



IEA SHC Task 66:

Solar Energy Buildings

Integrated solar energy supply concepts for climate-neutral buildings and communities for the "City of the Future"

Task Meeting No 4, *September 29+30,2022, Kassel, Germany*

Task Manager Task 66: Harald Drück, IGTE, University of Stuttgart, Germany
Email: harald.drueck@igte.uni-stuttgart.de

Administrator Task 66: Claudia Scholl-Haaf, IGTE, University of Stuttgart, Germany
Email: claudia.haaf@igte.uni-stuttgart.de

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (1/10): File “Task66_M4_AG1.pdf”, distributed 23/09/22

Agenda Meeting No 4;
Version No 1.0; Date 23/09/22

Date/Time:

September 29, 2022 (Thursday): Start 09:00 CET (UTC +2) Task Meeting (day 1)
September 30, 2022 (Friday): Start 09:00 CET (UTC +2) Task Meeting (day 2)
September 29, 2022 (Thursday): Start 14:00 CET (UTC +2) Industry Workshop No 2 ([see separate agenda](#))

Location:

University of Kassel, Nora-Platiel- Straße 5, 34127 Kassel, Building WISO B, Room: 0109
*online participation in the task meeting - **but not in the industry workshop** - is possible, see Web Conference Login below*

How to get to the location: See page 12 to 14

Further information: <https://task66.iea-shc.org/>

Web Conference Login:

To join the meeting click on the following link:

<https://unistuttgart.webex.com/unistuttgart/j.php?MTID=m1ef434e091bb65422d8a76aefe42a5fe>

Note: For participation by phone see access information at the end of this document

Registration:

Please confirm your participation in the task meeting by email at **latest until September 27, 2022** to Claudia Scholl-Haaf:
claudia.haaf@igte.uni-stuttgart.de

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (2/10)

Agenda day 1 (Thursday, September 29, 2022)			
Item	Start time	Topic/Content/Responsible	Related documents / comments / details
1	09:00	Welcome by Harald Drück (IGTE) Meeting organization, agenda, goals	
2	09:15	Introduction by Harald Drück (IGTE) <ul style="list-style-type: none"> • General Presentation of Task 66 “Solar Energy Buildings” • Results of previous meetings (M1 to M3) and current status of activities • CETPartnership (Celan Energy Technology Partnership) – an option for Task 66? 	Task Workplan (V2, Dec 20) Task66_Flyer1.pdf Minutes M1 Minutes M2 Minutes M3 CETPartnership
3	09:30	Introduction of Participants <ul style="list-style-type: none"> • Verbal introduction of participants (approx. 2 min per person) 	
4	10:00	General Introduction to subtasks by Harald Drück (IGTE)	

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (3/10)

5	10:15	<p>Subtask A: Boundary Conditions, KPIs, Definitions and Dissemination Frank Späte, (OTH-AW, Germany)</p> <p>Past Subtask Meetings (between the 3rd and 4rd Meeting of Task 66)</p> <ul style="list-style-type: none"> • One meeting 12/07/22 <p>Dissemination</p> <ul style="list-style-type: none"> • Task brochure/Flyer • Task Video • Task Poster • Industry Workshop No., 1 • Industry Workshop No., 2 <p>KPIs (Key Performance Indicators)</p> <ul style="list-style-type: none"> • (Final) list of KPIs - Deliverable D.A2 <p>Reference Building</p> <ul style="list-style-type: none"> • Final definition of reference buildings / cases, Deliverable D.A4 - Guideline (part 1) - Template (part 2) <p>Future work</p> <ul style="list-style-type: none"> • Finalisation of the above mentioned deliverables • Dissemination activities • Supporting the other Subtasks <p>Planned Subtask Meetings</p> <ul style="list-style-type: none"> • to be defined 	<p>Task66_Flyer1.pdf</p> <p>Task66_Video1.mp4</p> <p>Task66_Poster1.pdf</p> <p>Task66_IndWs1_AG1.pdf</p> <p>Task66_IndWs2_AG1.pdf</p> <p>Task66_D.A2_Final list of KPIs_draft1.pdf</p> <p>Task66A_M3_Nomenclature1.pdf</p> <p>Task66_D.A4_Final_def_RefBui_draft1.pdf</p> <p>Task66_D.A4_Final_def_RefBui_draft1.xlsx</p>
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Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (4/10)

6	11:00	Break	
9	11:15	<p>Subtask B: New and existing single buildings Xinyu Zhang from the China Academy of Building Research, Beijing, China</p> <p>Past Subtask Meetings (between the 3rd and 4rd Meeting of Task 66)</p> <ul style="list-style-type: none"> • M1:18:00-19:00(UTC+8) on Apr 14, 2022; • M2:18:00-19:00(UTC+8) on May 30, 2022; • M3:(working group meeting):14:00-15:00(UTC+8) on Jun 17, 2022; • M4:(participated in SC meeting):16:00-18:00(UTC+8) on Jul, 6, 2022; • M5:(working group meeting):14:00-15:00(UTC+8) on Jul 12, 2022; • M6:(working group meeting):14:00-15:00(UTC+8) on Jul 28, 2022; • M7:(participated in SC meeting):16:00-18:00(UTC+8) on Aug 11, 2022. <p>Topics</p> <ul style="list-style-type: none"> • Ongoing activities of the subtask. <p>Future work</p> <ul style="list-style-type: none"> • Continue to collect demo cases; • To complete the <i>Summary of Demo Cases</i> document; • Continue to cooperate with SC about <i>modelling and simulation tools</i>. <p>Planned Subtask Meetings</p> <p>- M8:16:00-17:00(UTC+8) on Oct 31, 2022: Comparison between the different modelling and simulation tools</p>	
10	12:00	<p>End of day 1” <i>Note: Industry Workshop starts at 14:00 hrs</i></p>	<p>Task66_IndWs2_AG1.pdf</p>

