



SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

Strategic Planning Session

Tomas Olejniczak
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Proposed Vision & Mission

Vision

Making the best use of solar energy in a net zero energy future.

Mission

To bring the latest and best solar heating and cooling research to the forefront of the global energy transition.

Proposed Scope

Scope

The **practical use of sunlight** for heating and cooling.

Core research areas:

- 1) Systems for heating, ventilation, and air conditioning for buildings and neighborhoods (including daylighting),
- 2) Industry
- 3) Agriculture

The Programme is **technology neutral** and aims to find the **best available solar solution** for a given process.

Strategic Context

In the next 25 years a major transformation of the energy sector will happen.

How can solar heating and cooling (SHC) fit in? By...

- **Delivering affordable hot water** for 1200 million homes (the IEA's Net Zero by 2050 sector milestone)
- **Providing secure and clean energy for industrial processes**
- **Creating reliable climate conditions for greenhouse farming and more.**

How can our TCP contribute? By...

- **Supporting the IEA's mission** of net zero energy sector by 2050
- Work internally and externally to **increase SHC technology deployment**
- **Tackle market barriers and policies and subsidies** that ignore solar thermal

Programme Objective 1



Analyze. Provide authoritative and impartial sector analysis on solar heating and cooling and daylighting technologies and markets.

- Conduct analysis that links SHC designs and technologies as solutions to **energy security concerns** and **environmental and economic goals**
- Collect and provide high-quality **data**, for example, publish annual Solar Heat Worldwide report, develop Levelized Cost of Heat methodology, develop analytical tools that support SHC and daylighting R&D, effective deployment, and market growth, including CO₂-emission reductions
- Support development and harmonization of new and current **standards** necessary for widespread use of innovative solar designs and applications in the building, agricultural and industrial sectors.
- Identify and prioritize **R&D needs** for solar heating and cooling, leading to expanded markets due to significant performance increases.

Programme Objective 2



Research. Demonstrate the effectiveness of solar heating and cooling technologies and designs through increased performance and reduced costs, facilitating their market competitiveness in heating and cooling applications.

- Develop effective designs and technologies for solar energy as part of a **climate-neutral solution** for heating and cooling building demand, including software/hardware solutions and heat storage technologies.
- Work to address **SHC integration** issues in long-term urban strategies, user acceptance, and building design and aesthetics, as well as work to incorporate solar heat into energy supply system investigations as **sector coupling** of renewable heat and electricity supplies increases.
- Continue **R&D activities** and **strengthen interactions with industry** to address cost drivers and market competitiveness.

Programme Objective 3



Connect. Cooperate with stakeholders, including industry, international organizations, local, regional and national governments, potential customers, and energy and urban planners.

- Establish or enhance **partnerships** with the IEA and other TCPs, R&D community, international organization, national governments, municipalities and cities, associations and certification bodies², utilities, manufacturers and suppliers, intermediary industries³, and end users.
- Build relationships with **IEA member countries** that are not SHC members by developing new Tasks aligned with their interests and strengthening the Programme's presence in the Asia Pacific region.
- Support increased use of solar applications in **developing countries** through targeted dissemination of Task results, participation of developing countries in Tasks, country/sponsor membership in the TCP, Solar Academy activities, and other TCP initiatives.
- Increase cooperation with **other heating and cooling technology stakeholders** (e.g., Heat Pumps, Biomass, Boilers).

Programme Objective 4



Communicate. Raise awareness and understanding of the potential and value of solar heating and cooling systems by providing information.

- Communicate the **value of solar heating and cooling designs and technologies** in publications and public events. Continue outreach activities, including SHC conferences (for example, EuroSun) and Task workshops, Solar Academy webinars, SHC Award, and targeted Task and TCP publications.
- Promote the **advantages of solar thermal and hybrid applications** with other renewables.
- Support the **IEA in communicating the value and potential** of solar heating and cooling.

Questions: IEA

- Who are the relevant people at the IEA?
- What energy issues are their top priority?
- What problems are they trying to solve?
- Why are they ignoring solar thermal in their analyses and publications?

Questions: SHC Deployment

What are the relevant industries?

What technologies need support?

What solar solution are they trying to solve?

Why is their uptake limited?

Questions: Policymakers

- Who are the relevant policymakers?
- What policies are they making?
- What problems are these policies trying to solve?
- Why are they ignoring solar thermal in the development of these policies?