

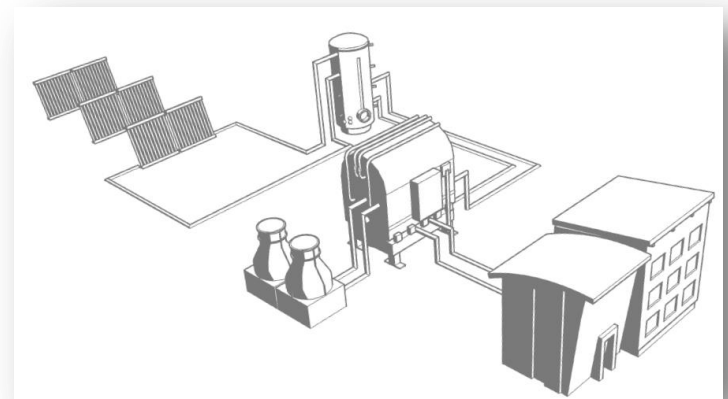
IEA SHC TASK 53 Kick-Off Meeting

Subtask Lead A

Tim Selke

Kick-Off Meeting

Vienna, March 18th – 19th 2014

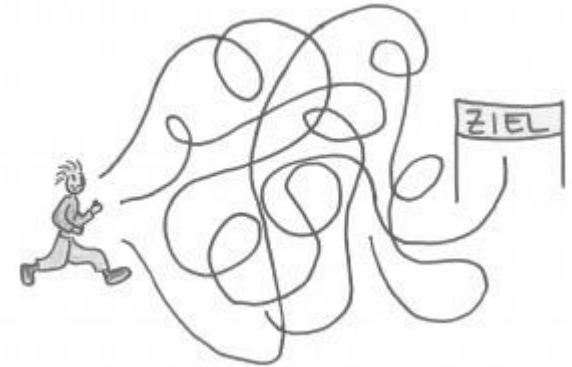


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Subtask A leadership

What would be a successful meeting for me:

- To know each other better
- Activity leadership is fixed
- To identified activity teams with critical mass
- To get a better understanding of participant expertise
- To generate and fix reasonable next steps because already three milestones have to achieved until next Experts Meeting
- Improved understanding of subtaks overlaps or interactions
- ..



<http://blog.nachhilfeschule-fuerth.de/ziele-setzen-bringt%C2%B4s/>

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Subtask A

What is it about?

- What is the state-of-the-art market available products and upcoming R&D
- What system configuration do exist und fit for what application?
- What storage concepts exist?
- What are the benefits of NG SCH Systems?
Eco ... Life cycle ... electrical grid



Quelle www.oew.org

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Subtask A

What is it about?