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (5/10)

Agenda day 2 (Friday September 30, 2022)			
Item	Start time	Topic/Content/Responsible	Related documents / comments / details
11	09:00	Intro to day 2 by Harald Drück (IGTE)	
12	09:10	<p>Subtask C: New and existing buildings blocks / communities Elsabet Nielsen, Department of Civil Engineering, Technical University of Denmark</p> <p>Past Subtask Meetings (between the 3rd and 4th Meeting of Task 66)</p> <ul style="list-style-type: none"> to be included <p>Topic</p> <ul style="list-style-type: none"> Ongoing activities Guidelines for monitoring and reporting Stakeholders viewpoints <p>Future work</p> <ul style="list-style-type: none"> Tools Demonstration systems Stakeholders viewpoints <p>Planned Subtask Meetings</p> <ul style="list-style-type: none"> to be defined 	
11	10:15	Break	

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (6/10)

12	10:30	<p>Subtask D: Current and future technologies and components Thomas Ramschak, AEE – Institute for Sustainable Technologies, Austria</p> <p>Past Subtask Meetings (between the 3rd and 4rd Meeting of Task 66)</p> <ul style="list-style-type: none"> • 12. April, 2022, 11:00 to 12:00 (virtual) • 23. August, 2022, 09:30-11:00 (virtual) <p>Topics</p> <ul style="list-style-type: none"> • Presentation and status of the subtask • Discussion of draft deliverable DD1 “Description of available technology portfolio” • Documentation of Current and future technologies (DemoCases) • Technology Radar • agreement on next steps <p>Future work</p> <ul style="list-style-type: none"> • Finalisation of Deliverable • Description of promising future technologies <p>Planned Subtask Meetings</p> <ul style="list-style-type: none"> • to be determined 	<p>Task66_DD.1_TechPortfolio_V0.1.docx</p>
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Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (7/10)

a13	10:30	<p>Organisational aspects (HD)</p> <p>National participation letters (Status) Received: Austria, Denmark, Slovakia, China Missing:-Germany (under preparation), Australia, Portugal, United Kingdom Template: http://files.iea-shc.org/public/q8z/task66-participationletter-draft1hd.docx</p> <p>Emailing – Mailing rules Subject: Task66: abc..xyz – for information relevant for the complete task Task66X: abc..xyz for information relevant for subtask X (X=A,B,C,D)</p> <p>Subtask Meetings: It was agreed that every Subtasks Leader should invite in addition to his subtask team also the leaders of the other Subtask and the operating agent</p> <p>Task emailing list It was agreed that no official email address for Task 66 is required. The Task 66 emailing list is managed by the operating agent (HD) and the task manager (CH). If there is something to be distributed to all members and interested parties of Task 66 this should be send to HD and/or CH for distribution</p> <p>Subtask emailing list will be managed by the subtask leaders individually</p> <p>Cloud based document processing will be managed by the subtask leaders individually</p> <p>Note: For read (and download) only access, document can be made available www.iea-shc.org In case you would like to make documents available via this site, please send them to CH and/or HD</p>	
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Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (8/10)

		<p>Task video, flyer and poster See subtask A</p> <p>Template for Deliverables Elaborated by Claudia Scholl-Haaf and Frank Späte</p> <p>Promotion via LinkedIn Activity via LinkedIn: information about Industry Workshop No 2 was successfully spread via linkedIN by our participant Ronald van der Ende from Qsilence PVT to more than 700 contacts.</p>	<p>Task66_deliverable-template1.docx</p>
14		<p>Eurosun 2022 – Contributions Conference will take place from Sept. 22 - 29, 2022 in Kassel Germany See: https://www.eurosun2022.org/</p> <p>(Potential) contributions from Task 66:</p> <ul style="list-style-type: none"> ➤ Quasi-Dynamic Testing of Thermal Sun-Air-Collectors and Numerical Simulations of a Cold District Heating Network Stefanie Lott et. al., IGTE, University of Stuttgart, Germany ➤ Development of a combined model predictive and adaptive control strategy for the operation of a cold district heating network Jens Ulmann e. al., IGTE, University of Stuttgart, Germany ➤ Participation potentials for energy active facades in future flexibility markets Thomas Ramschak, AEE INTEC, Gleisdorf, Austria ➤ Simulations on SEB (working title), Elsabet Nielsen, DTU 	<p>Task66A_Photography-Copyright-Release-Form.docx</p>

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (9/10)

