

---

# WEBINAR

---

## IEA SHC Solar Academy Task 69: Key considerations for the adoption of PV Water Heaters

**5 December, 2023 4:30-6:00 AM GMC/UTC (3:30-  
5pm Melbourne time)**

**&**

**11 December, 2023 7:00-8:30 AM GMC/UTC**

Webinar of:

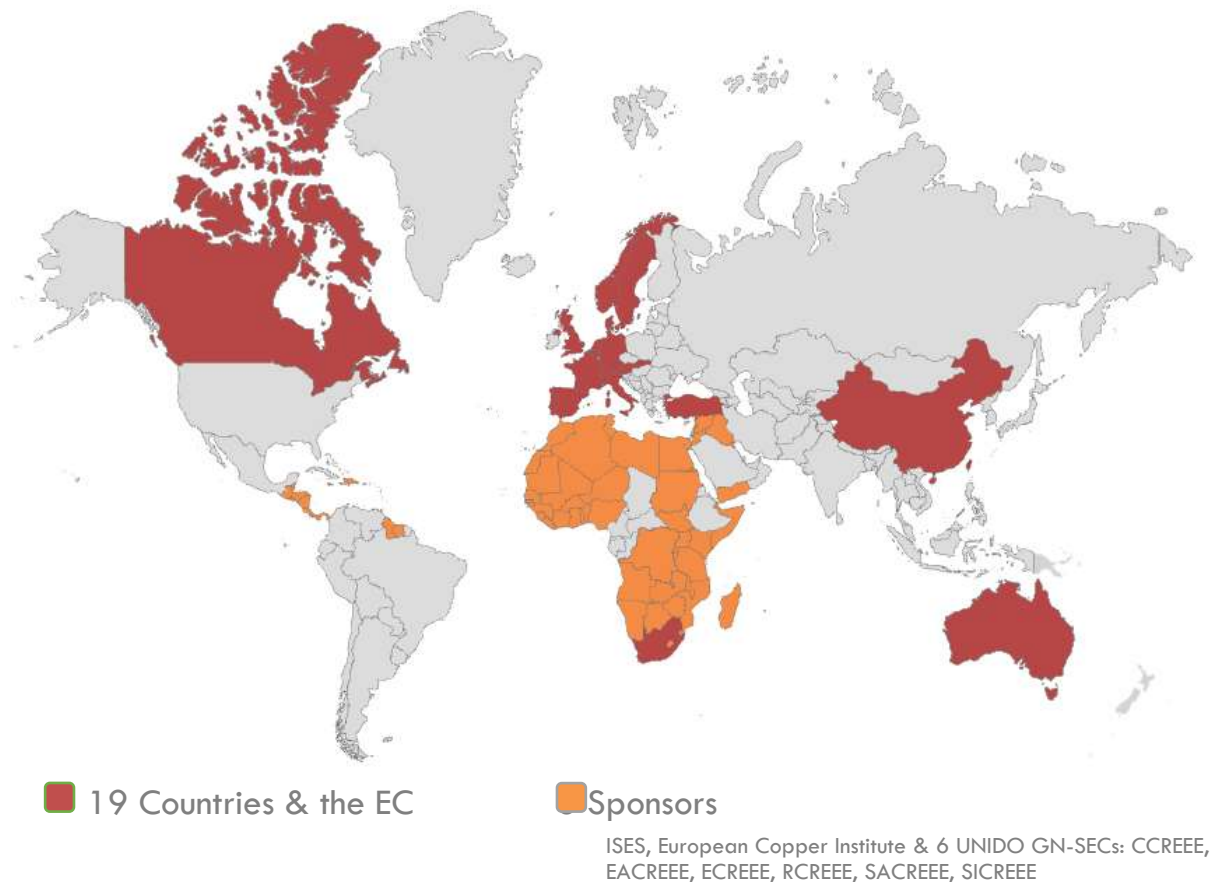


Hosted by



# IEA Solar Heating & Cooling Programme

- Project-focused **international R&D collaboration** since 1977
- **19 member countries, the EC, and 8 international organizations**
- **200+** experts
- **9 current solar projects (Tasks)**
  1. Solar neighborhood planning
  2. Solar process heat
  3. Solar cooling for sunbelt regions
  4. Solar energy buildings
  5. Compact thermal energy storage
  6. Solar district heating
  7. Solar hot water for 2030
  8. Integrated lighting
  9. LCA for SHC technologies



