electrode performance as well as of the cathode reaction to ensure efficient and sustained product yield and stable electrode performance.

Finally, objectives contemplated on this WP are the development of a method for preparation of 3D electrodes (e.g. foam) as well as of a modularized ThermoLab™ system.

WP3: System Platform Innovation (TNO)

TNO will work on this WP on the selection of the electrolyte system and its optimization, as well as on the design of modular and integrated electrochemical process system based on specifications and findings from WP1 and WP2 design and testing of individual components on small bench scale: (a) electrocatalytic reactor, (b) separation / purification unit.

WP3 also comprises the integration and testing of components reactor and separation/purification with electrolyte recycle, the process modelling, the production of samples at 100g scale for testing as well as the transfer of design guidelines for scale-up of integrated system.

WP4: PowerPlatform Demonstration (HYSTECH)

The goal of WP4 is to design the PowerPlatform setup for paired electrolysis setup for the selected electrolysis routes, to build the PowerPlatform, test, characterize and optimize the operation and to carry out the operation of the pilot for 2000 hours as well as to collect and analyse data required for a design of a full scale plant.

WP5: Process Assessment

In WP5, the sustainability of the electrochemical PowerPlatform for the valorisation of biomass will be evaluated. To this, the environmental impacts, energy efficiency and cost-feasibility of the system proposed will be assessed. Besides, KPIs based on envisaged impacts including technical, economic and environmental indicators will be monitored and the quality of the final products will be evaluated.

In addition, the potential of the electrocyclic acids for polymers will be investigated, first with commercial monomers and later with monomers produced by the PowerPlatform.

WP6: Techno-economic Analysis and Market Assessment (AVA Biochem)

The goal of WP6 is to provide Techno-Economic Assessment (TEA) of each electrochemical synthesis route on several stages of the project, to perform Final TEA and benchmark the power electrolysis process of Line 1 and 2 against available alternative processes as well as to carry out the Market Assessment of the products and technology developed by PERFORM.

WP7: Dissemination, training & exploitation (SIC)

Sustainable Innovation Europe's objective in this WP is to enable potential future exploitation of the results to their full potential by disseminating the results to the relevant stakeholders, to ensure that the findings of the project are widely communicated to the public in general, to document undertaken and proposed dissemination and communication activities, as well as to ensure the project results reach the relevant stakeholders who will use and implement them.

WP8: Coordination and project management solution (TNO)

The aim of WP8 is to coordinate the administrative activities of the project and linking together all project components, to carry out the overall legal, contractual, ethical, financial and administrative management in accordance with the grant agreement, to maintaining communication with the Commission and each partner as well as to establish and manage the Industrial Interest Group. TNO will guarantee the continuous assessment and mitigation of risks to the project.



PERFORM provides solutions for the need for the electrification of the chemical industry and will establish a Flexible PowerPlatform pilot plant.

QUICK LINKS

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Figure 4: Documents → Articles