15	<p>Nice “pictures”</p> <p>If you have some to share, please send them to Claudia Scholl-Haaf: (claudia.haaf@igte.uni-stuttgart.de) together with</p> <ul style="list-style-type: none">- the permission to use them (see link to “Task66A_Photography-Copyright-Release-Form”)- information what is shown (e.g. <i>solar multifamily house with PV and ST in Berlin, Germany</i>)- information how they should be referenced	
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Task 66 (Solar Energy Buildings) – Task Meeting No 4

Agenda (10/10)

16		<p>Summary and next steps (HD)</p> <p>Next Meetings and Industry Workshops</p> <p>Meeting No.5: virtual February 6 and 7, 2023 start on Feb 6 at 12:00 CET (UTC+1) – <i>with Sub B first</i> start on Feb 7 at 15:30 CET (UTC+1) – after industry workshop</p> <ul style="list-style-type: none">• Industry Workshop No 3: virtual combined with Task Meeting No 5 Feb 7, 2023 at 13:00 CET (UTC+1), duration 2 hours• Meeting No.6: - to be defined physical / virtual when e.g combined with ?• Industry Workshop No 3: - to be defined physical / virtual when e.g combined with ? <p>Any Other Business</p>	
17	12:00	End of meeting	

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Goals of the meeting

- Get in personal contact with colleagues and learn more about them
- Identify options for cooperation and generate synergies
- Achieve common understanding of the structure and goals of Task 66
- Work together and generate synergy effects
- Present and discuss results achieved
- Work as a team towards the goals of Task 66
- Q&A
- ...

Have fun!



Source: <https://www.shutterstock.com/de/image-vector/children-laugh-fun-funny-cartoon-character-1081269524>

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Item 2: Introduction

Most relevant documents



SOLAR ENERGY BUILDINGS

Integrated solar energy supply concepts for climate-neutral buildings and communities for the "City of the Future"

Work Plan

Version 2.0; December 22, 2020

Note: This Version is based on the results of the results of the 88th IEA SHC Executive Committee Meeting and the ballot performed after this meeting

Prepared by: Harald Drück, IGTE University of Stuttgart, Germany
Email: harald.drueck@igte.uni-stuttgart.de
Christian Fink, AEE INTEC, Gleisdorf, Austria
Email: c.fink@aee.at

Work Plan [December 22, 2020]



TASK 66

SOLAR ENERGY BUILDINGS

Integrated solar energy supply concepts for climate-neutral buildings and communities for the "City of the Future"

ANNEX PLAN

December 2020

This Annex text was prepared by Harald Drück, IGTE University of Stuttgart, Germany

IEA SHC Task 66: „Solar Energy Buildings“

Fröling Web Portal | IEA SHC || Projects | IEA SHC || Task 66 || Solar Energy

https://task66.iea-shc.org

SHC TASK 66

ABOUT PROJECT | MEETINGS / EVENTS | NEWS | PUBLICATIONS | RESOURCES

TASK 66 Solar Energy Buildings

[LEARN MORE →](#)

Task Information
DURATION
July 2021 — June 2024

OPERATING AGENT
Dr. Harald Drück
GERMANY
harald.drueck@igte.uni-stuttgart.de

IEA SHC - The world's largest *Solar Heating and Cooling* research network

<https://task66.iea-shc.org/>

Task 66 (Solar Energy Buildings) – Status Aug. 2022

Meetings / Workshops **already** performed

- Task preparation Workshop on March 30, 2021 (virtual approx. 45 participants from 15 different countries)
- Task Meeting No 1 (kick-off meeting) July 1+2, 2021 virtual, with 37 participants from 14 different countries)
- Task Meeting No 2 Nov 4+5, 2021, virtual with 37 participants from 14 different countries
- Task Meeting No 3 March 23+24, 2022, virtual with 29 participants from 12 different countries
- Industry Workshop No 1 March 23, 2022, virtual with 56 participants from 14 different countries



<https://www.chanty.com/blog/perfect-virtual-meeting/>

Task 66 (Solar Energy Buildings) – Status June 2022

Information / dissemination - **already** done (1/3)

Publications related to Task 66 (in English)



02

MAY

2021

How to design an 85 % solar-heated and 100 % solar air-conditioned house

During an online meeting from 1 to 2 July, the IEA Solar Heating and Cooling programme will launch a new global research platform called Task 66 Solar...

[read more >](#)



24

APR

2021

Solar-heated multi-family buildings gain popularity in Germany

Many new largely solar-heated houses in Germany are multi-family buildings, and their number is growing, according to Sonnenhaus-Institut (Solar House...

[read more >](#)



24

APR

2021

Solar houses: above 95 % solar fraction is possible

Between 2014 and 2019, the Austrian Climate and Energy Fund supported the construction of over 100 solar-heated houses, 19 of which were monitored by the...

[read more >](#)



20

FEB

2020

Solar Energy Buildings to make cities fit for the future

Buildings account for around 40 % of the world's primary energy consumption. Hence, they are the number one cause of resource consumption on earth.

