SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

IEA SHC TASK Proposal 2018 - 2020

PVT systems

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SHC International Conference 2017
Abu Dhabi – Oct. 30 – Nov 2 , 2017

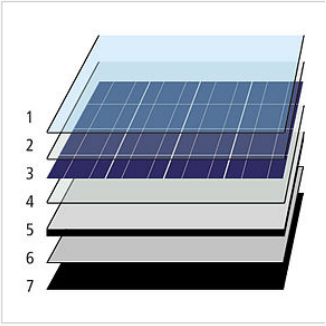
1st Task definition meeting - March 2017, Zürich
Findings

- Recognition of a potential market for PVT solutions not yet mature
- Clear Interests for a new Task from scientists + industries

Key missions of the future Task

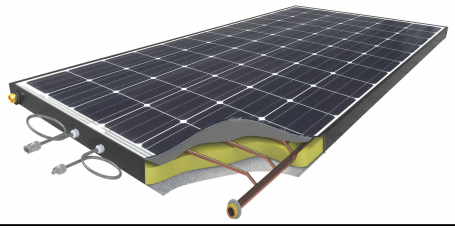
- **Spreading the available knowledge and experience**
- **Development of covered collectors without overheating issues**
- **Reduction of system complexity and costs**

PVT collectors

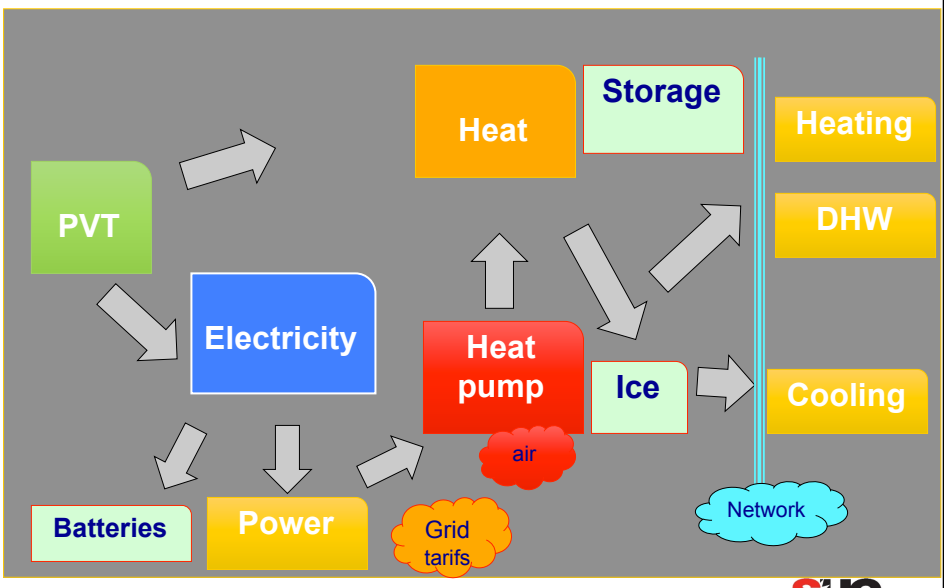


Schematic of a hybrid (PVT) solar collector:
1 - Anti-reflective glass
2 - EVA-encapsulant
3 - Solar PV cells
4 - EVA-encapsulant
5 - Backsheet (PVF)
6 - Heat exchanger (copper)
7 - Insulation (polyurethane)

- PVT liquid collector
- PVT air collector
- PVT Liquid air collector
- Glazed / unglazed
- PVT concentrator (CPVT)



Much to optimize !



Task Objectives 1

1. Provide an overview on the present (2018-2020) state-of-the-art of the PVT technology worldwide.
2. Gather the results and the operating experience made with the systems in which PVT collectors are integrated.
3. Improve the testing, modeling and adequate technical characterization of PVT collectors in order to enhance (and simplify) the correct inclusion of the PVT technology in simulation programs and planning tools.

Task Objectives 2

4 Adress all types of PVT collectors since the current markets have made no clear choices.

5 Find more typical PVT solutions beside the two applications which are well known, i. e.

(1) regeneration of bore-hole storages
(2) pre-heating of DHW for multi-family houses
Others....

6 Explore potential cost reductions in the balance of systems (BOS), i. e. piping technology and materials, hydraulics, controls etc.

7 Increase awareness in PVT.

8 Support the re-start of a PVT industry

Stakehoiders

1 PVT industry

2 Distributors of products

3 Certification bodies

4 Architects

5 Engineers

6 Policy makers

7 R&D scientists

8 Education

9 Exco

10 Solrico (channel to different stakeholders and end users)

11 PVT Task participants

Task Organisation

Operating Agent
JC Hadorn, Switzerland

A
PVT systems in operation

IN situ

B
PVT Collectors testing

K. Kramer, Fraunhofer, G

LAB

C
PVT Modeling

Model

D Systems Performance assessment / evaluation of solutions from B and C with A constraints – high level approach and optimisation – Basic recommended Control strategies

System evaluation

Dissemination and market support

A. Haeberle, SPF

Segments of market

Delivery of:
- Heat
- Cold
- Electricity

- One family house 10 kW
- Multifamily house 100 kW or more
- Commercial – Industrial processes 100-200 kW
- District heating and cooling systems : 1 MW

Interest from:

- **Germany** Fraunhofer ISE, Berlin HFT, ISFH ?, Univ Saarland, Stutgartt HFT, consolar
- **Austria** AEE Intec
- **Switzerland** SPF, ZHAW, ETHZ LKE, CSEM, HEIG-VD, Vela Solaris, ESSA, Meyer Burger ?, Hadorn
- **Spain** Tecnalia, Endef
- **France** Univ Perpignan, CETIAT ?, Tecsol ?, Dualsun
- **Italy** Politec Milano
- **UK** Naked energy
- **NL** Seac, Solarus BV
- **Sweden** Lund Univ ?, Univ. Gävle ?, Solarus AB
- **Qatar** Gord
- **Denmark**

Already 10 countries interested

JOIN US

for the 2nd Task definition meeting

During SHC 2017
Oct 30, 2017
6 pm
Meet in the lobby

www.iea-shc.org

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