# Interested in Joining a SHC Task?

1. **Check** if your country is an IEA SHC member

[www.iea-shc.org/members](http://www.iea-shc.org/members)

[www.iea-shc.org/organization-members](http://www.iea-shc.org/organization-members)

2. **Learn** more about the Task on the SHC website

[www.iea-shc.org/tasks](http://www.iea-shc.org/tasks)

3. **Contact** the Task Manager to discuss your interest & expertise

[www.iea-shc.org/tasks](http://www.iea-shc.org/tasks)

# What is the SHC Solar Academy?

The Solar Academy is a **platform for sharing, and applying**, our results and experiences from 50 years of international collaboration with as many people as possible.

Our Tasks produce not only valuable **scientific results**, but also:

- **training materials**
- **case studies, fact sheets and databases**
- **design, evaluation and assessment tools**



# What does the SHC Solar Academy offer?

## **Webinars** – held quarterly and hosted by ISES

- Webinar 1 at 14.00 GMT and Webinar 2 (rebroadcast, live Q&A) at 6:00 GMT  
👉 [www.iea-shc.org/solar-academy/webinars](http://www.iea-shc.org/solar-academy/webinars)

## **Videos** – interviews with solar experts and all our Solar Academy webinars

- 👉 [www.iea-shc.org/videos](http://www.iea-shc.org/videos) or IEA SHC YouTube channel

## **Onsite Training** – solar heating and cooling training workshops by our experts. Available upon request by IEA SHC member countries/organizations.

- Past trainings: ECREEE (Cape Verde), CCREEE (Barbados), China, South Africa, UK



# Where to find more information

Visit our website – [www.iea-shc.org](http://www.iea-shc.org)

Download a free SHC publication – [www.iea-shc.org/publications](http://www.iea-shc.org/publications)

Follow us on social media –

 @IEASHC

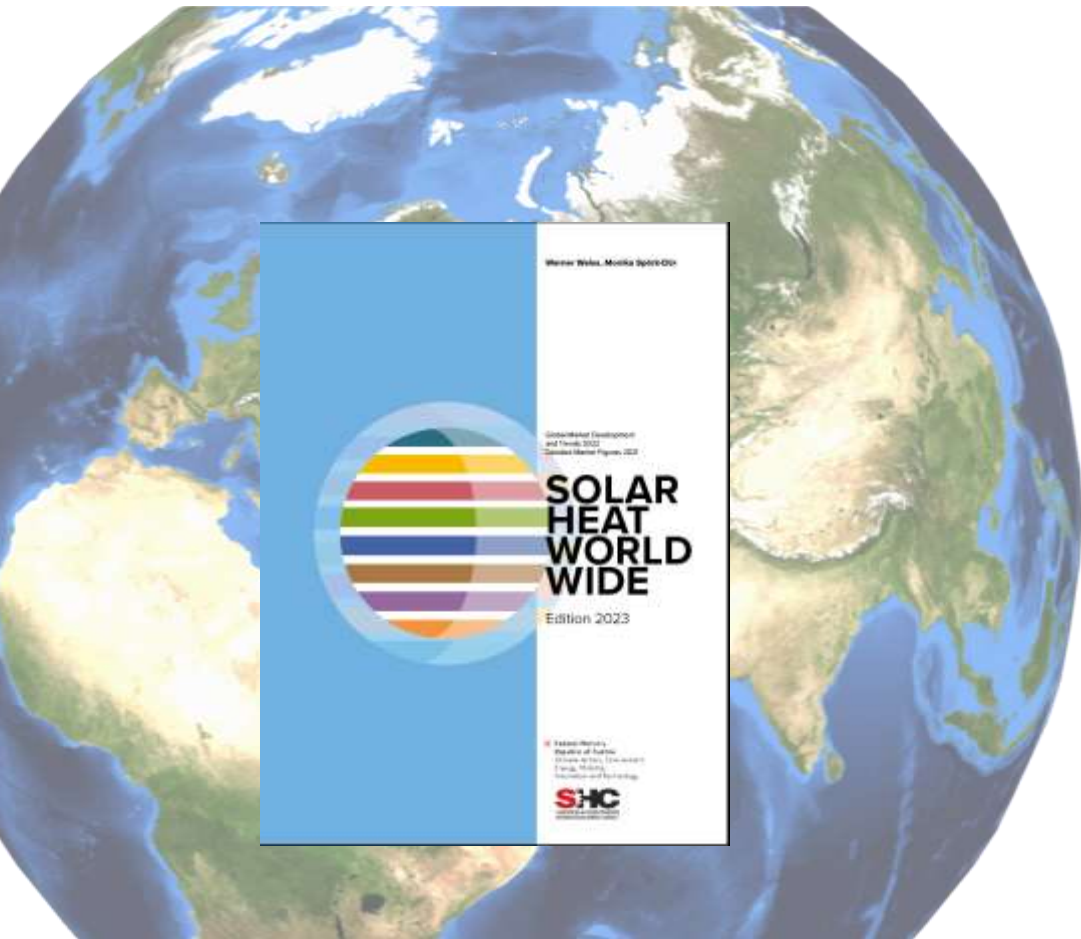
 IEA Solar Heating and Cooling Programme (group 4230381)

