

## CST in Turkey: Current State and National Strategies to Exploit Opportunities

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**Live Seminar Time and Date\*:** 12:00-13:00 (Turkish time / GMT + 3)  
Friday, Jan. 8, 2021

**Recorded Seminar:** <https://youtu.be/KtxWxV1gagA>

**Abstract:** This second ODAK<sub>TR</sub> Seminar builds-on the global perspective of Concentrating Solar Thermal (CST) given in the 1<sup>st</sup> seminar by providing an overview of the state of and opportunities for CST in Turkey. As part of the Horizon 2020 (H2020) CST *SolarTwins* project, METU is developing several Joint Research Lines (JRLs) with its strategic EU partners CIEMAT (Spain) and DLR (Germany). In this seminar the METU-CIEMAT JRL *Social Aspects of Sustainable Energy Transitions* is presented. This JRL aims to exploit synergies from a larger cluster of pan-European activities in which METU-GÜNAM is involved to catalyze and grow Turkey's CST activities and markets. The current state of and opportunities for CST in Turkey identified through the aligned H2020 CST *Horizon-STE* project are presented, including results from Interviews and a Bibliometric Analysis. Lessons learnt from Spain's CST Experience and policy implications to promote development and diffusion of CST Technologies in Turkey are discussed based-on the presenter's on-going Post-Doctoral research at CIEMAT. A comparative case study of Spain and Turkey for CST is presented. Finally, Policy Implications to support CST Technologies in Turkey within an EU Context are discussed.

**Short Bio:** Yelda Erden Topal is a postdoctoral researcher in the Polytechnical University of Madrid (UPM), Spain, and collaborating with CIEMAT as a TUBITAK 2219 (International Postdoctoral Research Fellowship Program for Turkish Citizens) Scholar since March 2020. She is a researcher in H2020 SolarTwins and HORIZON-STE projects, and one of the contributors for Turkey membership in the European Research Infrastructure Consortium (ERIC) *EU-SOLARIS* on CST. She is Dr. Research Assistant and Postdoctoral Researcher in Science and Technology Policies Research Center (METU TEKPOL) and Vice Presidency Office at Middle East Technical University since 2009. She has research experience in the EU Projects of SolarTwins, Horizon STE, Turkey-ICT RTD Technological Audit, and National Projects such as TUBITAK, Min. of Development (now SBB), Development Agencies, Associations and NGOs.

**About UPM INNOPRO:** The Innovation, Industrial Property and Technology Policy (INNOPRO) Research Group, officially recognized by Universidad Politécnica de Madrid in 2004, acknowledges and contributes to the growing significance of the knowledge economy. In this respect, INNOPRO as a facilitator, carrier and innovation source, supports technology intensive services and activities as a part of the innovation process to promote the growth of innovative activities in industry, and to improve competitiveness in Spain & EU. To implement these activities work is done in research areas of Innovation, Industrial Property Rights, Technology Policy, Digital Transformation, e-Learning and learning analytics, and Social Innovation. INNOPRO Activities are Participation in national and international tender projects, Participation in research projects with companies, Technological services (audits, strategy, planning...), R&D and Innovation projects evaluation, Training courses and seminars. For further information: <https://www.innopro.upm.es/>

**About METU TEKPOL:** Science and Technology Policy Studies (STPS) program was founded in 1997 at METU with the explicit objective to conduct research in science, technology and innovation policy issues. It has organic relations with the Research Center for Science and Technology Policies (METU TEKPOL). TEKPOL is the only academic unit in Turkey that concurrently coordinates education and research activities. It operates M.Sc. and Ph.D. programs in science technology policy studies at the Graduate School of Social Sciences. TEKPOL also conducts research on science and technology policy issues with the aim of addressing societal challenges. TEKPOL has an interdisciplinary approach to the analysis of the economic, social and political factors that drive technological change and innovation. TEKPOL deals with recent policy questions concerning national and international regulations of science, technology and innovation in various areas of ICT, economic development, creative industries, social innovation, interdisciplinary collaborative science, artificial intelligence, energy, sustainability and climate change, data science, informatics, network building, science communication, innovation systems, technology development and diffusion, labor dynamics, etc. with qualitative and quantitative tools of data collection and analysis. For more information see <https://stps.metu.edu.tr/en>

**About ODAK<sub>TR</sub>:** ODAK<sub>TR</sub> is a national CST initiative led by METU-GÜNAM with objectives to

1. Support Turkey's energy transition through the development & commercialization of CST technologies;
2. Catalyze domestic CST economic activity by supporting growth in markets, industrial capacities, and industrial activities;
3. Strengthen Turkey's CST Research and Innovation (R&I) capacities, including by creating globally competitive CST research opportunities at Turkish universities.

One of ODAK<sub>TR</sub>'s main strategies to achieve these objectives is through harmonization of national activities with EU CST initiatives by strengthening and exploiting synergies created by METU-GÜNAM's role as Turkey's National Node for the CST European Research Infrastructure Consortium (ERIC) EU-SOLARIS, and participation in 5 EU H2020 projects: 1. SolarTwins; 2. HORIZON-STE; 3. SFERA-III; 4. INSHIP; and 5. GeoSmart.