[read more >](#)

Task 66 (Solar Energy Buildings) – Status June 2022

Information / dissemination - **already** done (2/3)

Publications related to Task 66 (in German)

SCHWERPUNKT Gebäudekonzepte



Wohnanlage in Weinstadt: Eine Sole-Wasser-Wärmepumpe, ein Eisspeicher und PVT-Kollektoren nutzen effizient Solarstrahlung und Umweltwärme.

Mit Eis und Sonne heizen

SOLARE KONZEPTE FÜR KLIMANEUTRALE GEBÄUDE Klimaschutz braucht echte Klimaneutralität, keine virtuelle oder bilanzielle. Worin sich die drei Formen der Ökobilanzierung unterscheiden und wie sich mit einem solaren Eisspeicher-Konzept der CO₂-Ausstoß vor Ort mindern lässt, erläutert der folgende Beitrag. Dr. Harald Drück

IEA Task 66 „Solar Energy Buildings“

Die Entwicklung von Konzepten und Technologien zur wachsenden solaren Energieversorgung von Gebäuden ist von globalem Interesse. Aus diesem Grund wurde im Solar Heating and Cooling Programm (SHC) der Internationalen Energieagentur (IEA) auch die Arbeitsgruppe bzw. Task 66 zum Thema "Solar Energy Buildings – Integrierte solare Energieversorgungskonzepte für klimaneutrale Gebäude und Quartiere für die Stadt der Zukunft" etabliert. Die Task 66 wird von Dr. Harald Drück vom IGTE der Universität Stuttgart als Operating Agent geleitet und wird offiziell zum 01.07.2021 beginnen.



Solare Konzepte für klimaneutrale Gebäude

Im Projekt Sol4City arbeiten deutsche und österreichische Partner aus Forschung und Industrie zusammen, um solare Energieversorgungskonzepte für klimaneutrale Gebäude der „Stadt der Zukunft“ zu entwickeln.

Task 66 (Solar Energy Buildings) – Status June 2022

Information / dissemination - **already** done (2/3)

Publications related to Industry-
Workshop No 1
on Solarthermalworld. org



How to get renewable energy to buildings in dense urban areas

📅 Wed, 13 April 2022

Publications (and presentation)
related aspects of climate
neutrality (in German)

32. Symposium Solarthermie und innovative Wärmesysteme, 03.–05. Mai 2022, Bad Staffelstein

Die Definition von Klimaneutralität und ihre Relevanz für die Solarthermie

Harald Drück^{1,2}, Dominik Bestenlehner^{1,2}

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Forschungs- und Testzentrum für Solaranlagen (TZS)
Pfaffenwaldring 6, 70550 Stuttgart
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1. Einleitung

Das Adjektiv „klimaneutral“ ist heute fest in unserem Sprachgebrauch etabliert. Doch was bedeutet klimaneutral eigentlich?

In dem Beitrag werden drei Ansätze für das Erreichen von Klimaneutralität detailliert beschreiben und zusätzlich auch auf Basis von ökologischen und ökonomischen Aspekten am Beispiel unterschiedlicher Konzepte für die Wärme- und Stromversorgung eines Einfamilienhauses verglichen und bewertet.

Ergänzend wird dargestellt, dass die thermische Nutzung der Solarenergie in Kombination mit saisonaler Wärmespeicherung eine Schlüsseltechnologie für das Erreichen einer realen Klimaneutralität ist.

Task 66 (Solar Energy Buildings) – Status Aug 2022

Information / dissemination - **already** done

Task 66 Flyer

Task 66: Solar Energy Buildings

Integrated solar energy supply concepts for climate-neutral buildings and communities for the "City of the Future"




OBJECTIVE: Development of economic and ecologic feasible energy supply concepts with high solar fractions

Areas of Work

The task addresses single-family buildings, multi-story residential buildings and building blocks and communities, for both, new and existing buildings. The separation between (single) buildings and building blocks or communities is based on the aspect whether the buildings are connected to a thermal grid or not. While single buildings have their individual heating system, building blocks and communities are connected to a thermal grid.

Subtask A: Boundary Conditions, KPIs, Definitions and Dissemination
Leader: Frank Späth (OTH Amberg-Weiden, Germany, f.spae@oth-aw.de)

- Define performance assessment methodology for SEBs* incl. KPIs**
- Assessment of SEBs of Subtask B and C
- Organization of Industry Workshops
- Preparation of guidelines for policy makers, municipalities, energy related companies

Subtask B: Thermal stand alone Buildings and Building Blocks / Communities
Leader: Xinyu Zhang (China Academy of Building Research, China, zxyh@163.com)

- Development and definition of sample cases
- Identification of demonstration Projects
- Planning and implementation methodology
- Modelling, simulation and optimization tools

Subtask C: Thermal grid connected Buildings and Building Blocks / Communities
Leader: Elisabet Nielsen (Technical University of Denmark, Denmark, ean@byg.dtu.dk)

- Development and definition of sample cases
- Identification of demonstration projects
- Planning and implementation methodology
- Modelling, simulation and optimization tools

Subtask D: Current and future technologies and components
Leader: Thomas Ramtschke (AEE - Institute for Sustainable Technologies, Austria, t.ramtschke@aee.at)

- Documentation and analysis of current and future technologies
- Classification and techno-economic technology assessment
- Development SEB* solution sets and guidelines

Outcomes
 Summary of KPIs, Definition of Reference Buildings; SEB promotion documents; Demonstration cases (Case studies); Processes and tools currently used to design new SEBs and convert existing buildings into SEBs; Catalogue describing optimized solutions of SEBs and communities; Description of available technology portfolio, future technologies and components.

