Österreichische Beteiligungen an Projekten des IEA Solar Heating and Cooling Programme

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IEA FORSCHUNGS KOOPERATION

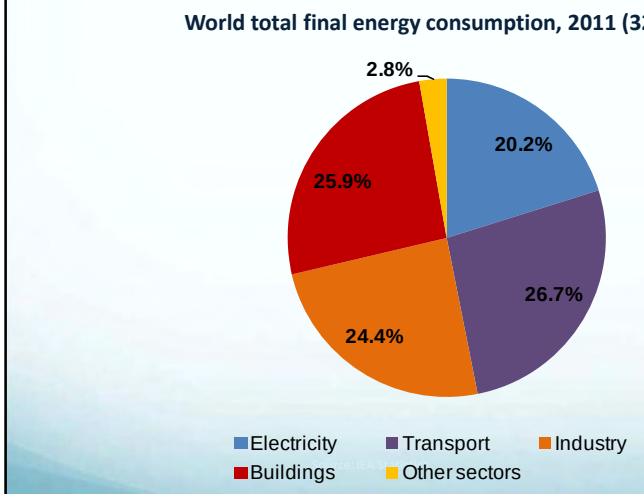
bmvit

SHC SOLAR HEATING & COOLING PROGRAMME INTERNATIONAL ENERGY AGENCY

	2009 2010 2011 2012 2013 2014
Task 39 Polymeric Materials for Solar Thermal Applications (Germany)	
Task 40 Net Zero Energy Solar Buildings (Canada)	
Task 41 Solar Energy and Architecture (Denmark, Norway, Sweden)	
Task 42 Compact Thermal Energy Storage (Netherlands)	
Task 43 Rating and Certification Procedures (Denmark, US)	
Task 44 Solar and Heat Pump Systems (Switzerland)	
Task 45 Large Solar Heating/Cooling Systems (Denmark)	
Task 46 Solar Resource Assessment and Forecasting (United States)	
Task 47 Solar Renovation of Non-Residential Buildings (Norway)	

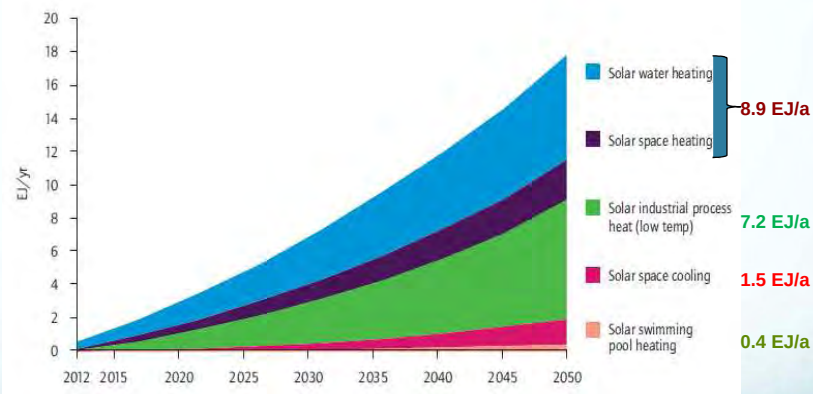
	2011 2012 2013 2014 2015 2016
Task 48 Quality Assurance and Support Measures for Solar Cooling Systems (France)	
Task 49 Solar Heat Integration in Industrial Processes (Austria)	
Task 50 Advanced Lighting Solutions for Retrofitting Buildings (Germany)	
Task 51 Solar Energy and Urban Planning (Sweden)	
Task 52 Definition: Solar Thermal & Energy Economics in Urban Environments	
New Generation of Solar Heating and Cooling Systems	

