SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

IEA SHC Task 55

"Towards the Integration of Large SHC Systems into DHC Networks"

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IEA SHC Task 55 Webinar – Solar Academy
21th March 2019

Solar District Heating in Europe

Market figures EU:

~ 300 plants (> 350 kW_{th})
Capacity: 1,100 MW_{th}
Newly installed: +30 %/a
Production: 660 GWh/a
(Solites, 2017)

Why SHC TASK 55?

- Successor of SHC TASK 45 (Large scale solar thermal)
- Substituting fossils and pushing the overall energy efficiency in urban areas for solar district heating and cooling
- Step from MEGAWATT to GIGAWATT systems
- Need for low system cost – need for reduced heat price – need for validated increased collector field efficiency and output
- Task 55 acts as exchange platform for interested Stakeholders and Experts from research and industry

SHC TASK 55 Short Facts

- Duration: **September 2016 – August 2020**
- Approx. 65 Experts from 38 organizations from 12 countries are currently involved
- **> 60% experts from industry**
- Access to project results of ≈ 35 projects
- Output: FACT SHEETS
- 2 Expert Meetings/Workshops each year
- 12 participating countries: Austria, Canada, China, Denmark, Finland, France, Germany, Italy, Spain, Sweden, The Netherlands, United Kingdom
- Cooperation with IEA DHC (e.g. DHC Annex TS2)

TASK 55 Subtasks

SUBTASK A - Network Analysis and Integration
Lead: AUSTRIA: AIT – Austrian Institute of Technologies (Ralf-Roman Schmidt); DHC Collaboration; DHC ExCo Austria

SUBTASK B - Components testing, system monitoring and quality assurance
Lead: CHINA: SUNRAIN (Jiao Qingtai)

SUBTASK C - System design
Lead: DENMARK: PlanEnergi (Jan-Erik Nielsen)

SUBTASK D - Economic Aspects and Promotion
Lead: GERMANY: SOLITES - Steinbeis Research Institute for Solar and Sustainable Thermal Energy Systems (Magdalena Berberich)

TASK 55 Objectives

- Description of low cost and high performance large-sized SDH/SDC systems and their main components
- Simulation of the integration of large seasonal storages, large collector arrays and hybrid technologies into different district heating networks
- Description of crucial components of modular conception and construction
- Elaboration of business and financing calculation models
- Validation of measurement methods of tests on field collector performances
- Country reports, feasibility studies and a best practice database on large SDH/SDC systems
- Cooperation on a moderate level with the IEA Technology Collaboration Programme on District Heating and Cooling

Denmark Vojens

Source: PlanEnergi

71 000 m²; 200 000 m³ water pit storage

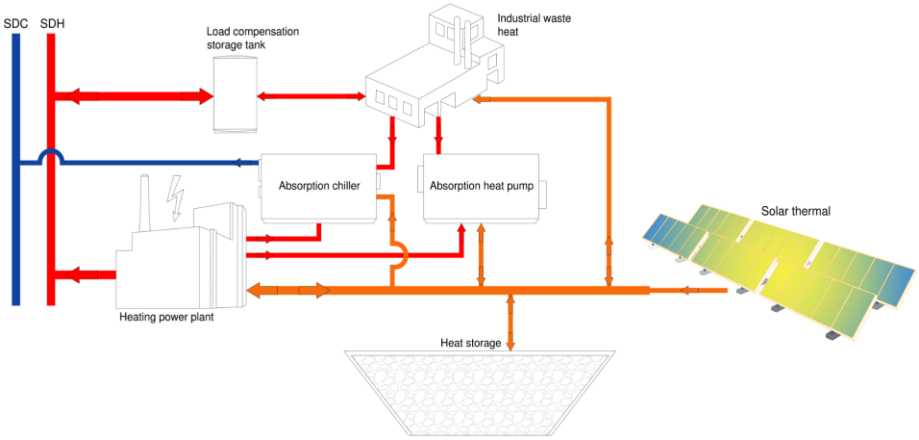
China, Tibet

- Langkazi - 100.000m² residential heating space
- 22.275m² flat plate collectors; 15.000m³ pit storage
- DH net temp. 65/35
- 3MW electric boiler
- All implemented components from Europe
- 100% sponsored by China's central government

SDH Trends

- Denmark large scale installations and long term experience “infects” several countries around the world
- Barriers and opportunities to maximize ST share are core topics for researchers
- Development of seasonal storages concepts
- Model based control strategies for the whole system (ST, DH…)
- Design of solar thermal systems including hybrid technologies like seasonal storages, biomass, waste heat, interaction with CHP, etc.

Upcoming Meetings



6th TASK 55 Meeting

Location: Spain, Almeria (Host University of Zaragoza)

Date: 8 – 10 April 2019

7th TASK 55 Meeting and DH Workshop

Location: Sweden, Härnösand (Host ABSOLICON)

Date: End of September 2019

If you want to participate in one of the next meeting please contact the operating agent s.putz@solid.at

3rd SHC Task 55 Meeting in Abu Dhabi

34 industry and research Experts from 12 Countries
27/28 October 2017

www.iea-shc.org

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Solar District Heating Means Big Business: @solarthermal on @IEA_SHC_Task55 solarthermalworld.org/content/iea-ta…

30 May

IEA SHC Task 55 Retweeted

EU_Eurostat
@EU_Eurostat

CO2 emissions from energy use slightly decreased in 2016 compared with 2015: early estimates from #Eurostat ec.europa.eu/eurostat/en/we …

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