HySelect

Efficient water splitting via a flexible solar-powered Hybrid thermochemical-Sulphur dioxide depolarized Electrolysis Cycle

www.hyselect.eu

D9.1 Project website – Public

31.03.2023

WP9 - Knowledge and innovation management, dissemination and communication

Clean Hydrogen Partnership

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Disclaimer

Acknowledgement

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Preface

HySelect will demonstrate the production of hydrogen (H_2) by splitting water via concentrated solar technologies (CST) with an attractive efficiency and cost, through the Hybrid Sulphur cycle (HyS). The HyS consists of two central steps: the high temperature -yet below-900ºC -decomposition of sulphuric acid forming Sulphur dioxide (SO_2) and the subsequent low temperature (50-80ºC) SO_2 depolarized electrolysis (SDE) of water to produce H_2. HySelect will introduce, develop and operate under real conditions a complete H_2 production chain focusing on two innovative, full scale plant prototype core devices for both steps of the HyS cycle: an allothermally heated, spatially decoupled from a centrifugal particle solar receiver, sulphuric acid decomposition-Sulphur trioxide splitting (SAD-STS) reactor and a Sulphur dioxide depolarized electrolyzer (SDE) without expensive Platinum Group Metals (PGMs). Furthermore, a heat recovery system will be integrated to exploit the temperature difference within the cycle and boost the overall process efficiency. In the course of the work, non-critical materials and catalysts will be developed, qualified and integrated into the plant scale prototype units for both the acid splitting reactor and the SDE unit. Experimental work will be accompanied by component modelling and overall process simulation and culminate with a demonstration of the complete process integrating its key units of a 750kW_{th} centrifugal particle receiver, a hot particles storage system, a 250kW_{th} SAD-STS and a 100kW_e SDE into a pilot plant. Testing for a period of at least 6 months in a large-scale solar tower, driven with smart operation and control strategies, will establish the HySelect targeted efficiency and costs. Finally, an overall process evaluation will be carried out in order to assess the technical and economic prospects of the HySelect technology, directly linked to the know-how and developments of the sulphuric acid and water electrolyzers industries.

DLR	German Aerospace Center	DE	
CERTH	Centre for Research and Technology Hellas	GR	
AALTO	Aalto University	FI	
ENEA	Italian National Agency for New Technologies, Energy and Sustainable Economic Development	IT	
FENR	FEN Research GmbH	AT	
GRILLO	Grillo Werke AG	DE	

Summary

Two of the main communication measures in the framework of the planned communication activities (WP9) of the HySelect project, are the project website and the project's social media channels (deliverable 9.1). In general, all planned communication measures within the HySelect project will be further defined in deliverable 9.3 (M6) in the dissemination & exploitation plan which will be published in the second half of 2023.

Since the project website and the project's social media channels are of significant importance in the early stages of the project, their use for the promotion of the project's content, events, and results are already defined in this report. This is to ensure that the public awareness of the project is raised, and scientific/industrial/social related achievements are properly communicated to the relevant target groups and audiences.

Contents

1. Introduction

To enhance the public visibility of the HySelect project and to promote its content, events, and results, a project homepage as well as two social media channels (Twitter and LinkedIn) will be implemented. A significant online presence will ensure that the public awareness of the project is raised, and scientific/industrial/social related achievements are properly communicated to the relevant target groups and audiences.

This deliverable describes the structure of the project homepage as well as the content provided in all sub-pages.

2. Project Website Structure

The HySelect website is designed in a straightforward structure, making the essential information regarding the project accessible to visitors. The main pages of this website are the following:

- Home
- Project Information
- News & Events
- Reports
- Project Partners
- FAQ

The layout of the HySelect website is optimized for smartphones, tablets, and desktops. The content of each page is described in the following chapters and the related screenshots are shown.

2.1. Home

The project and funding body logos as well as the navigation menu are located at the top of this page. The project logo appears on the top left whereas the “Clean Hydrogen Partnership” and “Co-funded by the European Union” logos appear on the top right (see Figure 1). The “Clean Hydrogen Partnership” logo is linked to the corresponding available website. The header design of the main page appears on all other pages.
The visual identity for all project publications was provided by the project coordinator (DLR). The colors employed in the homepage were accordingly adapted to the related color codes, presented in Appendix A.

Figure 1 HySelect Website: Main page header, logos, navigation menu & project title.

