

Enabling Efficient Cities 建设高效能城市

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How Cities Can Meet Climate Commitments through Green Technologies

城市如何能利用绿色技术而达成气候目标

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Two billion additional urban inhabitants are expected by 2030, the majority of whom will be in the rapidly growing cities of Africa, Asia, and Latin America.

到2030年将新增20亿城镇居民

A night-time photograph of the Eiffel Tower in Paris, France, illuminated with golden lights. The tower is the central focus, with its intricate lattice structure clearly visible. The background is dark, showing the silhouettes of trees and the faint lights of the city. The text is overlaid on the right side of the image.

The expected increase
in urban population of
2 billion people before 2030
would require the equivalent
of **200 new cities**
the size of the Paris region



Benefits to Cities

对城市的益处

- Reduce energy costs for the government...and citizens
- Reduce urban pollution and improve health
- Mitigate global climate change
- Assistance to achieve National and City Energy Goals
- Reduce power grid congestion
- Help assure reliable energy supplies
- Foster economic development
- Produce jobs in new and emerging technologies
- Increase community pride and reputation
- 为政府.....以及市民减少能源费用
- 减少城市污染，从而改善健康
- 减轻全球气候变化
- 帮助国家和城市达到节能目标
- 减少电网负担
- 保证能源供应
- 促进经济发展
- 创造新技术领域就业机会
- 提高社区的荣誉感和知名度



We must **engage**
我们必须携手各方人士

Leading up to COP21 in Paris

U.S. – China Climate Leaders Summit 中美气候首脑峰会

September 15 - 16, 2015

Los Angeles, California



U.S. Governors and Mayors

美国的州长和市长

Gov. Jerry Brown



Mayor Ralph Becker



Chinese Climate Leaders

中国气候领导

Su Wei



Xie Zhenhua



01 Low-Carbon Lifestyle

Lead the low-carbon lifestyle and strengthen low-carbon community construction



In Wuhan Baibuting Community, children are making reusable bags together with foreign teachers.



In Wuhan Baibuting Community, resident Yang Guangle made soap from waste oil in smoke exhauster.



In Wuhan Baibuting Community, residents made lanterns with waste materials and exhibited them on the Lantern Festival, which were very popular. The "waste" community was concretely presented at this moment.

04 Low-Carbon Buildings

Implementation of green building standard and promotion of building energy efficiency demonstration

The implementation rate of energy saving at the design stage of newly constructed buildings in Guiyang City is 100%, while that of energy saving standard at the stages of both construction and completion is higher than 98%. There are altogether five construction projects in the city that have won 3-star green building design evaluation logo, and three projects have won 2-star green building design evaluation logo, with a total construction area of about 1.075 million m^2 . There are 12 projects where renewable energy sources are used for construction and completion, with a demonstration area of application 890,000 m^2 . There are altogether six projects in progress, with a demonstration area of application 2.08 million m^2 .



Vertical Green in Guiyang City



Optical Lighting System in Guiyang City



Double-layer respiratory Curtain wall



Guiyang International Commerce and Exhibition Center-Green Architectural Cluster

02 Low-Carbon City

Low-carbon pilot program in full swing

China is vigorously promoting the construction of ecological civilization and green and low-carbon development. Approved by the State Council, the NDRC has implemented the pilot program of low-carbon provinces and cities in 2010 and 2012, and designated six provinces and 36 cities for this program.



欢迎来

Guangzhou is looking forward to collaborate with
US and the globe to tackle climate change
issues, and to strive for low-carbon
development.

Welcome to Guangzhou!



U.S. – China Climate Leaders Summit 中美气候首脑峰会

Beijing. Sichuan. Hainan. Shenzhen. Guangzhou. Wuhan. Guiyang.

Zhenjiang. Jilin. Yan'an. Jinchang. Agreed to:

北京、四川、海南、深圳、广州、武汉、贵阳、镇江、吉林、延安、Jinchang 同意:

- Establish Ambitious Targets 设立高远目标
- Report on GHG Inventories 报告温室气体排放
- Establish Climate Action Plans 拟定气候应对行动计划
- Enhance Bilateral Partnership and Cooperation 加强双边合作

Committed “To achieve the peaking of CO2 emissions around 2020” – ahead of the national goal of 2030

