

ICN SUMMIT 2014 CREATING SMARTER SOLUTIONS

PROGRAMME 21-22 MAY, 2014



Welcome to ICN Summit 2014

At this year's ICN Summit we will be focusing on cities. Cities across the world currently face major urgent challenges related to rapid urbanisation and climate change: congestion, waste accumulation, resource depletion, water shortages and cloudbursts.

Today, twelve eleven cities will present challenges, inviting your recommendations on their address. The cities are looking for solutions that are as innovative and visionary, as they are applicable and economically profitable for all parties. We will create solutions that take into account the full complexity of each challenge. We create smarter solutions.

This is not a mere exercise, but a rally for bringing about actual

change for the cities involved. It does not end today, but rather lays the ground for new partnerships and business opportunities for the coming years.

Today, twelve cities challenge us to devise holistic solutions to their problems. Today, we accept that challenge.

WITH WARM REGARDS



Stephan Skare Nielsen, Head of International Cleantech Network



Anders Eldrup, Chairman Copenhagen Cleantech Cluster



OUR MEMBERS, PARTNERS & SPONSORS

The International Cleantech Network

The ICN Summit is organized by the International Cleantech Network (ICN) and Copenhagen Cleantech Cluster. The ICN brings together leading cleantech clusters all over the world because problems are global. We need global co-operation in order to create smarter solutions.

Host to the ICN Summit 2014:

Copenhagen Cleantech Cluster (CCC) is at the heart of the cleantech ecosystem in Denmark. CCC's mission is to create an attractive platform for knowledge sharing and collaboration between Danish and foreign companies, knowledge institutions, organizations and authorities in order to promote growth and employment, support entrepreneurs and growth in SME's and increase international awareness of Danish cleantech.

Members of ICN

- ACLIMA: Bilbao, Spain
- Colorado Clean Energy Cluster: Fort Collins, USA
- Copenhagen Cleantech Cluster: Copenhagen, Denmark
- ECO World Styria: Graz, Austria
- Ecotech Quebec: Montreal, Canada
- Incheon Technopark: Incheon/Songdo, South Korea
- Lombardy Energy Cluster: Milano, Italy
- Oslo Renewable Energy and Environment Cluster: Akershus, Norway
- Renewable Energy Hamburg: Hamburg, Germany
- Singapore Sustainability Alliance: Singapore
- Tenerrdis: Grenoble, France
- Research Triangle Cleantech Cluster: Raleigh, USA
- China Yixing Industrial Park for Environmental Science and Technology: Yixing, China



Programme - 21 May

09.00 - 09.15	Welcome Anders Eldrup, Chairman, Copenhagen Cleantech Cluster	
09.15 - 09.30	The International Cleantech Network Stephan Skare Nielsen, Head of International Cleantech Network	
09.30 - 09.40	Setting the scene; Creating Smarter Solutions Greg Clark, Global Advisor on City Development and Investment	
09.40 - 10.10	Keynote: Designing Cities; Designing the Future Dimitri Zenghelis, Senior Visiting Fellow, Grantham Research Institute, London School of Economics	
10.10 - 10.30	Introduction to tracks Greg Clark	
10.30 - 12.00	6 tracks to choose from Optimizing Urban Mobility Designing Energy Infrastructure Waste as a Resource Water Management Big Data for City Solutions Creating the Liveable City	
12.00 - 13.15	Lunch	
13.15 - 13.20	Introduction to city sessionsGreg ClarkRoom: The Concert Hall	
13.20 - 13.50	Keynote: The Art of Integrating Blue-Green-Social for Liveable Cities Herbert Dreiseitl, Director, Liveable Cities Lab, Ramboll	
13.50 - 14.20	Keynote: Bicycle Urbanism by Design - Why we should design human cities instead of engineering them Mikael Colville-Andersen, CEO, Copenhagenize Design Company	