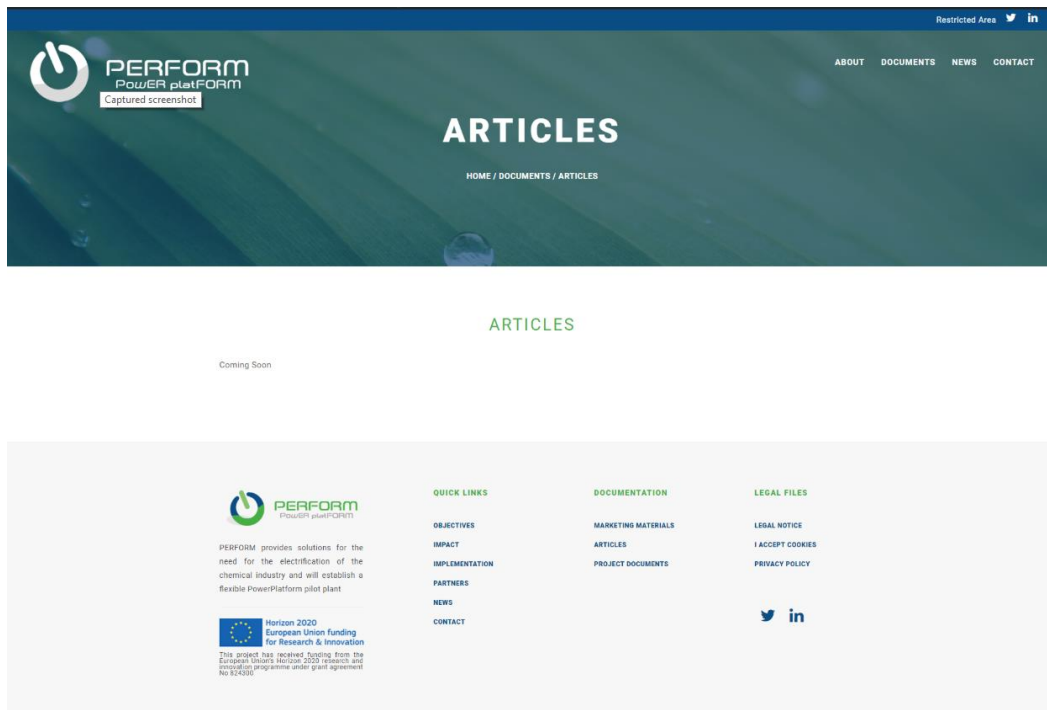


Figure 5: Documents → Marketing materials

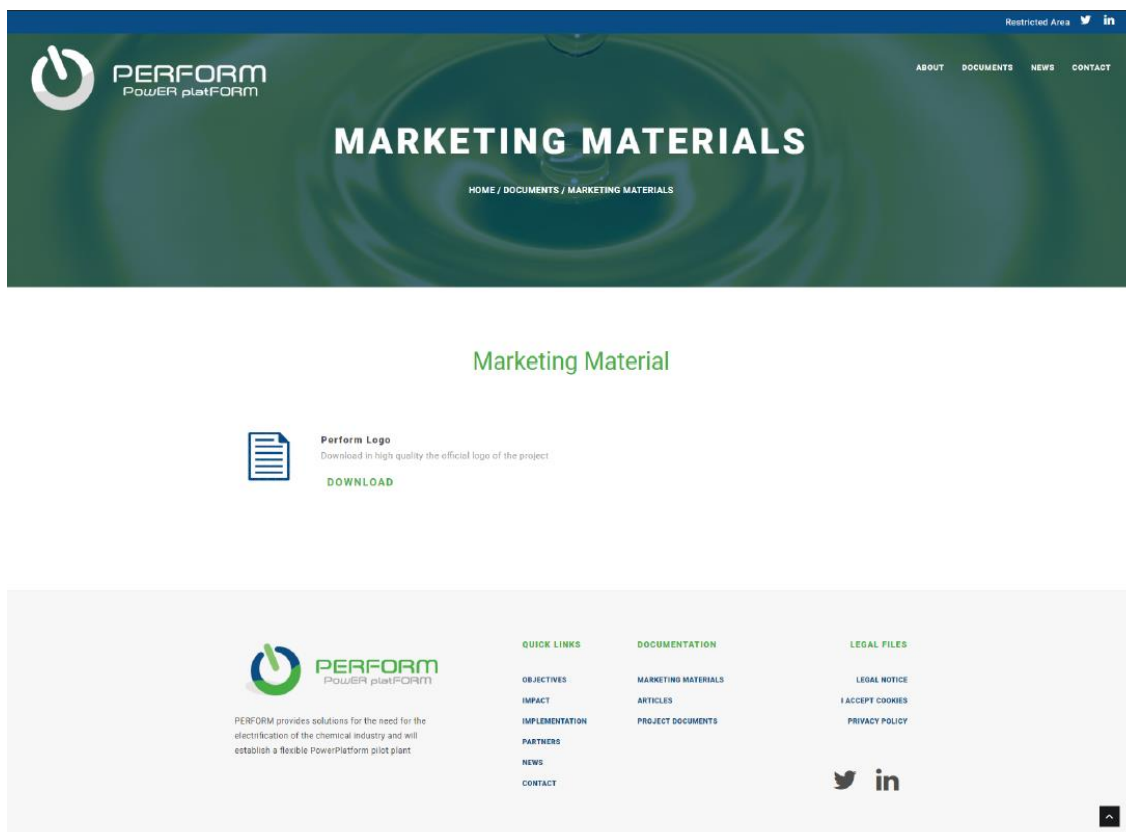


Figure 6: Documents → Project documents

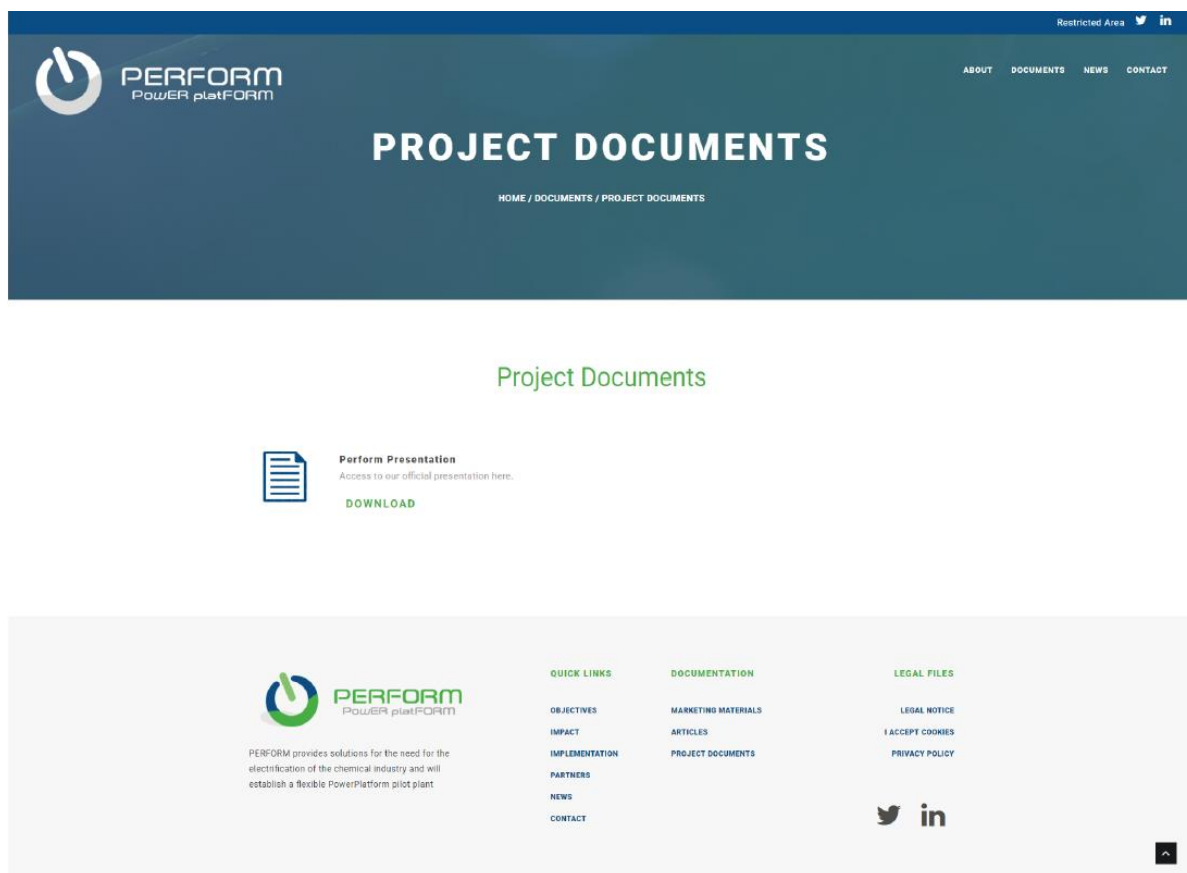


Figure 7: News