承诺“在2020年CO2排放达到峰值” – 在2030年国家目标期限之前

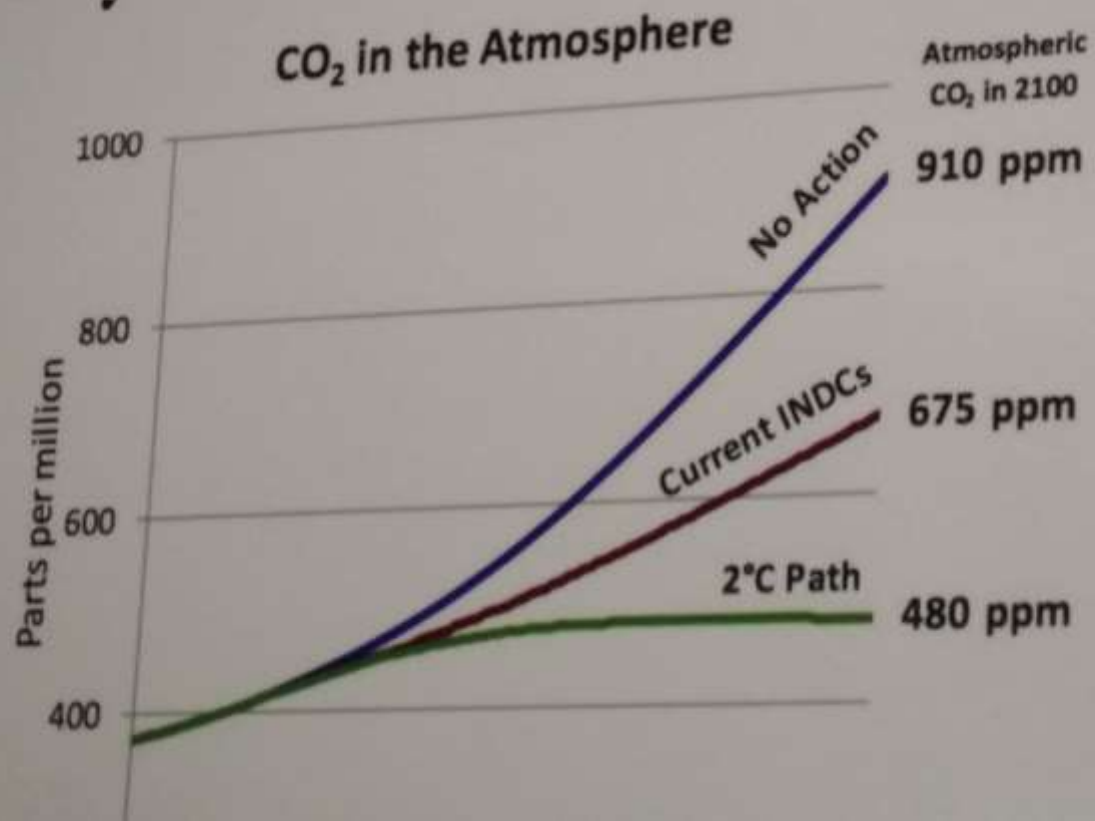
COP21 in Paris

第21届联合国气候变化巴黎大会

Welcoming 33,000 credentialed participants from 195 countries
欢迎来自195个国家的33,000位专业与会者



Why The Paris Climate Talks Matter



City Day 城市日



Hosted by Mayor Bloomberg and Mayor Hidalgo, who are joined by President Hollande and Xie Zhenhua

Mayors Present Commitments to UN Secretary General Ban Ki-moon 市长们向联合国秘书长潘基文作出的承诺





Gore
DiCaprio
Redford
Baldwin





Former Vice President
Al Gore



Gore at Ornate
Paris City Hall



Su Wei
News Conference



Energy Secretary
Ernest Moniz



DRIVERS FOR ACTION

行动动

另

Guiyang Eco-Forum 贵阳生态论坛

The Hope..... 愿景.....



The Reality..... 现实.....



what cannot be **measured** cannot be **managed**

准确的数据有助于管理

A SHIFT





入LEED Dynamic Plaque平台

LEEDon.io

Illustrative Example:

A World City

Score

Energy

Water

Waste

Transportation

Human Experience

Survey

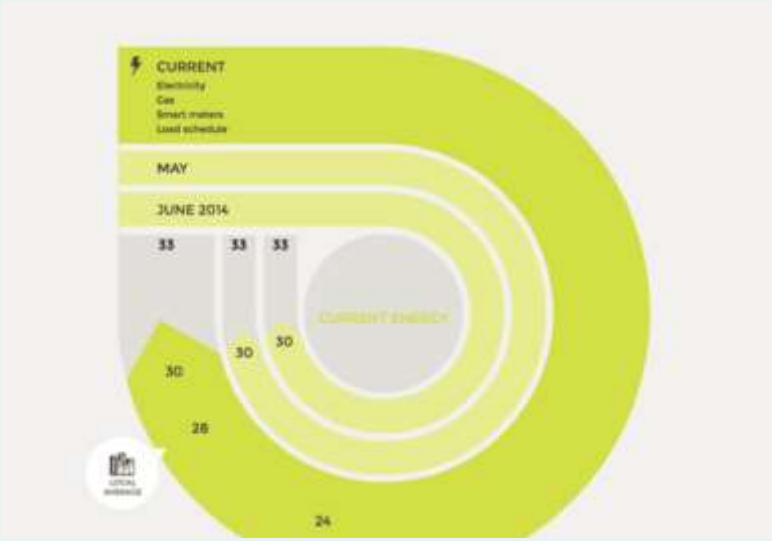
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World Cities that are Implementing Strategies and Improving Performance are able to Participate

