



## Solar Academy Report

ExCo Meeting, 3-5 December, 2022, Cape Town, South Africa

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### *Solar Academy Working Group:*

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### **1. Background and rationale**

The collaborative work of the SHC Programme spans almost five decades. Over these years this international partnership has not only generated valuable scientific results but also training materials, valuable case studies, and design tools. These training materials are often just used by the task participants. In order to intensify the use of the SHC Task results and to make use of the comprehensive knowledge of the task experts a “Solar Academy” was established in 2016.

Based on Task results the “Solar Academy” provides training courses and capacity building services on solar thermal heating and cooling and solar buildings on different levels.

The courses are carried out by Operating Agents or international experts, who participated in IEA SHC Tasks.

### **2. Goals:**

- Dissemination of first-hand R&D results
- Dissemination of theoretical knowledge and practical experiences on solar heating and cooling technology applications and realized solar buildings
- Intensification of the cooperation with the industry
- Know-how transfer to new SHC member countries or countries that did not participate in the Task
- Increase interest of research institutes from non-member countries

### **3. Target Groups**

- New IEA SHC member countries
- Universities
- Research centers
- Engineers, HVAC companies
- Installers (if highly qualified, not a target group in the sense of broad training of installers)
- Investors and other professionals
- Policy and communities (for selected topics)
- Policy and policy advisors (for selected topics)

### **4. Training Formats**

- **Webinars** held quarterly in cooperation with ISES
- **Videos** highlighting IEA SHC work and other SHC issues
- **National Days** are country-specific events held in conjunction with IEA SHC meetings for the exchange of information between national experts and IEA SHC experts.
- **Onsite Training** provided by IEA SHC experts at the request of IEA SHC member countries
- **Online trainings:** Due to the travel restrictions caused by the corona pandemic, it was decided at the Online ExCo Meeting in June 2020 to also offer online trainings.

For details of the training formats see Annex 1 of this report.

## 5. Activities

Since the establishment of the Solar Academy in 2016, 23 webinars with a total of 5,167 participants, 5 Onsite Trainings in three countries (South Africa, China, UK) with a total of 291 participants as well as one Web-based online training for CCREEE (Caribbean Centre for Renewable Energy & Energy Efficiency) have been conducted.

Since September 2020 the Webinars have been held for both the Western hemisphere and the Eastern hemisphere. The presentations for the webinar for the Western hemisphere are held live, followed by the Q&A session. This webinar is being recorded and broadcasted in an appropriate time two days later for the Eastern Hemisphere. The Q&A session took place live again.

### **Webinars carried out in 2022**

	<b>Topic</b>	<b>Date</b>	<b>Participants</b>
	Global Solar Certification	22 March 2022 Western hemisphere	156
		24 March 2022 Eastern hemisphere	28 Q&A 4
	Solar Heating and Cooling Markets and Industry Trends	Western hemisphere 21 June 2022	227
		Eastern hemisphere 23 June 2022	42 Q&A 15
Task 65	Solar Cooling for the Sunbelt Regions	Western hemisphere 25 October 2022	155
		Eastern hemisphere 27 October 2022	42 Q&A 12
Task 64	Solar Process Heat	Western hemisphere 29 November 2022	No data available yet
		Eastern hemisphere 1 December 2022	No data available yet
<b>Total</b>			<b>650</b>

### **Evaluation**

The number of participants increased steadily from 680 to 1,275 from 2017 to 2020 (see chart below). In 2021, there were only 803 participants. It must be taken into account that only three webinars took place in 2021. If this is extrapolated to 4 webinars, 1070 people would have participated (orange part in the figure below).

For the year 2022, data is also only available from the first three webinars. So far, 650 people have taken part in the webinars in 2022. If we extrapolate to four webinars, we see a slight downward trend.

