

Solar district heating 1 December 2016 16h30 – 18h30



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16:30	Introduction
	Stephan Fintelmann, KBB & ESTIF Board
16:40	Prospects for District Heating in Europe
	Eloi Piel, Euroheat and Power
17:00	Opportunities for Solar District Heating
	Thomas Pauschinger, Solites
17:20	XXL Solar District Heating: Big Solar
	Christian Holter, SOLID
17:40	Technology challenges for SDH and large
solar thermal applications	
	Kaj Pischow, Savo-Solar & ESTTP Steering
	Committee
18:00	Debate
18:20	Conclusions
18:30	End



SDH in Germany

- Definitely increasing acceptance and activities from the 'innovative' utilities.
- Still strong need to shift focus on RHC, but situation definitely improving at policy level.
- Need to promote DHC as solution for the energy transition, today's image of DHC is still too often the 'old technology'. More modern DHC will automatically lead to SDH.



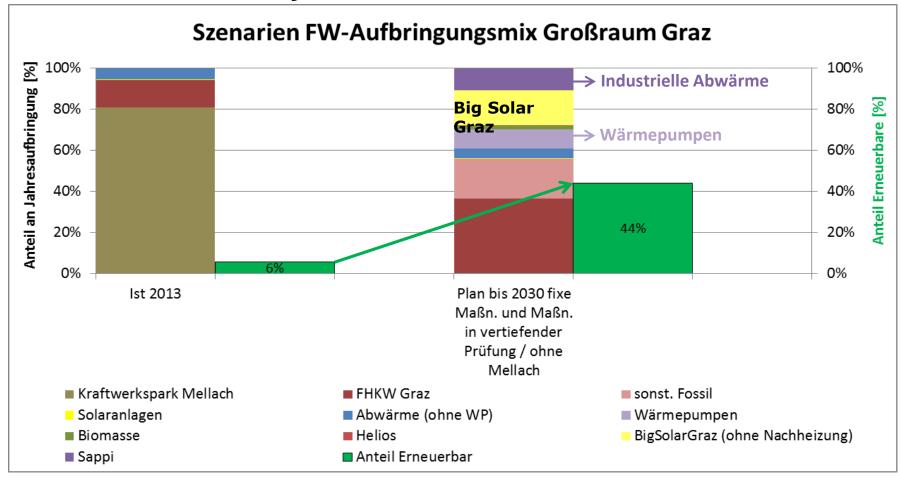
SDH in Germany

- Government plans 'Energy Efficiency Strategy Plan for Buildings'
- More or less a constant DH contribution of 80 TWH/a until 2050.
- A long term share of 15 % ST in DH leads to ~12 TWh/a SDH, -> 30 Mio m² ST -> ~ 1 Mio m² to be installed per year until 2050.

Renewable goal: 44%



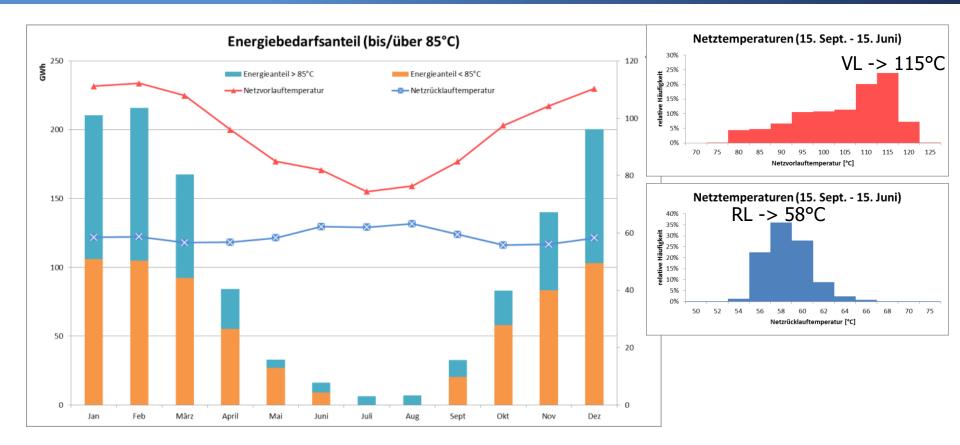
Condition today from 2020 onwards



Source: Grazer Umweltamt & Energie Agentur, Prutsch, Götzhaber, Papousek; Vortrag bei Fernwärmetagen in Velden, 16.3.2016

