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An outline of the Study on
Climate Neutral City: How to Make UNECE cities
less Carbon-Intensive and More Resilient to
Climatic Challenges

Oleg Golubchikov

University of Birmingham

University of Oxford

UNECE Committee on Housing and Land Management

Challenges for UNECE cities

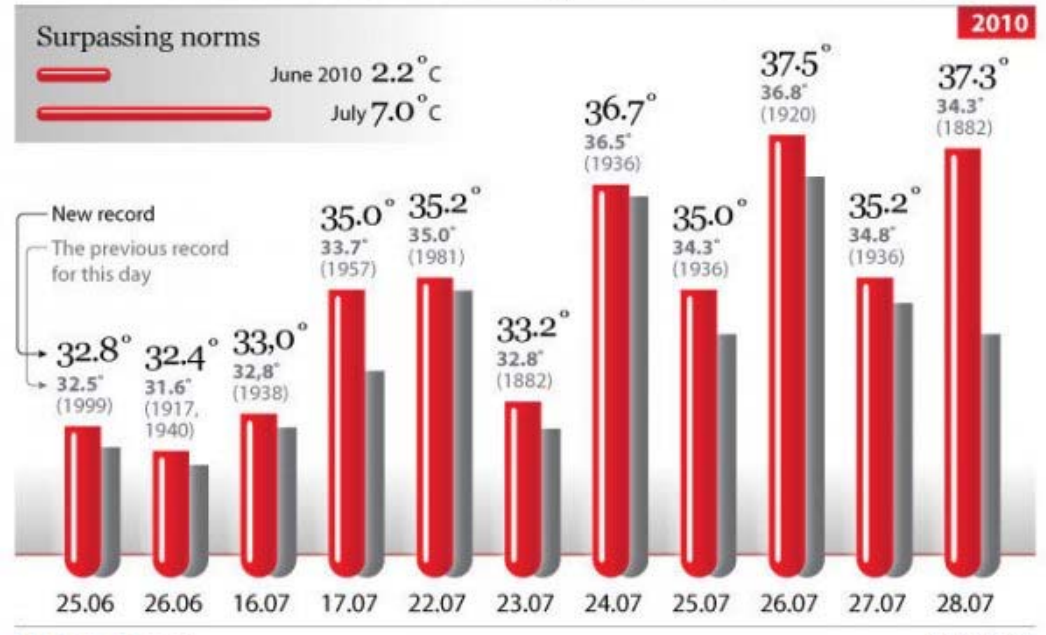
- High urbanisation rates across UNECE
- Cities need land and energy

- Sustainability agenda
- Energy crisis
- Climate change

- UNECE – ½ of the global GHG
- Mostly concentrated in cities



Moscow's summer temperature records



Decarbonising urban economy
(net zero carbon emissions, free of fossil fuels)

Adapting cities to climate change
(future proofing, resilient cities)

CLIMATE NEUTRAL CITIES

Sustainable development of cities
and multiple benefits for the economy,
society and the environment

Masdar City

The world's first zero-carbon city
Being constructed in the United Arab Emirates



covering
6 sq km



Costing **USD\$22bn**

work initiated in
2006 due to be
completed in
2014



home to **50,000** people



1,500 businesses



60,000 workers expected
to commute daily

Automobiles will be banned within the city; travel will be accomplished via public mass transit and personal rapid transit systems, with existing road and railways connecting to other locations outside the city



Personal Rapid Transit



Light Rail Transit



Metro & High Speed Rail



40 to 60 megawatt solar power plant, will supply power for all construction activity. Photovoltaic modules will be placed on rooftops to provide solar energy -130 megawatts

Wind farms will be established outside the city's perimeter capable of producing up to 20 megawatts

The city also intends to utilise geothermal power, in addition, there are plans to host the world's largest hydrogen power plant.

Water management - a solar-powered desalination plant will be used to provide the city's water needs, with approximately 80% of the water used being recycled. Waste water will be reused "as many times as possible," with this greywater being used for crop irrigation and other purposes.

Biological waste will be used to create nutrient-rich soil and fertiliser, and some may also be utilised through waste incineration as an additional power source. Industrial waste, such as plastics and metals, will be recycled or re-purposed for other uses.

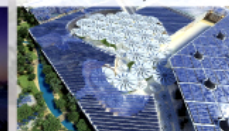
Renewable resources

Masdar Main Street

Masdar Institute

Masdar Headquarters

Masdar City Plaza



The world's first carbon-neutral city

Being built in Abu Dhabi, UAE

Designed by Fosters & Partners

Zero carbon + zero waste

Solar and other renewable energy

Banning cars within the city

Public transport system and personal rapid transit systems

Examples of cities' carbon emissions reduction plans across UNECE regions

Copenhagen – 20% by 2010 below 2005

San Francisco – 20% by 2012 below 1990

London, UK – 60% by 2025 below 1990

Rotterdam – 50% by 2025 below 1990

Hamburg – 40% by 2020, 80% by 2050 below 1990

Amsterdam – 40% by 2025 below 1990

Vancouver – 33% by 2020 below 2007

New York City – 30% by 2030 below 2005

Paris – 75% by 2050 below 2004

Stockholm – 60-80% by 2050 below 1990

Växjö, Sweden - 50% by 2010, 70% by 2025 below 1993

Rationale for CNC study

- Emission targets: easy to promise, hard to deliver?
- For many - lack of commitment, lack of capacity
- A challenge for many cities: no national policy
- Asymmetry in knowledge and resources across the UNECE region
- This study: an overview and policy guidelines to inform policies at urban, national and international levels

Existing UNECE instruments to inform the study

UNECE Draft Action Plan on Energy-efficient housing in the UNECE region

Transport, Health and Environment Pan-European Programme (the PEP)

UNECE Strategy for Education for Sustainable Development

Proposed structure of the CNC study (1)

I. New challenges for cities

1. Introduction
2. Climate change, cities, and policy agendas

II. General policies and institutions

1. International and national policies
2. City governments
3. Spatial planning and building control
4. Urban resilience
 - Aspects of adaptation
 - Human systems
 - Technological systems



Proposed structure of the CNC study (2)

III. Actions for priority sectors

- Urban energy infrastructure
- Buildings and housing sectors
- Transport
- Green spaces and water systems
- Waste management



IV. Post-carbon transitions

1. City Road Map to climate neutrality



Suggestions are welcomed

oleg.golubchikov@ouce.ox.ac.uk