14.20 - 14.30	Transition to city sessions
14.30 - 16.30	City challenges
	Sant Cugat del Vallès The Concert Hall Graz Ladies' Hall
	Milan Gentlemen's Hall Copenhagen The King's Hall
	Grenoble Schimmelmann's Hall Osaka Hall of Roses
	Barcelona The Red Lounge Istanbul The Gallery Hall
	Perth Bergentin's Hall Rotterdam Hall of Mirrors
	Boulder, Fort collins, Loveland The Banquet Hall
	Hamburg The King's Hall
16.30 - 16.45	Coffee and gathering in The Concert Hall
16.45 - 17.30	Concluding remarks
	Greg Clark
17.30 - 19.00	Reception
	Ground floor

Cleantech Sites and Seminars - 22 May

Contact a member of the organising team to sign up if you are not registered. See page 19 for details.

09.00 - 11.00	Boat Tour in the Harbour of Copenhagen
11.00 - 17.30	Tour 1 - Liveability in Copenhagen
	Tour 2 - Energy Infrastructure and Cleantech Bazar
	Tour 3 - From Waste to Energy and Resources
	Tour 4 - Big Data and City Solutions
	Tour 5 - Kalundborg Industrial Symbiosis

6

TRACK 1: OPTIMIZING URBAN MOBILITY

The growth in population in cities all over the world puts immense pressure on street space and creates congestion. Cities face enormous challenges when it comes to managing traffic and at the same time creating an attractive and healthy city for their citizens. Intermodal passenger transport planning solutions, smart parking solutions based on use of real-time data and intelligent traffic lights are just some examples. Join the discussion with leading experts on the field.

MODERATOR: Vinay Venkatraman CEO, Leapcraft



LIVEABLE MOBILITY

Kristian Villadsen, Gehl Architechts

Kristian has been with Gehl Architects since 2005. His focus area is on capacity building, competition briefs, regeneration strategies for deprived areas, strategic planning frameworks and sustainable cities.



Andreas Leo moovel GmbH

Andreas is a Corporate Communications Manager of Daimler's subsidiary moovel GmbH (former Daimler Mobility Services GmbH). With the car2go brand, DMS is the world's leading provider of flexible car sharing programmes.



INCREASE BIKING IN URBAN AREAS

Daniel Kofler BikeCityGuide Apps GmbH

Daniel's passion for bikes resulted in the foundation of BikeCity-Guide Apps GmbH with Andreas Stückl and Dietmar Hofer in 2011. The startup company develops apps and provides wider concepts for promoting cycling in urban areas.

Cities presenting challenges:

Boulder, Fort collins, Loveland Milan Perth Graz

The integration of renewable energy sources requires an ever greater flexibility and intelligent design of the energy infrastructure. An intelligent and flexible infrastructure is more than just a smart electricity grid; it is a smart energy system, which is able to integrate many different types of energy grids including gas, electricity and district heating and cooling. Join the discussion on how to design the intelligent energy infrastructure.

MODERATOR: Helle Juhler-Verdoner Managing Director, Danish Intelligent Energy Alliance



THE HIDDEN **BACKBONE OF** THE LIVEABLE CITY

Anders Dyrelund Ramboll

Anders has worked with planning of urban energy solutions in Denmark and in more than 20 other countries. He is a District Heating and Energy Planning Specialist.



THE DEVELOP-MENT OF THE HEAT MARKET IN THE UK

Ben Lynch Carbon Trust

Ben is the Manager of technical services to the Carbon Trust's Public Sector customers. He leads all technical aspects of their decentralized energy project portfolio.



DESIGNING **ENERGY INFRA-**STRUCTURE IN A DANISH PERSPECTIVE

Kim Ernst Copenhagen Cleantech Park

Kim is former Vice President, DONG Energy Renewables, with more than 35 years of experience in the power sector industry.

Cities presenting challenges:

Osaka Grenoble Istanbul Boulder, Fort Collins, Loveland

How do we make the most of our waste? Waste is already a high value product traded across borders and resource scarcity makes efficient use of waste resources necessary in order to ensure future production. Whether it is directing waste away from landfills, utilizing waste for energy production or creating high value products based on waste, an efficient waste handling management system constitutes one of the most important future societal challenges.