Heat accounts for more than half of world's total final energy consumption today



Source: Paolo Frankl, IEA, Paris

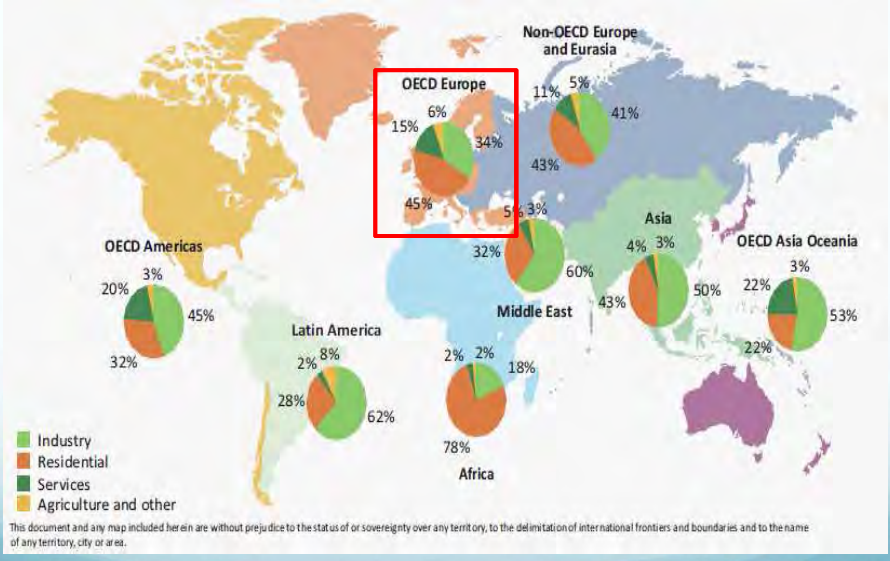
IEA Roadmap vision of solar heating and cooling by sector (EJ/yr)



Solar heating and cooling capacity could produce annually by 2050:
- 16.5 EJ solar heat (16% of TFE low temp. heat)
- 1.5 EJ solar cooling (17% of TFE cooling)

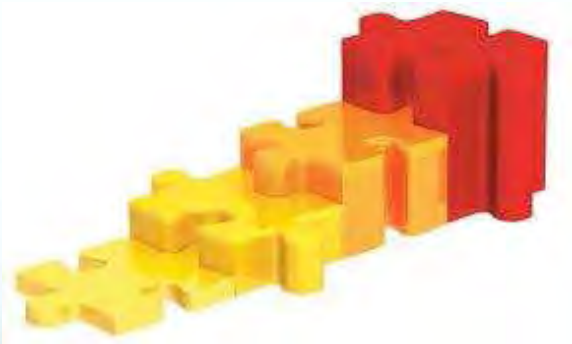
Source: IEA Technology Roadmap – Solar Heating & Cooling

