



HORIZON
STE

Implementation of the Initiative for Global
Leadership in Solar Thermal Electricity

NEWSLETTER



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State of Play

Having successfully overcome the challenges by the COVID-19 pandemic, HORIZON-STE is coming to an end after organising the last five joint industry and R&I national events as well as the EU cooperation & closing event in Brussels. The partners are pleased to present you the conclusions and radiant results over the last six months of the project... the time has come to conclude the project!

Climate change is more and more pronounced and continues to affect our daily lives, under conditions of uncertainty due to the disruptions of the global energy market. The Russian invasion of Ukraine only amplified the on-going energy crisis. The resulting costs are always paid in times of crisis that cannot be mitigated in the short and medium term - since they lead to a partial or total reset of industry/energy strategies that are only possible over decades and are currently in discussion in all EU countries. The European Commission is therefore strongly committed to finding the best strategies to deal with this crisis that encompasses everyday life and the need to become increasingly independent of fossil fuels and the energy independence of the Member States. The current political discourse considers the independence and cost-effectiveness of renewables as keywords.

The sharp rise in electricity prices is exposing the limits of the current electricity market structure, and every kilowatt-hour of electricity Europe generates from solar, wind, hydro, biomass geothermal or green hydrogen makes us less dependent on Russian gas.

The European CSP sector is waiting for the outcome of the new tender in Spain to take place on 25 October 2022, which will reveal the type of projects and the costs levels that can be envisaged in the short term in Spain and could open the doors of CSP technology in other Member States as well.

During the HORIZON-STE project, clear signals were recorded to promote hybrid or cross-technology projects binding the best available resources. These findings will be at the heart of the upcoming EU-funded project "CST4ALL: Support to the activities of the Concentrated Solar Thermal Technology area of the SET Plan", also coordinated by ESTELA.

Work Package 1: “Implementation Plan (IP) initial and yearly status update”

The update of the Strategic Energy Technology Plan (SET-Plan) CSP Implementation Plan is reaching its final stage. ESTELA has submitted an advanced draft document to the CSP Implementation Working Group (IWG) Chair for review, while the last steps include the endorsement of this document by the CSP IWG and its submission to the SET-Plan Steering Group for the final formal approval.

HORIZON-STE has continued monitoring the initiatives and legislative measures taken at EU level relevant for the CSP/STE sector that will also be reported in the project deliverable D1.7 “Report on yearly update of current framework and market conditions (Yr.3)”. This comprises the third and last yearly update of current framework and market conditions as part of the project activities in the framework of WP1. It is a confidential deliverable to be submitted by the end of September 2022, therefore selected topics included in this deliverable covering the last six months of the project are presented below:

- Adoption of the “[EU solar energy strategy](#)” by the EC on 18 May 2022, consolidating the results of the open consultation process launched in January 2022.
- Release of the study on “[Renewable Power Generation Costs in 2021](#)” by IRENA in July 2022.
- Announcement of the upcoming CSP tender by the Spanish Ministry for the Ecological Transition and the Demographic Challenge (MITECO) on 18 July 2022. The final terms of this tender that will take place on 25 October 2022 are available [here](#).
- [Innovation Fund's second call for small-scale projects](#) with a capital expenditure between €2.5 and 7.5 million (deadline on 31 August 2022).
- [Innovation Fund's third call for large-scale projects](#), planned to be launched in late autumn 2022.

Work Package 2: “Re-launching STE Industry in Europe”

HORIZON-STE is pleased to announce that WP2 was completed with the submission of the project deliverable D2.4 “Final Country Reports” on 31 July 2022. The countries included in the report are the following: Belgium, Cyprus, Denmark, France, Germany, Greece, Italy, Portugal, Spain, Switzerland and Turkey.

D2.4 is a public deliverable that is currently under review by the EC services, therefore some key findings are highlighted here:

- There is a “new” interest for CSP that did not exist at the beginning of the project.
- Especially in Spain and to a lesser extent in Portugal, the perspectives for seeing new CSP power plants remain relatively realistic, since confirmed in the latest available updates of the respective National Energy and Climate Plans (NECPs).