MODERATOR: Nicholas Krøyer Blok Project Manager, Monday Morning Sustainia



POTENTIALS AND BARRIERS FOR THE BIO-FCONOMY

Lene Lange Aalborg University

Lene is a Professor in biotechnology at Aalborg University. Her experience in both academia and industry, has enabled her to acquire extensive experience from all parts of the knowledge-value-chain.



WASTE PREVENTION, **RE-USE AND RECYCLING IN URBAN AREAS**

Birgit Munck-Kampmann Copenhagen Resource Institute

Birgit has been the institute's Director since 2000. In her capacity as Manager of European Topic Centres on Waste & Material Flows and Waste & Resource Management.



THE FUTURE OF BIOWASTE - WHERE ARE WE HEADING?

Theis Gadegaard Krüger

Theis is Market Manager at Krüger and has been working for the company for 14 years. As Market Manager he is responsible for sales and innovation programme.

Cities presenting challenges:

Sant Cugat Del Vallès Istanbul Barcelona

Osaka

How do we handle water in an intelligent manner in ever bigger cities? Water constitutes an array of challenges depending on local needs and conditions. In fast growing urban areas, water has become a scarce resource and there is a need to avoid waste of water and to find new ways at cleaning and reusing waste water. Yet, in other cases cloudbursts constitute a real threat to the urban infrastructure and health conditions. Either way, intelligent water management is an essential part of the future challenges for cities everywhere in the world.

MODERATOR: Mette Tjener Andersson Business Development Manager, Urban & Industry, DHI



INNOVATION AND GROWTH IN THE WATER MANAGEMENT SECTOR

Mikkel Thomassen Smith Innovation

Mikkel is co-founder of Smith Innovation. His main interest is to foster long-term innovation with a focus on water management and climate adaptation.



DISASTERS

TAMING

GLOBAL FLOOD

Chris Zevenbergen Dura Vermeer

Chris is Strategic Advisor of the Executive Board of the Dura Vermeer Group NV. Chris Zevenbergen is also professor at the Water Engineering Department of UNESCO-IHE and at TuDelft, The Netherlands.



WATER, PUMPS, ENERGY &

Rasmus Blom Grundfos

Rasmus is Director of Grundfos Connect with the overall responsibility of defining the digital products and services focusing on Water and Energy.

Cities presenting challenges:

Copenhagen Barcelona Rotterdam Hamburg

10

We have all heard the quote 'Big Data is the new oil'. However, the problem is that everyone talks about it, but nobody really knows how to do it and everyone thinks everyone else is doing it. There is no doubt that data can improve city planning and it is the raw material enabling smart city solutions. We have seen many small scale examples of this all over the world. How can we utilize big data for large scale smart city planning and solutions? How can we make big data a natural part of the smart city?

MODERATOR: Marianna Lubanski, Director - Investment Promotion & Clusters, Copenhagen Capacity



HAS THE KEY **TO UNLOCKING BIG DATA BEEN**

Tim Fawbert Hitachi Europe

Tim's role with the Hitachi Business Development team is to work closely with the related Hitachi Divisions, and to link them with European customers and partners, to meet tomorrow's challenges.



Peter Lange IBM

Peter is Executive IT-Architect within Smarter Cities with a long international career within Smarter Cities, Big Data and e-Government.

BIG DATA AND

THE QUEST

FOR BETTER

BUSINESS

MODELS



INTELLIGENT STREET LIGHTING AND SMART CITIES

Kenneth Aastrup Citelum Danmark

Citelum offers lighting solutions that go beyond function. Citelum street lighting improves safety and security, helps users find their way, and highlights important features in the urban landscape.