Heat plays important role worldwide



Note: Figure based on 2009 data
Source: Energy Technology Perspectives 2012

Worldwide Solar Thermal Markets



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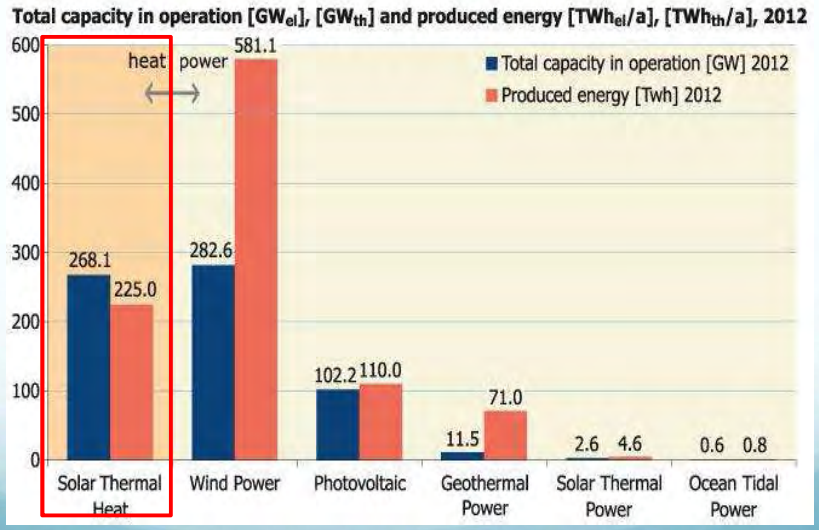
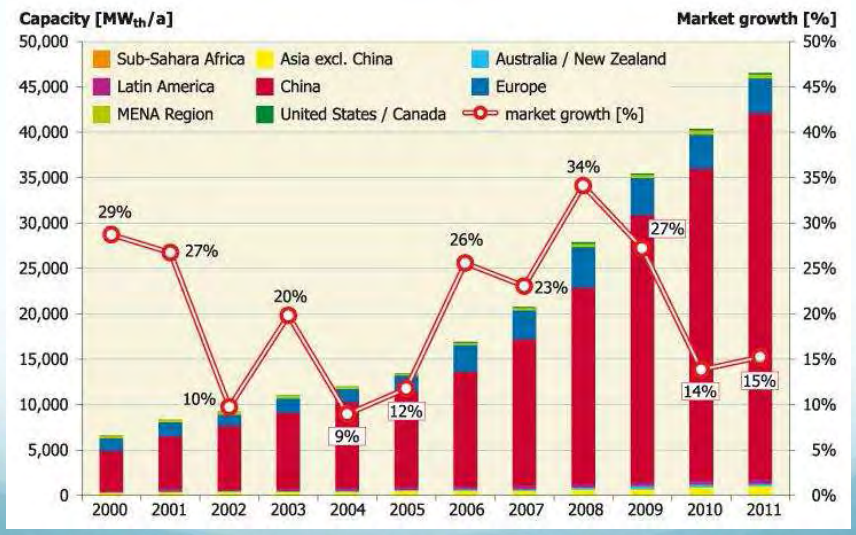
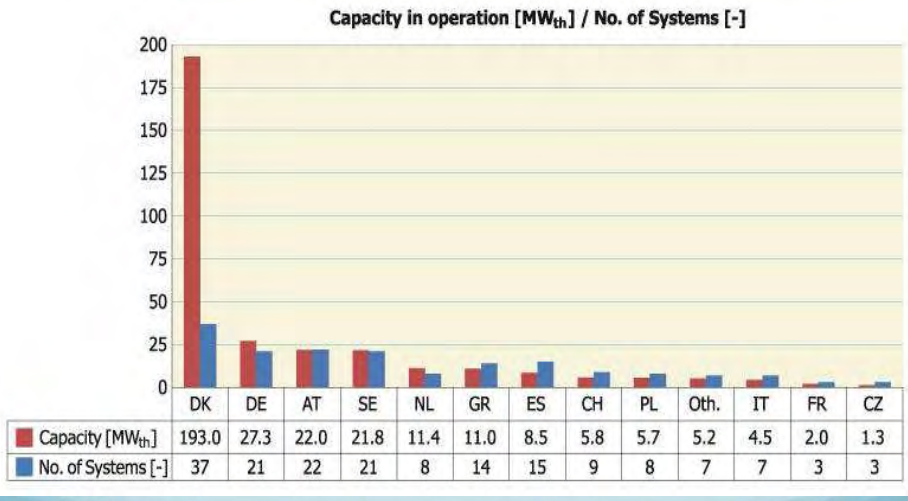
Achievements - 2012



Annual installed capacity of flat plate and evacuated tube collectors from 2000 to 2011