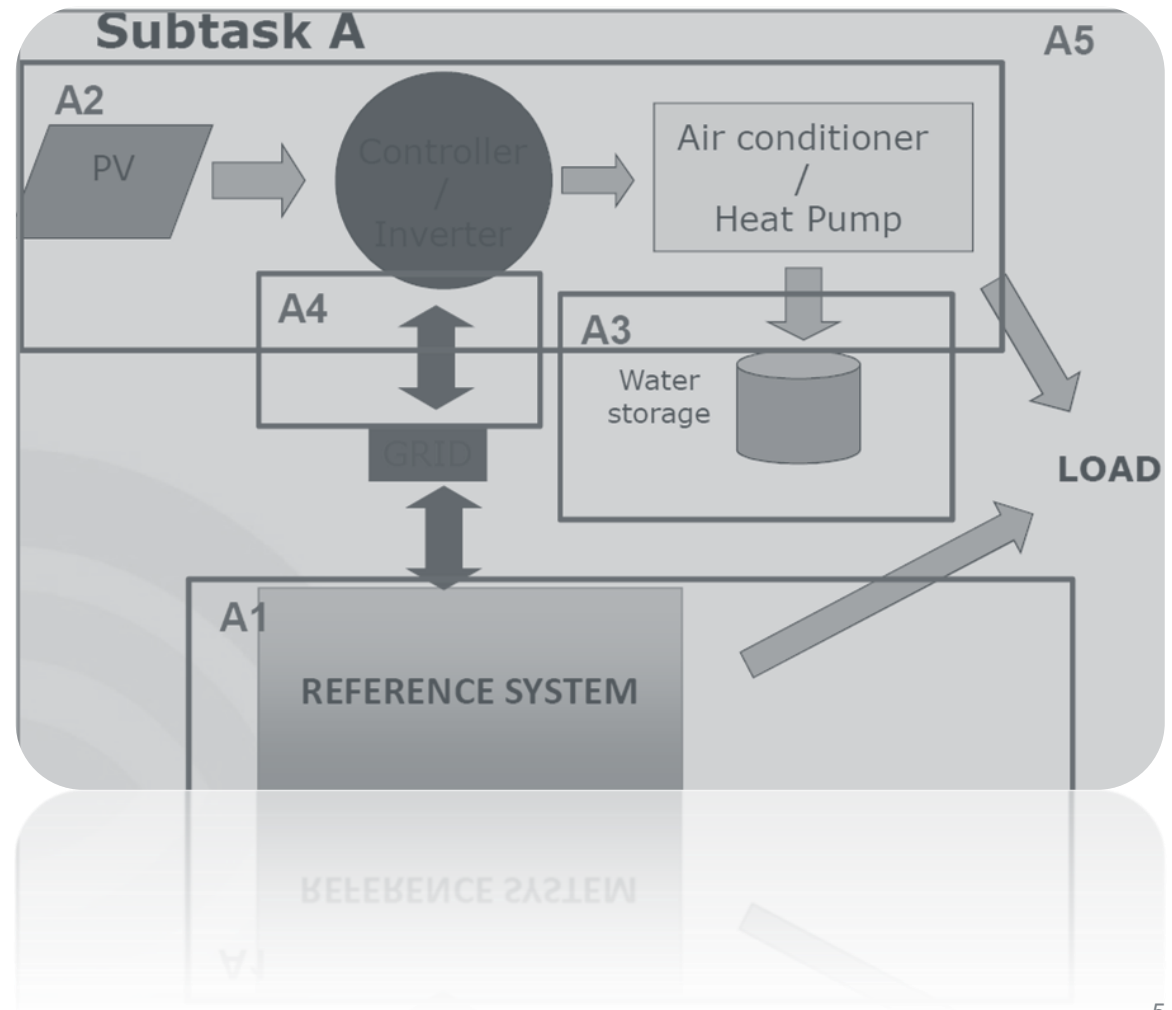
The general objectives of this subtask are:

- Improve knowledge and expertise about current market available new generation solar cooling & heating components and systems
- Identification of ongoing and future related standards and testing methods
- to identify where new solar cooling & heating systems are suitable
- to develop tools and deliverables permitting to show the level of quality of both the most critical components and systems.

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Subtask A

What is it about?



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Subtask A Activity A1

Reference system (for heating/cooling)

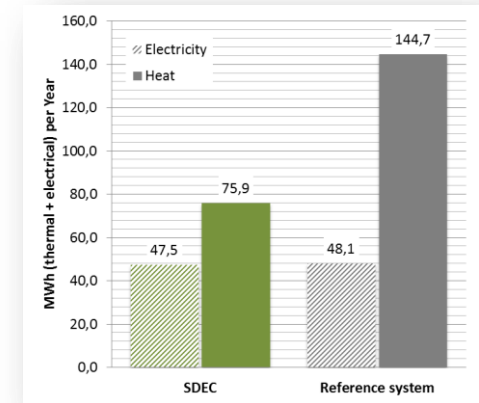
- Definition and characterization of the reference system with regard to climate, regions, building type, covering cooling, heating, domestic hot water demand ..
- Creation of a data base about NG SHC Systems including technical and economical parameters

Activity A1 it leads to a data base for future works, like energy and economical assessments, conceptual designs

Preparation work for B1 Reference and B3?

