

District Cooling (in the PRC) - Status and Development Potential

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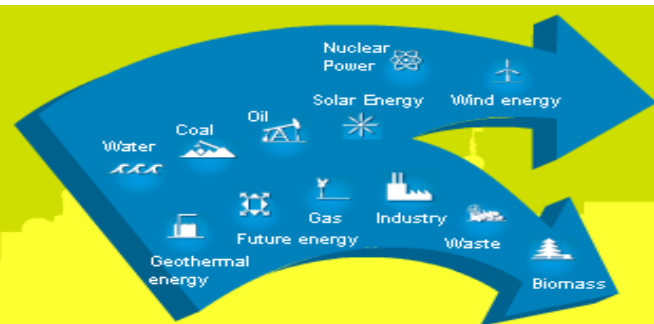
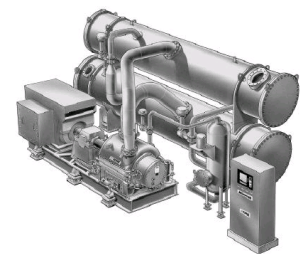
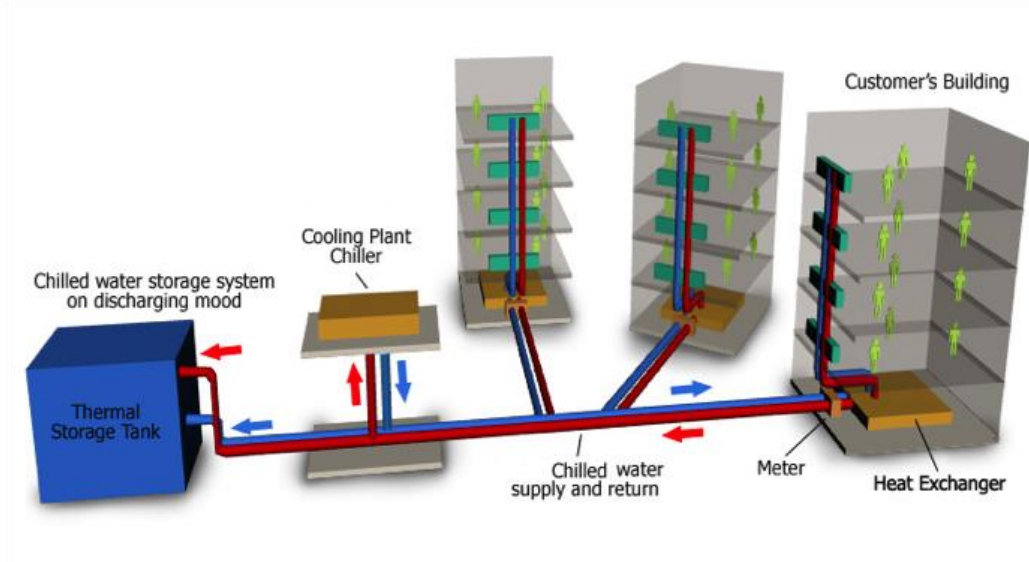
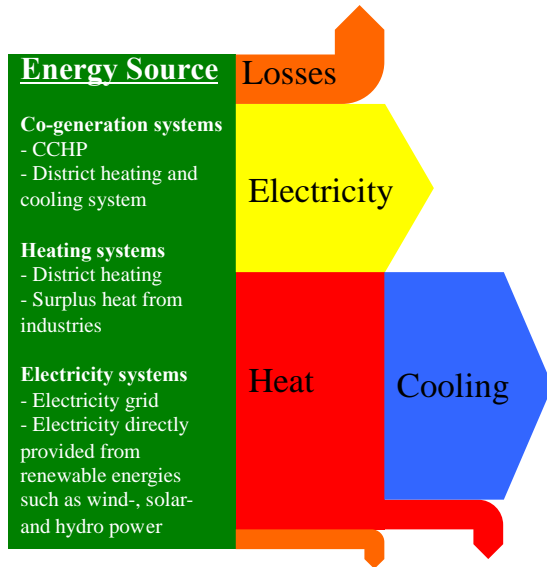
What is District Cooling?

Is District Cooling feasible?

What is the Municipalities roles in regards to District Cooling?

How is the the District Cooling development in China?

What is District Cooling?

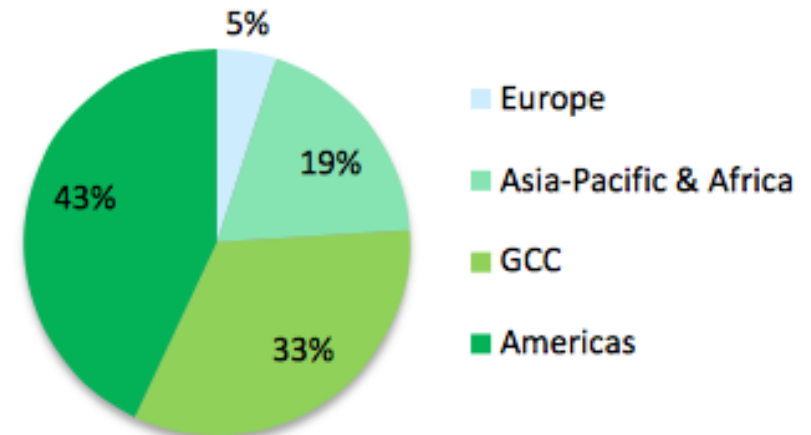


District Cooling Worldwide

North America: 18 GW / (25 TWh*)
Europe: 2 GW / 3 TWh
Middle East: 14 GW / (45 TWh*)
Japan: 7 TWh

