



HORIZON
STE

Implementation of the Initiative for Global
Leadership in Solar Thermal Electricity

NEWSLETTER



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State of Play

A year and a half after the start of the Covid-19 pandemic, there is still a slow recovery in the organisation of physical events. The latest progress has shown how HORIZON-STE has continued steadily to meet its milestones, moving to online meetings and interviews with important stakeholders in the countries of focus.

HORIZON-STE is well on its way to achieving its goals. In this newsletter issue, we would like to share with you the latest progress made over the last six months of the project, as well as the results of our activities that may be of interest to you.

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

Close to the deliverable of the project regarding the update of the framework conditions for R&I and industry, the Concentrated Solar Power (CSP) Implementation Working Group (IWG) endorsed a request from research centres to deliver and move towards an updated implementation plan (IP), initially defined in 2017. In this direction, IWG agreed to continue this update process, which is now close to the final stage. The last step will be the adoption of the final version of the IP by the Strategic Energy Technology Plan (SET Plan) Steering Group, prepared by a core group of research and industry representatives. This updated IP will essentially contain:

- A new set of Research and Innovation (R&I) activities, and
- Strategic objectives for the industry with clear indications about specific boundary conditions (non-technological conditions) for the industry to achieve these targets.

In addition to the IP update, the project continues to monitor legislative measures taken at EU level relevant for the CSP/STE sector:

- On 7 June 2021, the European Commission launched the public consultation on the revised Climate, Energy and Environmental Aid Guidelines (CEEAG), inviting all interested parties to contribute with comments on this set of measures taken in response to the challenges in achieving the European Green Deal objectives: A key point of this revision is the widening of the scope of the Guidelines to new areas



and all technologies contributing to the Green Deal, including support for renewable energy.

- On 14 July 2021, the European Commission adopted the 'Fit for 55' package with legislative proposals to revise the entire EU 2030 climate and energy framework, towards raising the 2030 greenhouse gas emission reduction target to at least 55% compared to 1990 levels. Among the announced initiatives, the following are considered of high relevance to the scope of the HORIZON-STE project:
 - Revision of the EU Emissions Trading System (ETS)
 - Revision of the Regulation on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry (LULUCF)
 - Amendment of the Energy Efficiency Directive to implement the ambition of the new 2030 climate target (EED)
 - Revision of the Directive on deployment of alternative fuels infrastructure
 - Amendment to the Renewable Energy Directive to implement the ambition of the new 2030 climate target (RED)

To accelerate the clean energy transition, the revision of the Renewable Energy Directive (RED II) raises the binding target for the share of renewables in the EU energy mix to 40% by 2030. This represents a significant increase from the previous target of 32% set in the 2018 directive, opening new opportunities for the further deployment of RES technologies, including STE projects.

Last, recent studies provide an overview of the technological status, outlook of other uses of CSP/STE technology, as well as strong arguments on the cost competitiveness, economic prospects and socio-economic value for financing new STE projects. Specifically:

- [Solar thermal power plants – Heat, electricity and fuels from concentrated solar power](#) published by the German Aerospace Center (DLR) in May 2021
- [CSP – Solar Power around the clock](#) published by the German Association for Concentrated Solar Power (DCSP) in May 2021
- [Renewable Power Generation Costs in 2020](#) published by the International Renewable Energy Agency (IRENA) in June 2021

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

Despite the interruption of key project activities requiring physical meetings with external stakeholders as a result of the Covid-19 pandemic, further progress has been made in WP2 over the last six months with respect to the Integrated Reports in the countries of focus.

In this direction, a trilateral online meeting took place between ESTELA, DLR and DCSP to update the Germany’s Country Report with the integrated findings as well as the aligned conclusions and recommendations, with a clear focus on the mechanism that





facilitates the transition from the R&I phase to market entry of innovative technologies and applications for STE technologies.