Cities presenting challenges:

Sant Cugat Del Vallès Grenoble Rotterdam Hamburg

The 21st century belongs to the cities. Home to more than half of the world's population, cities have not only become the main growth engines for new development; they have also become the chief consumers of energy and resources. Situated at the very heart of the global social, economic, and environmental development, cities hold the key to creating a truly sustainable future. Join the discussion on how to unlock this potential.

MODERATOR: Mads Sand Madsen Group Director, Global Accounts & Sales Excellence, Ramboll



INFRASTRUC-TURE AND SOCIAL EQUITY

Savvas Verdis Siemens/LSE

Urban infrastructure economist at Siemens and Senior Research Fellow at the London School of Economics. He consults city and national governments on urban development strategies and the evaluation of infrastructure projects.



IF GROUND FLOOR WORKS?

Louis Becker Henning Larsen Architects

Architect and partner at Henning Larsen Architects A/S. Since 1998 part of management and in 2005 appointed director of the international market.



SHARING THE SMART CITY

Søren Smidt-Jensen Danish Arcitecture Centre

Søren Smidt-Jensen leads the CITIES programme at the Danish Architecture Centre. Currently he leads the Strategic Urban Governance Leadership Programme for executives from Danish municipalities.

Cities presenting challenges:

Copenhagen Barcelona Rotterdam Graz

12 city challenges

COPENHAGEN

CITY OFFICIAL:

Lykke Leonardsen, Head of Climate Unit, City of Copenhagen TRACKS: Creating the Liveable City Water Management

How can the city administration, their partners and stakeholders secure that the climate adaptation plan is implemented during the next 5 to 10 years and beyond?

In 2011 a massive cloudburst showed the vulnerability of the city to the future climate. Massive traffic disruption with closed roads, power cuts at hospitals, and flooded basements all over the city demonstrated the urgency for action. The cloudburst in 2011 was a game changer both on a local and a national level, and showed the need for a cloud burst plan. In 2014 the City Council must decide on how the implementation should take place. This includes deciding how fast implementation should occur, in what order, and what is the fair economic distribution between different actors and interests.

BARCELONA

CITY OFFICIAL:

Maria José Chesa Marro, Director of Planning & Innovation, City of Barcelona

Wate

Water Management Waste as a Resource

How can Barcelona use public management tools to improve odor control?

The odors from sewers have become an increasing problem for the City of Barcelona and have since been high on the agenda of the citizens' concern. The complaints may though have different origin, e.g. solid waste, emissions or sewers. In the last few years citizens' sensibility to this problem has increased, especially in the case of sewer smell. The solution should be a general approach that public managers can use. Especially sensor technologies and self-cleaning drains are of interest here.

MILAN

CITY OFFICIAL: Maria Berrini, President and Managing Director, City of Milan



How can increased Urban Mobility make Milan greener and smarter? Milan's key challenge is the traffic congestion in the city. Air and noise pollution exceed the critical values set by the EU and the high level of car ownership adds to the problem. The second largest city of Italy, which is home to 1,3 Million people remains the country's main industrial engine. Milan is working strategically to smarten the city within six areas: Smart Economy, Smart Living, Smart Environment, Smart Mobility, Smart People and Smart Governance. The city is now looking for a way to reduce negative mobility impacts.

GRENOBLE

CITY OFFICIAL:

Xavier Normand, Project Manager, "Sustainable Cities" Coordinator, City of Grenoble

TRACKS:

Energy Infrastructure Big Data for City Solutions

How can technological systems and information be used to influence consumer behavior and energy consumption?

Thermal performance of new housing is improving quickly thanks to new building solutions. However, it leads to a set of challenges which are related to the issue of intelligent energy use and management: low temperature heating systems, the share of energy load linked with individual behavior becomes predominant and consumer behavior thus becomes a challenge. The city wants to learn how to influence consumer behavior towards energy consumption, especially if technological systems exist.

OSAKA

CITY OFFICIAL:

Mr. Hideo, Isozaki Technical Director & Maito Takagi, Architect Manager, Sakishima Smart Community Alliance

TRACKS: Energy Infrastructure Waste as a Resource

How can new technology improve thermal grid systems?