Below the navigation menu, the title of the project is given, together with a short, animated video representing the plant block flow diagram of HySelect (see Figure 2). The use of a short, animated video represents a first draft but can be further completed/improved in the course of the project.

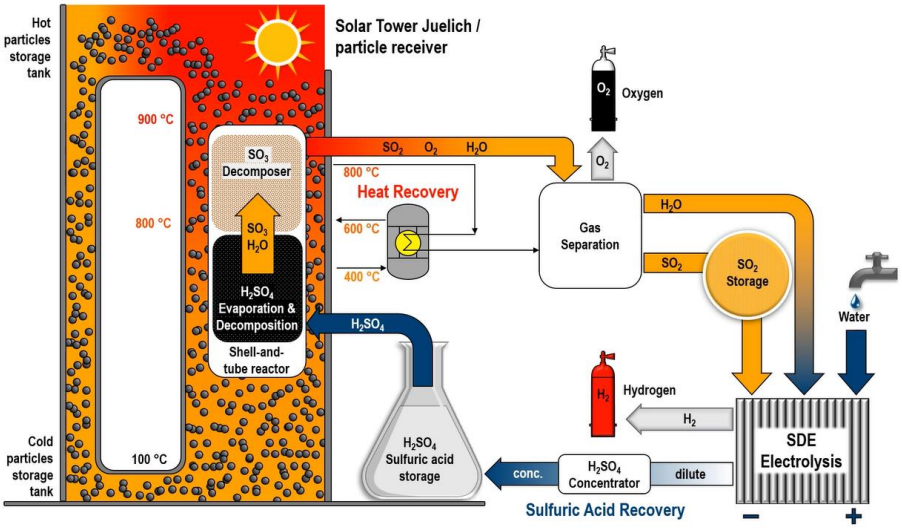

Figure 2 HySelect Website: Main page with short video presentation of plant block flow diagram.

The center of the main page is comprised of two columns. The Hybrid Sulphur (HyS) cycle reaction sequence is presented in an animated schematic in the left-hand column while a short description of the objectives of the project are given in the right-hand column (see Figure 3).

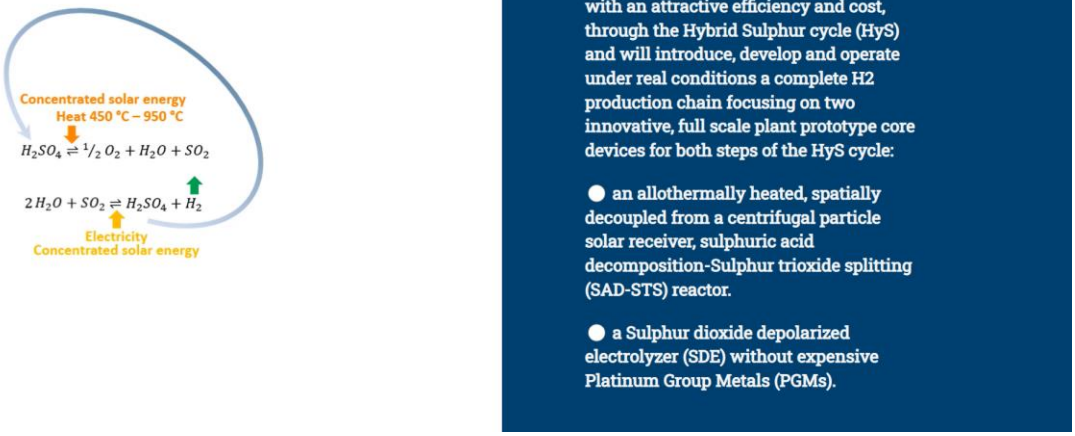

Figure 3 HySelect Website: Main page with animated schematic and complementary information.

The core design of the main page aims at providing several types of complementary information to ensure the recognition of the project goals and employed techniques. As mentioned above, the provided information can be updated any time during the project. An active and regular maintenance of the project homepage will further enhance the public visibility of HySelect.

Beneath the section shown in Figure 3 an overview of the project consortium is depicted on a map. The complete name of each partner organization with the link to their respective webpages are provided as well (see Figure 4).