Key Question - What reference systems do we consider?

- PV H&C versus ST H&C? versus conventional H&C?



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Subtask A Activity A1

Core team (Status November 2013)

- **Coordination - Fraunhofer ISE (Björn Nienborrn?)**
- **Strong expected participation**
 - UIBK / Austria
 - ZAFHNET / Germany
 - AEE Intec / Austria
 - EURAC / Italy

Deliverables

- D-A1: Definition of the existing cooling reference systems (A1)

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Subtask A Activity A2

New system configurations for heating/cooling/dhw

- Provide overview about state-of-the-art
- Focus existing market available solutions
- Screening and documentation of upcoming R&D activities

Activity A2 documents on

- market available systems and
- promising R&D activities

Key Question – How many systems do we have in our task team?

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Subtask A Activity A2

Core team (Status November 2013)

- **Coordination - TECSOL (Daniel Mugnier?)**
- **Strong expected participation**
 - Fraunhofer ISE / Germany
 - AIT PV / Austria
 - CNAM / France
 - ZAE / Germany
 - AEE Intec / Austria
 - Shanghai Uni / China

Deliverables

- D-A2-1: State of the art of new generation commercially available products including costs, efficiency criteria ranking and performance characterization
- D-A2-2: Technical report on recent R&D work on the topic (A2)

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Subtask A Activity A3

Storage (electrical and thermal) concepts and management

- **Focus** on existing market available storage solutions
(System integration, material, energy management strategies ..)
- **Scope** – latent and sensible storage, electrical, thermal activation of building elements, district network storage ..)

Activity A3 reports on best practices for energy storage including both efficiency and adaptability in solar cooling systems (including KPI's)

Key Question - Who of us does have the required competence / expertise, especially because of the wide scope of storage technologies?

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Subtask A Activity A3 Storage

Core team (Status November 2013)

- **Coordination – Fraunhofer Umsicht (?)**
- **Strong expected participation**
 - CNAM / France
 - UIBK / Austria
 - ZAE / Germany
 - ZAFHNET / Germany

Deliverables

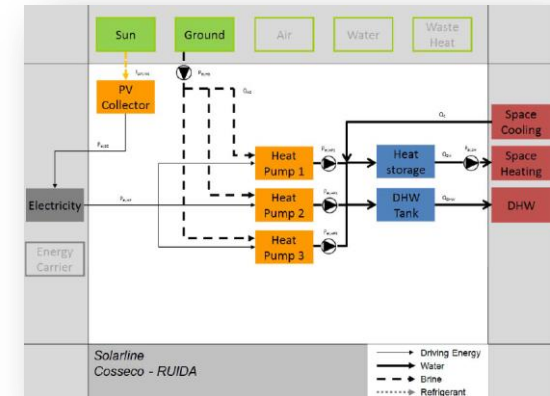
- D-A3 : Technical report on best practices for energy storage including both efficiency and adaptability in solar cooling systems (including KPI's)

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Subtask A Activity A4

System integration into buildings,
micro grid and central grid (existing control)

- **Focus** on different configurations of integration of solar cooling and heating systems among buildings, micro grids and the central grid.
- **Cooperation** – applying approach developed in SHC Task44
- **Limits** – system market available or close to be commercialized



Activity A4 will deliver

- “new generation solar cooling square view” for generic systems
- State-of-the-art on the management of the interface solar cooling (e.g. AC unit / PV modules) and distribution system /grid

Key Question - Who of us is an active SHC TASK 44 participant?