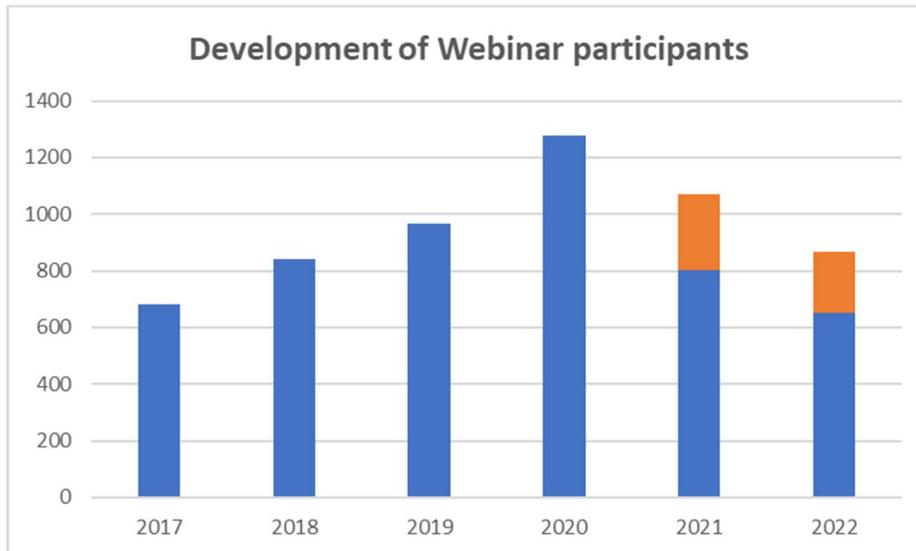


Figure 1: Development of the number of participants in IEA SHC webinars. The blue bars for the years 2021 and 2022 show the participants of only 3 webinars. The orange part shows the projection to 4 webinars.

**In order to increase the number of participants again, we should consider whether we can improve the dissemination of information at the level of the SHC member countries.**

After each webinar, ISES does an evaluation about the origin of the participants as well as about the quality of the webinar. The following graphs refer to the webinar on the topic "Solar Cooling for the Sunbelt Regions" which was held on 25 and 27 October 2022.

When asked how they knew the webinar was taking place, most participants answered that they were informed by ISES. IEA SHC is in second place. This also shows the importance of the cooperation with ISES. I.e., through the cooperation with ISES we have a much larger reach than if we would announce it only with the IEA SHC e-mail distribution list.

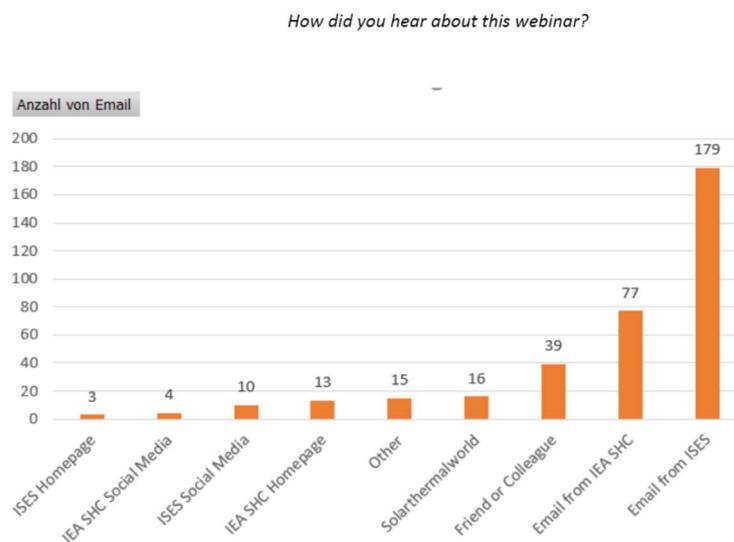


Figure 2: Webinar 1: 25 October 2022 (Western hemisphere)