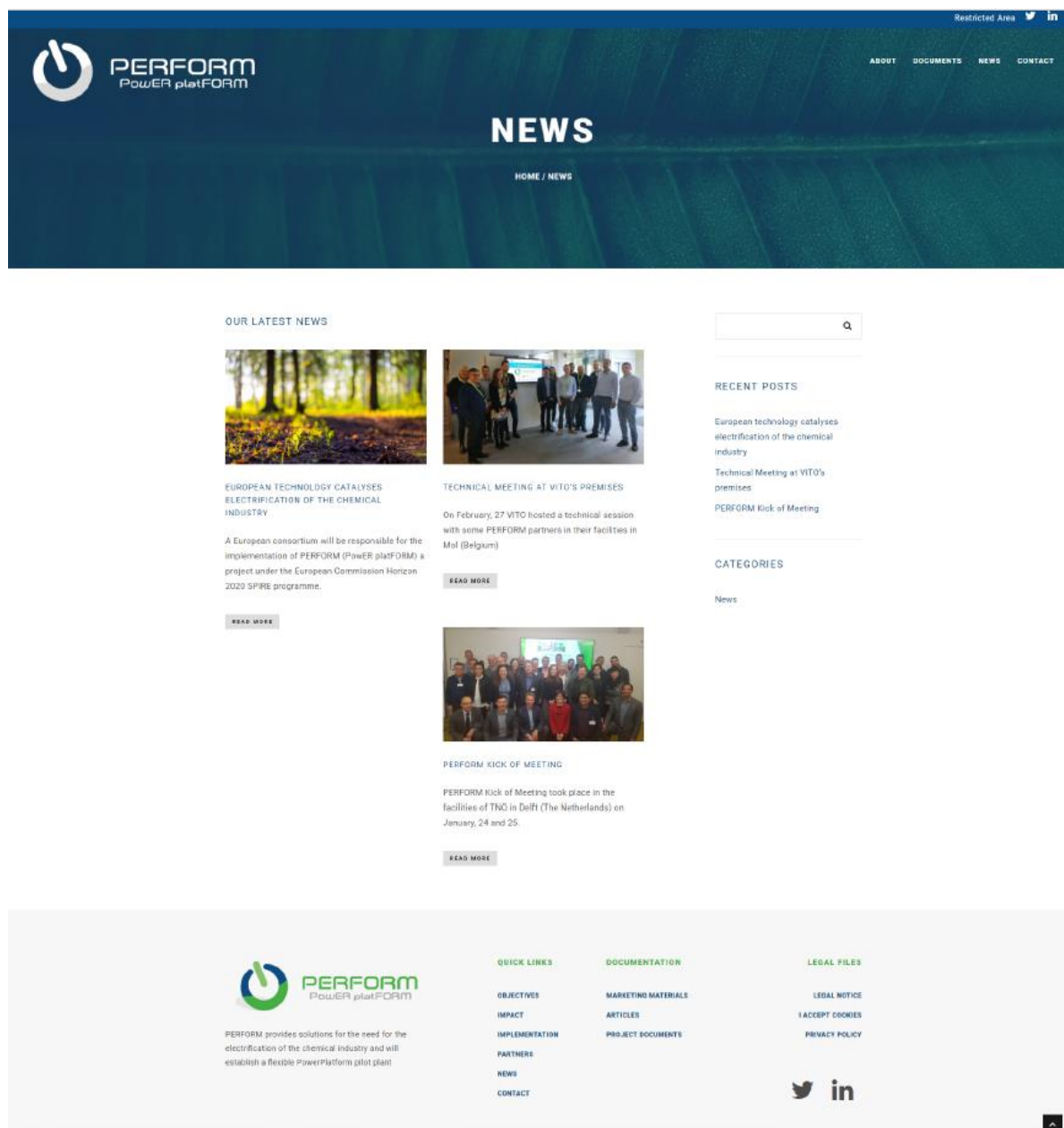



Figure 8: Contact



PERFORM
Power platform


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CONTACT

[HOME / CONTACT](#)


CONTACT US

Project Coordinator
Erwin Giling

 INFO@PERFORMPROJECT.EU

*Required fields:

☐ I have read and accept the data protection policy



PERFORM provides solutions for the need for the electrification of the chemical industry and will establish a flexible PowerPlatform pilot plant

