



Connective Cities Dialogue Event for international and German municipalities on Municipal sustainable energy production and efficiency: planning and implementing innovative solutions

# Background Paper on the Methodology and Topic of the Dialogue Event

9 – 11 May 2016 Würzburg, Germany

On behalf of:



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In cooperation with:



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# **Connective Cities – Methodology and work process**

As a methodological approach for the implementation of international dialogue events, Connective Cities has opted for a strategy that is highly participatory and practice-oriented. This is meant to ensure that practitioners participating in these events share their respective practical context and receive feedback, leading to joint learning. In addition, the events give the opportunity to lay the foundations for future project activities that build on the ideas generated and implement and disseminate solutions for sustainable urban development processes further.

The first part of the current text explains the necessary preparation as well as the work process during the dialogue event. The second part includes a short presentation of the most relevant fields of work within the topic of municipal sustainable energy production. These subtopics will be discussed extensively during the dialogue event and will also form the framework for all good practice examples presented by participating practitioners.

# Preparation

The participants already take an active role in the preparation of the Connective Cities dialogues. We attach importance to active participants who take part in shaping the design, process and course as well as the desired goals of a Connective Cities dialogue event.

The selection of topics is correspondingly oriented on demand and reflects both the personal interests and the challenges that the municipal practitioners see themselves faced with. Experience has shown that a contingent of 20-30 participants enables an interactive approach and ensures that concrete results are achieved.

Fitting in with the chosen topic, "municipal sustainable energy production: planning and implementing innovative solutions", the participants prepare the event by developing a "Good Practice" (method, procedure, solution model, etc.) of sustainable urban development or a concrete challenge / problem situation from their direct practical environment. The "Good Practice" is then presented in form of a poster at the event.

In accordance with the project objective, the Connective Cities dialogue events feature an international structure of participants. This allows to address local as well as international challenges with a focus on solutions. The dialogue event creates a world-wide platform for municipal practitioners to learn together.

# **Dialogue event**

## **Phase I Thematic introduction**

The dialogue starts with a scientific introduction to the theme, which at this stage is introduced, contextually categorised and thematically grounded. Here, keynote speakers assume a central role.

## Phase II Exchanging good practices

Good practices serve as process initiators, lay the foundations for discussions and serve as idea stimulators.

The good practices are brought in by the practitioners from their immediate professional or work environment and are structured along key questions: basic issue, institutional background, approach, conclusion and transferability. Rather than presented through a Power Point presentation, the good practices are illustrated with posters on pin boards. This enables core elements to be visible throughout the event, showcased in an easy-to-understand way and orientated on practice. The idea is not to present so-called "best practices" but to give an insight into practical action in a local or regional context. An excursion giving an insight into local practice is an additional element of this phase.

#### Phase III Peer consulting

Peer consulting forms the core of each Connective Cities dialogue event. In addition to the challenges resulting from the presentation of good practices, concrete problems are gathered in the plenary or proposed by individual participants in advance. This enables to address real-life challenges emerging from the immediate environment of the practitioners with a focus on solutions in peer consulting. The aim is to jointly develop practice-oriented solutions for very concrete issues.

### Phase IV Joint project development

The fourth phase of the dialogue event deals with the development of new project ideas. Setting out from common interests, queries and existing expertise, participants get together and work out new project ideas that are then discussed, put into concrete terms and elaborated. The participants provide input on the specific topic, analyse the prerequisites and specific framework conditions or jointly develop a proposal on the approach to be applied. The result of this step is a joint development of ideas and proposals for innovative measures, spanning from urban development projects to further education and training to address the challenges the practitioners are facing. At this point, participants agree on next steps to be undertaken beyond the conclusion of the event. After the dialogue event Connective Cities continues to support the municipal experts in developing further networks and promotes cooperation by, for example, offering learning programmes, virtual project workshops or further project expert exchange.

The Connective Cities dialogue events are the first step towards supporting the municipal practitioners in establishing projects of their own in their cities.

# Thematic introduction Municipal sustainable energy production and efficiency: planning and implementing innovative solutions

## Background

Energy is a major component for both local and global economic development. It is needed for transport, industrial and commercial activities, buildings and infrastructure, water distribution, and food production. Most of these activities take place in or around cities, which are on average responsible for more than 75% of a country's Gross Domestic Product (GDP)<sup>1</sup>. With their high concentration of industry, transport systems, buildings and households, municipalities consume large amounts of energy (estimated between 60 and 80% of the global primary energy) and emit between 50 and 60% of the world's total greenhouse gases<sup>2</sup>. The majority of this energy consumption goes into buildings and transport.

In 2014, global energy supply consisted of 80.6% fossil fuels (oil, coal and gas), 9.9% nuclear power, and only 9.5% renewable energy sources (such as hydro, wind, biomass and solar)<sup>3</sup>. Unfortunately, this widespread use of fossil fuels causes a number of challenges. Carbon-based energy generation has a large ecological footprint, not only due to rising greenhouse gas emissions and pollution caused by burning fuels, but also because of extraction techniques that contaminate the environment, and frequent production or delivery accidents. Furthermore, because of the current mono-dependency on fossil fuels, supply drops or price hikes can easily disrupt economies. Fossil fuels are also all too often a source of regional conflicts and are misused as a means of political pressure. Besides, fossil fuel resources are not infinite, and their depletion is a near reality<sup>4</sup>.

