



# Cooperation for Promoting Low Carbon Cities in North-East Asia

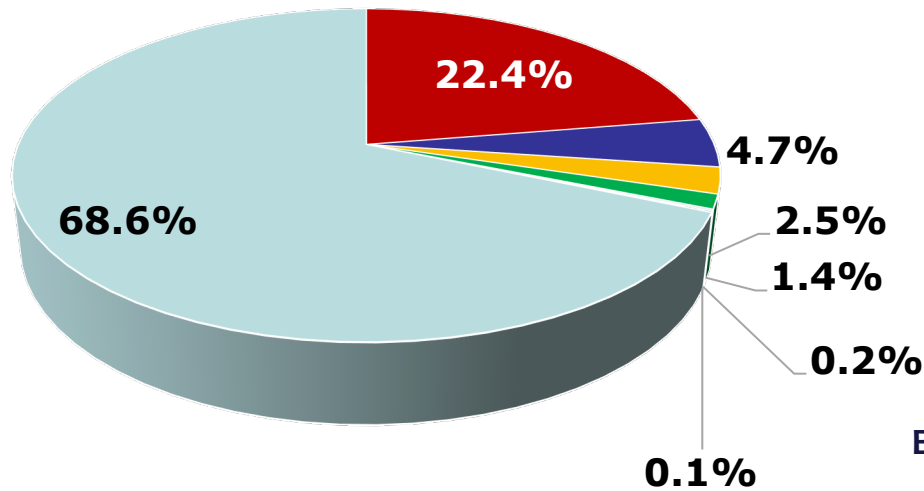
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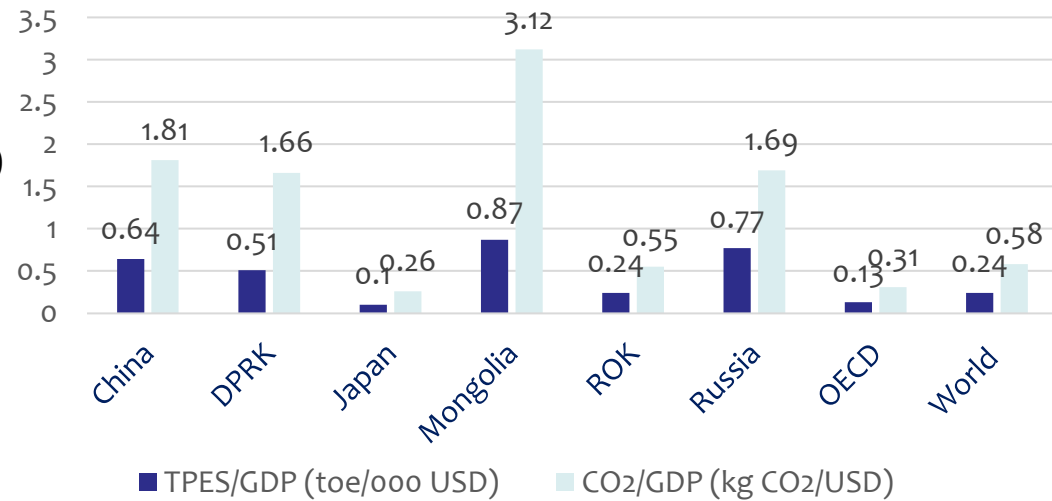
# Greenhouse Gas (GHG) Emissions in North-East Asia



