

LOW CARBON CITIES DEVELOPMENT INDEX

EXPLORING WAYS TO MEASURE CITIES CONTRIBUTION TO REDUCED CO2 EMISSIONS GLOBALLY.

CHOOSE CITY TO VIEW

SORT CITY BY (in alphabetical order)

- OVERALL CLIMATE CONTRIBUTION
- POLICIES
- EMISSIONS
- INVESTMENTS
- FUTURE TRAJECTORY
- HISTORIC TRAJECTORY
- TRANSFORMATIVE NETWORK LEVEL



FUTURE TRAJECTORY

- VERY RAPID IMPROVEMENTS
- RAPID IMPROVEMENTS
- IMPROVEMENTS
- NO CHANGE
- DECLINE
- RAPID DECLINE
- VERY RAPID DECLINE

HISTORIC TRAJECTORY

- VERY RAPID IMPROVEMENTS
- RAPID IMPROVEMENTS
- IMPROVEMENTS
- NO CHANGE
- DECLINE
- RAPID DECLINE
- VERY RAPID DECLINE

TRANSFORMATIVE NETWORK LEVEL

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



URBAN PROFILE

POPULATION SIZE

GDP

EDUCATION

INCOME DISTRIBUTION

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BACKGROUND

The Low Carbon City Development Index (LCCDI) originates in the 'Copenhagen Declaration', which was formulated in 2008 by a group of cities, businesses, investors, NGOs, academics, and more).¹ These stakeholders share the vision of low-carbon development as an opportunity and of the role of cities in implementing strategies to support this opportunity and develop low-carbon solutions for the world.

By supporting transparency and allowing for benchmarking, the LCCDI is created to support cities in developing strategies based on global best practices. The index will also support a broader understanding of the important role cities must play, and some already play, in providing low-carbon solutions.

The LCCDI is an initiative to measure how much and in what way cities contribute to low-carbon development. The focus is on cities as global solution providers and how cities link low-carbon strategy to overall economic and social development. The LCCDI is conceived of as an open source tool applied by leading cities, regardless of their size or development state.

THE INDEX WILL HELP CITIES

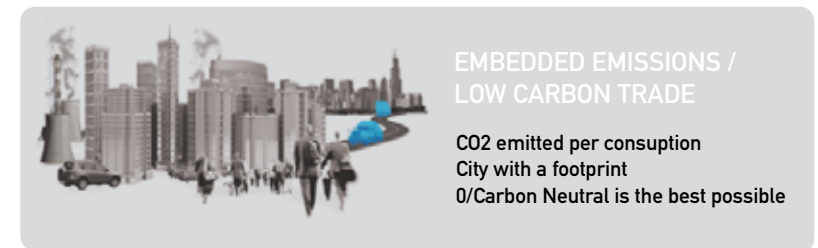
- » Benchmark a range of climate work against other leading cities.
- » Shift from an exclusive focus on reducing the city's own emissions so as to include a focus on measures that result in economic development based on the export and import of low-carbon solutions.
- » Develop tools that measure the CO2 reductions the a city contributes to through export of low-carbon solutions.
- » Strengthen networks between cities that are delivering concrete results.

TIME TO ACKNOWLEDGE CITIES AS GLOBAL SOLUTION PROVIDERS

In the early years of climate work in cities, the focus was on the **direct emissions** from the city, and the focus was on local reductions. Only the emissions emitted from the geographical area of the city were included, and strategies focused on these direct emissions. The city measured carbon per square meter; treating itself as an isolated entity.

As the gravity of the climate crisis became acknowledged and the role of cities better understood, leading cities began to assess the full carbon footprint of the population in the cities. Realizing that the sustainability of the city had to include the global aspect, these cities also assessed the **embedded (also called "embedded") carbon in goods imported and exported.**

The emissions from a city should also include the embedded emissions in the goods that people use, and the embedded emissions in exports should be subtracted in order to provide a more accurate picture of the role of the city and how sustainable it is.



For the direct and embedded/embedded emissions the Low Carbon City Development Index will be based on the "Draft International Standard for Determining Greenhouse Gas Emissions for Cities" by UNEP, UN Habitat, and the World Bank.²

The time has come for the third step. This step **adds a solution perspective and broadens the focus to a global focus where emissions reductions from the use by exported solutions are considered.** These solutions can range from solar PV solutions and energy efficient LED's to architectural solutions and restaurants serving low-carbon food. Here the focus is the city as a global and dynamic solution provider. This perspective frames the first two steps as an integrated part of economic and social policy. By reducing direct emissions in a strategic way and not just moving the problem, and by addressing the embedded emissions, new solutions will be developed. These solutions will be created by a new generation of companies and can be exported in order to help the rest of the world reduce their emissions. As no city is isolated, the export of solutions must **also include strategic import of low-carbon solutions that help reduce emissions.**

With a global solution and export perspective, the city's climate strategy is not only about reducing emissions, but also about creating and supporting innovation, encouraging growth of low-carbon businesses and accelerating exports of transformative low-carbon solutions. Instead of an agenda that is only about "reduction," it is an agenda about "innovation".