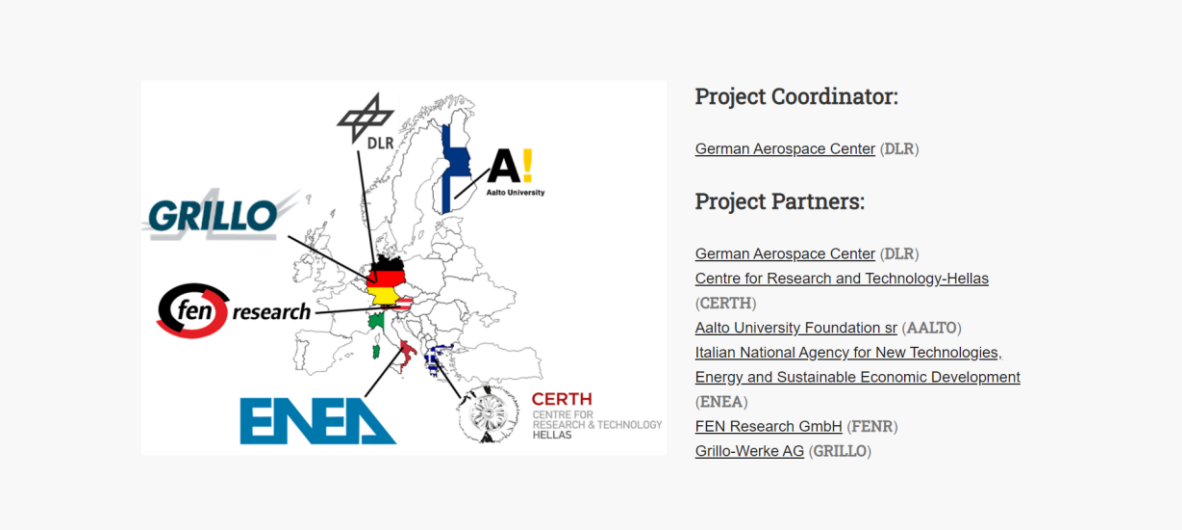

Figure 4 HySelect Website: Main page overview of the consortium.

Additional objectives and goals within the project are provided in three columns at the bottom of the main page (see Figure 5). The topics listed in this section are:

- Heat recovery system integration
- Accompanying component modelling and process simulation
- Long-term testing in a large-scale solar tower

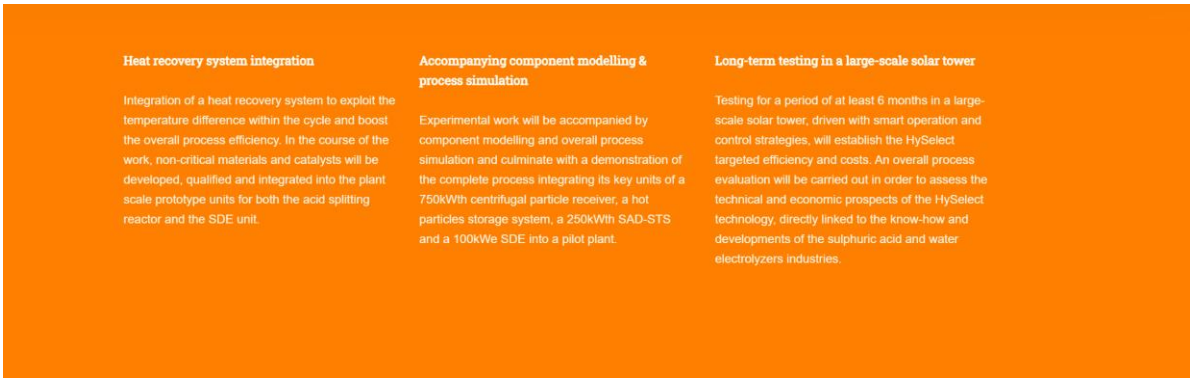

Figure 5 HySelect Website: Main page bottom, further project objectives & goals.

Furthermore, at the bottom of the main page the logos of the project partners are shown. Each logo is linked to the respective organization's website. Below the logos, project acknowledgement is given as well as the possibility to translate the page content into different languages (see Figure 6). The main page footer appears on all other pages.

Figure 6 HySelect Website: Main page footer, project partners logos, acknowledgements and provided languages.

The order of the five first languages follow the order of the project partners in the project (German, English, Greek, Finnish, Italian). The additional languages from Europe and even Asia will guarantee the promotion of the project's content, events, and results at an international level. Different layouts of HySelect main page are further depicted in Appendix B.