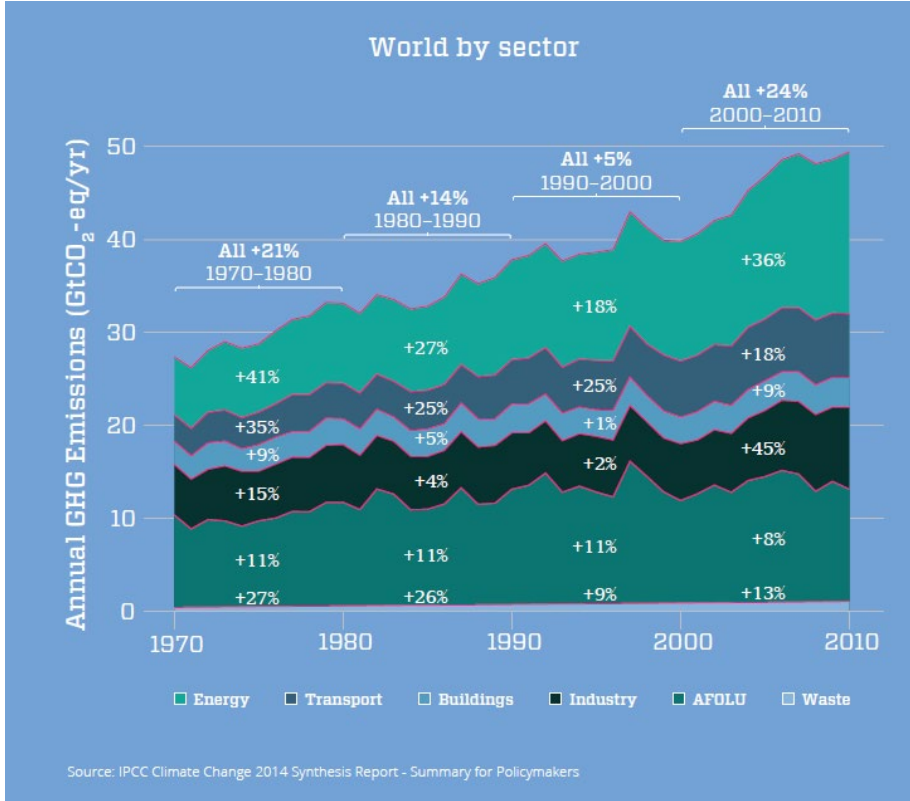
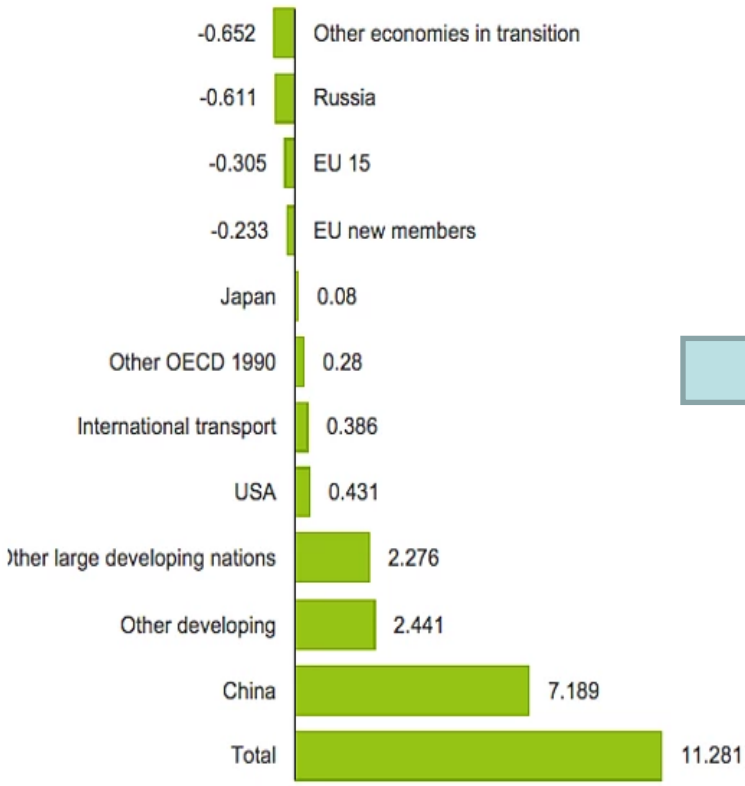
- China
- Russian Federation
- Japan
- Korea, Rep. (South)
- Korea, Dem. Rep. (North)
- Mongolia