Framework requirements

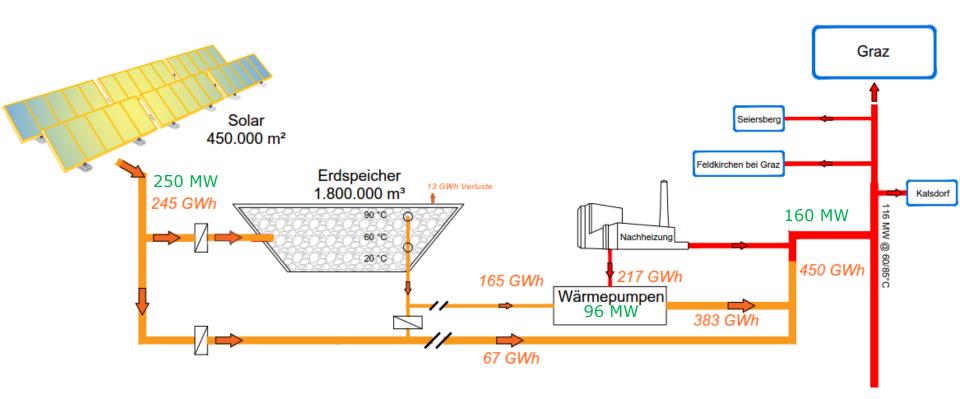




- ⇒ Current network temperatures allow a maximum of 50% of Big Solar conceptual share
 this corresponds to a solar coverage of 30%.
- ⇒ The results from the simulations show an economic optimum under current framework requirements at ~ 20% solar coverage.

System concept optimum



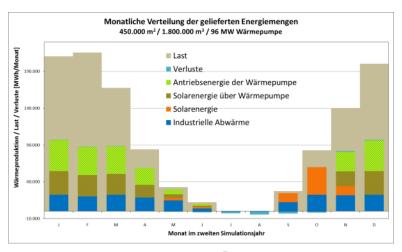


Solar coverage: approx. 20 %

Total capital expenditures: approx. 200 Mio. EUR

Overview





- ➢ Heat supply in Graz: Situation → Goals
- Solar heat for urban district heating
- "BIG Solar Graz": Results of the feasibility study
- Next Steps & World Wide Potential

Potentials m² Collectors



District Heating in Developing Countries

Installed DH Capacity, 2009



994,800 MWth

Trench Length of DH Pipeline System, 2009



327,706 km

Investment need estimate (up to 2020)



\$ 70-100 Billion

Estimated Annual Energy Savings



1,500,000 TJ and 10,000 GWh

Estimated Annual GHG Reduction Potential



115,000,000 tons CO2e

^{*} Selected countries in ECA and EAP (excluding Central Asia and Mongolia)





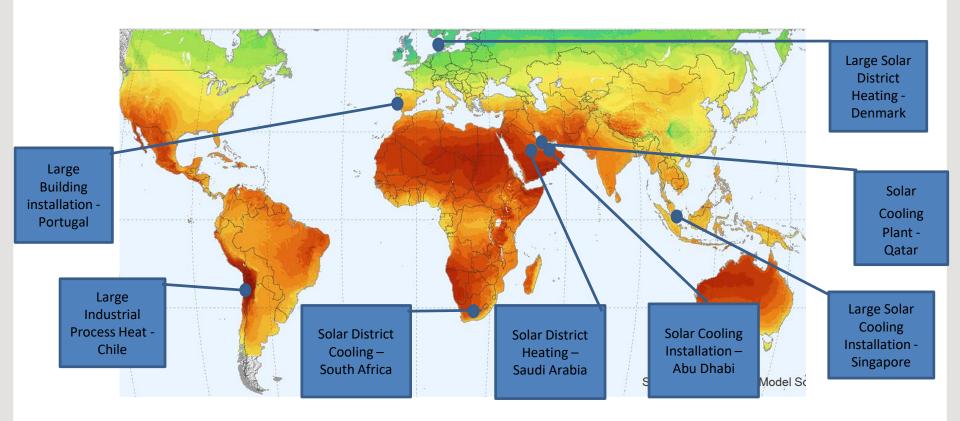
IBRD Projects

- Ukraine
- Bulgaria
- China
- Croatia
- Russia
- Lithuania
- Poland
- Serbia
- Belarus (biomass-based DH)
- Large number of advisory projects: e.g.
- · Moldova (Chisinau)
- · Regional Balkans Biomass DH

IFC Projects

- Timisoara Subnational finance, advisory, Romania (IFC ~\$34.6 M)
- Botosani –Subnational finance, advisory, Romania (IFC ~\$10 M)
- Bucharest PPP advisory, Romania
- KKS Private DH company, Russia (IFC \$ 18.2M equity, \$7.7M loan)
- Mytischi Subnational finance, Russia (IFC \$ 8.4 M)
- · A number of advisory projects

Medium & marge Scale Solar Heat (and Cooling): European technology with strong export potential





Large-Scale District Heating and Cooling Applications in Europe by 2015