2.2. Project Information

In this section, a timeline is presented to give an overview in regard to the general project's events, results, and breakthroughs (see Figure 7). Each element of the timeline can be further developed using related media and descriptions in the next pages of the project website namely "News & Events" and "Reports".

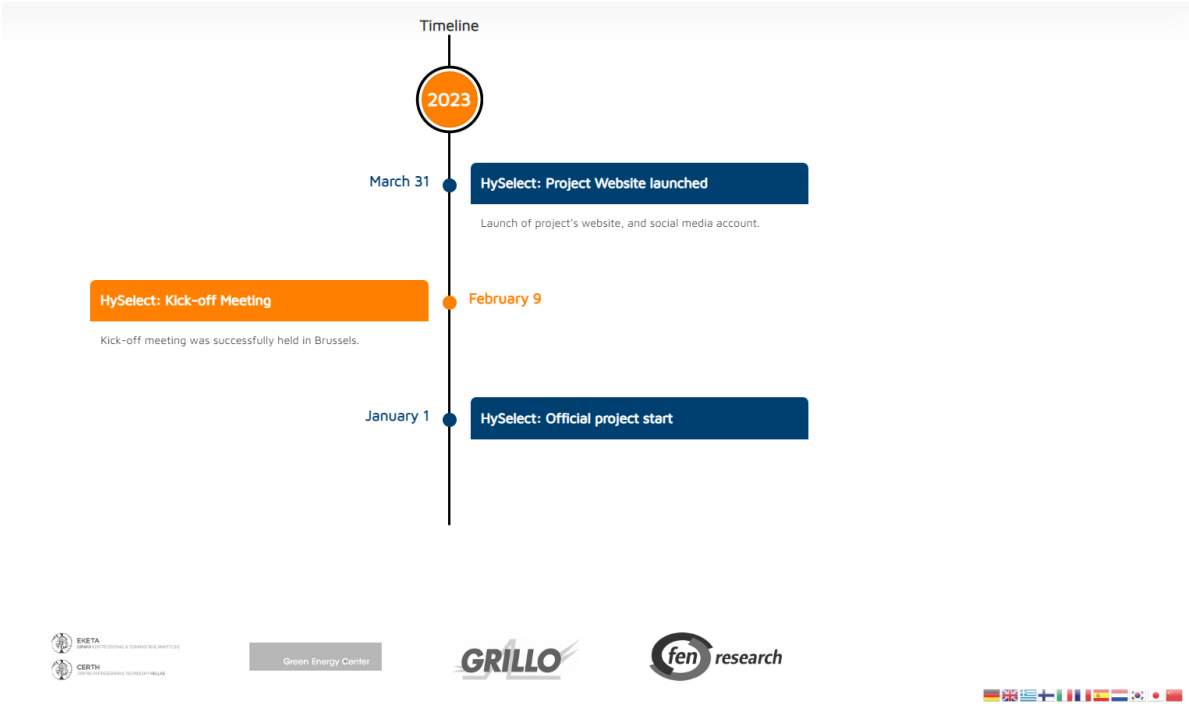

Figure 7 HySelect Website: Project Information, timeline of general project events, results, and breakthroughs.

This page further provides key facts about HySelect, as shown in Figure 8 below.

Figure 8 HySelect Website: Project Information, key facts.

2.3. News & Events

This section is regularly updated with posts related to important project meetings, workshops, webinars & seminars, conferences, and awards. Each of the posts contains a short and informative description of the news / event, date of publication, publisher, and additional links to external websites for further information.
The social media links will be made accessible under this section. For all social media posts regarding project news and events, a link leading to the respective post on the website will be systematically provided.

2.4. Reports

Press releases, public reports, project reports, scientific publications and public deliverables will be made accessible in the “Reports” section. For all social media posts regarding project reports, a link leading to the respective post on the website will be systematically provided.

2.5. Project Partners

The “Project Partners” section introduces the HySelect consortium. For each project partner selected team members will be optionally presented by a photo and/or a short CV. The organization logo of each partner is shown beneath the team member photos and is linked to the related webpage. The contact of the project coordinator will be made available for further requests, mainly containing the email address, postal address, and the phone number.

2.6. FAQ

The frequently asked questions about the project are given in this page. These questions will be regularly updated following the project progress. For an accurate description of the challenges and related questions, an active internal communication will be carried out with the corresponding project partners.