CAIT, Total GHG emissions in 2012, incl. land use change and forestry

Energy and carbon intensity of Economy

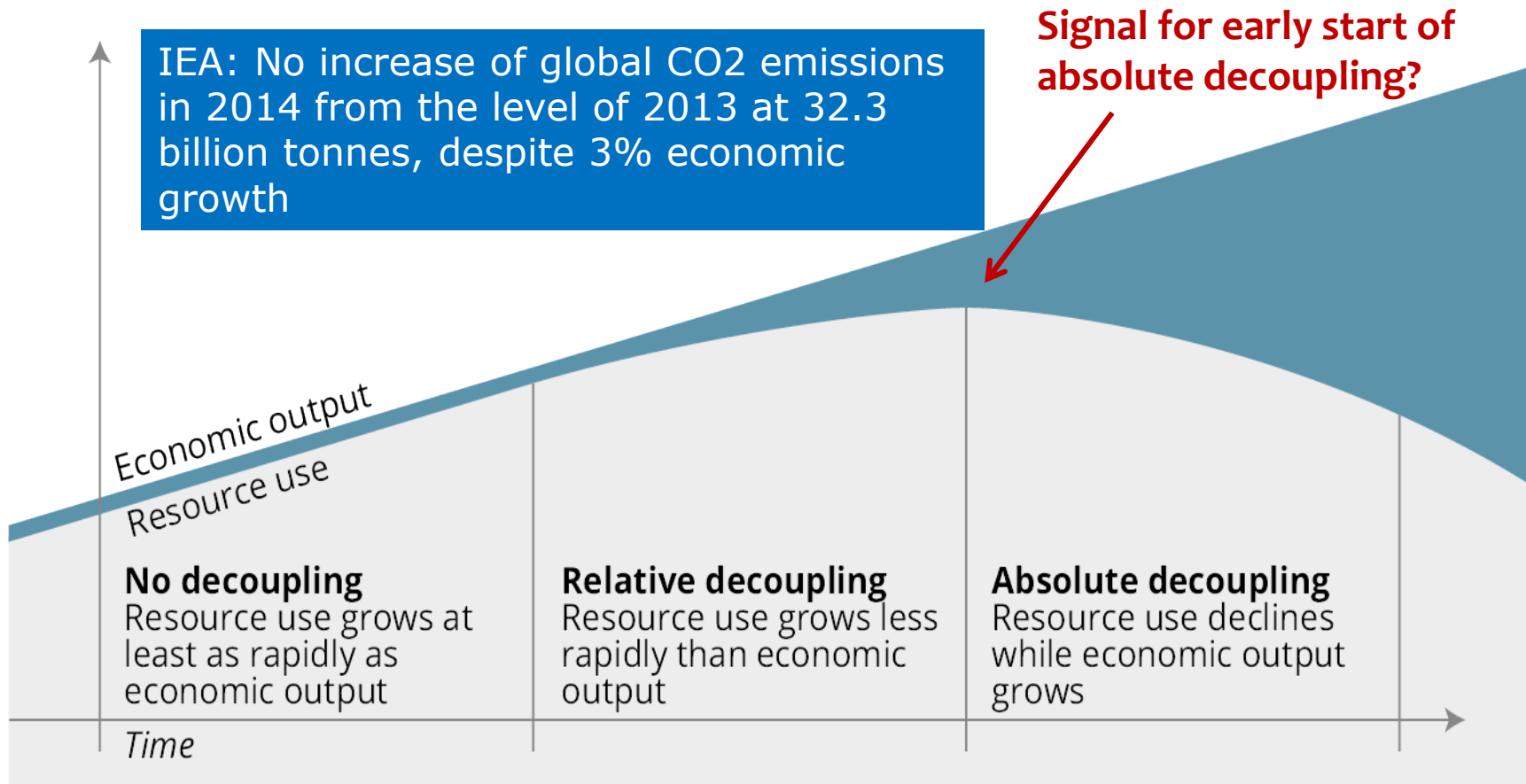


# Changes in CO2 emissions (GT) from 1990 and the end of 1st commitment period of Kyoto Protocol



# Decoupling

- Improving energy/carbon intensity of GDP for relative decoupling
- Decarbonizing energy for absolute decoupling