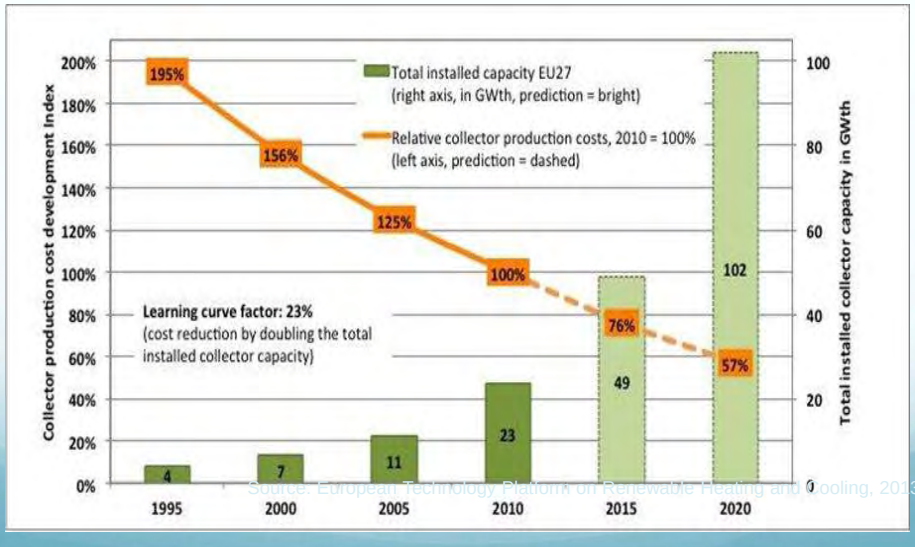
European large-scale solar heating systems by the end of 2012



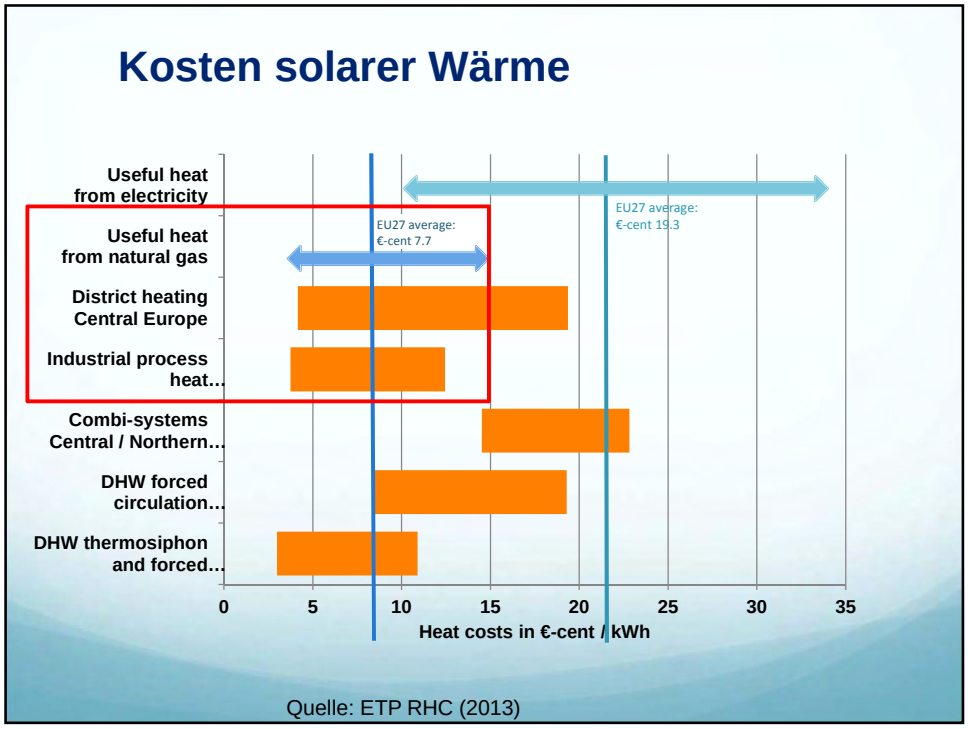
	DK	DE	AT	SE	NL	GR	ES	CH	PL	Oth.	IT	FR	CZ
Capacity [MW_{th}]	193.0	27.3	22.0	21.8	11.4	11.0	8.5	5.8	5.7	5.2	4.5	2.0	1.3
No. of Systems [-]	37	21	22	21	8	14	15	9	8	7	7	3	3

(Source: Jan-Olof Dalenbäck - Chalmers University of Technology)