**Where do the participants come from?**

*Where did attendees come from?*

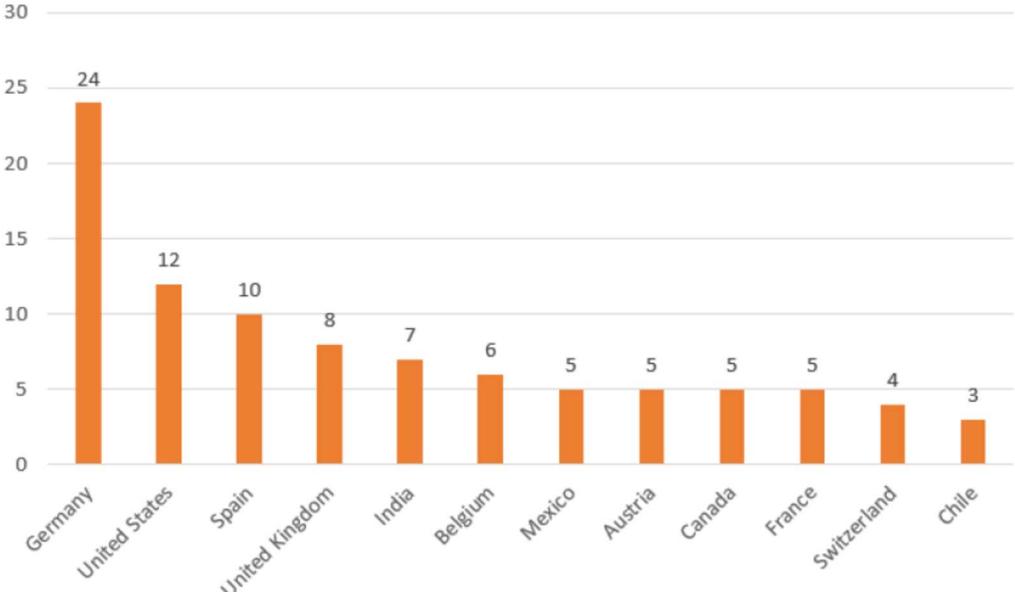


Figure 3: Attendees at Webinar 1 (Western hemisphere)

*Where did attendees come from?*

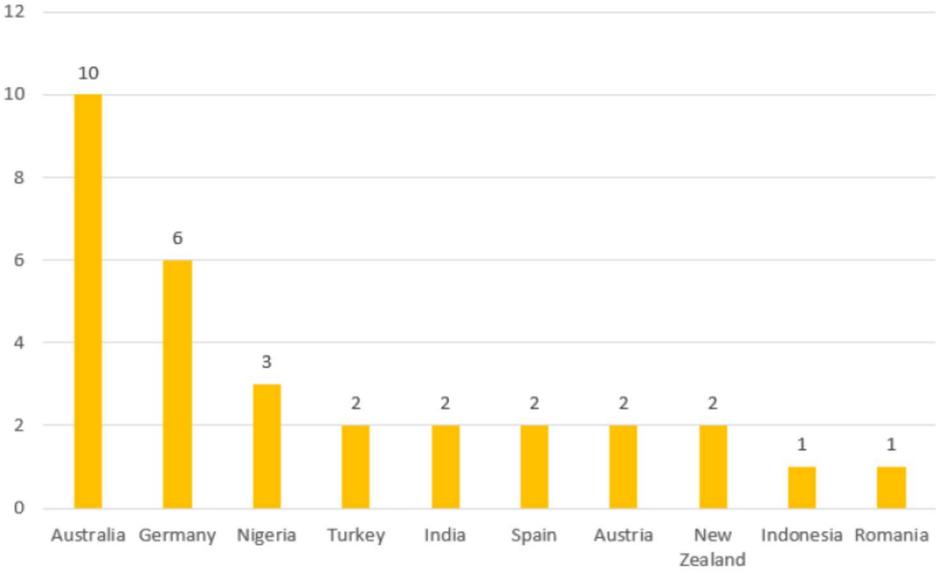


Figure 4: Attendees at Webinar 2 (Eastern hemisphere)

The top attend countries from Asia/Oceania for webinar 2 were Australia (10) followed by Germany, Nigeria and Turkey. It is noteworthy that again no one from China participated in this webinar.

### Quality of the Webinar:

A survey of attendees was conducted after the completion of the 2<sup>nd</sup> webinar, (1-to-10 scale, 10 being extremely satisfied).