$$\text{CO}_2 = \text{P} \times \text{S} \times \text{E} \times \text{C}$$

PEOPLE      SERVICES PER PERSON      ENERGY PER SERVICE      CO<sub>2</sub> PER UNIT ENERGY

*Proposed by Bill Gates in 2010*

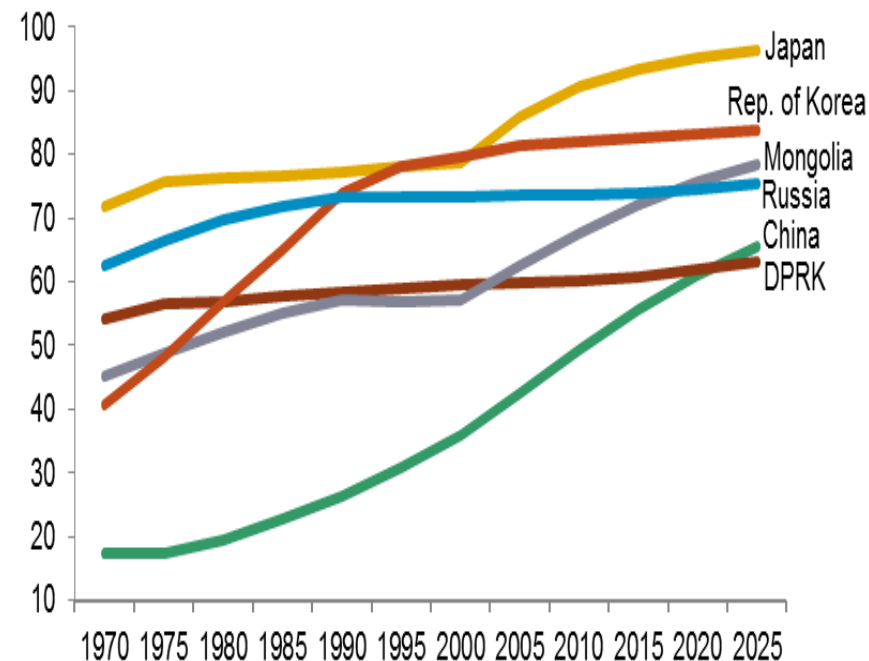
- Improving **energy intensity** of economy
- **Decarbonizing** primary energy and electricity
- Enhancing the assimilative capacity of **natural sinks**
- Investing into new and improving existing **urban infrastructure**



# Why cities?

- Cities world-wide account for **70%** of GHG emissions due to their energy intensive infrastructure and lifestyle
- North-East Asian countries contributed **32%** of global CO<sub>2</sub> emissions from fuel consumptions (2012)
- It is estimated that low-carbon urban solutions available today, could generate savings with a current value of US\$16.6 trillion by 2050 (The New Climate Economy, 2015)
- Urban centers are also ideal **‘policy labs’** to experiment new policies and innovative measures

Share of urban population in North-East Asia, 1970-2025



# City Century: Why Municipalities Are the Key to Fighting Climate Change?



First International  
Conference on  
NATIONAL URBAN POLICY

**Michael Bloomberg, UN Secretary-General's Special Envoy for Cities and Climate Change.**

*“... [a new] model has emerged: focusing first and foremost on creating the conditions that attract people. As cities are increasingly demonstrating, **talent attracts capital more effectively than capital attracts talent...***

*... For mayors, reducing carbon pollution is **not an economic cost; it is a competitive necessity**”*

- Empowerment of cities - to find solutions for their specific problems and become full partners to national counterparts to bring nation-wide benefits
- As the private sector naturally concentrate in cities, cities can foster public-private partnership
- Innovations from cities (and piloted in cities) can help **close the gap** between developed and developing world. Cities are also increasingly connected all over the world in **promoting the spread** of new solutions



Low carbon cities are a  
**\$17 trillion**  
global opportunity.



Construct new buildings to higher heating efficiencies



Retrofit old buildings for reduced heat intensity



Install efficient lighting and appliances



Install building-mounted solar PV

How can we seize it?



