Rescue

RENEWABLE SMART COOLING FOR URBAN EUROPE

WORK PACKAGE 6

Report on communication events and networking

Co-funded by the Intelligent Energy Europe Programme of the European Union

This report was elaborated in the framework of the RESCUE project co-funded by the Intelligent Energy Europe Programme of the European Union

Report prepared by:

AGFW PROJEKT-GMBH

RESCUE – RENEWABLE SMART COOLING FOR URBAN EUROPE

REPORT ON COMMUNICATION EVENTS AND NETWORKING

1. PREFACE

This report has been elaborated in the RESCUE (Renewable Smart Cooling in Urban Europe) project. This IEE (Intelligent Energy Europe) co-funded project is scheduled from June 2012 to November 2014.

Project Coordinator: Prof. Clemens Felsmann, Technische Universität Dresden, Professorship of Building Energy Systems and Heat supply

Principal Authors of this Report: Stephan Orita, AGFW, Germany

With Contribution by the RESCUE partners:

- TU Dresden (www.tu-dresden.de)
- Capital Cooling Energy Service AB (www.capitalcooling.se)
- Climespace (www.climespace.fr)
- Helsinki Energy (www.helen.fi)
- AGFW (www.agfw.de)
- Euroheat and Power (www.euroheat.org)
- ICLEI Europe (www.iclei-europe.org)
- Regional Energy Agency of Liguria (www.areliguria.it)

If you would like to know more about RESCUE project please visit our website www.rescue-project.eu.

2. PROJECT DESCRIPTION

Cooling energy demand within Europe, especially in urban regions, is rising significantly, mainly caused by building design, internal heat loads, heat island effects, and comfort reasons. If served conventionally using small scale and distributed electric driven compressor chillers this would result in a significant rise in primary energy consumption, greenhouse gas emissions and peak electricity demand.

The RESCUE project focuses on the key challenges for further development and implementation of District Cooling (DC) using low and zero carbon emitting sources, thereby enabling local communities to reap the environmental and economic benefits of this mature technology. Although DC allows the application of high efficient industrial chillers or absorption chillers driven by waste heat it is estimated that DC market share today is about 1-2 % in the service sector (which is about 3 TWh) but less than 1 % of the total present existing European cooling market including residential. The main steps to extend the use of smart, energy efficient and renewable DC Systems are:

1. Dissemination of essential background information.

2. Decision making based on (pre-) feasibility studies exploring cooling options.

3. Implementation, monitoring and optimization.

The RESCUE project focuses on steps 1 and 2 within the project duration addressing main actors and target groups, i.e. Local Authorities (LA), utility companies, building owners, and the financing sector. The main objectives of the project are therefore:

- Promote DC as a high potential, sustainable energy solution.

- Increase familiarity and reliability of information available to decision makers and LA about the DC business.

- Improve networking activities and experience exchange.

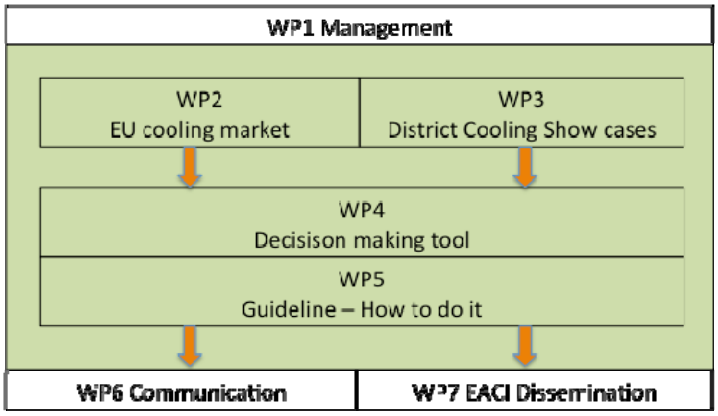
A key action of the project is to provide a number of target cities with a decision-making support package assisting LA to account for DC in their planning policies and to guide them when looking for cooling options fitting best to their Sustainable Energy Action Plan (SEAP). Key outputs and main deliverables of the project, available to the public, are:

- An impact calculator which shows the key figures in comparison between Central and Distributed solutions.

