

New Work

In the Pipeline

Two projects are under development and scheduled for approval at the June 2024 IEA SHC Executive Committee. Interested in joining? If from an IEA SHC member country, you are welcome to join the planning stages, simply contact the Task Organizer.

Solar Cooling for Emerging Economies

Building off the current Task on Solar Cooling for the Sunbelt Regions, this proposed new project aims to demonstrate the potential for sustainable and efficient heating/cooling solutions as a system approach for industrial applications in Southeast Asia, the Pacific region, and African and South American countries. The work will also focus on thermal energy storage and industrial waste heat recovery. The cooling and air conditioning systems included will range from 2 kW_r to 5,000 kW_r and use both solar thermal and photovoltaic (PV) technology as both can deliver efficient heat and cold combinations for industrial applications, including agri-food, manufacturing, and tourism.

The primary target audience of the new project are energy consultants, planners, project developers, energy managers, plant manufacturers, solar thermal collector manufacturers, solar cooling turnkey providers, and chiller producers using natural refrigerants but also investors and financing bodies, especially but not only from the regions mentioned above. These stakeholders are invited to help strengthen the proposed Task work to demonstrate sustainable and efficient heating/cooling solutions in industry.

There is still time to participate in this exciting and important work.

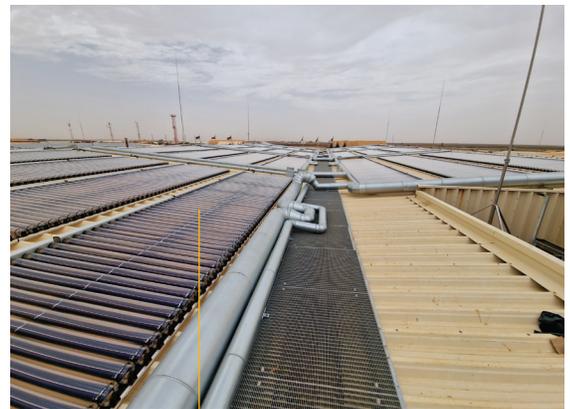
The next meeting will be in conjunction with the April 2024 ISEC conference in Graz, Austria. To learn more about the proposed project and how to join, contact the Task Organizer, Uli Jakob, at uli.jakob@drjakobenergyresearch.de.

Energy Carriers from Solar Powered Reactors

Fact – Decarbonization requires a change in our energy supply and hybridization. Green fuels will and can meet industrial energy demand (e.g., hydrogen and in combination with CO₂ energy carriers (e.g., methane, methanol, ethanol)). But, today, e.g., 99% of H₂ for industrial use is from non-renewable energy sources!^[1]

That is what one would call an untapped potential for solar reactors. The demand for “green” energy sources is increasing, and using the sun to produce them is a win-win.

This proposed project would work on technologies to use solar radiation to produce H₂ and other fuels via photothermal, photocatalytic, and photo-electrochemical processes. The work would



▲ **Solar cooling system at Camp Castor in Mali. The system uses 700 m² of vacuum tube solar collectors to drive an absorption chiller with a 348 kW cooling capacity to provide AC to a cafeteria and kitchen. Photo credit: Frank Molter, SolarNext**

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be divided into three areas: 1) materials and component development, 2) reactor design, and 3) system integration.

If you want to be part of this expert exchange network on Solar Fuels, join us in our shared efforts to realize the use of sunlight for novel fuel production.

The next meeting is on April 9, 2024, in Graz, Austria, one day before the ISEC 2024 conference on April 10-11. To learn more about the proposed project and how to join, contact the Task Organizer, Bettina Muster-Slawitsch, at b.muster@aee.at.



- ▲ **Solar reactors using solar radiation for the production of H₂ and other fuels via photo processes.**