Spain is expected to launch the auction for 200 MW of new installed capacity of CSP before the end of 2021. The conditions and design parameters of this CSP auction set by the Spanish authorities will have a crucial impact on the entire CSP sector, and especially the interest of investors for more CSP projects.

Further progress has been made on the analysis of Portugal. Specifically, HORIZON-STE recently established a new contact with the Portuguese Association Of Renewable Energy (APREN) and the Spanish Association for the Promotion of the Solar Thermal Industry (PROTERMOSOLAR), leading to a new narrative regarding Portugal's optimal capacity for CSP, in addition to the planned 300 MW in the national energy and climate plan (NECP). APREN recognises the operational benefits of CSP on the Portuguese electricity system that need to be translated into their socio-economic dimensions to increase interest of political authorities in the country. Altogether the results of this broad dialogue with Portuguese entities will be the new narrative for the upcoming national event. On this occasion, the benefits of a wider deployment of CSP will be brought in perspective with the overall benefits for the Portuguese society.

Regarding the review of Greece as the next relevant country for the project, online meetings were held with important actors, i.e., the Independent Power Transmission Operator (IPTO or ADMIE in Greek) and the Regulatory Authority for Energy (RAE). These meetings provided useful insights on the Greek energy policy, as the discussions focused, among others, on the new regulatory framework, needs for interconnections capacity and electricity storage due to high balancing costs of the power system, as well as the increasing share of variable renewable energy sources and the effect of their curtailments, especially in the islands.

Towards the completion of the remaining Country Reports, the investigation of conditions in France and Italy started in autumn 2021 with a series of contacts with the main stakeholders of these countries that will be concluded by a national joint industry-R&I event in 2022.

Work Package 3: “R&I Impact Maximization”

METU is leading the efforts in WP3 on creating an internal report as part of project Deliverable 3.3 “Report on Options for Future European Joint Programme for the CSP Sector” to support the organisation and execution of a European workshop with key European CST stakeholders and solicit their input to define a strategy for the future CST Research and Innovation funding. To this end, the internal report is intended to provide inputs to this workshop through a summary and assessment of current European CST R&I networks and funding programmes to support multi-national CST R&I activities.

In this context, DLR shared information with the Coordinator of CSP-ERANET based on the update of project Deliverable 3.1 “Proposed Actions for the Funding Agencies” with





the objective to give recommendations to the funding agencies for the next Call for Proposals in the CSP-ERANET programme. In this confidential report, the CSP activities funded from the 1st CSP ERANET Call were assessed regarding their topics, goals, budget, participating countries, etc., while recommendations were given to improve the impact of the 2nd and upcoming Calls.

In the same direction, CIEMAT contacted the Spanish representative of the Clean Energy Transition Partnership (CETP) to explore the possibility of organising a meeting with participants from other countries involved in the CETP. This meeting will be arranged after the new CSP Implementation Plan is distributed, with the objective to discuss and address any open issues by the participants.

Last, all WP3 partners have continued their work on the Integrated Country Reports for the countries of Spain, Germany, Italy, and Turkey, as well as on collecting data about R&I activities in EU countries not covered by a consortium member of HORIZON-STE, i.e., France, Portugal, Cyprus, Switzerland, Belgium, Netherlands, Sweden, Greece, etc.

Work Package 4: “Communication and Events”

In line with the theme “Innovative Energy Solutions” of the 23rd World Petroleum Congress (WPC), Eduardo Zarza from CIEMAT participated in the panel discussion of the on-line expert workshop on “Energy Storage Systems” held on 20 May 2021, organised by the Indian National Committee of the WPC with the support of the Indian Oil Corporation-R&D Division and the Federation of Indian Petroleum Industry (FIPI).



More information about the workshop, including the agenda and list of speakers, is available at the event [website](#).