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- The upcoming CSP tender in Spain will reveal the type of projects and their cost impacting the development of the entire CSP sector in Europe.
- In Portugal as well as in Spain the interest of authorities contemplates various (hybrid) concepts incorporating parts of the CSP value chain able to support in the short term the decarbonisation of industry and later the development of new fuels.
- In Germany, strong priority is set on heat applications (in the short term) especially around the concept of “Wärmewende” (heat transition) with high ambitions towards a new H₂ market. Legislative initiatives are expected in Germany (BMWK) in this respect.
- France is a specific case: it has good natural solar resources, several major companies with a strong industrial potential to promote CSP backed by extended R&I entities. This strong potential is however exclusively directed to non-EU CSP markets (Morocco, South Africa, UAE, China).
- In Italy, some progress was achieved via closer involvement of local communities in the project development that mitigated severe (almost systemic) issues of social acceptance affecting any major infrastructure project in the country.
- The excellent solar resources in Turkey allow CST solutions for a wide range of applications, involving local industry with the possibility of international collaboration supported by a dynamic R&I environment.

Work Package 3: “R&I Impact Maximization”

The project partners have been working on the public deliverable D3.3 “Report on options for future European Joint Programme for the CSP sector” to be submitted to the EC by the end of September 2022. Reflecting the evolution of the CSP landscape since the HORIZON-STE proposal was submitted, D3.3 targets the creation of a European Joint Funding Programme for the broader CST sector that not only includes CSP/STE, but also Solar Heat for Industrial Processes (SHIP) and the production of renewable fuels (e.g., H₂). Creating a European Joint Funding Programme for the CST sector can offer transnational benefits by strengthening and leveraging CST’s unique ability to be coupled with Thermal Energy Storage (TES) to deliver cost-effective dispatchable clean energy that complements variable renewable energy technologies (e.g., PV and wind), and through its application to the hard-to-decarbonise industrial and transportation sectors. Additionally, CST can strengthen Europe’s energy security by reducing dependence on imported natural gas and oil for the industrial and transportation sectors.

Work Package 4: “Communication and Events”

HORIZON-STE has recently published its second infographic for raising awareness about the countries reviewed, the joint industry and R&I national events organised as well as the policy recommendations addressed during these events in the framework of the project.



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Solar Thermal Electricity (STE)

THE FUTURE OF SOLAR
ELECTRICITY ON DEMAND



THE TECHNOLOGY

Solar Thermal Electricity (STE) technologies use mirrors to concentrate the sun's radiation onto a receiver to generate heat. The heat can either be used in industrial processes or to drive conventional steam turbines that produce electrical power.

THE POWER PLANTS



THE PROJECT

HORIZON-STE is a policy-oriented EU-funded project aimed at supporting the implementation of the initiative for Global Leadership in Solar Thermal Electricity. The initiative was launched by the STE sector in Europe and adopted by the European Commission within the Strategic Energy Technology Plan.

THE COUNTRIES REVIEWED



THE JOINT INDUSTRY AND R&I NATIONAL EVENTS ORGANISED



POLICY RECOMMENDATIONS ADDRESSED DURING THE JOINT INDUSTRY AND R&I NATIONAL EVENTS

Germany



- Set up of an efficient regulatory/legal framework to accelerate the transition from the R&I phase to market entry of innovative technologies
- Set up of a clear regulatory framework for STE technologies especially related to heat applications and in the context of green H₂
- Extended funding schemes for demonstration concerning different elements such as R&D, H₂ with carbon, Carbon Contracts for Difference, etc.
- Support to international project development
- New consideration of the EU cooperation mechanisms (EU RES DFP)