Follow us on YouTube – IEA SHC

Ask questions – [secretariat@iea-shc.org](mailto:secretariat@iea-shc.org)



# Our flagship report



# Our semiannual newsletter

The image shows the cover of the 'Solar Update' newsletter. The cover is blue and white with the SHC logo and the text 'Solar Update' and 'VOL. 77 JULY 2023'. The background of the entire slide is a large, stylized globe of the Earth.

**Solar Heat Worldwide - 2023 Edition**

*Our flagship report, Solar Heat Worldwide 2023 is the most comprehensive evaluation of solar heating and cooling markets with data from 71 countries. The 2023 edition is available for free on the IEA SHC website. Highlighted below are just a few of the findings from this year's report.*

In 2022, **19 GWh** or **27 million square meters** of collectors were installed, generating 442 TWh of green heat, saving **47.48 million tons of oil** and avoiding **153.3 million tons of CO<sub>2</sub>**. And with **115 million systems** in operation, the total solar thermal capacity was **542 GWh**.

2022 was a mixed year for solar thermal – while many solar thermal markets grew, particularly in Europe, the global market was overshadowed by declines in two of the largest markets, China and India, leading to a 9.3% decline after last year's 3% growth. With China holding over 70% of the total market share, its decline of 12.4%, largely due to Covid-19 lockdowns, combined with a 21% drop in India due to subsidy changes and PV competition, the drag on the global market is evident. *continued on page 2*

**Lucio Mesquita of Canada Elected New SHC Executive Committee Chair**

Lucio Mesquita of Natural Resources Canada is a familiar face to many of us and a longtime Task participant starting with Task 25 on Solar-Assisted Air Conditioning of Buildings in 1999.

Lucio has over 30 years of experience researching, designing, and testing solar thermal products and systems for industrial, commercial and residential applications in Canada, Brazil, China and the US. His work has included designing and commissioning more than 180 commercial solar thermal projects.

Tomas Olejniczak passed the 'gavel' to Lucio at the June Executive Committee Meeting in France. Thank you Tomas for your leadership as Chair these past 2 years!

**SHC Members**

- AUSTRALIA
- AUSTRIA
- BELGIUM
- CANADA
- CZECH
- CHINA
- DENMARK
- EGYPT
- EUROPEAN COMMISSION
- FRANCE
- GERMANY
- INDIA
- NETHERLANDS
- NORWAY
- PORTUGAL
- RUSSIA
- SACRE
- SLOVAKIA
- SOUTH AFRICA
- SPAIN
- SWEDEN
- SWITZERLAND
- TURKEY
- UNITED KINGDOM