The second largest economy in Japan Osaka is exchanging nuclear power with green energy and has started to test smart home technology in 2011. 'Sakishima Smart Community', located in the Osaka Bay area outlines their challenge as: energy network along the railway, mutual use of boiler and chiller in buildings, biogas from sewage plants supplying DHP and energy to the district. In more concrete terms, Osaka wants to improve their thermal grid system by low-cost piping technology and products and low-cost biogas co-generation systems. They are looking for smart and unknown technologies that can be applied to the project.

GRAZ

CITY OFFICIAL:

Kai-Uwe Hoffer, Project management, Smart Future Graz, Urban Planning Directorate Graz

TRACKS:

Optimizing Urban Mobility Creating the Liveable City

How can Graz build a smart, pulsating urban quarter with zero emission, low use of resources, sustainable energy forms and sustainable mobility?

The Austrian Smart City flagship project "Smart City Graz" plans to transform a former industrial area into a future oriented and intelligent city quarter with attractive public spaces and a high quality of life, where sustainable urban mobility including e-mobility plays a vital role. Important questions further remain the issue of financing the necessary investments, increasing the visibility and strengthening the general public's awareness of and enthusiasm for smart cities. Graz is now looking for a concrete approach to "smart energy technologies" such as smart grids for heat and electricity, the coupling of isolated technological solutions to form one urban system emphasizing renewable energy and the development of smart mobility solutions.

SANT CUGAT DEL VALLÈS

CITY OFFICIAL:

Victor Martinez del Rey, Director of Territorial Management and Urban Quality Department, City of Sant Cugat del Vallès

TRACKS:



Big Data for City Solutions Waste as a Resource

How can data improve waste management and increase the quality of life?

Waste collection has decreased the quality of life of the residents living in the pedestrian zones: streets full of containers, dirt, and noise when collecting the waste. The city is now looking for new data technology to implement a waste management system that ensures the best ratio between costs, quality and service to citizens. The Strategic Plan 2011-2020 sets ambitious targets for sustainability and the liveable city. A number of smart solutions are being implemented: sensor monitoring in parking areas, a mobility sensorized system to avoid traffic jams and presence sensors to control lighting and regulation of the intensity in pedestrian areas.

PFRTH

CITY OFFICIAL: Doug Forster, Director of City Infrastructure and Enterprises, City of Perth

TRACKS:



How can Perth make a well-informed decision on whether or not to develop Northbridge West into a low cost sustainable village? The economic and social vitality of downtown Perth largely depends on retail and service industries. However, increasing real estate prices and living expenses make it expensive for employees to live in the city. The City of Perth is now considering to change the under developed Northbridge West area into a low cost sustainable urban village, applying smart solutions such as inclusion of environmental enhancement systems. The city is looking for a predictive economic modelling in order to decide whether or not to develop the city area. The solution should include low impact integrated transport and choices in mobility.

ISTANBUL

CITY OFFICIAL: Fatih Yildiz, Head of Department for Water Treatment, City of Istanbul TRACKS: Energy Infrastructure Waste as a Resource

How can Istanbul efficiently use waste as a resource?

The city of Istanbul strives to find more efficient ways of using waste and thereby increase energy efficiency. The aim is to reduce the amount of waste and thereby increase the amount of recycled waste. The city will collect more resources from waste through targeted recycling and energy recovery while almost completely eliminating landfill. In addition, the exploitation of phosphor should be increased in order to spare primary sources of phosphor. Istanbul is looking for concrete ideas on how to install new plants and ways of measuring the efficiency of resources.