France



- In the light of the ongoing energy crisis worsened by Russian invasion of Ukraine, France should reconsider its CSP strategy and implementation from a more holistic building block to reduce its dependence on fossil fuels, besides its nuclear assets
- France is in Europe the country that binds most positive conditions for a better use of concentrated solar technologies
- In France, the project uncovered the need for a campaign around dispatchable renewables to complement nuclear power in the next generation of renewable energy sources

Spain



- The results of the announced auction in 2022 will be important about the type of projects and their cost in Spain impacting the development of the entire CSP sector in Europe
- The auction design should provide stable conditions for blending technologies - exposure to market prices
- Use of different evaluation criteria for each of the technology involved regarding their proper system or macro-economic value
- The Spanish TSO should control the use of storage capacities in power plants
- The applicable regulatory conditions should support the possibilities to optimise the use of CSP storage during the winter period
- The highly developed R&D sector can contribute to the re-launch of CSP via technological innovations in power plants and new applications for process heat or solar fuels

Italy



- Cuts/reductions for CSP plants are expected due to 'economies of scale' and manufacturing standardisation in case of a CSP European project pipeline
- Harmonisation of permitting procedures between the national, regional, and municipal levels would support the deployment of CSP
- The stakeholders in CSP should go to projects with a balanced ratio between environmental sustainability and technical/economic yield
- The adjustment of auction criteria would enable the valorisation of the system benefits of CSP plants for the electricity system
- CSP deployment should involve the Italian industry capabilities with involvement of both numerous knowledge holding SMEs and major companies

Portugal



- Coordinating RES supply auctions between Spain and Portugal and combining solutions to the storage challenge across the Iberian Peninsula
- A common political initiative in Portugal and Spain at nurturing water cooperation in the RES sector, especially about CSP
- Potential job creation and related socio-economic benefit for stressed rural regions
- Proactively supporting industrial cooperation between Portugal and Spain on extended uses of CSP
- Strengthening the support for aligned research and industry policy
- Maintaining a stable funding framework for R&D on extended CSP applications beyond 2020, in line with the NECP targets

Turkey



- Due to its excellent solar resources Turkey can provide water concentrated technology solutions for many applications, first in heat
- CSP development would offer opportunities for international cooperation in the Turkish industry
- Turkish research is a dynamic asset that can efficiently add support to this new market in Turkey
- On the longer term, lessons learned from the auction in Spain should be adjusted to the Turkish environment

- Download [second HORIZON-STE infographic](#)

HORIZON-STE also launched its second project video to strengthen the efforts to raise awareness about the policy recommendations for re-launching the STE industry in Europe.



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The [second HORIZON-STE video](#) is uploaded to YouTube for easy sharing on social media and is also available at the “Media outreach” section of the project’s website: <https://horizon-ste.eu/media-outreach/>.

Following the success of the first joint industry and R&I national event held in Turkey on 7 April 2022, the HORIZON-STE partners are pleased to have organised other five joint industry and R&I events in selected EU countries, mainly aimed at discussing the key findings of the project from an R&I, industry and institutional framework perspective, as well as capturing the potential impact on CST industry of the current emergency situation in the European energy sector, which started at the end of 2021 and was amplified by the Russian invasion of Ukraine.

The second joint industry and R&I national event took place on 14 June 2022 in Rome, Italy. It was organised as a hybrid event involving both in-person and online participation and was attended by the national decision makers and authorities, industry, research institutions and others. The main goal of the event was to discuss the status and development possibilities offered by CST for the realisation of the “energy transition” in the light of the ambitious Green Deal objectives. The event also included a technical visit to the solar platform of the ENEA Casaccia Research Center.



