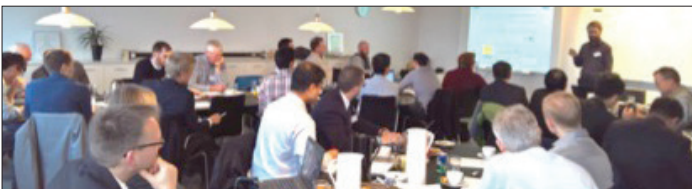


## Task 55

# Large Scale Solar Installations – The Actors & Activities

*Industry and researchers are collaborating to assess how best to integrate large scale solar thermal installations in combination with hybrid technologies into district heating and cooling networks. Besides the international scope of this work, what also makes it unique is that the IEA SHC Programme has teamed up with the IEA District Heating and Cooling Programme to ensure that the right stakeholders are involved.*



Looking closely at the contributing projects and listening to outside market information is vital to the success of IEA SHC Task 55 on *Towards the Integration of Large SHC Systems into District Heating and Cooling (DHC) Network*. Without the right team in place, any Task and its objectives can be challenged. Because of this, the leader of Task 55, Sabine Putz has connected the Task's core expert participants, their projects and stakeholders in four dynamic subtask teams. All actors involved have a commitment to their group and share the Task 55 vision of large scale solar thermal installations globally. The Task 55 expert meetings, such as the 3rd meeting held in Abu Dhabi on 27-28 October 2017 allow for open communication within the expert group.

Examples of current projects contributing to SHC Task 55, are heat portfolio, BiNe2, UrbanDHExtended, optENgrid, giga-TES, BIG SOLAR, NEWsdhSOL, ISORC, and a solar heating project from Tibet. The project UrbanDHExtended focuses on the development of innovative urban district heating systems by integrating long-term thermal storage, large scale heat pumps, large-scale solar thermal installations, waste heat recovery, and analysis and evaluation through simulation. The results of this project will provide templates for new urban district heating areas. The project from Tibet will provide an interim report about the vacuum tube solar heating collectors installed onsite at Sunrain's large scale solar seasonal thermal storage heating plant, which is the world's first high altitude project of its kind.

Many more projects have registered their contributions in Task 55 and were presented at the 3rd Expert Meeting in Abu Dhabi. Participants discussed case studies, such as "Solar District Heating Inspiration and Experiences from Denmark" in greater technical and economic details.

To learn more about SHC Task 55 visit <http://task55.iea-shc.org/>.

## TASK 55 AREAS OF WORK

### Subtask A: Network Analyses and Integration

Leader: Ralf-Roman Schmidt (AIT, Austria)

Investigating DHC network supply strategies and assessing the technical characteristics of existing, newly integrated and planned SDH and SDC systems, focusing on > 0,5MWth up to GWth.

### Subtask B: Components Testing, System Monitoring and Quality Assurance

Leader: Jiao Qingtai (SUNRAIN, China)

Elaborating methods for hybrid elements in in-situ collector tests and for simple thermal power and energy performance proofs. Providing data on automated monitoring and failure detection software for key components and developing/describing control strategies and self-learning controls.

### Subtask C: Design of the Solar Thermal System and of Hybrid Components

Leader: Jan-Erik Nielsen (PlanEnergi, Denmark)

Focusing on design of solar thermal systems and integration of hybrid technologies. Simulating and comparing large scale collector fields to the measurements of Subtask B. Calculating parameters of seasonal storages and working on guidelines for the design and construction of different storage types.

### Subtask D: Economic Aspects and Promotion

Leader: Patricio Aguirre (TECNALIA, Spain)

Elaborating economic aspects to assist practitioners, architects, system designers and district heating providers in their efforts for the integration of DHC applications. Creating a database to collect information on different system and disseminating project results.