QUICK LINKS

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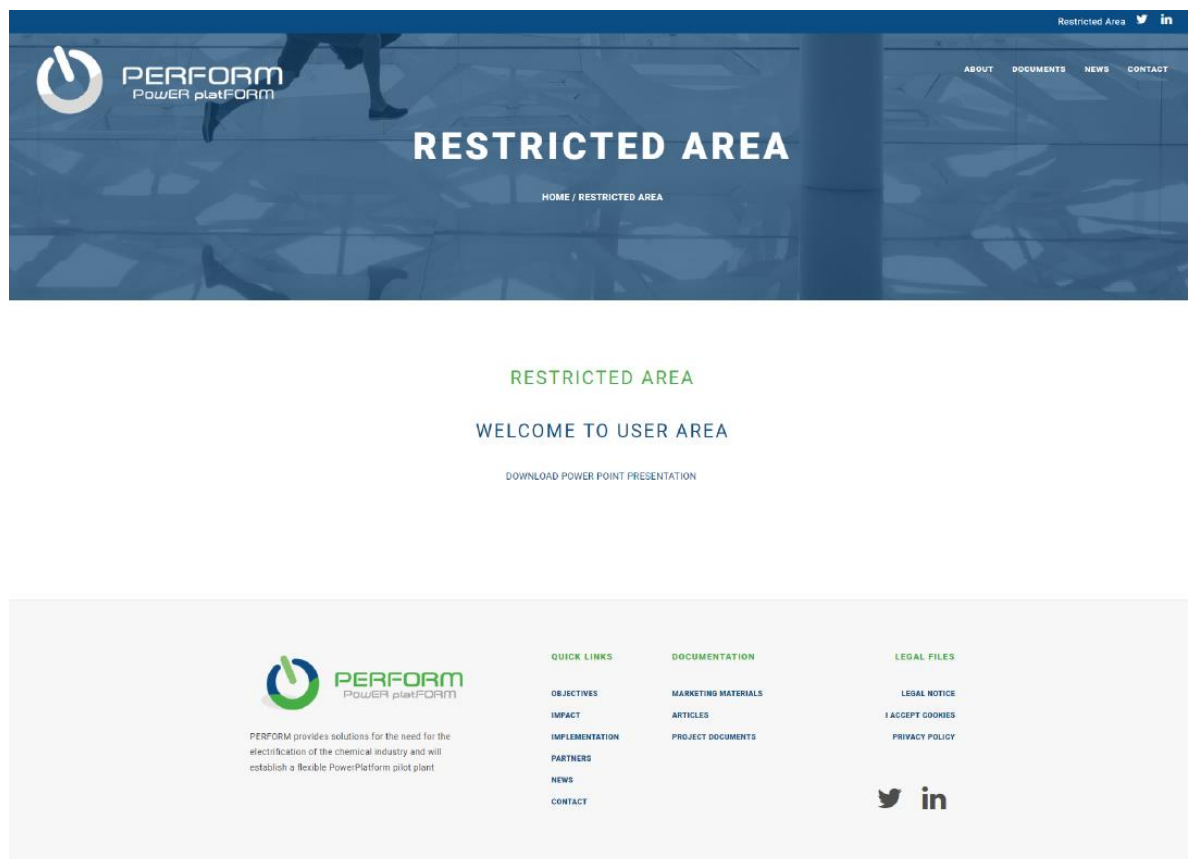



Figure 9: Restricted area



The layout is based on story telling principles that guides the visitor through the PERFORM story using images, icons, and key appealing messages expressing the value proposition of PERFORM technologies, methodologies and identity.

3.3 Navigability

The PERFORM Project website is characterized by its easy navigability, simplicity and user-friendly features.

On the menu, the following sections have been created: About, Documents, News, Contact and Restricted area. Intended to be an informative website, and according to the project's needs to update information, this organisation or internet architecture lets the different audiences know more precisely about the project. The Restricted area is specifically dedicated to the exchange platform requiring the login for Consortium members.

The 'About' submenu comprises two (2) subsections to introduce the project: Project & Partners. The first one includes also three (3) subsections: Objectives, Impact, Implementation. They briefly present the value proposition of the PERFORM project including pictures, graphics, figures and messages to

let the audience understand what the project is about and why it is innovative and marketable. The Partners section includes a description of each organisation involved in the project.

On the 'Documents' submenu, there are three (3) subsections: Articles, Project documents & Marketing material. Each section will be useful to have organized all the important documents that should be disseminated during the project's execution.

The 'News' submenu is useful to inform on recent developments within the project.

The 'Contact' section presents the project coordinator's contact details and a fields box where audiences can send messages that will be directed to the coordinator via a dedicated email address: info@performproject.eu.

The 'Restricted area' submenu is linked to the workspace platform where the consortium will have access to relevant files for the consortium.

Social media icons (LinkedIn and Twitter) appear in the header, while the generic contact email stays in the footer.

3.4 Content Dissemination and Publication

The PERFORM website was developed in three phases:

- 1) content and visual proposition;
- 2) design, and
- 3) feedback and corrections.

Final input was given prior to the closeout of beta-testing (27/03/19). The content included possible messages, menus, and submenus, navigability as well as visual prospects in the form of a site map. The site will go live, as planned, but is not a static tool. Modifications can be made at any time per the Consortium's request and verification with the Project Coordinator.

SIE will coordinate the project dissemination by updating the project's website, e-newsletters, etc. It will play a proactive role in checking with partners for the latest news, thus ensuring the regularity of the flow of information.

During the early stage of the project, when results are not yet available, project kick-off will be announced, general information on PERFORM technology will be disseminated and the website will be promoted. The project's website will be accessible from Month 4 (April) (Date of delivery: 29 March 2019).

Content resulting from project outcomes and other activities will be published on a regular basis. Preferably update reports will be received until the 20th of each month. SIE will then consolidate the information, validate it with the coordinator and then proceed to the website update.

Any scientific public articles as well as event participation will be tracked under an excel file stored in Intranet space and it will be updated every 6 months. In this way, any communication material to be disseminated will be tracked and archived to have a successful control in coordination and message deployment. This document will be put in place during M4.