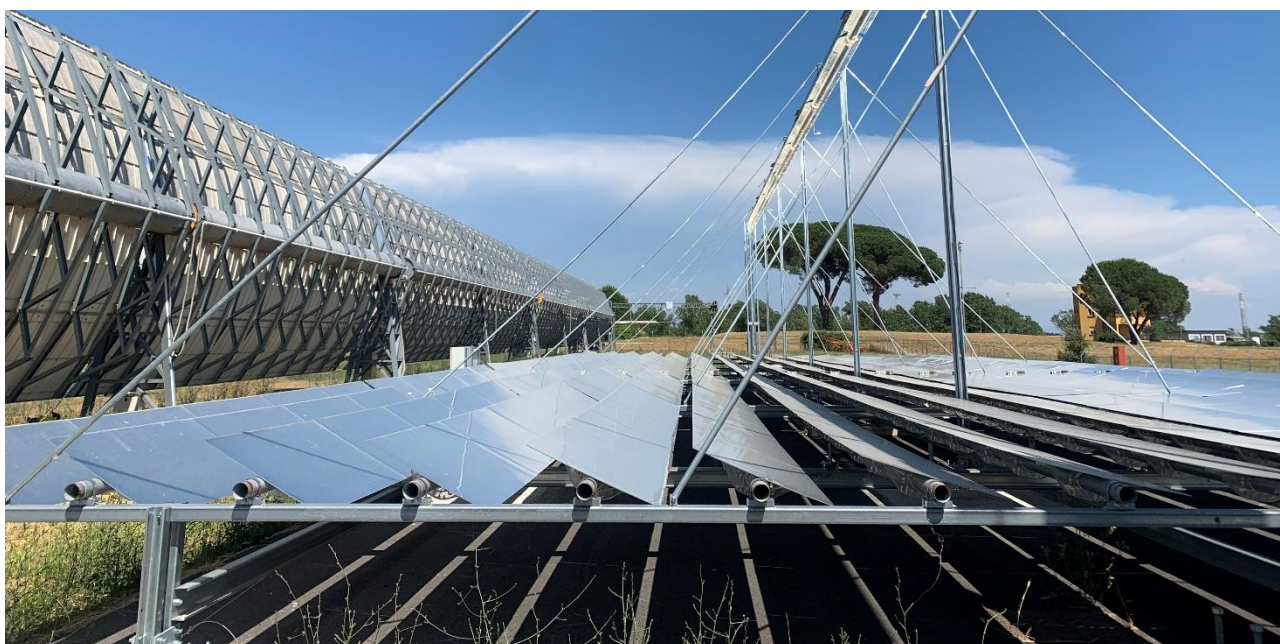


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Presentation of HORIZON-STE's main conclusions during the joint industry and R&I national event in Italy



Technical visit to ENEA Casaccia research centre - linear fresnel and parabolic trough



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The third joint industry and R&I national event was held on 30 June 2022 in Berlin, Germany. Among those who attended the event were representatives from industry, research institutes, associations, national decision-makers and authorities. The main goal was to discuss the possibilities offered by CSP for the realisation of the “heat transition” (German “Wärmewende”, similar to the approach of the “Energiewende” dedicated to the decarbonisation of the electrical energy sector) in Germany and Europe with the support of German stakeholders.



Welcome speech of HORIZON-STE coordinator (Secretary General of ESTELA) during the joint industry and R&I national event in Germany

The fourth joint industry and R&I national event was organised on 6 July 2022 in Madrid, Spain. It was attended by the national decision makers and authorities, industry, and research institutions. The topics of the discussions focused, amongst others, on the revision of the Integrated NECP, the upcoming CSP tender in Spain, the promotion of applications for industrial process heat, the storage challenge of existing CSP plants in Spain, funding options, the loss of talents and industrial know-how, as well as contributions of Spanish R&I to CSP technology development. As a result of the importance of CSP in Spain, there was media coverage of the event, with Channel Extremadura publishing the story "Why the concentrated solar thermal and photovoltaic plants stop in the hours of the most sun?" that includes interviews with Lucia Blanco (Ministry of Ecological Transition and Demographic Challenge), Marcel Bial (ESTELA) and Mercedes Ballesteros (CIEMAT), available [here](#).