Reduce motorised passenger travel activity



Expand rail and bus transport over cars and trucks



Adopt more efficient cars and electric vehicles



Improve freight transport logistics

Actions that could make cities globally save \$17 trillion by 2050 and reduce GHG emissions.

Source: *The New Climate Economy*



Improve global freight energy efficiency and increase electrification



Increase recycling rates in cities



Capture greater volumes of methane from landfills



# Low Carbon Cities Development in North-East Asia



# National Programmes and Initiatives for Low Carbon Cities in North-East Asia

CHINA	JAPAN	REPUBLIC OF KOREA
<b>PROGRAMMES AND INITIATIVES</b>		
<p>Low Carbon Pilot Cities and Provinces (2010, 2012)</p> <p>Pilot Low Carbon Transportation System (2011)</p>	<p>Eco-model City Programme (2008)</p> <p>Future City Initiative (2010)</p> <p>Low Carbon City Act (2012)</p>	<p>Climate-model city and Eco-rich City (2007)</p>
<b>GHG EMISSIONS REDUCTION GOALS IN SELECTED CITIES</b>		
<p><i>Based on carbon intensity per GDP</i></p> <ul style="list-style-type: none"> <li>Baoding: 35% (2010-2020)</li> <li>Hangzhou: 50% (2005-2020)</li> <li>Jilin: 60% (2005-2030)</li> <li>Shenzhen: 45% (2005-2020)</li> <li>Guiyang: 45% (2005-2020)</li> <li>Tianjin: 15.5% (2010-2015)</li> </ul>	<p><i>Based on absolute reduction target</i></p> <ul style="list-style-type: none"> <li>Tokyo: 25% (2000-2020)</li> <li>Kyoto: 40% (1990-2030)</li> <li>Toyama: 30% (2005-2030)</li> <li>Kitakyushu: 30% (2005-2030)</li> <li>Yokohama: 30% per capita (2004-2025)</li> <li>Minamata: 32% (2005-2020)</li> </ul>	<p><i>Based on absolute reduction target or business as usual (BAU)</i></p> <ul style="list-style-type: none"> <li>Seoul: 25% (2005-2020), 30% (2005-2030)</li> <li>Suwon: 20% (2005-2020)</li> <li>Gangneung: 49% (BAU, 2020)</li> <li>Jeju: 41% (BAU, 2020)</li> <li>Gwangju: 40% (BAU, 2020)</li> </ul>



- The *12<sup>th</sup> Five Year Plan* included the reduction of GHG emissions per unit of GDP by 40-50 per cent by 2020 (compared to 2005)
- The *Low Carbon Province and City Pilot Project*
- The *Low Carbon Community Pilot Project*

## Energy

- City-based **low-carbon energy mix** and green electricity
- **Industrial energy efficiency** (revision of Energy Conservation Law and specific energy saving targets of top energy-consuming enterprises)
- **Energy efficiency in buildings** (new building energy efficiency standards and energy efficiency codes, renovation of existing buildings)
- **Heating reform** (commercialize heating, promote technological innovation and apply energy-saving building construction)