On 25 June 2021, a [CSP Projects Joint Webinar](#) was organised by the European CSP projects SOCRATCES, MUSTEC, NEXTOWER and SFERA-III. In this event, CIEMAT participated in the round table on the potential of Concentrated Solar Power Plants, covering topics related to niche opportunities for CSP in the electricity systems of the





future, major barriers to the development of CSP (political, financial, regulation, etc.), future development of the technology in the EU context, increase of actual funding resources available for CSP technologies and research, as well as needs of performance improvement in CSP plant components.

The recording of the event is available [here](#).

The CSP Technology Day took place on 21 October 2021 as an on-line event jointly organised by CSP ERANET and the EU-funded project SOCRATCES in the framework of the EU Sustainable Energy Week 2021. The objective of this event was to present the achievements and further challenges of CSP, and present upcoming funding opportunities on the sector to keep feeding the development of this promising sustainable technology. In this event, ESTELA presented the current European perspectives for CSP, while CIEMAT reported on the challenges to increase performance and reduce costs in line-focus solar technologies.

More information on the agenda, presentations and recording of the CSP Technology Day, is available at the event [website](#).

On 12 November 2021, METU gave an invited presentation on the “Overview of Concentrating Solar Thermal (CST) Technologies and Applications” in the frame of the SiseCam 36th Glass Symposium, which was held as a fully virtual event for this year.

CST as a part of synergistic Renewable Energy systems

Challenge: A barrier to the clean energy transition is the variable nature (i.e. not “flexible” or “dispatchable”) of cheap PV and wind makes matching energy supply and demand difficult.

Solution: System level solutions focused on the integration of synergistic renewable energy sources and technologies to create “manageable” (i.e. “flexible” and dispatchable”) solutions.

Opportunities: The European Union is increasingly asking for integrated and synergistic renewable energy solutions as evidenced by the scope of Horizon Europe calls.



Through the EU GeoSmart project, the METU graduate student Balkan Mutlu is developing novel methods to hybridize geothermal power plants with CST and biomass to increase flexibility and dispatchability, and therefore value.



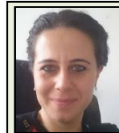
GeoSmart received funding from the European Union's Horizon 2020 research and innovation programme. Grant agreement 818576.

Assessment & development of national & European capacities and markets

National Challenge: Although Turkey's CST industrial and market potentials are among the largest in Europe, these are almost completely undeveloped and lag countries with less favorable Markets (e.g. Germany).

European Challenge: Europe is a global leader in CST capacities and markets, but this leadership position is increasingly being challenged.

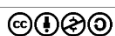
Solution: Collaborate with European partners to catalyze opportunities for national and European CST industrial and market growth.



Through the EU HORIZON-STE project, Dr. Yelda Erden Topal of METU is collaborating with ESTELA (European STE association), DLR, PSA-CIEMAT, and ENEA (Italy) to assess and develop Turkey and Europe's STE capacities and markets.



HORIZON-STE received funding from the European Union's Horizon 2020 research and innovation programme. Grant agreement 838514.



More information on the speakers in this event is available [here](#), while the scientific programme can be downloaded [here](#).

CIEMAT also organised in collaboration with PROTERMOSOLAR a seminar on Solar Thermal Power Plants, which took place in Madrid as a physical event on 18 November





2021 at the [International Fair on Energy and Environment GENERA](#). The seminar was composed of four presentations by CIEMAT, EXERA Energía, PROTERMOSOLAR, and SOLARCONCENTRA, followed by a round table with the participants.



The presentations of this seminar are available [here](#).

In the frame of the [15th SET Plan conference](#), which took place in Bled, Slovenia on 25-26 November 2021, a shorter version of the original [HORIZON-STE project video](#) conveying the key messages of the CSP IWG was included in the [video compilation](#) (SET Plan video 2) presented during the SET Plan IWGs snapshots video session to summarise the success stories and achievements of the SET Plan IWGs.

Last, DLR has supported the dissemination of the HORIZON-STE work by forwarding the project results to the German stakeholders coordinated by DCSP.

Previous Newsletters

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