- Survey participants, on average, rated the technical quality of the presented material as a 8.0 out of 10.
- When asked about the importance of the webinar topics to their field of work/study respondents gave an average rating of 7,5 out of 10.

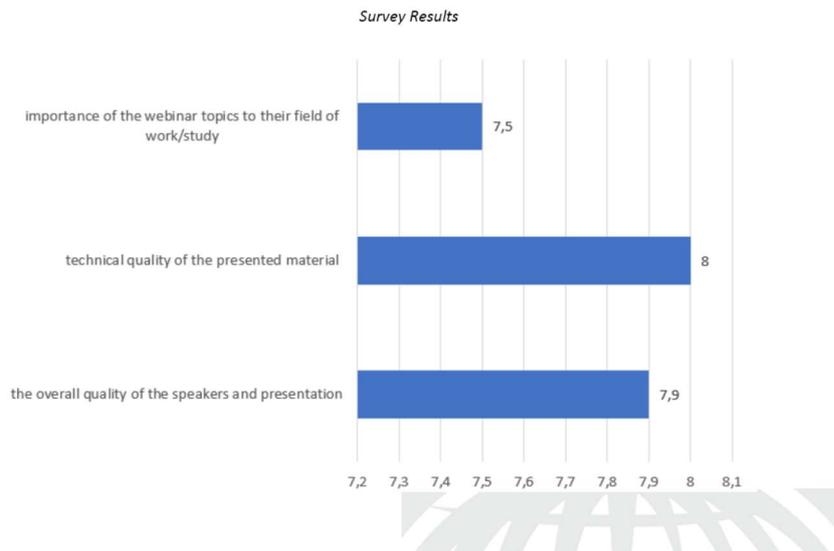


Figure 5: Rating of the quality of the webinar

All webinars are recorded and available on the [IEA SHC Solar Academy YouTube channel](#), the [IEA SHC Solar Academy website](#) and on the [ISES YouTube channel](#)

## 7. Scheduled Activities

### Planned Webinars in 2023

Task / Topic	Responsible Person	Date	Speakers	Moderator
Global Solar Certification Network (GSCN)	Harald Drück	21 and 23 March 2023	t.b.d.	Bärbel Epp
Solar Heating and Cooling Markets and Industry Trends	Werner Weiss	20 and 22 June 2023	Werner Weiss Bärbel Epp N.N.	Pedro Dias
Task 66 Solar Energy Buildings	Harald Drück	19 and 21 September 2023	t.b.d.	Bärbel Epp
Task 67 Thermal Energy Storage	Wim van Helden	21 and 23 November 2023	t.b.d.	Bärbel Epp

### Planned On-site trainings 2023

#### Turkey

Interest in onsite trainings has been expressed by Turkey (Kemal Gani Bayraktar and Bulent Yesilata).

The general interest has not been specified so far.

#### Onsite trainings in cooperation with GN SECs

In order to better inform the UNIDO GN SECs about the IEA SHC activities, the general applications and opportunities of solar thermal systems, and the possibilities for active participation in IEA SHC Tasks, it is proposed to organize two to three onsite workshops in 2023.

In addition to conveying the technical information, the discussion of the interests of the GN SECs and maybe the development of solar thermal roadmaps should be at the center of these onsite workshops.

The further procedure should be discussed at the ExCo meeting.

## 8. Budget 2023

The total approved 2023 budget for the Solar Academy is US\$ 20,000.

#### IEA SHC Solar Academy Webinars – 2022 MoU

IEA SHC will pay ISES a fee of USD \$2,000 (plus any bank fees) per webinar, which will include 2 time zones per webinar, western and eastern hemispheres. In total this will be USD \$8,000 for all four webinars of 2023.

#### Budget available for onsite trainings (US\$ 12,000)

At the ExCo meeting in Santiago, the decision was made to provide between US \$ 2,500 and US \$ 3,500 per on-site training.

If the GN\_SEC workshops are to be held in 2023 as described above, then a one-time increase in the budget should be discussed. Since the budget for onsite trainings could not be used in the last two years to the full extend (due to the Covid pandemic), it would be a possibility to provide additional financial means.

