Solar Cooling Kits and innovative chillii® System Controller

OTTI Solar Air-Conditioning Seminar – Innovation-Forum
NH Hotel Munich, Germany, 08.06.2010

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Hightex Americas LLC, USA
Hightex Pty. Ltd., Australia
Hightex Structures Ltd., South Africa
Metal-System Küstrin Sp.zo.o, Poland
(40 % stake)

SolarNext AG, Germany
World Exhibition 1878, Paris - A. Mouchot Produced the First Ice Block Through Solar Energy

Source: Olynthus Verlag
Heat Sources for Thermally Driven Cooling and Heating Systems

Solar

- Source: Tsinghua

District Heating


CHP Unit, Biomass, Process Heat etc.

- Source: EC-Power

Source: Citrin Solar


Source: ecopower

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chillii® Cooling Technology

Source: SolarNext

chillii® System Controller Development
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• Different Heat Sources  
  (e.g. Solar, CHP unit, Biomass)  
• Back-up System  
  (e.g. Oil/Gas Boiler)  
• Heat and Cold Storage Management  
• Domestic Hot Water  
• Chiller (e.g. chillii® STC15)  
• Recooler (e.g. Dry Recooler)  
• Heating and Cooling Circuits
Small-Scale chillii® Cooling Kits

Source: SolarNext

SolarNext chillii® Cooling Kit PSC19

SolarNext chillii® Cooling Kit ISC10

Source: SolarNext

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Medium-Scale chillii® Cooling Kits

SolarNext
chillii® Cooling Kit ACC50

Source: SolarNext

SolarNext
chillii® Cooling Kit WFC105

Source: SolarNext

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• Extensions of chillii® Cooling Kits (e.g. Cold Storage Extension)

• System Design

• Implementation Strategy and Project Management

• System Optimisation

• Commissioning

• Maintenance

• All-In
• Formed in March 2009 as German Industry Association (today 8 Companies, 4 Institutes)

• Located in Berlin, Germany

• Representing around 60% of all European manufacturers of thermally driven sorption chillers in the small and medium-scale cooling capacity range

• Since February 2010 open for all European manufacturers of sorption technologies (closed and open systems) and sponsoring memberships
• Lobbying of Sorption Cooling Technologies in general but especially in the Politics (Small and Medium Cooling Capacity Range)
• Promoting and Developing of the Solar and Thermal Cooling Market in Germany as well as Europe
• Increasing Awareness of Thermal Cooling Technologies (Publicity at Fairs, Conferences, Workshops, etc.)
• Standardization of Chillers/Cooling Kits as a Requirement for Funding
• Preparing of a Design Tool and Related Information on the Association’s
• Website
• Small and Medium-Scale chillii® Cooling Kits in capacity range of 7 kW up to 105 kW available

• Worldwide References with Operational Experiences based on Solar Heat, Biomass, CHP Waste Heat and Process Heat

• Specific Collector Surface of the chillii® Solar Cooling Kits is 4.5 m²/kW

• Specific Costs of Solar Cooling Kits in Europe(*):
  - 5,000 to 8,000 EUR/kW in 2007
  - 4,000 to 4,500 EUR/kW in 2008
  - 3,500 to 4,500 EUR/kW in 2009

(*) The solar cooling Kit consist of solar thermal collectors, hot water storage, pump-set, chiller, re-cooler, partly cold water storage and system controller. The specific costs are without cold distribution and installation costs.
Thank you.

Dr. Uli Jakob, Senior Consultant
SolarNext AG

www.solarnext.de
www.greenchiller.de