3. HySelect Social Media Accounts

Two social media channels (LinkedIn and Twitter) have been set-up for the HySelect project. These channels aim to establish a significant online presence, which will ensure that the public awareness of the project is raised, and scientific/industrial/social related achievements are properly communicated to the relevant target groups and audiences.

3.1. LinkedIn

An overview of the HySelect LinkedIn page, which is available under the link https://www.linkedin.com/company/hyselect/, is shown in Figure 9 below.

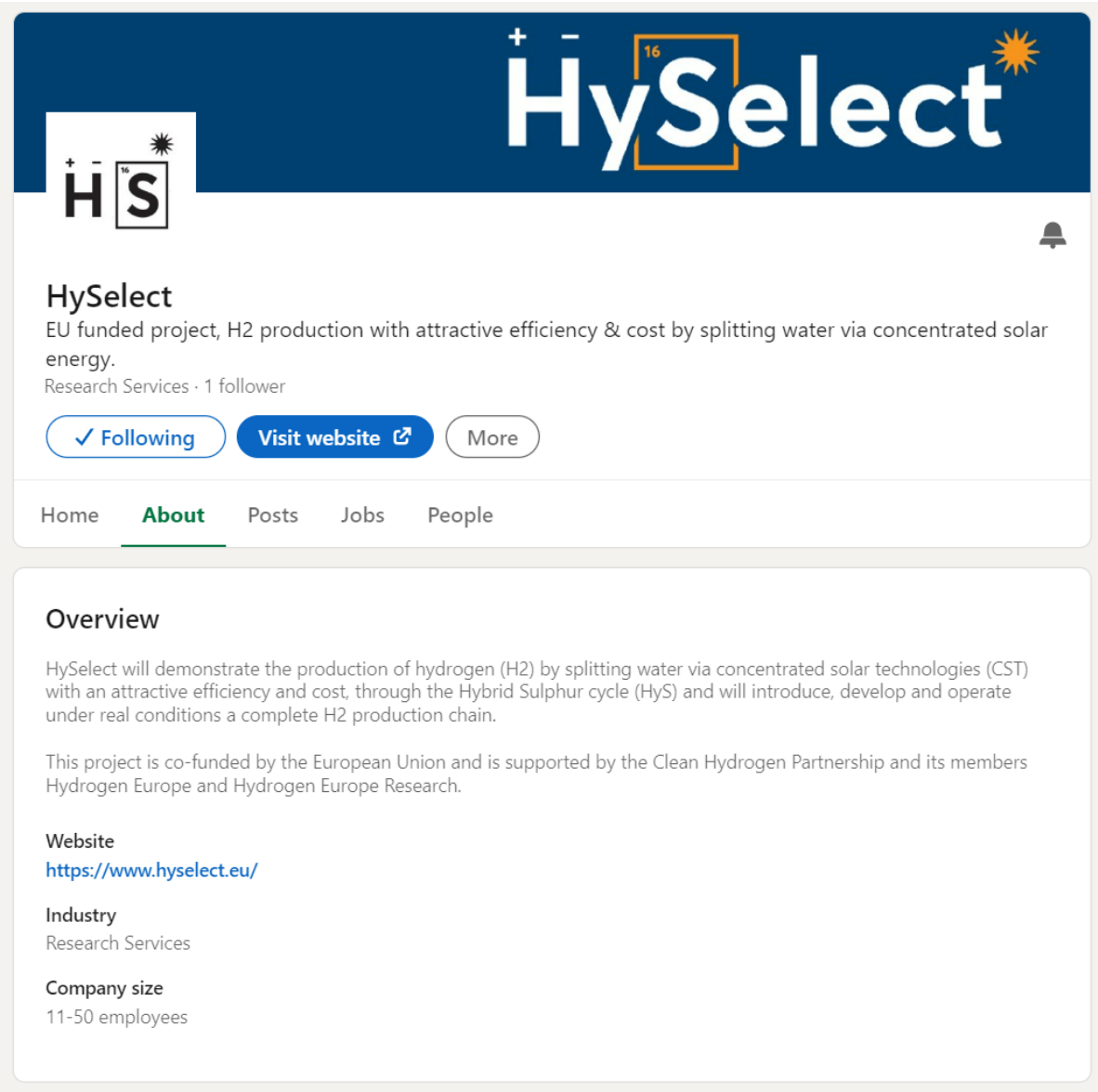

Figure 9 HySelect LinkedIn page.

