



## 24/7 Heat & Electricity Powered by the Sun

### The Combined Forces of Solar Energy (CSP, PV, ST) and Thermal Energy Storage

Official side event of the Berlin Energy Transition Dialogue 2021

<https://2021.energydialogue.berlin/>



18. March 2021, 2 pm – 5 pm CET

Online

If you are interested in joining our workshop, please register

<https://register.gotowebinar.com/register/8299511103333128717>

It is our great pleasure to invite you to the upcoming webinar “**24/7 Heat & Electricity Powered by the Sun: The combined Forces of CSP, Solar Energy and Thermal Energy Storage**”, organized by the German Association for Concentrated Solar Power (DCSP), the German Solar Association (BSW) and the German Energy Storage Systems Association (BVES) as official side event to the Berlin Energy Transition Dialogue.

There is a growing importance of **integrated CSP-PV-Hybrid systems with thermal storage** as confirmed by Worldbank and IRENA in recent studies. These systems can provide flexible, renewable energy, 24/7 in regions with excellent direct solar resources for *electricity, heat* and *green hydrogen* generation. The flexibility of these hybrid systems facilitates a rapid capacity expanding of low-cost volatile renewable energy, allowing to replace a larger share of fossil fuels in the energy mix.

**Solar heat for industrial process** systems is becoming a growing reality even in regions with less direct solar radiation. In combination with thermal storage, it can cover the heat supply in the industrial sector 24/7 and can play a key role in industrial decarbonisation.

Solar thermal systems provide climate friendly and competitive heat. They are easily scalable and cover a vast heating range from low (below 100 °C) to high temperatures (< 550°C) and have shown considerable economies of scale in recent years. Thermal energy storage technologies play a crucial role for the system integration of renewables as well as the optimization of energy efficiency in every system and are a dynamically developing market segment of the energy storage industry.

The workshop will give an insight in technologies and applications of solar systems in combination with thermal storage as well as their economics. Several companies will present their technologies and show case successful projects.



## Programme

### Session 1: Solar Process Heat for industries and thermal storage

Moderation: Jan Knaack, BSW-Solar

#### Keynote:

02:00 pm *CSP & solar thermal heat for industry: Current costs and drivers, & outlook for CSP to 2030*, Michael Taylor, International Renewable Energy Agency IRENA

#### 02:20 pm **Projects and technologies:**

- *Solar Process heat for industries and utilities – experiences and future developments*, Yuvaraj Pandian, Solarlite CSP Technology
- *Solar Orange Juice in Cyprus: Process Heat for the Food Industry*, Martin Scheuerer, Protarget
- *Clean Industry Solutions*, Paula Alfonso, Industrial Solar
- *Renewable Process Heat Plants within the Gas Sector*, Roland Heinzen, EnerSolve GmbH
- *PCM systems in practical applications*, Dirk Büttner, Axiotherm
- *Heat-Recycling for a Better Future*, Martin Schichtel, Kraftblock
- *Decarbonizing ENI refinery by solar energy storage*, Hannes Reuter, EnergyNest

03:00 pm **Panel discussion with the audience**

### Session 2: PV/CSP Hybrids and Storage: cost efficient flexible renewable energy 24/7

Moderation: Juliane Hinsch, DCSP

#### Keynote:

03:30 pm *CSP-PV Hybrid Concepts for low Cost Dispatchable Power*, Robert Pitz-Paal, Institute of Solar Research, German Aerospace Center (DLR)

#### 03:50 pm **Projects and technologies:**

- *Economic evaluation of different operating modes of hybrid CSP-PV*, Klaus-Jürgen Riffelmann, sbp schlaich bergemann partner
- *Integrated CSP-PV-Hybrid (ICPH) - Green Energy for Hydrogen Production*, Oliver Baudson, TSK Flagsol
- *Integrated CSP-PV-Hybrid (ICPH) - Performance Enhancement by Hybridization*, Gustl Schreiber, Siemens energy
- *Just Hot Air?*, Caspar von Moy, Heliovis
- *The benefits of energy storage for the energy transition*, Martin Schlecht, Suntrace
- *High-Temperature Steel Storage. Heat & Power for Local Value Creation through Emission-Free Sector Coupling*, Constanze Adolf, Lumenion

04:20 pm **Panel discussion with the audience**

04:50 pm **Closing remarks**

05:00 pm **End of the workshop**



## About:

### **German Association for Concentrated Solar Power (DCSP)**

was established in September 2013. Among the members are consulting and engineering companies, manufacturers of components, owners and operators of power plants as well as research institutions. The portfolio covers the whole CSP value chain. The association's objective is to join forces and interests of the market players in Germany and enhance their chances in international markets. In their latest policy paper, DCSP explains the social, economic and environmental opportunities of a global expansion of CSP and how the federal government and parliament can make their contributions to utilize these opportunities.

### **German Solar Association (BSW-Solar)**

The association's mission is to support its members operating around the world in accessing and developing a global market for solar power, solar heat and solar storages. BSW-Solar drives the implementation of solar business models and is a treasure trove of first-hand information, networks and service, unrivalled in its experience with solar energy. Multiple of its member companies promote the use of low and mid-temperature heat for residential, commercial and industrial applications.

### **German Energy Storage Systems Association (BVES)**

The BVES is the strong voice of Germany's energy storage industry. As an industry association that is open to all various kinds of energy storage technologies, the BVES represents the whole spectrum: electric, thermal, electro-chemical, chemical, and mechanical energy storage in the energy sectors electricity, heat and mobility. The BVES bundles forces to facilitate the communication between Germany's energy storage representatives and the national as well as international political levels, the administrative levels, science and the public. The BVES also routinely works together with the standard-setting organizations in Germany on the technical issues that are of main importance for the energy storage industry.