Collector production cost development in Europe



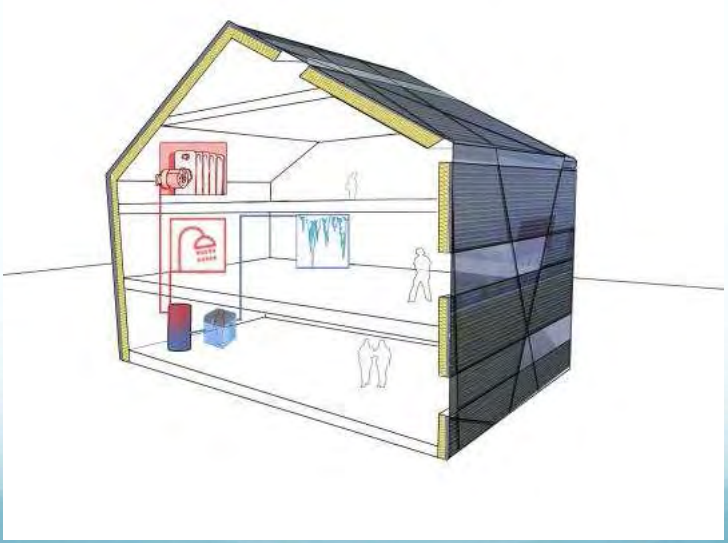
Source: European Technology Platform on Renewable Heating and Cooling, 2013



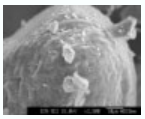
Quelle: ETP RHC (2013)

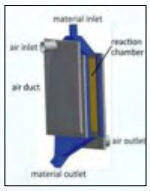
ENERGY STORAGE – THE KEY ISSUE
Task 42/24

Joint Task between Solar Heating and Cooling (SHC) and Energy Conservation through Energy Storage (ECES)



Development fields





Materials

- improve performance (capacity, power)
- reduce costs (basic material, production technology)

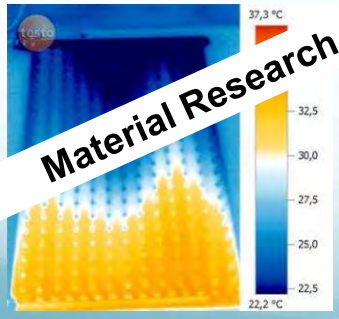
Components

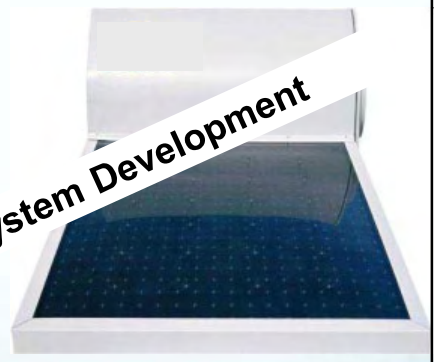
- heat exchangers
- mass transport
- sensoring, control