The LinkedIn page of HySelect gives a short introduction to the goals of the project and provides a link to the main project homepage. New posts regarding recent developments will be published. As described in the chapters above, all significant posts will be linked back to the project timeline, and the “News & Events” and “Reports” pages.

3.2. Twitter

An overview of the HySelect Twitter page, which is available under the link https://twitter.com/HySelect, is shown in Figure 10 below.

Figure 10 HySelect Twitter page.

The Twitter page of HySelect gives a short introduction to the goals of HySelect and provides a link to the main project homepage.

4. Conclusions

The HySelect homepage is accessible via https://www.hyselect.eu/ and has been optimized for smartphones, tablets, and desktops.

The core information regarding the project objectives and goals is provided in “Home” also named the main page. This information respectively consists of:

- project and funding body logos
- full title of the project
- short animated video showing the plant block flow diagram of HySelect
- animated schematic of chemical and electrochemical reactions
- complementary description of project objectives and goals
- overview of the consortium
- project partner logos
- acknowledgement

The timeline of all project events, results, and breakthroughs is shown in the “Project Information” page. This page further provides key facts about HySelect.

The “News & Events” page is regularly updated with posts related to important project meetings, workshops, webinars & seminars, conferences, and awards. Access to social media accounts (LinkedIn and Twitter) is made available under this section.

All published press releases, public reports, project reports, scientific publications and public deliverables will be made accessible in the “Reports” page.

Selected team members will be optionally presented by a photo and/or a short CV in the “Project Partners” section. The contact of the project coordinator will be further made available on this page.

Following the project progress, the frequently asked questions about HySelect will be regularly updated and presented in the “FAQ” page.

In general, all pages can be translated to eleven languages, to guarantee the broad promotion of the project’s content, events, and results at an international level.

Two social media accounts have been implemented for the HySelect project. The LinkedIn page of the project is available under https://www.linkedin.com/company/hyselect/. The Twitter page of the project is available under https://twitter.com/HySelect. New posts will be published and linked back to the project timeline, and the “News & Events” and “Reports” pages on the project homepage.

Planned workshops with all the consortium partners will further aim to regularly update the homepage content. This will ensure that scientific/industrial/social related achievements are properly communicated to the relevant target groups and audiences and that the public awareness of the project is raised.

Appendix A

Figure 11 HySelect visual identity color codes.

Appendix B

Figure 12 HySelect Website: Main page optimized for smartphones.

Figure 13 HySelect Website: Main page optimized for smartphones.

Appendix C

Figure 14 HySelect Website: Main page optimized for tablets.