ROTTERDAM

CITY OFFICIAL:

Maike Akkers, Merwe-Vierhavens at Havenbedrijf Rotterdam, City of Rotterdam

TRACKS:



How can Rotterdam transform the former port areas in a sustainable urban development process that aims at connecting city and port? The City of Rotterdam faces the challenge of how smart/clean technologies can be integrated within energy, building, water and waste in order to create a liveable city in the Merwe Vierhaverns area. The aim is to connect city and port by developing former port areas. Stadshavens Rotterdam (e.g. Merwe Vierhavens Area) will become home of sustainable innovations, directly linked to education and the regional labour market in order to create an attractive business climate for (international) companies. For the period 2014-2025, room will be provided for economic and (light) industrial use. This development should be organized in such a way that after 2025 it's possible to realize housing within environmental guidelines.

BOULDER, FORT COLLINS & LOVELAND

CITY OFFICIAL: Bruce Hendee, Chief Sustainability Officer, City of Fort Collins



How can three Colorado cities jointly push for EV/PV adaptation at scale for daily in-commuters?

Employee commuting results in significant monthly gas costs and accounts for a significant portion of communities' greenhouse gas inventories. If you could be producing your own transportation fuel from your home PV system, the ROI and cross-sector benefits become compelling. The cities are looking for innovative ideas on technical solutions, human behavior change and the business models to bring EV/PV to scale. The cities are interested in examples where this may have been done, investor perspectives and interest, and prospective partners.

HAMBURG

CITY OFFICIAL: TBC

TRACKS:

Optimizing Urban Mobility Energy Infrastructure

Cleantech Sites and Seminars - 22 May

Join us on 5 tours of cleantech sites around greater copenhagen. The site visits will serve as platforms for extensive dialogue on the current status and future development of each of the industries.

The tours start at 11.00 from the Dome of Visions, Søren Kierkegaards Plads, 1016 Cph K and end at 17.30 at Copenhagen City Hall.

A detailed programme of each site and seminar can be found at the ICN meeting point located on the ground floor, where you will also have the opportunity to sign up for the tour of your choice. Please note that the number of seats is limited

Contact a member of the organising team to sign up if you are not registered.

PROGRAMME ADI	DRESS: SØREN KIERKEGAARDS PLADS, 1016 CPH K
09.00 - 11.00	Boat Tour in the habour of Copenhagen
11.00 - 17.30	Tours - cleantech sites and seminars
TOURS ADDRESS	SØREN KIERKEGAARDS PLADS, 1016 CPH K
TOUR 1: LIVEABILITY IN COPENHAGEN	Do you want to learn more about creating the liveable city? Join the City of Copenhagen on a bus tour and experience the harbour bath and Ørestaden, a new neighbourhood in Copenhagen; see examples of urban farming and green areas and attend presentations of improving cycling.

TOUR 2: ENERGY INFRA-STRUCTURE AND CLEANTECH BAZAAR

Siemens Windpower, the Technical University of Denmark and PowerlabDK have joined forces and invite the participants to visit an offshore wind farm outside Copenhagen harbour with Siemens Windpower, meet exhibitors from the academic research community at the Technical University of Denmark's Cleantech Bazaar and experience an experimental platform for smart grid at Powerlab-DK.

Technical University of Denmark

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SIEMENS

TOUR 3:

FROM WASTE TO ENERGY AND RESOURCES



From dumping on every street corner to ambitions of 100 % reutilisation, few of the thematic industries find such an international variety in practices as that of waste management. So how do we make the most of our waste? Experience Amager Resource Centre's incineration facility and the enzymatic bio-reactor of DONG ReneScience and find out.

TOUR 4: BIG DATA AND SMART CITY SOLUTIONS

Explore how big data can be used to create smarter cities and business opportunities. ORACLE will host the seminar and you can meet key people from the utility company SEAS-NVE and the City of Copenhagen.

ORACLE

TOUR 5:

KALUNDBORG INDUSTRIAL SYMBIOSIS



The Kalundborg Symbiosis is the world's first well-functioning example of an industrial symbiosis. It is a closed cycle- ecosystem, where the residual product of one enterprise is used as a resource by another enterprise. Novozymes and Kalundborg Utilities will be showcasing their sites with a focus on water management.

NB: This tour starts at 8.45, earlier than the remaining tours. Departure from Copenhagen City Hall



Investing in your future



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