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Subtask A Activity A4 System Integration

Core team (Status November 2013)

- **Coordination – ZAFHNET / Germany**
- **Strong expected participation**
 - CNAM / France
 - UIBK / Austria
 - ZAE / Germany
 - Shanghai Uni / China

2 Deliverables

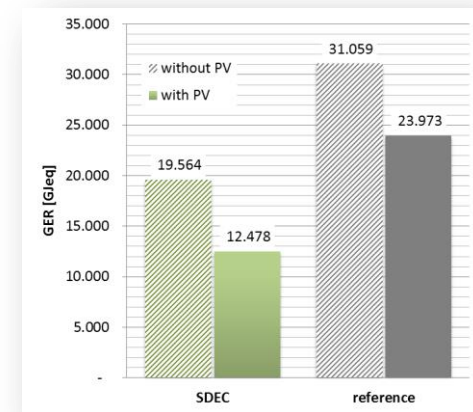
- D-A4-1: Report on a new and universal classification method “new generation solar cooling square view” for generic systems
- D-A4-2: State of the art on the management of the interface solar cooling (e.g. AC unit / PV modules) and distribution system /grid

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Subtask A Activity A5

LCA and techno-eco comparison between reference and new systems

- **Focus** on comparison between reference and NG SHC systems applying to methods, a) Life Cycle Analysis and b) the techno-economical analysis with KPIs
- **Work** – definition of adequate KPI
- **Added value** – contributing to quality labeling scheme for NG SHC systems



Activity A5 produces

- techno-economic and LCA approach
- Recommendation for test methods as well as standards

Key Question

- Who can perform LCIs and/or LCAs?
- Who has access to standards development?

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Subtask A Activity A5 LCA and comparison

Core team (Status November 2013)

- **Coordination – University of Palermo**
- **Strong expected participation**
 - AIT PV / Austria
 - CNAM / France
 - Uni Rennes / France
 - EURAC / Italy

Deliverables

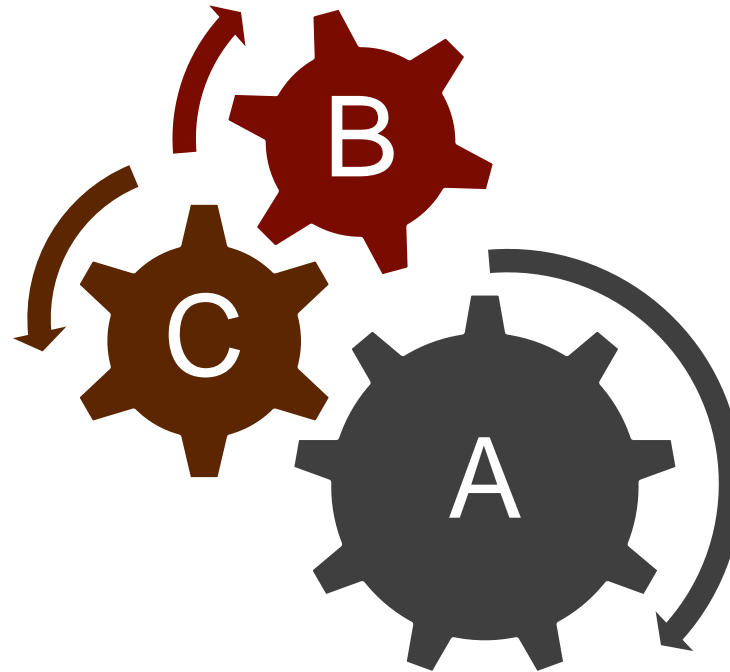
- D-A5-1: Techno-economic analysis report on comparison between thermal and PV existing solar cooling systems including as well LCA approach and Eco label sensibility
- D-A5-2 : Draft document defining the Key Performance Indicators (KPI) of the market available systems and possible characterization test method (permitting to lead to a quality labeling scheme for new generation solar cooling systems) as well as standards (A5)

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Subtask A What has to be delivered

Interaction and overlaps to SUBTASKs B,C and D

- To be defined



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Subtask A time planning

Already 3 milestones in the upcoming period (Month 8)

- **M-A1.1** Draft definition of the existing cooling reference systems
- **M-A2.1-1** Draft state of the art of new generation commercially available products including costs, efficiency criteria ranking and performance characterization
- **M-A3.1** Draft technical report on best practices for energy storage including both efficiency and adaptability in solar cooling systems (including KPI's)
- working group session should focus on this!!!

AIT Austrian Institute of Technology

your ingenious partner

Tim Selke

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