**In This Issue**

- Solar Heat Worldwide 1
- New SHC Chair 1
- Country Highlight | China 5
- Member News | EU-SOLARIS ERIC 8
- SHC Solar Award 2014 Winner Update | Montmélian 9
- Water and Wastewater Treatment | Task 62 10
- New Work | Solar-Powered Reactors 13
- Christoph Brunner Interview 14
- New Work | Solar Cooling 15
- New Solar Conversion Factor | Task 64 16
- Solar District Heating Info Package | Task 68 17
- LCA and LCOH | Task 71 19
- New Publications 21
- SHC Members 23

[www.iea-shc.org](http://www.iea-shc.org)

Free to download

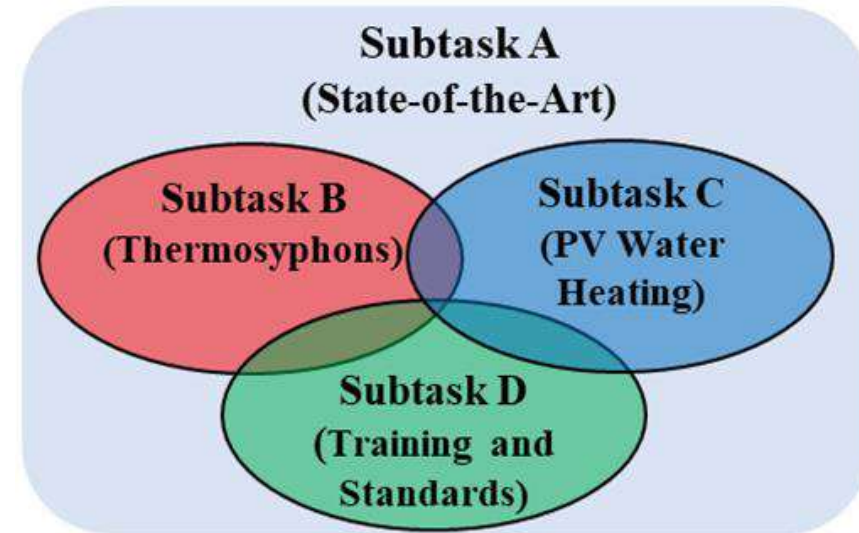
<https://www.iea-shc.org/solar-heat-worldwide>



SOLAR HEATING & COOLING PROGRAMME  
INTERNATIONAL ENERGY AGENCY



# Task 69: Solar Hot Water for 2030



Robert A Taylor, UNSW & He Tao, CBR: Joint TMs  
Presented at: June 2023 SHC ExCo Meeting & National Day



# Scope

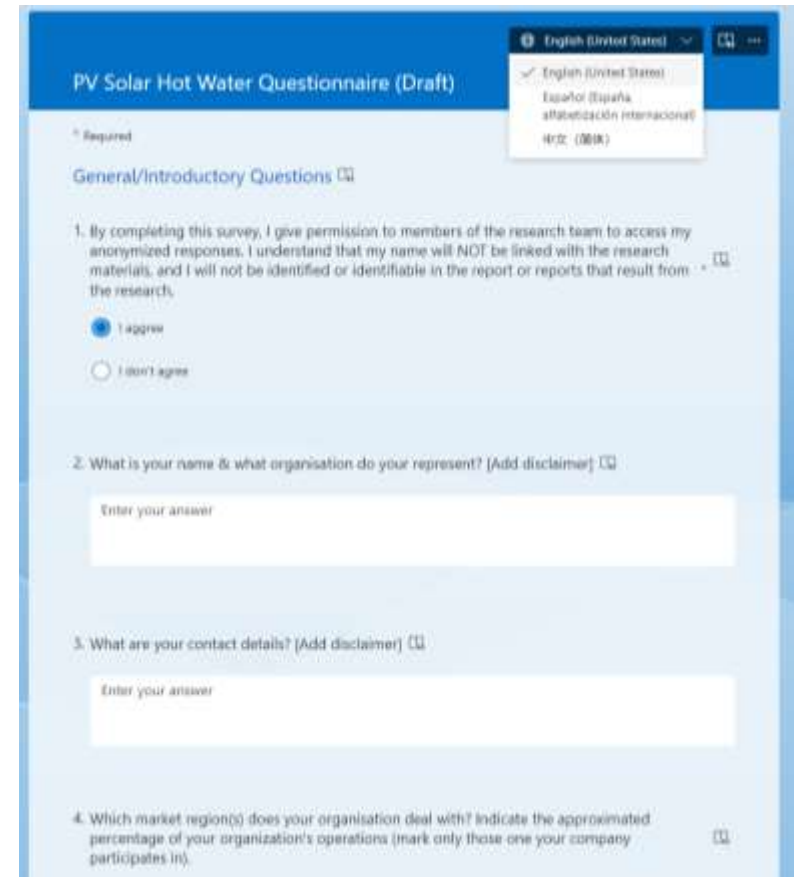
~Halfway through 3-year Task, focusing on **2** technologies:

- **Thermosyphons:** The most used solar heating system (~57% of domestic hot water systems in operation in 2019)
- **PV Hot Water:** Rapid PV growth! Can be simple (i.e., low cost) or advanced (i.e., soak up excess PV and power heat pumps).

Note: Both require very few moving parts, can be affordable and reliable, and provide opportunities for new products/components.

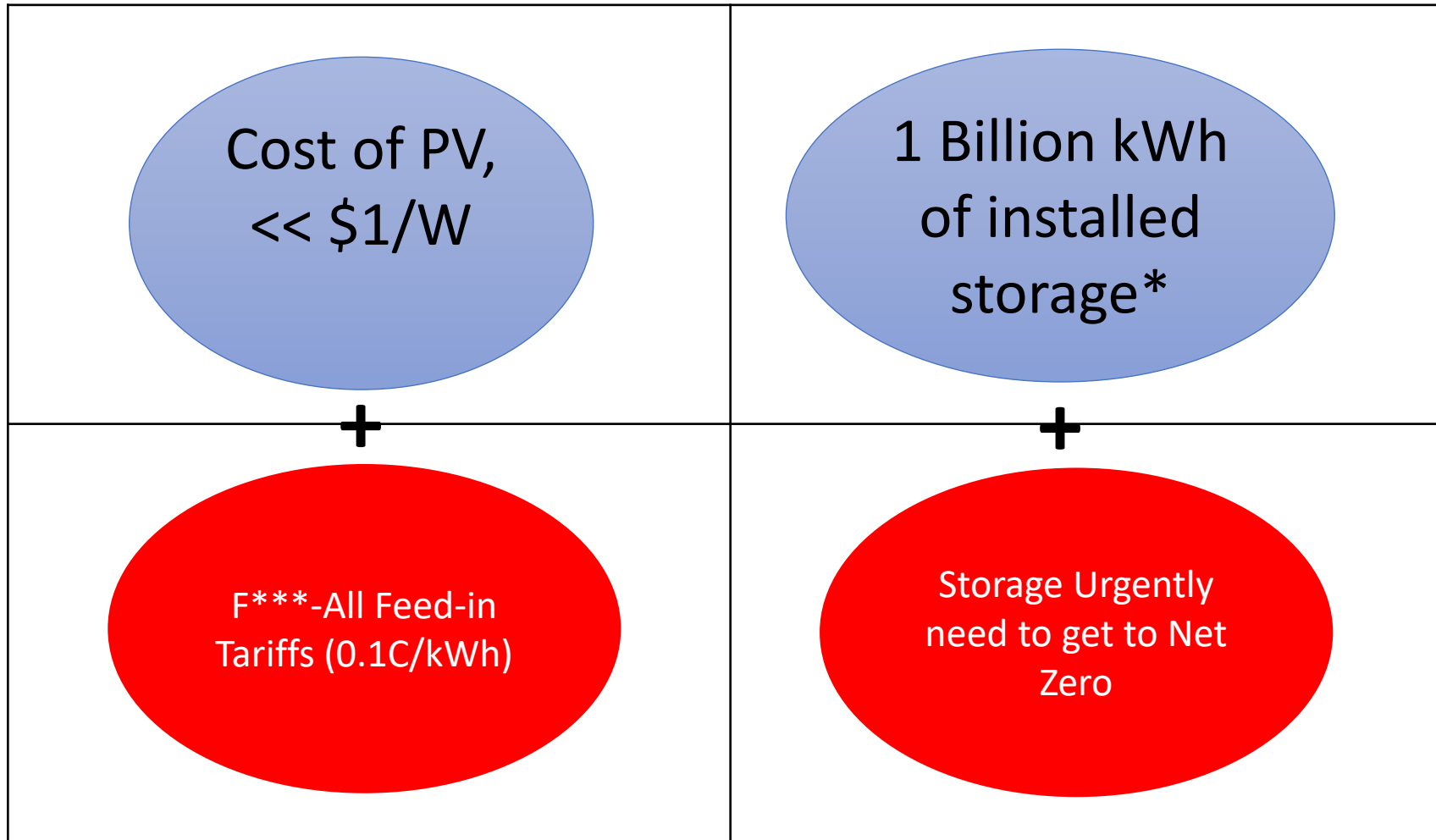
# Significant Task Results (since last ExCo Meeting)