Duration: July 2021 – June 2024

Task Manager:
Harald Drück, email: harald.drueck@sta.uni-stuttgart.de

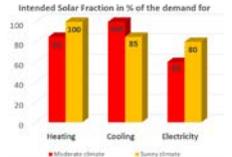
Task Administrator:
Claudia Schick-Haefl, email: claudia.haefl@ipc.uni-stuttgart.de
Institute for Building Energetics, Thermotechnology and Energy Storage (ISTE)
University of Stuttgart / Germany
www.iste.uni-stuttgart.de

<https://task66.iea-shc.org/>

task66_info@iea-shc.org

www.iea-shc.org

Intended Solar Fraction in % of the demand for



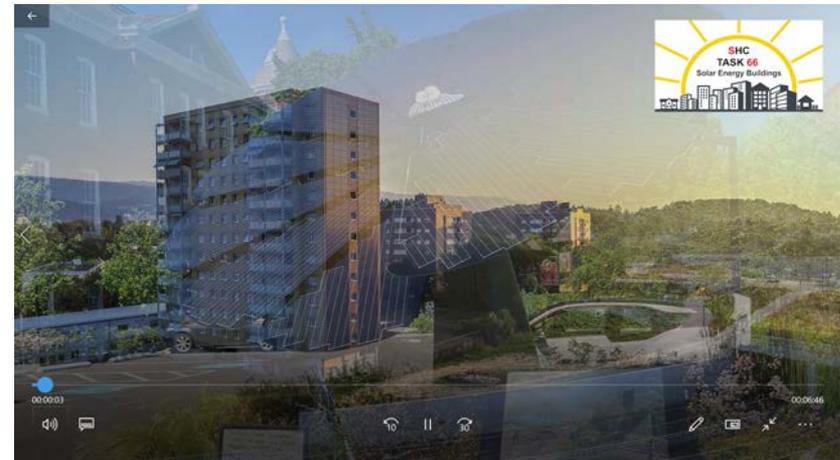
Participating Countries

- Australia
- Austria
- China
- Denmark
- France
- Germany
- Italy
- Mexico
- Portugal
- Slovenia
- Switzerland
- United Kingdom

* SEB = Solar Energy Building
** KPI = Key Performance Indicator

Net-zero-energy multi-story building, Copenhagen, Denmark
Source: Yakov Safir, CEO at Ræcol via Elisabet Nielsen, Technical University of Denmark, Denmark

Task Video



Task 66 (Solar Energy Buildings) – Status Aug 2022

Information / dissemination - **already** done

Task 66 Poster



Task 66

Solar Energy Buildings

Integrated solar energy supply concepts for climate-neutral buildings and communities for the "City of the Future"

Developing economic and ecologic feasible energy supply concepts with high solar fractions

Areas of Work

The Task focuses on single-family buildings, multi-storey residential buildings, building blocks, and communities for both new and existing buildings.

Subtask A: Boundary Conditions, KPIs, Definitions & Dissemination
Frank Späte (OTH Amberg-Weiden, Germany, f.spaete@oth-aw.de)

- Defining performance assessment methodology for Solar Energy Buildings (SEBs), including KPIs (Key Performance Indicator)
- Organizing industry workshops and preparing guidelines for policy makers, municipalities and energy-related companies

Subtask B: Thermal Stand-alone Buildings and Building Blocks / Communities
Xinyu Zhang (China Academy of Building Research, China, zxyt@163.com)

- Developing and defining sample cases and identifying demonstration projects
- Planning and implementation methodology and modeling, simulation and optimization tools

Subtask C: Thermal Grid Connected Buildings and Building Blocks / Communities
Elisabet Nielsen (Technical University of Denmark, Denmark, ean@byg.dtu.dk)

- Developing and defining sample cases and identifying demonstration projects
- Planning and implementation methodology and modeling, simulation and optimization tools

Subtask D: Current and Future Technologies and Components
Thomas Ramschak (AEE - Institute for Sustainable Technologies, Austria, t.ramschak@aee.at)

- Documenting and analyzing current and future technologies
- Classifying/glassing techno-economic technology and developing SEBs solution sets and guidelines

Deliverables

Summary of KPIs. Definition of Reference Buildings, SEB promotion documents, Demonstration cases (Case Studies). Processes and tools currently used to design new SEBs and convert existing buildings into SEBs. Catalog describing optimized solutions of SEBs and communities. Description of available technology portfolio, future technologies and components.