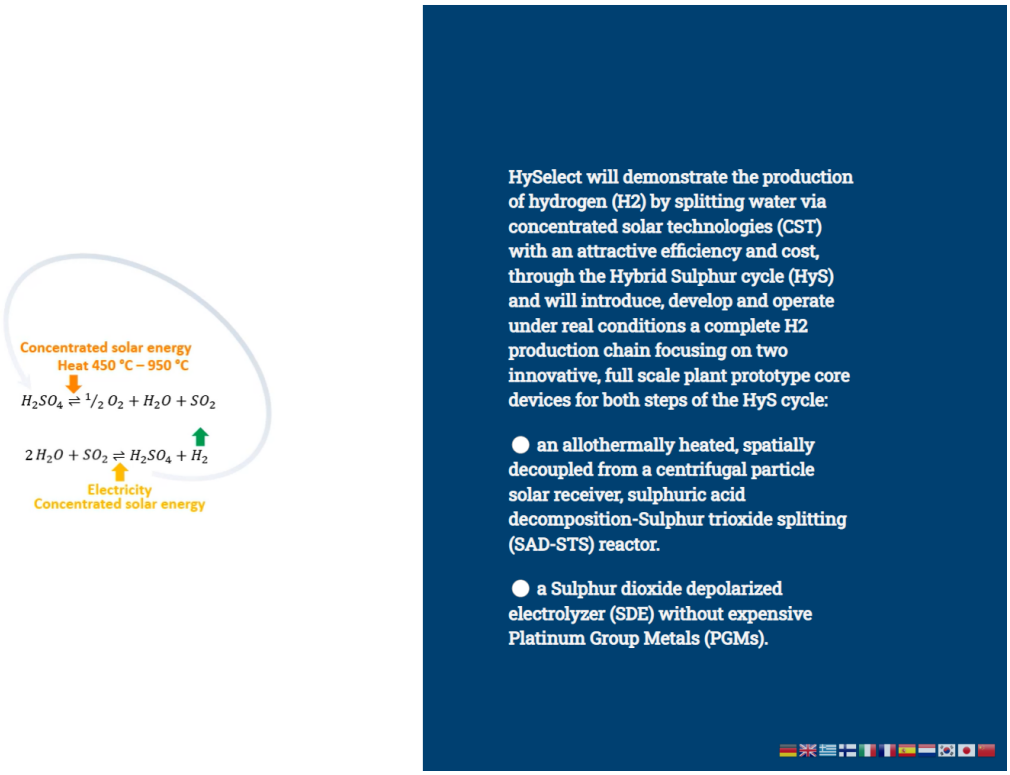

Figure 15 HySelect Website: Main page optimized for tablets.

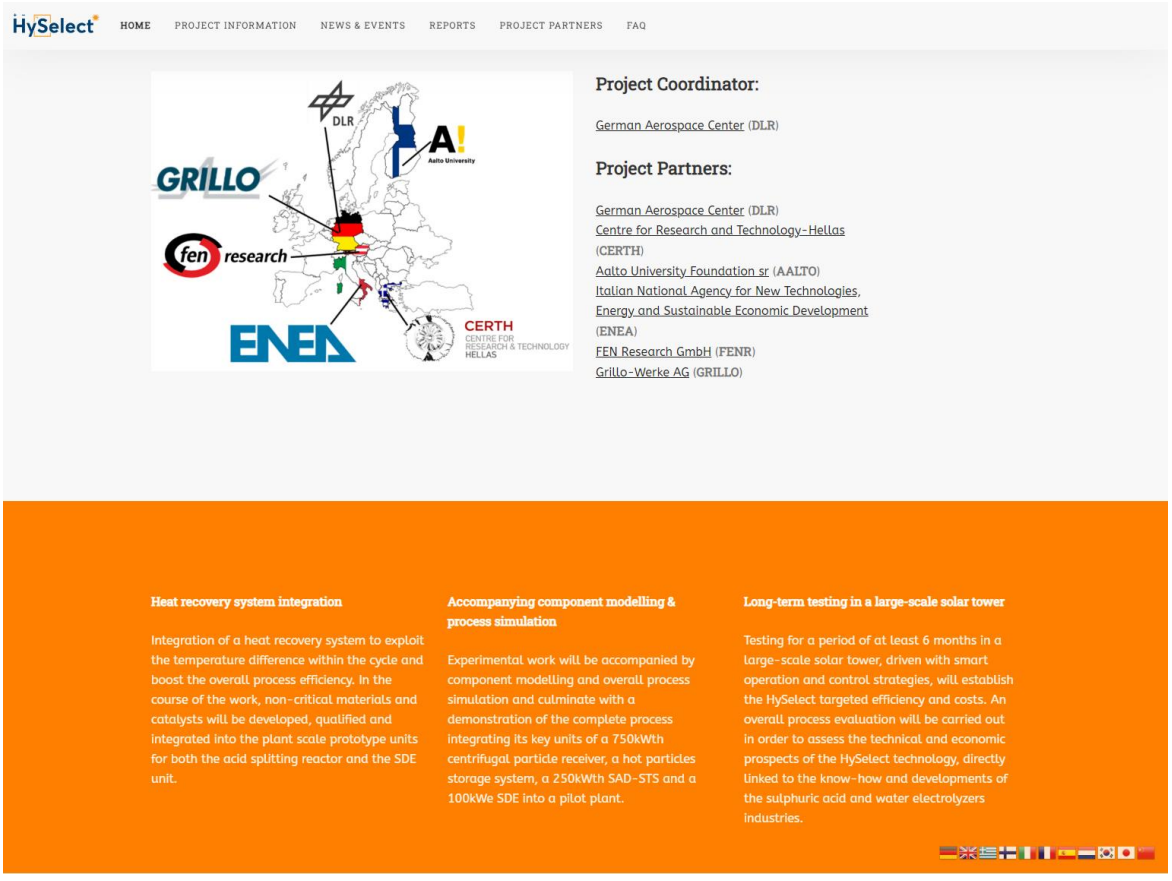

Figure 16 HySelect Website: Main page optimized for tablets.