*estimated figures

DC market worldwide (2014)



Source: Marafeq Qatar 2015

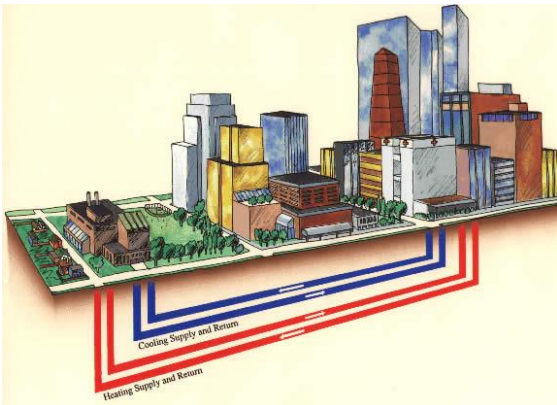
SWOT - District Cooling (in PRC)

Strengths

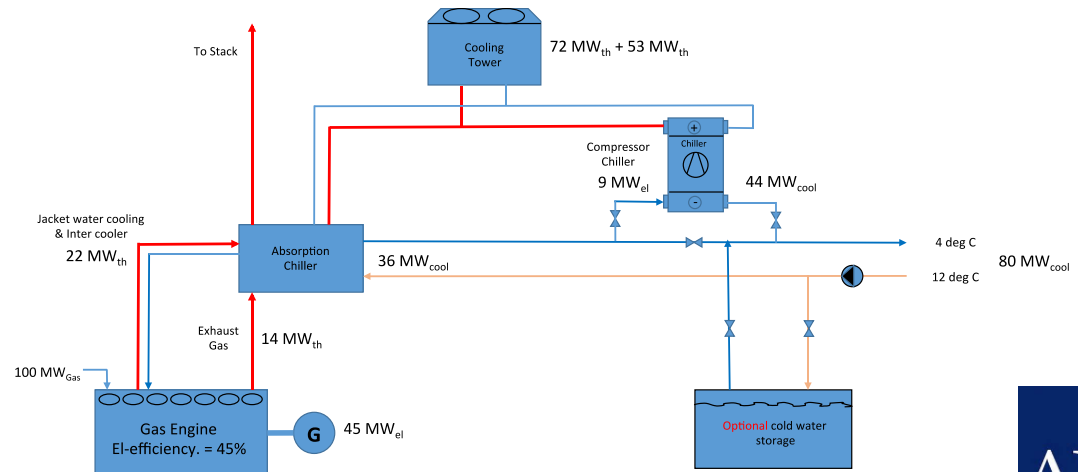
- Increased energy efficiency by 25%–50%
- Improved environmental efficiency
- Long lifespan of up to 50 years (low maintenance cost and improved management)
- Financial competitiveness (with the right preconditions) compared to traditional air conditioning split-units

Weaknesses

- High initial costs (front-loaded investments)
- Only financial competitive for areas with relatively high energy density
- Lack of incentives and regulations
- Require well-structured and coordinated planning, design and project implementation



Source: IDEA



SWOT - District Cooling (in PRC)

Opportunities

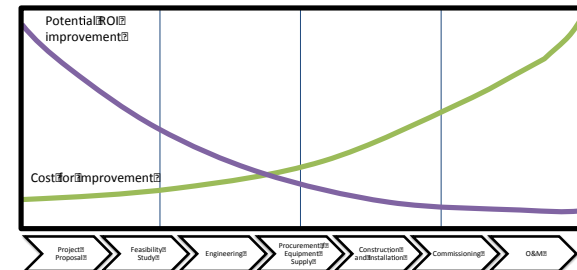
- Huge annual market potential growth of 5.4 TWh or 4.2 GW, which is larger than the current Japanese and European district cooling markets
- Increased environmental public and governmental awareness
- Increased public comfort expectations
- A few success cases start to be visible

Threats

- Customer protection in terms of pricing and quality of services
- Unsatisfactory feasibility studies
- Delayed load ramp-up and occupation ratio
- Inexperienced professionals for any stage of planning, design and project implementation



Influence of Project Optimization Made Along The Project Value Chain



District Energy Regulations Worldwide

Characteristic	Market Regulation	Economical Regulation	Social Regulation
Pricing basis	Alternative cost	Reasonable cost	Affordability
Political influence	Low	Medium	High
Administrative cost	Low	High	Medium
Attractiveness (for private investors)	Medium*	High	Low
EE incentives	High	Medium-High	Low
...			

Municipalities role for DC success in PRC

- Long-term planning; Integration of Energy Planning into Municipal Urban Planning
- Implementation of National- and Provincial Guidelines and Policies
- Stimulate an attractive business environment; Influence criteria systems for urban developers etc.
- Stimulate public awareness on Energy Efficiency and District Cooling



Asian Development Bank's efforts

- Initiating the study “District Cooling in the PRC - Status and Development Potential”
- Share the experiences on various forums, such as;
 - ACEF 2016
 - District Cooling Summit in Singapore (25–28 July 2016, Equip Global)
- Further support initiatives by governmental bodies to stimulate a positive development of financial-, technical- and environmental beneficial feasible District Cooling, such as;
 - Establishment/development of a coordinating national organization (ref. CDHA)
 - Establishment of a District Cooling Best Practice Handbook
 - Development of District Cooling Demonstration Project

Thank you!

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