Duration

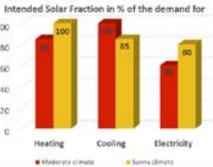
July 2021 – June 2024

Task Manager
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Participating Countries

- Australia
- Austria
- China
- Denmark
- France
- Germany
- Italy
- Portugal
- Slovakia
- Switzerland
- United Kingdom



Category	Moderate climate	Sunny climate
Heating	100	100
Cooling	85	85
Electricity	65	80

Moderate climate: e.g., central Europe, northern China and northern USA
Sunny climate: e.g., southern Europe, southern China and southern USA, Australia, Mexico
Source: SHC Task 66



Net-zero-energy multi-storey building, Copenhagen, Denmark
Source: Yakov Safir, CEO Ractel via Elisabet Nielsen, Technical University of Denmark, Denmark

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Item 2: Introduction

Clean Energy Technology Partnership

... an option for Task 66

<https://cetpartnership.eu/>

Questions and Discussion



Task 66 (Solar Energy Buildings) – Task Meeting No 4

Item 3: Introduction of participants

Please introduce yourself mentioning the following topics

- personal introduction (who are you and what is your background and what are your interests)
- A few words to your organization and your activities
- Your contribution and your expectations related to Task 66

Pls switch on your video camera while talking



Task 66 (Solar Energy Buildings) – Status Report June 2022

Subtasks of Task 66

Subtask A: Boundary Conditions, KPIs, Definitions and Dissemination

Lead: **Frank Späte**, OTH-AW, Germany

Subtask B: Thermal stand alone Single Buildings and Building Blocks (New and Existing) – Not connected to a thermal grid

Lead: **Xinyu Zhang**, China Academy of Building Research, Beijing, China

Subtask C: Thermal grid connected Buildings and Building Blocks / Communities (New and Existing) – Connected to thermal grid

Lead: **Elsabet Nielsen**, DTU, Denmark

Subtask D: Current and future technologies and components

Lead: **Thomas Ramschak**, AEE INTEC, Austria

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Subtask A

Boundary Conditions, KPIs, Definitions and Dissemination

Lead: Frank Späte, (OTH-AW, Germany)

Subtask A Session by Frank Späte

→ *see separate presentations*

**Break
... until 11:15 hrs (CEST)**



Task 66 (Solar Energy Buildings) – Task Meeting No 4

Subtask B

Thermal stand alone Single Buildings and Building Blocks
(New and Existing) – Not connected to a thermal grid

Lead: Xinyu Zhang, (China Academy of Building Research, Beijing, China)

*→ Nothing related to Subtask B was discussed
as Xinyu Zhang was not present*

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Subtask C

Thermal grid connected Buildings and Building Blocks / Communities

Lead: Elsabet Nielsen (DTU, Denmark)

Subtask C Session by Elsabet Nielsen (DTU, Denmark)

→ see separate presentations

End of Task 66 meeting day one.

2nd Industry Workshop stats at 14:00 hrs



**IEA SHC Task 66
Solar Energy Buildings**

Integrated solar energy supply concepts for climate-neutral buildings and communities for the "City of the Future"

Industry Workshop No 2

"Solar thermal and/or PVT combined with heat pumps as an innovative energy supply solution"

29th September 2022, Kassel, Germany

in context with the EuroSun 2022 conference

14:00 – 17:30 → Building Energy Systems Room 109, Nara-Platz 5, Kassel, Germany

About IEA SHC Task 66 Solar Energy Buildings

The objective of Task 66 is the development of economic and ecologic feasible energy supply concepts with high solar fractions. Task 66 addresses single-family buildings, multi-story residential buildings as well as building blocks and communities, with regard to new and existing buildings.

Program

- 14:00 – 14:10 **Welcome, Introduction and Presentation of Task 66**
Dr. Harald Drück, Task Manager of Task 66
Institute for Building Energetics, Thermotechnology and Energy Storage (IGTE), University of Stuttgart, Germany
- 14:10 – 14:30 **PVT heat pump collector as innovative energy supply solution**
Andreas Siegemund, Managing Partner
Consolar Solare Energiesysteme, Germany
- 14:30 – 14:50 **VirtuPVT: evacuated-tube technology for commercial and industrial applications**
Maria Zagorulko, Development and Operations Engineer
Naked Energy Ltd., UK
- 14:50 – 15:10 **Design and optimization of CCHP for microgrids and solar energy buildings**
Dr. Arun Kumar Vaiyapuri, Project Manager / R&D and Renewable Energy
STEAG Energy Services (India) Pvt. Ltd., India

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SHC TASK 66

- 15:10 – 15:30 **Manufacturing of innovative pvt-collectors (tbc)**
Robbert van Diemen, Managing Director at HRsolar Group
HRsolar Group / Qsilence, Netherlands
- 15:30 – 16:00 *Coffee Break*
- 16:00 – 16:20 **Intelligent heat pump solutions in combination with photovoltaics**
Marcel Macke, Key Account Manager
iDM Energiesysteme GmbH, Austria