#### **9. Issues for the ExCo and ExCo chair**

- Suggestions on how to increase attendance at webinars again at the SHC member country level.
- Decision on how to proceed with onsite trainings. Should there be a special focus on GN SEC members in 2023?
- Chair: Sign a webinar agreement with ISES for the 2023 webinars

## Annex 1 – Training Formats

The following table shows the formats and describes the necessary tools and co-operations needed to implement it. Also, the effort and budgets to implement it are described.

Training format	Co-operation / Target group		effort	budget
<b>Webinars</b>	<p><b>Experts from Industry and Research - world wide</b></p> <p>ISES</p> <ul style="list-style-type: none"> <li>provides the tool</li> <li>organizes the webinar</li> </ul> <p>IEA SHC</p> <ul style="list-style-type: none"> <li>Selects the topics</li> <li>organizes the speakers</li> <li>moderates the webinar</li> </ul>	<ul style="list-style-type: none"> <li><b>4 webinars/year</b></li> <li>Duration: 1.5 hours</li> <li>~60 min. presentation and answer Q&amp;A</li> </ul>	Medium	US\$ 2,000 per Webinar
<b>Videos</b>	<p><b>Experts from Industry and Research - world wide</b></p> <p>Videos of the training units and presentations could be taken at the national days and training courses and used later for e-learning or for the SHC Website</p>	<p><b>On-demand</b></p> <ul style="list-style-type: none"> <li>Professional video team (done up to now by Dave Renne)</li> </ul>	medium	~ US\$ 2,000 per day for the video team without travel cost
<b>Onsite Training<sup>*)</sup> Online Training</b>	<p><b>Member country co-operation</b></p> <p>Target group: New member countries or member countries, who did not participate in the respective Task and who want to provide the results of an SHC Task to national experts.</p> <p>The training courses of the SHC Academy shall be related to one of the completed or ongoing Tasks</p> <p><b>Duration of a training course</b></p> <ul style="list-style-type: none"> <li>1 – 4 days</li> </ul> <p><u>Host country</u></p> <ul style="list-style-type: none"> <li>Selects topic</li> <li>organizes the training</li> <li>invites participants</li> <li>takes over the cost for the venue, coffee breaks...</li> </ul> <p><u>IEA SHC</u></p> <ul style="list-style-type: none"> <li>takes over travel, accommodation and personnel cost for OA or task expert up to US\$ 3,500. If the cost exceeds this limit the host country has to take over the cost.</li> </ul>	<ul style="list-style-type: none"> <li><b>1 – 4 pear year</b></li> <li>Duration: 1 – 4 days</li> <li>Manuals Slides</li> <li>Simulation tools</li> </ul>	high	US\$ 10,000 per year
<b>National Days Technical Seminars in conjunction with ExCo meetings</b>	<p><b>Member country experts</b></p> <p>Host country</p> <ul style="list-style-type: none"> <li>organizes the national day</li> <li>invites participants</li> </ul>	<p><b>On demand of member countries</b></p> <ul style="list-style-type: none"> <li>OAs and experts willing to prepare</li> </ul>	low	Small

	<ul style="list-style-type: none"> <li>takes over the cost for venue...</li> </ul> <p>IEA SHC:</p> <ul style="list-style-type: none"> <li>Prepares agenda together with host country</li> <li>invites OAs or other experts for training lessons</li> </ul>	<p>presentations and to participate</p> <ul style="list-style-type: none"> <li>Duration: 1/2 – 2 days</li> </ul>		
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**\*) Procedure for Onsite and Online Training Courses:**

- An ExCo member in cooperation with an Operating Agent prepares an agenda for a training course including information on the venue and budget, presenters and local organizer.
- Submit the application to the chair of the SHC Academy
- The SHC Academy working group decides on the application within 3 weeks (decisions can be taken by the SHC Academy working group within the ExCo approved annual budget)
- The organizers of the training course have to submit a short report on the training course with at least the following information. Short description of the aim and goal, agenda, list of participants and some photos of the training course (could be used for the website). Participant feedback should be sought and included in the report. Videos of presentations and ppts would also be desirable.