- A set of guidelines and handbooks related to the DC business and the decision making process.

- Reports describing the cooling energy market, the energy performance evaluation as well as DC best practice and show cases.

The RESCUE project consists of seven Work Packages (WP), whereas WPs 1, 6 and 7 are dedicated for project management and communication, WP2 is dedicated to conducting a market survey for cooling in Europe and to establish how DC can contribute to the 20-20-20 targets. WP3 is to showcase examples of DC systems in Europe in order to demonstrate their performance and to provide details on the use of renewable energy sources (RES), improvements in energy efficiency and CO_2-savings. Within WP4 a “Decision Making Support Package” is developed, applied and enhanced to guide and assist LA in their decision processes regarding cooling issues in local energy concepts. The purpose of WP 5 is to provide practical information related to start-up of DC systems and the DC business in general.


WP1 Management
WP2
EU cooling market
WP3
District Cooling Show cases
WP4
Decisison making tool
WP5
Guideline – How to do it
WP6 Communication
WP7 EACI Disserination

3. GENERAL

The RESCUE project addresses the key challenges for the further development and implementation of district cooling using low and zero carbon emitting sources. It aims to enable local communities to reap the environmental and economic benefits of this mature technology. In order to succeed with this target the visibility of the project and the dissemination of its results are of vital importance.

In general, to extend the use of smart, energy efficient and renewable DCS, three steps have to be performed:

1. Dissemination of essential background information (share knowledge and experiences)

2. Decision making (offer support for making informed decisions)

3. Implementation, monitoring and optimisation (act, track and improve).

Steps 2 and 3 may not be performed without the first, highlighting the importance of approaching the right stakeholders with dissemination activities and spreading the word of the project in the respective communities.

Among the most important stakeholders are both local governments and utility companies.

Local Authorities are involved in mitigating climate change and are more and more trying to set their own agenda in regards to the energy system. District Cooling can provide a valuable asset in these actions.

Utility companies are the stakeholders responsible for actually implementing District Cooling and take the risk of operating this energy efficiency technology. This includes municipality owned and private utilities. Without the engagement of these stakeholders no significant development can be foreseen.

In order to encourage the use of the project's findings and tools presentations will be provided to these stakeholders and their representations, meaning networks and associations.

Therefore project partners approached relevant stakeholders at events by holding presentations and engaging in discussions in order to attract attention, gain visibility and enable stakeholders to engage with the project.

4. COMMUNICATION AND NETWORKING EVENTS

4.1 THE NEXT DHC GENERATION CONFERENCE IN BRUSSELS

The event provided an opportunity for all relevant stakeholders to obtain first hand information on different projects related to District Heating and Cooling and to discuss new concepts and ideas that will enable the benefits of District Heating and Cooling to be realised.

Taken in parts from the event's website: The first day included sessions "Smart Comfort for Cities", "Solar District Heating", and "Smart Cooling". These sessions showed that District Cooling, and the concept of "smart cities", can be integrated into local energy planning in order to make cities, industries, and other energy customers smarter and greener. Successful case studies from European cities that have integrated sustainable DHC into their energy mix were presented. A Panel Debate at the end of the day helped to facilitate discussions. The "DHC+ Student Awards" was officially launched, presenting an opportunity to inform participating students and stakeholders about this international initiative, which aims to highlight outstanding and original contributions to District Heating and Cooling (DHC) related research. A DHC+ technology platform workshop on Education and Training to discuss other relevant initiatives was held in parallel.