## Urban Transport

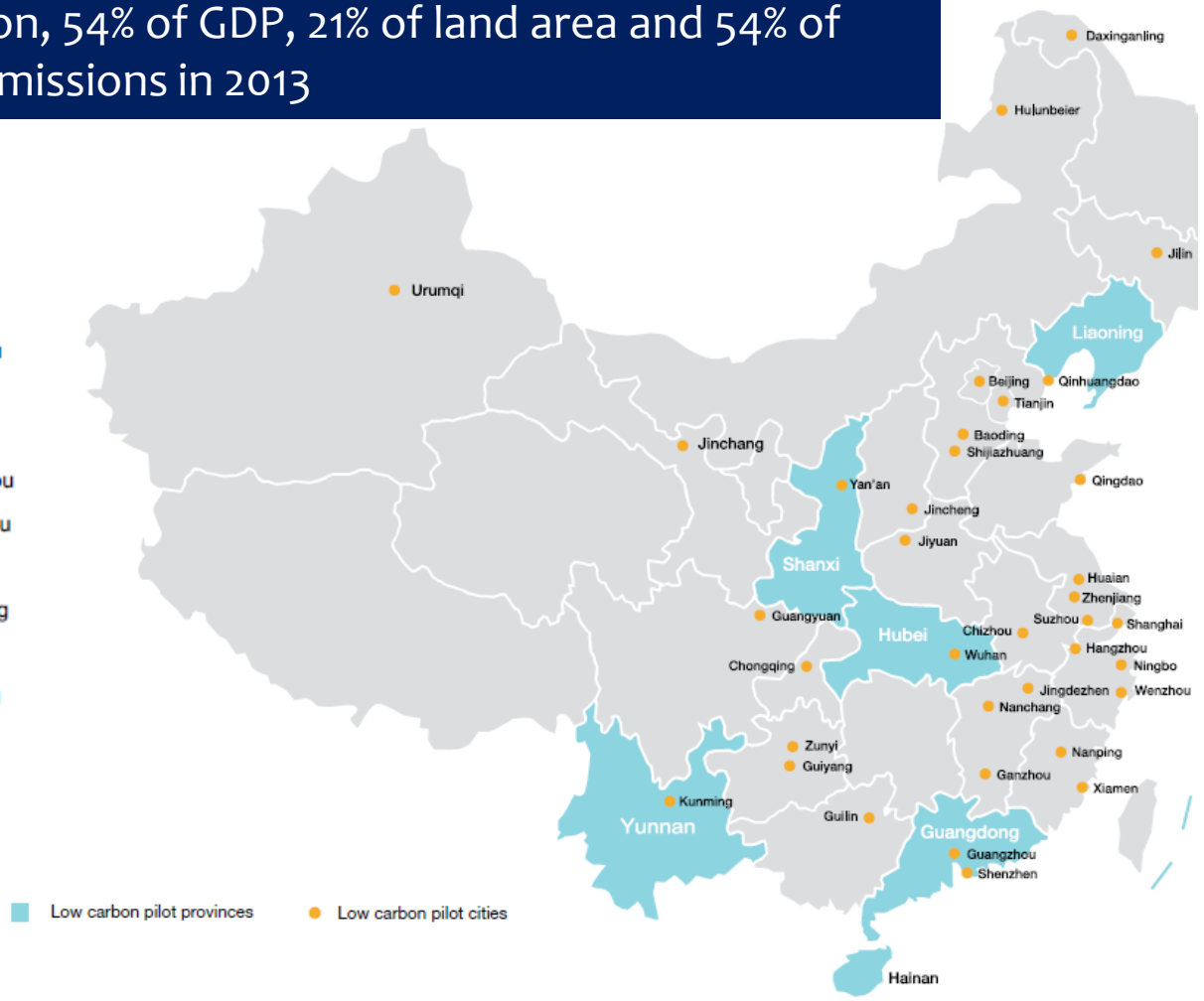
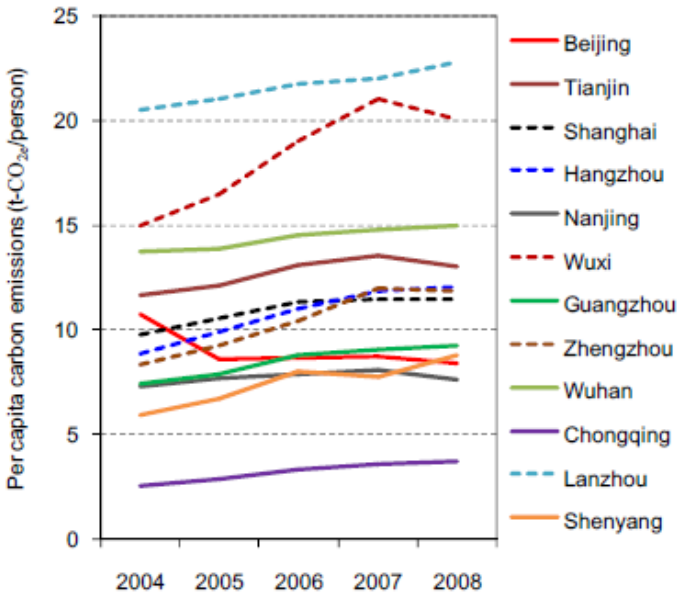
- Promote **walking and cycling** (provide infrastructure and adopt “people-centred development”)
- **Improve public transport** (unifying governmental framework on urban transport, develop institutional management and subsidies, national targets)
- **Reduce emissions from motorized vehicles** (user charging, promote electric vehicles and low carbon logistics)