**About the ODAK<sub>TR</sub> Seminar Series:** Through the ODAK<sub>TR</sub> Seminar Series, leading CST experts from METU-GÜNAM's strategic CST partners CIEMAT-PSA (Spain) and DLR (Germany) and other CST experts will give seminars targeting the Turkish CST community and tailored to support realization of ODAK<sub>TR</sub>'s objectives. The ODAK<sub>TR</sub> Seminar Series is being executed within the framework of the H2020 Project SolarTwins and this specific seminar is co-sponsored by the H2020 Horizon-STE project. The current ODAK<sub>TR</sub> Seminar Series schedule is as follows, with all seminars from 12:00-13:00 Turkish time:

Date	Speaker, Institution	Seminar Title
18 Dec. 2020	Prof. Dr. Eduardo Zarza, CIEMAT-PSA, Spain	An Introduction to Concentrating Solar Thermal (CST) Technologies and Applications
08 Jan. 2021	Dr. Yelda Erden-Topal, UPM & CIEMAT, Spain, and METU TEKPOL, Turkey	CST in Turkey: Current State and National Strategies to Exploit Opportunities
15 Jan. 2021	Dr. Florian Wiesinger, DLR - Inst. of Solar Research, Germany	Quality Assessment and Accelerated Aging Experiments of Optical Components for CSP Plants
21 Jan. 2021	Dr. Gkiokchan Moumin, DLR – Inst. of Solar Research, Germany	Solar heat for the calcination processes
5 Feb. 2021	Dr. Inmaculada Polo, CIEMAT-PSA, Spain	Antibiotic Resistant Bacteria: occurrence and removal from urban wastewater
12 Feb. 2021	Dr. Reiner Buck, DLR - Inst. of Solar Research, Germany	Solar Particle Technology for Dispatchable Power and Heat Generation
26 Feb. 2021	Dr. Isabel Oller, CIEMAT-PSA, Spain	Water-Energy-Food nexus in industrial and urban wastewater recovery

**About the H2020 SolarTwins Project:** The aim of the SolarTwins project is to step-up the scientific excellence of the promising CST Research Division ODAK of METU-GÜNAM (Coordinator) in collaboration with the

internationally leading CST institutions CIEMAT-PSA (Spain) and DLR (Germany). SolarTwins includes 4-weeks of CST summer schools at METU taught by leading experts from CIEMAT-PSA and DLR and METU graduate students co-advised by experts from CIEMAT-PSA and DLR. An expected impact is the establishment of competitively-funded METU-CIEMAT and METU-DLR Joint Research Lines.

**About the Horizon-STE Project:** The aim of Horizon-STE project is to provide scientific and industrial support to the Implementation of the European Initiative for Global Leadership in Solar Thermal Electricity (STE) as part of the European Integrated SET-Plan (Strategic Energy Technology Plan). The project is coordinated by ESTELA (Belgium) and CIEMAT, DLR, ENEA (Italy), and METU are partners. METU's main contributions are to support the Work Package to Maximize the Research and Innovation Impact, to Lead the Task to Evaluate the Implementation of this Initiative, and to support the analysis of Turkish CST Stakeholders.

**About the TUBITAK 2219 (International Postdoctoral Research Fellowship Program for Turkish Citizens) Scholarship:** The Scientific and Technological Research Council of Turkey grants fellowships for scientists/researchers to do research abroad. Yelda is one of the fellows of TUBITAK 2219 - 2018 (II) Term, and she would like to thank TUBITAK 2219 Fellowship for financing the research in Spain since March 02, 2020.

**About METU-GÜNAM's CST Research Division ODAK:** ODAK includes a diverse set of academics and post-doctoral researchers who are actively contributing to METU-GÜNAM's National and European CST activities:

Burcu AKATA KURÇ MNT, METU  
Derek BAKER ME, METU  
Özgür BAYER ME, METU  
Zeynep ÇULFAZ EMECEN ChE, METU  
Yelda ERDEN TOPAL TEKPOL, METU

Feyza KAZANÇ ME, METU  
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## EU Projects and Activities Showcased by ODAK<sub>TR</sub>



HORIZON  
STE

EU SOLARIS



GEOSMART

## ODAK<sub>TR</sub> Organizing Institutions



## Funding Agencies Supporting Projects Showcased by ODAK<sub>TR</sub>



The European Union projects have received funding from the Horizon 2020 research and innovation program under grant agreements No 856619 (SolarTwins), 838514 (HORIZON-STE), 731287 (INSHIP), 823802 (SFERA-III), and 818576 (GeoSmart).



Turkish funding for the bi-lateral project with CRTEn of Tunisia was provided by TÜBİTAK grant 217M062.



Funding for METU-GÜNAM's CST Research Infrastructure for SFERA-III was provided by the Turkish Ministry of Development under grant 2015K121200.