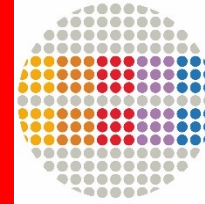




SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY



SOLARCOOLING®
SUNBELT REGIONS
TASK65



Solar Cooling for the Sunbelt Regions

Introduction of IEA-SHC Task 65

Uli Jakob, TM Task 65
IEA SHC Solar Academy
WEBINAR, 25th & 27th October 2022



Task 65 objective & scope

Objective

- Focus on innovations for **affordable, safe and reliable solar cooling systems for the Sunbelt regions worldwide**
- Implementation/adaptation of components and systems for the different boundary conditions is **forced by cooperation with industry** and with support of target countries like India/UAE through Mission Innovation IC7
- The innovation driver and the **keyword is adaptation** of existing concepts/technologies to the sunbelt regions using solar energy either solar thermal (ST) or solar PV

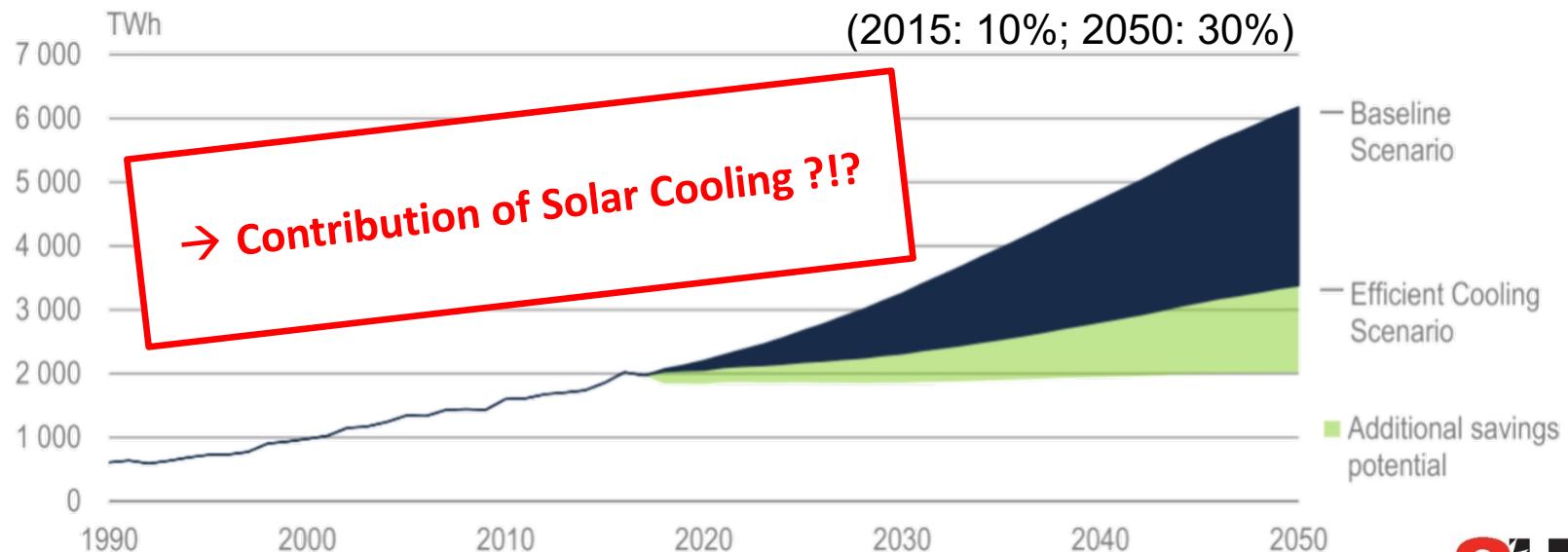


Scope

- Build on previous tasks 25, 38, 48 and 53
- **Target size segment** on cooling and air conditioning between **2 kW and 5,000 kW** (PV and ST)
- Task duration: July 2020 – June 2024

What are the challenges?

- The current trend shows, that **energy needs for space cooling** – almost entirely in the form of electricity – will **more than triple between 2016 and 2050**, driven mainly by the residential sector (2,000 TWh => 6,000 TWh)
- Most of the **projected growth in energy use for cooling is set to come from India, China and other emerging economies**
- Space cooling is set to overtake appliances and plug loads **to become the single largest user of electricity in buildings**



Source: OECD/IEA (2018) The Future of Cooling

Task 65 focus on energy-efficient, renewable cooling

- **Innovations** for affordable, safe and reliable PV/solar thermal cooling systems like **hybrid chillers**
- **Hybrid concepts** for **hot and humid climates**
- Energy saving and **increased energy efficiency**
- **Reduction of electricity consumption** and energy costs (Ø 75% less electrical power consumption compared to conventional vapour compression chillers/heat pumps)
- Significant **CO₂-reduction**
- Reduction of the Global Warming Potential (**no GWP**)
- because **no F-Gases** and therefore no environmentally harmful refrigerants used
- Instead **natural refrigerants** like **water or ammonia**



Source: Fahrenheit



Source: SolabCool

Task 65 website



TASK 65

Solar Cooling for the Sunbelt Regions

[LEARN MORE →](#)

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



Focuses on innovations for affordable, safe and reliable Solar Cooling systems.

[LEARN MORE](#)

Task Information

DURATION

July 2020 — June 2024

OPERATING AGENT

Prof. Dr. Uli Jakob

GERMANY

uli.jakob@drjakobenergyresearch.de

<https://task65.iea-shc.org>

www.iea-shc.org



SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY



Contact: Prof. Dr. Uli Jakob,
TM IEA-SHC Task 65

<https://task65.iea-shc.org>

Green Chiller Association for Sorption Cooling e.V., Berlin, Germany / uli.jakob@greenchiller.eu

Dr. Jakob energy research GmbH & Co. KG, Germany / uli.jakob@drjakobenergyresearch.de