## Waste and Wastewater Management

- Adopt **integrated solid waste management**
- Reduce **GHG** emissions from **water and wastewater facilities**

# China Low Carbon Pilot Cities and Provinces

42 low carbon cities and provinces cover 37% of population, 54% of GDP, 21% of land area and 54% of carbon emissions in 2013



Source: The carbon emissions of Chinese cities, H. Wang, R. Zhang, M. Liu, and J. Bi, (2012)

Map Source: Innovative Green Development Programme, Low Carbon Cities in China: National Policies and City Action Factsheets



## Bill of the Basic Act on Global Warming Countermeasures (2010)

- specifies Japan's mid- and long-term targets to reduce 60-80 per cent of GHG emissions by 2050
- Aims to develop innovative technologies, mainstreaming existing advanced technologies, and promote renewable energy and energy conservation

## Low-Carbon City Act (2012)

- Promote cross-sectoral emissions reductions
- Provides tax breaks for certified energy efficient buildings
- Formulate municipalities' LCC Development Plans

## Eco-model City Programme (2008)

- Shift from single innovations to collaborative social innovations via structural innovations in the social system and concerted low carbon efforts by cities and communities.

## Future City Initiative (2011)

- Create and disseminate the best practices of low carbon, green cities in Japan and abroad.

## **“Low carbon, green growth” Concept (2008)**

- 7 cities were selected as **EcoRich Cities** focusing on the improvement of the city environment, and creating new jobs in energy, commuting, recycling, etc.
- This concept combines policies from various ministries to provide a comprehensive approach for the green growth of cities

## **The Urban Planning Guidelines for Low-Carbon Green Growth (2009)**

- Involves establishing standards, evaluations and countermeasures concerning the application of the concept of low carbon, green growth in urban planning

## **The Low Carbon, Green Growth Basic Act (2010)**

- In addition to a five year National Low Carbon, Green Growth Strategy, local governments are required to prepare a five year plan and annual implementation plan

- **Green Development Policy:** Supports the global commitment to change current development trends, and **transition to a socially inclusive, low greenhouse gas and reduced waste development model**, by changing and conserving natural resources and ecosystem value, along with increasing human well-being and reducing poverty

## Strategic Objectives

Promote a sustainable **consumption and production** pattern with efficient use of natural resources, low greenhouse gas emissions, and reduced waste generation;

Sustain **ecosystem's carrying capacity**

Increase **investment** in natural capital, human development and clean technology

Engrain a green **lifestyle** by reducing **poverty** and promoting green **jobs**;

Encourage **education, science, and technology**

Develop and implement a **population settlement plan** in accordance with climate change, while considering the availability of natural resources and the resilience of regions.



# Lima-Paris Action Agenda (LPAA) Focus on Cities: Non-State Actor Zone for Climate Action (NAZCA)



- **Covenant of Mayors:** 6300 municipalities signatories and representing 208 million of people
- **Compact of Mayors:** 360 cities on the identification and implementation of climate objectives, the production of GHG inventories, targets and compliance
- **Compact of States and Regions:** 44 members from 18 countries
- **Under 2 MOU:** 57 sub national's jurisdictions to reducing their emissions from 80 to 95% below 1990 levels by 2050 or achieving per capita annual emission target of less than 2 metric tons by 2050
- **The Carbon neutral cities alliance:** 17 major cities to achieve at least 80% of GHG reductions by 2050 compared to 2000
- **Cities Climate Leadership Alliance Finance (CCFLA):** coalition of 36 UN, multilateral financial institutions, donor agencies, city networks, etc.
- **The US-China Agreement:** 18 cities from US and 11 cities from China; a number of these cities in the Alliance of Peaking Pioneer Cities commit to meet or exceed China's goal of peaking emissions by 2030