- 2 Surveys: SubTask A/B (52) & C (44),
- STA: Soltrain+ testbed almost ready (thermosyphon vs. PV2Heat) in Namibia.
- STB: Thermosyphon testbed on-going at CABR.
- STC: 3 Journal papers, Solarshift testing PV electric water heaters in Albion Park, NSW, AU
- STD: Standard review + Solar Academy Special Session (tomorrow, 5 Dec.)



The screenshot shows a survey interface for 'PV Solar Hot Water Questionnaire (Draft)'. The language is set to 'English (United States)'. The survey is marked as 'Required'. The section is titled 'General/introductory Questions'. The first question is a consent statement: 'By completing this survey, I give permission to members of the research team to access my anonymized responses. I understand that my name will NOT be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.' There are two radio button options: 'I agree' (selected) and 'I don't agree'. The second question is 'What is your name & what organisation do you represent? [Add disclaimer]'. It has a text input field with the placeholder 'Enter your answer'. The third question is 'What are your contact details? [Add disclaimer]'. It also has a text input field with the placeholder 'Enter your answer'. The fourth question is 'Which market region(s) does your organisation deal with? Indicate the approximated percentage of your organization's operations (mark only those one your company participates in)'. It has a text input field with the placeholder 'Enter your answer'.

# SubTask C Overview



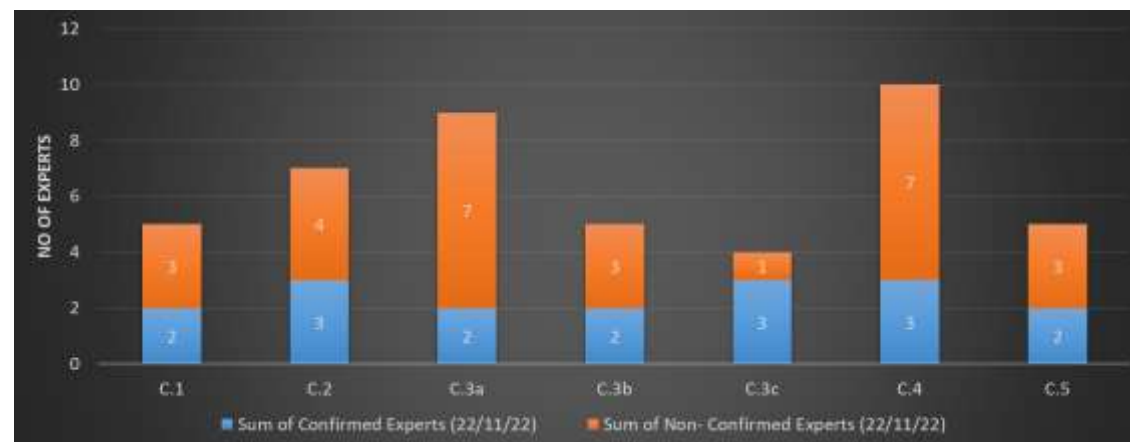
**CONCLUSION:**  
We cannot  
**AFFORD** to  
forget about  
hot water!