Panel discussion regarding the HORIZON-STE's key findings from an R&I perspective during the joint industry and R&I national event in Spain



Interview of HORIZON-STE coordinator (Secretary General of ESTELA) to Channel Extremadura





The fifth joint industry and R&I national event was held on 8 July 2022 in Lisbon, Portugal. It was organised as a hybrid event involving both in-person and online participation and was concluded with a technical visit to the LNEG facilities.



Discussion of the HORIZON-STE's key findings during the joint industry and R&I national event in Portugal



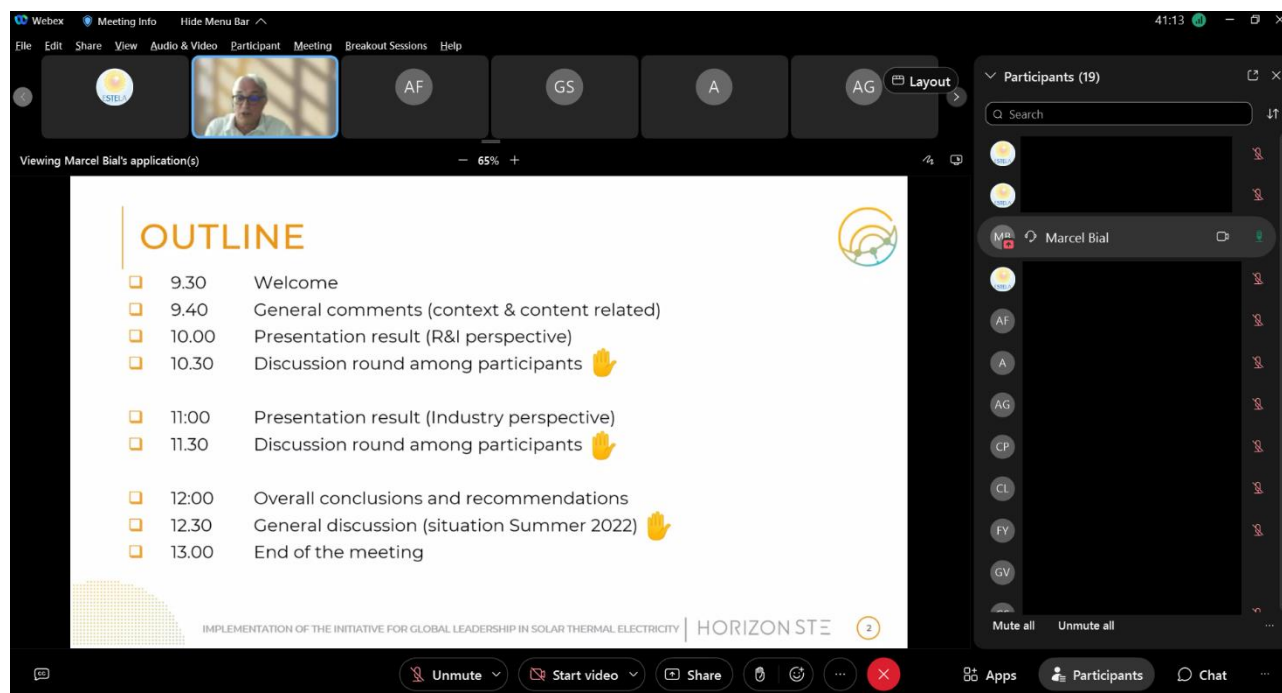
Technical visit to LNEG facilities - solar tower testing facility



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The sixth and last joint industry and R&I national event was about the CSP landscape in France and was organised online on 12 July 2022.