NAZCA registers: 2,200+ cities



# Needs and Benefits of International Cooperation for Low Carbon Cities

1. **Facilitating knowledge-sharing** among cities on policy reform and innovation to inform and inspire action;
2. Utilising **common platforms and standards** to enable cities to make their commitments public, credibly record their energy use and GHG emissions, develop low-carbon strategies, and measure their results;
3. **Building the capacity** of local governments, so that political leaders and municipal staff can effectively plan, design and execute low-carbon development plans and strategies;
4. **Financing low-carbon urban infrastructure** by improving cities' access to domestic and international financial markets; and
5. Supporting national governments to **empower cities** to invest and innovate.

*Source: The New Climate Economy*



# North-East Asian Subregional Programme for Environmental Cooperation (NEASPEC)

- Established in 1993 and supported by UNESCAP
- Covers all six North-East Asian countries, i.e. China, DPRK, Mongolia, Japan, ROK and Russia
- Works on the promotion of low carbon cities from 2011

## Supporting joint efforts for advancing sustainable development in North-East Asia

Transboundary Environmental Challenges

Economy -  
Environment

Air pollution

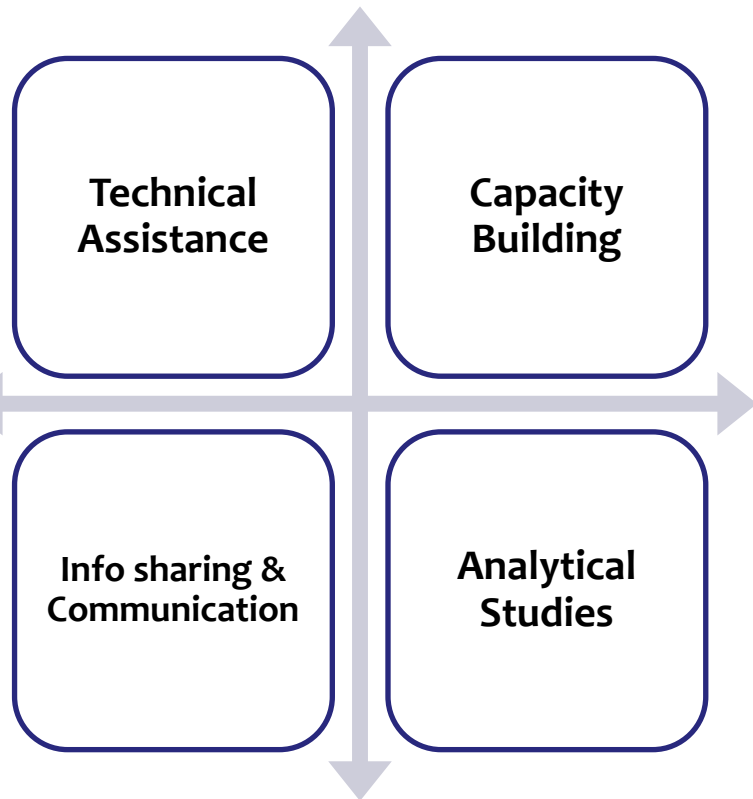
Dust and  
sandstorm

Nature  
conservation

Marine  
Protected  
Areas

Low carbon  
cities





## OBJECTIVES

Numerous global and regional networks in Asia are consisted of mainly municipal governments or academia. In order to add value to the existing networks, launching a **platform for organizations working on LCC approaches, policies and programmes** will:

1. **bring together existing and new information and knowledge on LCC approaches and policies,**
2. **synergize the works of specialized organizations; and**
3. **collectively support municipal authorities in moving towards LCC**





# THANK YOU

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