\*10kWh/hot water tank x 1 Billion Households w/ tanks = 1 Billion kWh of storage

# Subtask C: Solar Photovoltaic Hot Water

## Joint Leads: Tony Day (UK-New!) & Dean Clift (AU)

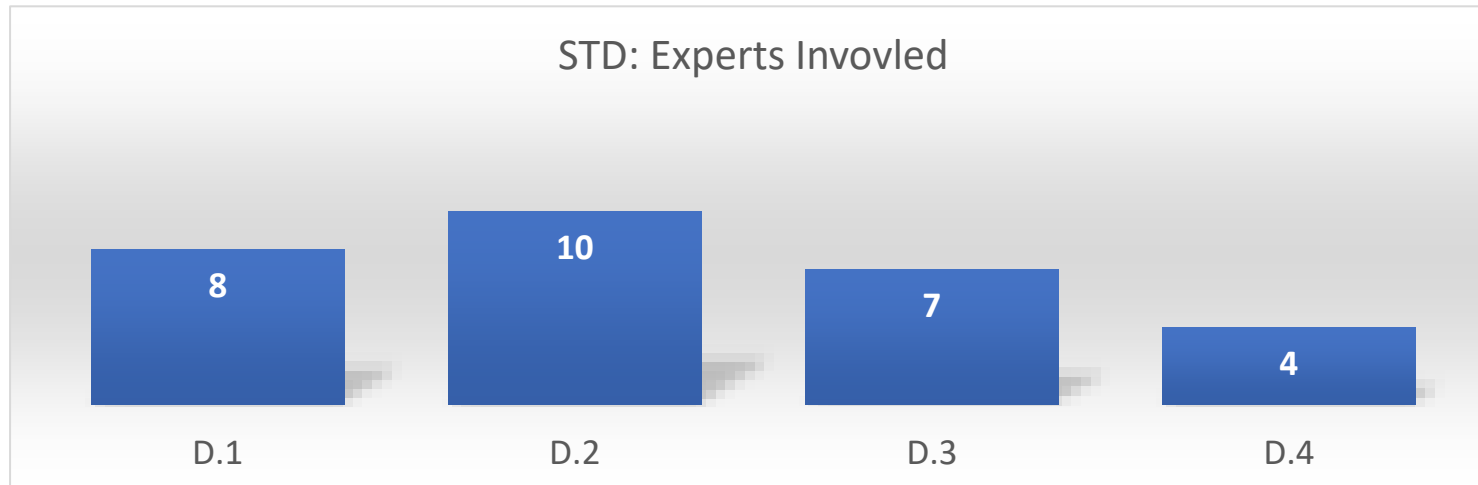
No.	Deliverables	1 July 2023 Proposed Deliverables	Month
C.1	Expert Network, Expert Questionnaire / Interviews and Case Studies	Unchanged	18
C.2	Systematic International Literature Review + Market Review	Unchanged	24
C.3	Technology / Policy Brief	IEA SHC Technology Brief	24
C.4	Reference Models + Solar Heat Worldwide Chapter	Academic Publications (2) on PV Hot Water System Modelling	24
C.5	Implementation of Solar PV Hot Water Technology Harmonisation Strategy	IEA SHC Report on Solar PV Hot Water Technology Configuration/Operation Optimisation	36



# SubTask D: Deliverables and Timeline

## Lead: Jianhua Fan (DK), Denmark

No.	Deliverable	Month
D.1	Report on needs for new Standards or Standards updates and the status of selected warranty and certification networks	18
<b>D.2</b>	<b>Facilitate Training</b>	<b>15 &amp; 30</b>
D.3	Needs Assessment Report (Training for Solar Energy Practitioners)	24
D.4	Report on success stories	36



# Future Task Meetings

- **Task Meeting #3:** 4 December 2023, with the Asia Pacific Solar Research Conference in Melbourne, Australia (online option)
  - **Bonus:** Special Session on 5 December
- **Task Meeting #4:** 10-11 April 2024, International Sustainable Energy Conference (ISEC 24) – Graz, Austria (online option)
- **Task Meeting #5:** November 2024, Beijing, China (online option)
- **Task Meeting #6:** April 2025, GN SEC location? (online option)

# Questions?



[www.iea-shc.org](http://www.iea-shc.org)

 @IEASHC

 IEA Solar Heating and Cooling Programme  
(group 4230381)