Low Carbon City Development will focus on the core economic and social policies and how cities link economic and industrial development and the need for low-carbon solutions. The direct emissions are primarily important when these are linked to solution exports. Embedded emissions are especially important when these are linked to low-carbon economic city development

¹ The signatures of the Low Carbon City Development Index declaration were:

John Kornerup Bang, Head of Globalization Programme, WWF Denmark

Tom Carnac, Programme Manager, Public Sector, Carbon Disclosure Project, UK

Rajendra Kumar, Senior District Collector, Tiruvallur District, India

Mr. Lei Hongpeng, Programme Officer, Climate Change and Energy Programme, WWF China

Christine Loh, Founder and CEO, Civic-Exchange, HongKong, China

Mr. Ma XueLu, Former Director General, Administration of Baoding National New and Hi-tech IDZ

Jorgen Lund Madsen, Development Manager, Technical and Environmental Committee, Copenhagen City, Denmark

Dennis Pamlin, Global Policy Advisor, WWF Sweden

Mr. Pan Haixiao, Director, Transportation Planning Program Department of Urban Planning, College of Architecture and Urban Planning, Tongji University

Mr. Pan Jiahua, Executive Director, Research Centre for Urban Development and Environment (RCUDE), Chinese Academy of Social Sciences(CASS)

Peter Rathje, Managing Director, Project Zero, Denmark

Kaarin Taipale, Urban researcher and Chair, Marrakech Task Force for Sustainable Buildings and Construction, Helsinki School of Economics, Finland

² http://www.unep.org/urban_environment/PDFs/InternationalStd-GHG.pdf

THE THREE PARTS OF THE INDEX

The index focuses on solutions in three parts:

1. POLICIES

This part focuses on the kind of policies that the city has in place to reduce direct and embedded emissions and how these are linked to exports and imports of low-carbon solutions. This part will be divided into two sub-parts, one with policies that have supporting budgets and regulations and one with policies that lack supporting budgets and regulations.

2. EMISSIONS

This part focuses on the actual archived emissions reductions linked to providing key services (living, eating, transporting/communicating, and consuming/experiencing). A key focus is on transformative low-carbon solutions, i.e., solutions that provide key services in a way that would be sustainable if nine billion people were to use them. This requirement serves to discount incremental reductions that only make an unsustainable system slightly less unsustainable.

3. INVESTMENTS

This part focuses on the investments done by the city to enable reductions in the future, ranging from infrastructure investments to education.

These three parts are assessed in terms of two aspects, Urban Profile and Urban Trajectory, in order to be able to compare similar cities and similar aspects:

Urban profile

This aspect captures a city's profile in terms of land use, industrial structure, income level, etc.

Urban trajectory

This aspect allows the measurement of the city trend by covering the history and future emissions trajectories of the city. The historic data and the forecast will help users understand different development paths.

In order to measure a city's network and capacity when it comes to low-carbon solutions a "transformative network level" will also be measured. This will be based on how easy it is to access information and how close stakeholders in the city are collaborating.

All cities are different and will have different development paths. Ultimately, all cities will have to reach zero carbon emissions (including embedded emissions). A leading city should aim to reach zero carbon emissions by 2040-2050, at the latest. A leading city should also aim for exporting emissions reductions at least as great as 10 times their own current emissions within ten years.



A THREE-STEP APPROACH

Establishing the Low Carbon Development Index is planned as a three step approach.

Step one: Establish the concept, linking up with key stakeholders, testing the index on a limited group of cities, presenting the initial results visually.

Step two: Refine the concept and include at least 100 leading cities; collaborate with key stakeholders

Step three: Institutionalize the index

In the first step, the index will be created based on 25 leading cities. These cities have world-leading low-carbon strategies and/or are active in the international discussion about low-carbon development. They will be engaged to help provide data and develop a measurement system that is transparent and balanced. These cities will also be part of the strategy planning for step twos and three.

In the second step the index will be tested on a broader group of cities.

In the third step, the index will be institutionalized in order to ensure the possibility to follow the development in cities over time.

AN OPEN INVITATION TO ALL STAKEHOLDERS

A number of initiatives exist that aim to support low-carbon city development. The development of this index will be done in an open and collaborative way in order to support all efforts that focus on cities as solution providers. The project is an open source non-profit initiative that is open to any interested group, organization, or institution that wants to contribute. The data and assumptions will be transparent; the goal is to also transparently demonstrate how the index depends on these; the goal is to ensure that all interested parties will be able to gauge how modifying the assumptions changes the index.

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or visit: www.lowcarbondevelopmentindex.net