Presentation of latest Task 66 Subtasks results

- 16:20 – 16:30 **Introduction: Task66 Video**
Moderation: Dr. Harald Drück
- 16:30 – 16:45 **Highlights of the activities in Subtask A**
Boundary Conditions, KPIs, Definitions and Dissemination
Prof. Frank Spätle, Leader Subtask A of Task 66
TU Amberg-Weiden, Germany
- 16:45 – 17:00 **Highlights of the activities in Subtask B**
Thermal stand alone Buildings and Building Blocks / Communities represented by: Elsabet Nomonde Noma Nielsen, Leader Subtask C of Task 66, Technical University of Denmark (DTU), Denmark
- 16:45 – 17:00 **Highlights of the activities in Subtask C**
Thermal grid connected Building and Building Blocks / Communities
Elsabet Nomonde Noma Nielsen, Leader Subtask C of Task 66
Technical University of Denmark (DTU), Denmark
- 17:00 – 17:15 **Highlights of the activities in Subtask D**
Current and future technologies and components
Thomas Ramschak, Leader Subtask D of Task 66
AEE - Institut für Nachhaltige Technologien, Austria
- 17:15 – 17:30 **Discussion and Closing:**
Dr. Harald Drück, Task Manager Task 66, IGTE, University of Stuttgart, Germany

Registration is required! Please send an E-Mail at latest until 18.09.2022 to:
Claudia Scholl-Haaf (Task administrator) claudia.haaf@igte.uni-stuttgart.de

Task Manager: Dr. Harald Drück; E-Mail: harald.drueck@igte.uni-stuttgart.de

Contact us, join us, share your ideas with us!
E-Mail: task66_info@iea-shc.org Website: <https://task66.iea-shc.org>

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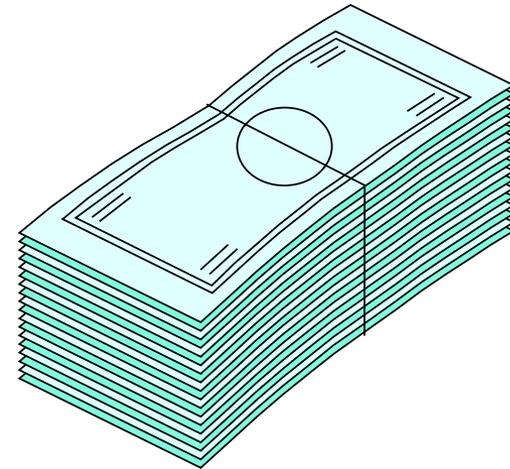
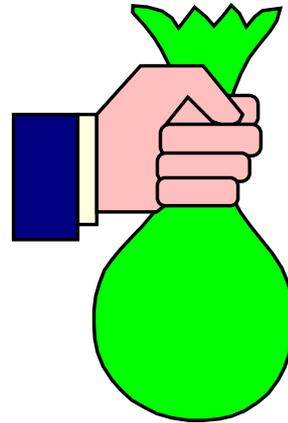
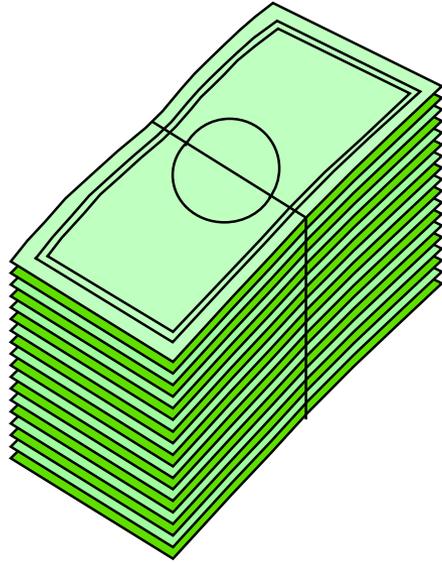
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Day 2

Two main topics:

- **Subtaks D**
- **Orgainsational aspects**

Collecting money for yesterday's meal



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Subtask D

Current and future technologies and components

Lead: Thomas Ramschak, AEE INTEC, Austria

Subtask D Session by Thomas Ramschak, AEE Intec, Austria

→ *see separate presentation*

**Break
... until ??? hrs (CEST)**



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Item 13: Organisational Aspects

- National participation letters (background and status)
- Task emailing list
- Cloud based document processing
- Task brochure and video

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Requirements for official participation

Submission of “national participation letter” (NPL)

Only possible for SHC-Member countries:

Australia, Austria, Belgium, Canada, China, Denmark, France, Germany, Italy, The Netherlands, Norway, Portugal, Slovakia, South Africa, Spain, Sweden, Switzerland Turkey, United Kingdom

Alternative 1

Participation based on collaboration with other

Implementing agreement

Options are: - EBC (Energy in Buildings and Communities)
- ECES (Energy Conservation and Energy Storage)
- PVPS (Photovoltaic Power Systems)

But: your country has to be a member of one of these implementing agreements

Alternative 2: Limited Sponsorship: approx 3.000 \$US/year

Alternative 3: Partizipation as Observer (only 2 times)

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National Participation Letter (NPL)

Already received

- Austria
- Denmark
- Slovakia
- China (one for CABR and one for BUT and one for HUST)
CABR: China Academy of Building Research
BUT: Beijing University of Technology
HUST: Huazhong University of Science and Technology
- Portugal

Still missing

- Germany (under preparation)
- Australia
- United Kingdom

Template:

<http://files.iea-shc.org/public/q8z/task66-participationletter-draft1hd.docx>

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Organizational Aspects

➤ **Communication: E-Mail, website**

E-Mail

Do we need a mailing list for Task 66, something like task66@... → no,

Do we need mailing lists for the Subtaks → no, will be managed by ST-leaders

Mailing “rules”

Subject: Task66: abc..xyz – for information relevant for the complete task

Task66X: abc..xyz for information relevant for subtask X (X=A,B,C,D)

Please use same nomenclature for filenames!