Systems

- Integration
- control

Polymeric Materials for Solar Thermal Applications - Task 39





Material Research & System Development

Highlights

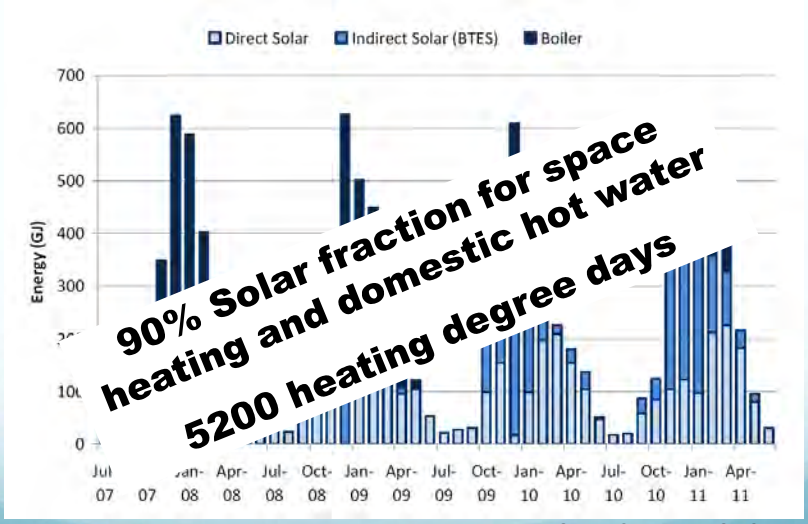
System related Tasks

Large Solar Heating/Cooling Systems Task 45

Solar Space Heating with High Solar Fraction

Drake Landing Solar Community, Canada

Energy Supplied to the Distribution Loop July 2007 – Apr. 2011

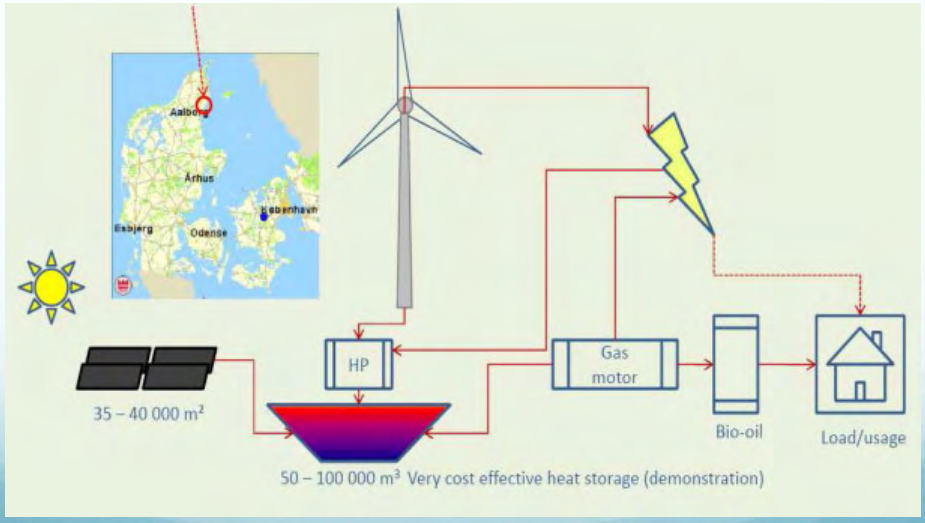


Source: CanmetENERGY, Ottawa

Hilleroed Solar District Heating, DK

Source: http://www.altomsolvarme.dk/solvarmecenter/fotostore.htm

Smart District Heating Systems
Integration of heat and electrical grids



Source: Jan-Erik Nielsen, PlanEnergi, Cost source: SDH, Report „success factors in district heating, Dec 2010

Industrial Process Heat – Task 49

Regional solar heating and cooling generation in buildings and industry

Source: IEA Technology Roadmap – Solar Heating & Cooling

Brewery Göss, Austria

Copper Mine in Cyprus - 0.5MW$_{th}$

Source: Millennium Energy Industries

Copper Mine in Chile - 26MW$_{th}$

SHC Website

www.iea-shc.org

Publications

Solar Heat Worldwide | Solar Update | Annual Report | Task Reports

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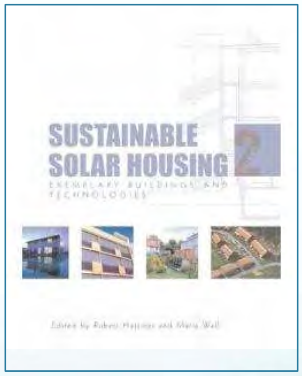

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Conferences

SHC 2012 CONFERENCE JULY 9-11 SAN FRANCISCO
International Conference on Solar Heating and Cooling for Buildings and Industry

SHC 2013 CONFERENCE SEPTEMBER 23-25 FREIBURG, GERMANY

SHC 2013 CONFERENCE

International Conference on **Solar Heating and Cooling** for Buildings and Industry

September 23-25, 2013
Freiburg Germany

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