The screenshot shows a Webex meeting interface. The main content area displays a presentation slide titled "OUTLINE" with the following agenda:

- 9.30 Welcome
- 9.40 General comments (context & content related)
- 10.00 Presentation result (R&I perspective)
- 10.30 Discussion round among participants 🖐️
- 11:00 Presentation result (Industry perspective)
- 11.30 Discussion round among participants 🖐️
- 12:00 Overall conclusions and recommendations
- 12.30 General discussion (situation Summer 2022) 🖐️
- 13.00 End of the meeting

The slide footer includes the text "IMPLEMENTATION OF THE INITIATIVE FOR GLOBAL LEADERSHIP IN SOLAR THERMAL ELECTRICITY" and the "HORIZON STE" logo. On the right side of the interface, a "Participants (19)" list is visible, showing various participant initials. The bottom of the interface features controls for "Unmute", "Start video", "Share", and other meeting functions.

Welcome speech of HORIZON-STE coordinator (Secretary General of ESTELA) during the joint industry and R&I national event in France

The series of joint industry and R&I national events within the framework of the HORIZON-STE project were concluded with the EU cooperation & closing event, which took place in Brussels on 14 September 2022. The event was organised in two sessions to first present the project results and then discuss the institutional framework along with the R&I and industry perspectives on CSP at European level.



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Welcome address in the HORIZON-STE EU cooperation & closing event by the President of ESTELA



Conclusion of HORIZON-STE EU cooperation & closing event by DG RTD and ESTELA (outgoing (on the left) and incoming (on the right) Secretary General)



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On 15 June 2022, CIEMAT organised in collaboration with [PROTERMOSOLAR](#) and [SOLAR CONCENTRA](#) the seminar on “Solar thermal power plants and the decarbonization of the Spanish electricity sector” at the international energy fair GENERA 2022 in Madrid (Spain). The event was held in Spanish and consisted of three speeches and a round table to answer the questions raised by the participants. The barriers to achieve a full decarbonisation of the Spanish electricity sector, the advantages of hybrid plants and the added cost of non-dispatchable renewable power plants for the electricity system were among the discussion points of this seminar. Further information is available [here](#).



Presentation during the seminar organised at GENERA 2022





On 20 September 2022, CIEMAT also organised a European webinar on Concentrating Solar Thermal (CST) Technologies within the framework of HORIZON-STE. The main objectives of this webinar were to:

1. Analyse the presence of concentrating solar thermal (CST) technologies in the Horizon Europe framework programme, discussing options to increase the funding for CST technologies within the EC framework programmes, not only for electricity generation, but also for process heat applications and green fuels production.
2. Present the results obtained from the study performed in HORIZON-STE about possibilities to implement a European Joint Funding Programme for CST technologies.
3. Present EU-SOLARIS ERIC to the CST stakeholders.



PROGRAM

09:30-09:45	Opening of the Webinar (Eduardo Zarza, PSA)
09:45-10:00	Project HORIZON-STE: introduction and objectives (Marcel Bial, Secretary General of ESTELA)
10:00 -10:15	Concentrating Solar Thermal Technologies in HORIZON EUROPE (Luisa Revilla, CDTI)
10:15 -10:45	Open discussion on how the presence of the CST technologies in the EC Framework Programmes can be increased (Chaired by Luisa Revilla, CDTI)
10:45 – 11:00 Break	
11:00-11:20	Possibilities for a European Joint Funding Programme on CST (Eduardo Zarza, PSA)
11:20-11:40	Open discussion on possibilities for a European Joint Funding Programme on CST (Chaired by Eduardo Zarza, PSA)
11:40-11:55	EU-SOLARIS ERIC (Julián Blanco, PSA)
11:55-12:10	Questions and discussion (Chaired by Julián Blanco, PSA)
12:15	Closing of the Webinar



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Opening of European webinar on CST technologies by CIEMAT



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Last, HORIZON-STE held its final General Assembly meeting on 15 September 2022 at the ESTELA premises in Brussels, with the commitment of continuing the work initiated in HORIZON-STE through its successor project, namely CST4ALL, which will embrace the technology interfaces that enable a wider spectrum of uses for CSP/CST.



In-person participants in the final General Assembly of HORIZON-STE

Previous Newsletters

For previous newsletters, please check them out [here](#) or visit our website:
<http://www.horizon-ste.eu/media-outreach/>



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