➤ **Note:**

It was agreed that every Subtaks Leader should invite in addition to his subtak team also the leaders of the other Subtask and the operating agent

Data exchange planform:

- For making documents available → <https://task66//iea-shc.org>

Cloud based document processing

- For working on documents together → individually organized

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Organizational Aspects – Task Brochure and video

➤ **Task brochure / flyer**

Available – Public access available via “Task 66 website”

➤ **Task poster**

Available – Public access will be made available via “Task 66 website”

➤ **Task video**

Finished – Public access available

via “IEA SHC You Tube channel”

➤ **[IEA SHC || Task 66 || Information Video \(iea-shc.org\)](http://iea-shc.org)**

Please us the material for promotion of our Task 66

➤ **Promotion via LinkedIn**

Options will be investigated by CH and HD

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Item 14: EuroSun 2022 Contributions

Eurosun 2022 conference, Sept. 22 - 29, 2022 in Kassel Germany

See: <https://www.eurosun2022.org/>

(HD is theme Chair for “Solar and Efficient Buildings”)



Contributions from Task 66 (1/3):

- Quasi-Dynamic Testing of Thermal Sun-Air-Collectors and Numerical Simulations of a Cold District Heating Network (poster)
Stefanie Lott et. al., IGTE, University of Stuttgart, Germany
- Development of a combined model predictive and adaptive control strategy for the operation of a cold district heating network (poster)
Jens Ulmann e. al., IGTE, University of Stuttgart, Germany
- Participation potentials for energy active facades in future flexibility markets (oral)
Thomas Ramschak, AEE INTEC, Gleisdorf, Austria

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Contributions from Task 66 (2/3):

- Definitions for Climate Neutrality and their Relevance for the Assessment of Solar Energy based Heating Systems (oral)
Harald Drück, Dominik Bestenlehner, IGTE, University of Stuttgart, Germany
- Theoretical investigations for electric heating concepts for residential buildings (oral)
Dominik Bestenlehner, Harald Drück, IGTE, University of Stuttgart, Germany
- Solar energy buildings with high degree of independence of energy supply from grids (poster)
Elsabet Nielsen, Simon Furbo DTU, Denmark
- Monitoring Results of the Energy Consumption Behaviour of Two Highly Solar-Powered Apartment Buildings (oral)
Lukas Oppelt, TU Bergakademie Freiberg, Germany

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Contributions from Task 66 (3/3):

- Economic and Ecological Evaluation of the Energy Supply in Highly Solar Powered Apartment Buildings (poster)
Lukas Oppelt, TU Bergakademie Freiberg, Germany
- Heat Pumps, Photovoltaics and Energy Storage in Buildings – Load Characteristics and Flexibility Options on District Level
Fabian Ochs, University of Innsbruck, Austria

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Item 15: Nice pictures

If you have some to share, please send them to Claudia
(claudia.haaf@igte.uni-stuttgart.de)

together with

- the permission to use them
- information what is shown (*e.g. solar multifamily house with PV and ST in Berlin, Germany*)
- information how they should be referenced

and:

- the “copyright release form”
(available by link in the agenda and minutes)

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Item 16: Summary and next steps / meetings (1/3)

Decided

Meeting No. 5: virtual

February 6 and 7, 2023

start on Feb 6 at 12:00 CET (UTC+1) – with Sub B first

start on Feb 7 at 15:30 CET (UTC+1) – after industry workshop

Industry Workshop No 3: virtual

combined with Task Meeting No 5

on **Feb 7, 2023** at 13:00 CET (UTC+1), duration 2 hours

focus on thermal and electrical storage

Task 66 (Solar Energy Buildings) – Task Meeting No 4

Item 16: Summary and next steps / meetings (2/3)

To be decided – **Next Task66 Meeting and Industry Workshop**

Meeting No. 6: physical

When 2023, at Graz (tbc)

start on October 9 at 12:00 CEST (UTC+2)

end on October 10 at 12:00 CEST (UTC+2)

Industry Workshop No 4: physical

combined with Task Meeting No 6

on **October, 10 2023** at 13:00 CEST (UTC+2), duration 3 hours

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Item 16: Summary and next steps / meetings (3/3)

To be decided – **Next Task66 Subtask leader meetings**

Meetings: virtual

When, 2022

start on Nov 15 at 12:00 CET (UTC+1)

When 2023

start on Jan 16 at 11:00 CET (UTC+1)

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Any other business?

Joined Workshop

at next heat pump conference in Chicago,
May 15, 2023 (tbc), by

IEA HPT Annex 61 “Heat Pumps in Positive Energy Districts”

and

IEA EBC Annex 83 “Positive Energy Districts”

will be attend by:

Fabian Ochs, Franziska Bockelmann, Lukas Oppelt,
Michael Gumhalter, Thomas Ramschak (tbc)

Contact for further Information: Fabian Ochs

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The End

*Thanks for participating
and contributing!*