#### Municipal solutions to the energy challenge

Despite the increasing energy demand in cities, it is at the municipal level that considerable potential to plan for and to produce energy sustainably and strengthen energy efficiency exists.

A sustainable urban energy system will need low carbon technologies on the supply side, and efficient distribution infrastructure as well as lowered consumption on the end-user side. Cities therefore need to shift from the current unsustainable fossil fuel energy generation towards using renewable energy sources, not only because of looming resource depletion but also to curb the negative externalities such as pollution and greenhouse gas emissions. At the same time, energy consumption must be reduced by changing consumption patterns and adopting energy saving techniques<sup>5</sup>.

Photovoltaics, wind power, biogas and combined heat and power production are just some of the examples that cities around the world have already experimented as reliable ways to achieve a more sustainable energy supply mix towards a greener urban economy.

Municipal authorities aim to overcome the challenges of the energy transition with a vibrant and strong provision of local authority services of public interest, because this would also successfully safeguard the public provision of light, heat, and electricity. To this end municipal governments strive to support the most innovative solutions that can be applied to daily life as well as regional and decentralized solutions to the energy transition to more sustainable energy production. However, policy at the regional and

<sup>&</sup>lt;sup>1</sup> UN-Habitat, Urban Themes, Energy, <u>http://unhabitat.org/urban-themes/energy/</u>

<sup>&</sup>lt;sup>2</sup> UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, Nairobi, UNEP, 2011

<sup>&</sup>lt;sup>3</sup> IEA, Key World Energy Statistics, Paris, IEA, 2015

<sup>&</sup>lt;sup>4</sup> UN-Habitat, Urban Themes, Energy, <u>http://unhabitat.org/urban-themes/energy/</u>

<sup>&</sup>lt;sup>5</sup> UN-Habitat, Urban Themes, Energy, <u>http://unhabitat.org/urban-themes/energy/</u>

national levels needs to ensure that it regularly and consistently strengthens local authorities with regard to all their prevailing economic and political circumstances<sup>6</sup>.

The transition to a more sustainable energy supply mix and to a more efficient use of energy is a joint effort at all government levels as well as in cooperation with all stakeholders (academia, business and civil society) and this collaborative approach is an essential condition for its success. The goal is to achieve a future energy market design that ensures harmonious relationship between generating capacity and the expansion and modification of the networks, system stability, supply security, increased cost efficiency, and compliance with climate change targets.

Along with the creation of new jobs, the transition to a more sustainable energy supply promotes new technology and innovation, in particular in terms of renewable energies, energy efficiency, grid technology, and product innovation. Practical planning solutions and innovative approaches in urban projects in this area can achieve widespread local impacts and significantly contribute to global sustainability goals.

## Main themes of the dialogue event

The dialogue event 'Municipal sustainable energy production and efficiency: planning and implementing innovative solutions' will bring together international and German municipal experts from 9 to 11 May 2016 in Würzburg. It will focus on exchanging lessons learned in municipal sustainable energy production and efficiency from both a planning and an implementation perspective. Participants will include planning municipal practitioners, industry experts active in municipal energy production and efficiency projects as well as representatives from academia, research institutes and civil society contributing to this type of projects.

The participants will be organised into four working groups, which will focus on the following themes:

# 1. Planning for municipal energy supply through renewable energy sources

Renewable energy technologies such as wind, water, solar, and geothermal are becoming more accessible and already cover the energy demands of some neighborhoods if not whole cities in certain areas. The intermittence of supply and high upfront costs are the main deterrents of a wider adoption. Nevertheless, benefits in the long run will outweigh the initial challenges, both from an environmental and economic perspective.

This working group will look into the successful implementation but also the challenges related to the municipal planning of renewable energy sources.

# 2. Innovative technologies for sustainable energy production, efficiency and storage

Beside renewable energy sources, new technologies to reduce emissions and improve resourceefficiency are progressively being used such as Combined Heat and Power (CHP) production for district heating and cooling solutions. Furthermore Information and Communication Technologies (ICT) offer additional possibilities to optimise the use of resources, including energy. This working group willlook at innovative solutions implemented and tested at the municipal level and will exchange on their wider applicability.

# 3. Impacts of sustainable energy production in local communities

The production of sustainable energy in municipalities creates new job opportunities and benefits from research and development input from academia and businesses as well as from an engaged and

<sup>&</sup>lt;sup>6</sup> German Council for Sustainable Development, *Making the Energiewende a success story thanks to strong local authorities*, Texts no. 43, May 2013

supportive civil society. This working group will focus on the impacts of sustainable energy production of a municipality on its wide range of stakeholders and on local experiences in different realities in this field.

# 4. Effective financing of municipal sustainable energy supply and energy efficiency

On top of the planning, technology and acceptance related to municipal sustainable energy production, the implementation of sustainable energy production and engaging in energy efficiency is very much linked to an effective and long-term financial plan. This working group will focus on the financing aspects of municipal sustainable energy projects, the challenges related to funding such activities and suggestions on how to best overcome those issues.