The RESCUE presentation dealt with the increased need for cooling in urban areas and its origins. The warmer climate, particularly an increase during extremely hot days accounts for this increased need as well as heat island effects in urban areas and the rising comfort expectations from users. The problems this rising demand creates are the increased energy use and the associated greenhouse gas emissions, the pressure on distribution and generation infrastructure. One of the possible solutions are better buildings that gain less heat and incorporate natural ventilation, however due to modern building codes and the associated insulation levels heat loads are harder and harder to dissipate. Better urban planning through adding green spaces and air flow corridors might also be a solution. But better cooling technology, such as District Cooling with the possibility to use natural cooling, waste heat and reduce the pressure on electric distribution and generation infrastructure and the need for redundant plants is certainly one of the most promising approaches to tackle the future challenges.

With the presentation around 100 participants, including local, regional and national authorities and facilitators and building professionals could be reached.

4.2 11TH CLIMATE TECHNOLOGY INITIATIVE WORKSHOP IN BERLIN

The Climate Technology Initiative fosters technology transfer, particularly in the fields of energy efficiency, renewable energies and climate protection.

The RESCUE presentation highlighted the support package, consisting of a methodology, toolset and practical guidance for policy makers, energy planners and technical staff. Since it is used to assist municipalities and local utilities in recognising the benefits that District Cooling can offer and to assess the potential viability of a system in the respective location, the audience was very receptive towards the message. The benefits for municipalities in the form of direct technical guidance were another topic that was being addressed.

The presentation around 40 decision makers, international experts, representatives from financing institutions and energy efficiency project developers from a broad range of countries were reached.

4.3 4TH ANNUAL MIDDLE EAST DISTRICT COOLING SUMMIT IN DOHA

The 4th Annual Middle East District Cooling Summit gathered delegates to learn of the latest news regarding District Cooling technologies, regulations, opportunities and technological solutions in the Gulf Cooperation Council utilities sector.

The three-day event promised to redefine the outlook for District Cooling in the GCC market. It featured 20 presentations, 4 panel discussions and a business networking session, before culminating with half-day post conference workshops on the final day.

The RESCUE presentation focused on the aim of the project, namely to address key challenges for further development and implementation of District Cooling using low & zero carbon emitting sources, fitting right into the context of the event. Further highlighted was the support package, since the audience consisted of all relevant stakeholders: policy makers, energy planners and technical staff.

Other participants included leading District Cooling technology specialists from a global platform but also Middle East based organizations who are advocating the use and adoption of District Cooling systems proactively. 200 participants could be reached.

4.4 ERASMUS UNIVERSITY SUMMER SCHOOL IN ROTTERDAM

Many universities offer special summer courses on special subjects. The Erasmus University in Rotterdam is no different, offering a short course on “Urban Management Tools for Climate Change”.

The background for this short course is the importance of cities in the context of climate change. Taken from the course’s description: “Cities are increasingly expected to undertake concrete actions to adapt to sea level rise, floods, droughts and other natural disasters exacerbated by climate change and climate variability. The impact of climate change differs for rural and urban areas, coastal cities, mountain cities and low-latitude cities. What concrete activities should coastal cities undertake? This course offers management tools for urban policy makers, planners and environmentalists.”

Participants are to be enabled to prepare local climate change plans, which address the global challenges yet focus on concrete local actions following the principle of “think global and act local”. The course offers specific practices to manage urban design and environmental infrastructure, in particular energy, transport, housing and water. District Cooling is one part of this concept.

The RESCUE presentation focused on the rising cooling demand, due to the importance of correct functioning of computers and manufacturing instruments and productivity concerns. The professionals were then informed on the problems of conventional cooling solutions, namely the high amounts of primary energy consumption and greenhouse gas emissions, rise of peak electricity demand and the fact that the impact of conventional on-site cooling solutions is “hidden” in the electricity bill.

The participants learned about the benefits of District Cooling in terms of Reducing electricity consumption and peak shaving (if District Cooling would cover 25 % of the cooling market in Europe, electricity consumption could be reduced by 50 to 60 TWh per year), saving greenhouse gas emissions (f District Cooling would cover 25 % of the cooling market in Europe, CO_2-emissions could be reduced by 42 to 50 million tons each year) and saving primary energy (EU 20% efficiency target).

24 municipal energy efficiency professionals and Erasmus students were reached.