

Virtual Workshops Tackle Technical and Market Assessments of Solar Cooling in the Caribbean

About 30 consultants, researchers, manufacturers, grid operators and CCREEE staff joined a two-day training course organized by the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) as part of the SHC Solar Academy. CCREEE, the newest member of the SHC Programme, welcomed the opportunity to learn about Austria and Greece's solar thermal work and the new SHC project, Task 65 on Solar Cooling for the Sunbelt Regions.

The online workshop kicked off with Werner Weiss, of the Austrian company, AEE INTEC, and Vassiliki Drosou, of the Greek Centre for Renewable Energy Sources, first giving an overview of solar thermal applications used in homes, hotels, hospitals and manufacturing businesses before describing specific successful implementation strategies, support mechanisms and quality control methods.

On Day 2, the workshop participants learned about the work starting in the new SHC project, *Task 65: Solar Cooling for the Sunbelt Regions*, and state-of-the-art solar cooling. Daniel Neyer, of Neyer Brainworks based in Austria, and Uli Jakob, of German-based dr. jakob energy research, presented basic system functions and trends in solar cooling, economic and technical assessments and best practices.

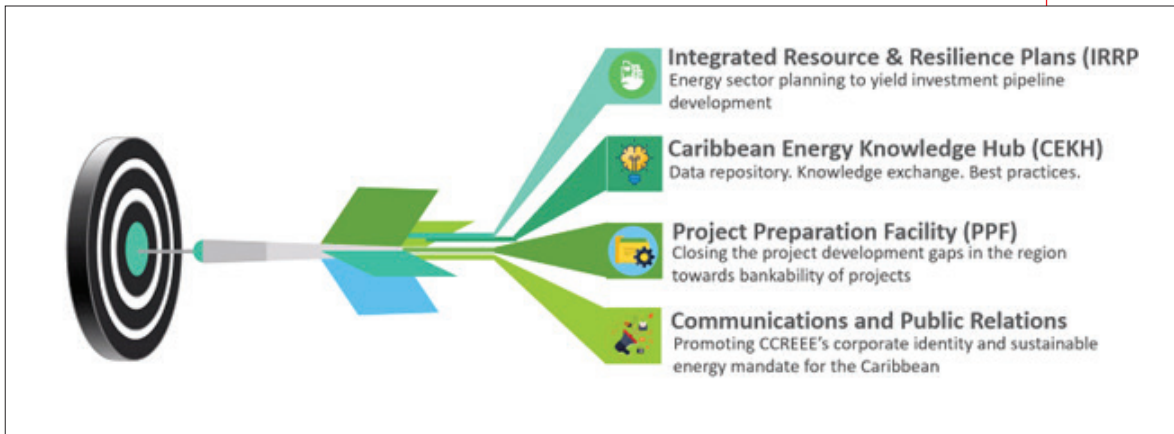
"CCREEE did a great job of organizing the training. Despite the event being held online, attendees were very engaged, which prompted many in-depth discussions," said Jakob. One benefit of solar thermal cooling, as relayed during the sessions, is that it can reduce the strain on power grids, an especially important factor on islands with capacity problems. An attendee who works for a grid operator said, "If PV or wind generators are connected to the grid, weather conditions have an immediate impact on grid stability. As soon as a cloud covers one of the smaller islands, electricity demand can grow within seconds. Solar thermal cooling could help lessen the effect of that."

Of particular interest to attendees was a case study on the technical and economic aspects of installing a hybrid cooling system on the island of Barbados. The calculation showed a payback period of less than seven years at an internal rate of return (IRR) exceeding 13%. "For this study, we selected a 75 m² field of flat plate collectors that would drive a 15 kW ammonia-water absorption and a 15 kW ammonia vapor compression chiller in hybrid mode. The absorption chiller would deliver chilled water at 6°C as soon as the collector exceeded 200 W/m². And if needed, a vapor compression device would meet the remaining demand. This system could be used for small office or residential buildings," explained Neyer.

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— ULI JAKOB

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CCREEE's work program.

Major Elements of CCREEE's Current Work Program

The addition of online training to the SHC Solar Academy's offerings will hopefully soon complement the Academy's pre-pandemic onsite training. Whether online or in-person, the trainings are creating a peer-to-peer bridge to exchange solar heating and cooling research work and experiences.

As Cornelia Schenk, CCREEE's Energy Efficiency Division Leader, noted, "We received a lot of positive feedback from attendees, so we are now exploring what other training opportunities we could make available in collaboration with the SHC Solar Academy." CCREEE is a relatively new but fast-growing organization that serves all 15 member states of the Caribbean Community, also known as Caricom. Founded in May 2018, it already employs ten staff as well as several interns.

A high point of CCREEE's current program is the Caribbean Energy Knowledge Hub (CEKH) that will provide a wide variety of data and information, including studies and reports. The CEKH is scheduled to come online this December.

Another notable activity is CCREEE's Project Preparation Facility (PPF) that aims to develop business models for clean energy or energy efficiency bankable projects. "A soft launch of the PPF is scheduled for 25 November with some initial seed projects. We are planning to go into full implementation in April 2021, following a validation period," explained Schenk.

CCREEE is part of GN-SEC, the Global Network of Regional Sustainable Energy Centres, and one of five GN-SEC members in the SHC Programme.