世界上有许多城市正在执行各种城市发展的创新策略、并积极提升城市发展水平，它们都能够加



LEED® DYNAMIC PLAQUE™

Washington D.C. (District of Columbia)

United States

Strategies Data Analysis

Search Credits Add Strategies + All LEED POINTS 50 / 100

SUSTAINABLE SITES 11 OF 21

WATER EFFICIENCY 8 OF 11

ENERGY 26 OF 52

Perform Energy Benchmarking

Provides a foundation for establishing energy-efficient operating strategies and training staff in system maintenance, monitoring, and evaluation over the life of the building. By developing an operations and maintenance plan and updating the current facility requirements... [Credit Library](#)

3 Credits

Purchase Green Power

Energy-efficient buildings will realize environmental and operational benefits. To encourage exceptional energy efficiency, requires benchmarking the project building's energy performance against comparable buildings with similar space use, occupancy, operations, and location... [Credit Library](#)

3 Credits

Property Assessed Clean Energy

Energy-efficient buildings will realize environmental and operational benefits. To encourage exceptional energy efficiency, requires benchmarking the project building's energy performance against comparable buildings with similar space use, occupancy, operations, and location... [Credit Library](#)

4 Credits

Solar Initiatives

Energy-efficient buildings will realize environmental and operational benefits. To encourage exceptional energy efficiency, requires benchmarking the project building's energy performance against comparable buildings with similar space use, occupancy, operations, and location... [Credit Library](#)

3 Credits

Energy Assistance and Weatherization for Eligible Residents

Energy-efficient buildings will realize environmental and operational benefits. To encourage exceptional energy efficiency, requires benchmarking the project building's energy performance against comparable buildings with similar space use, occupancy, operations, and location... [Credit Library](#)

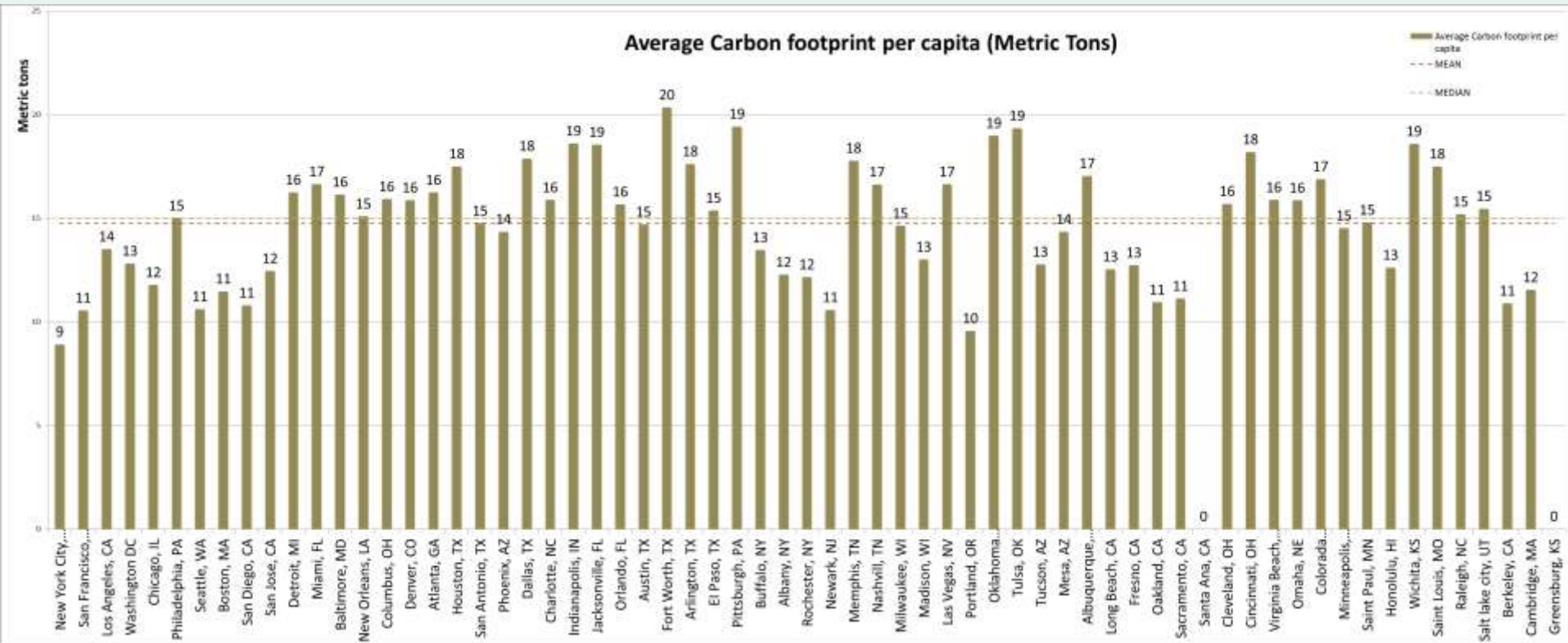
3 Credits

WASTE MANAGEMENT 4 OF 14

HUMAN EXPERIENCE 2 OF 17

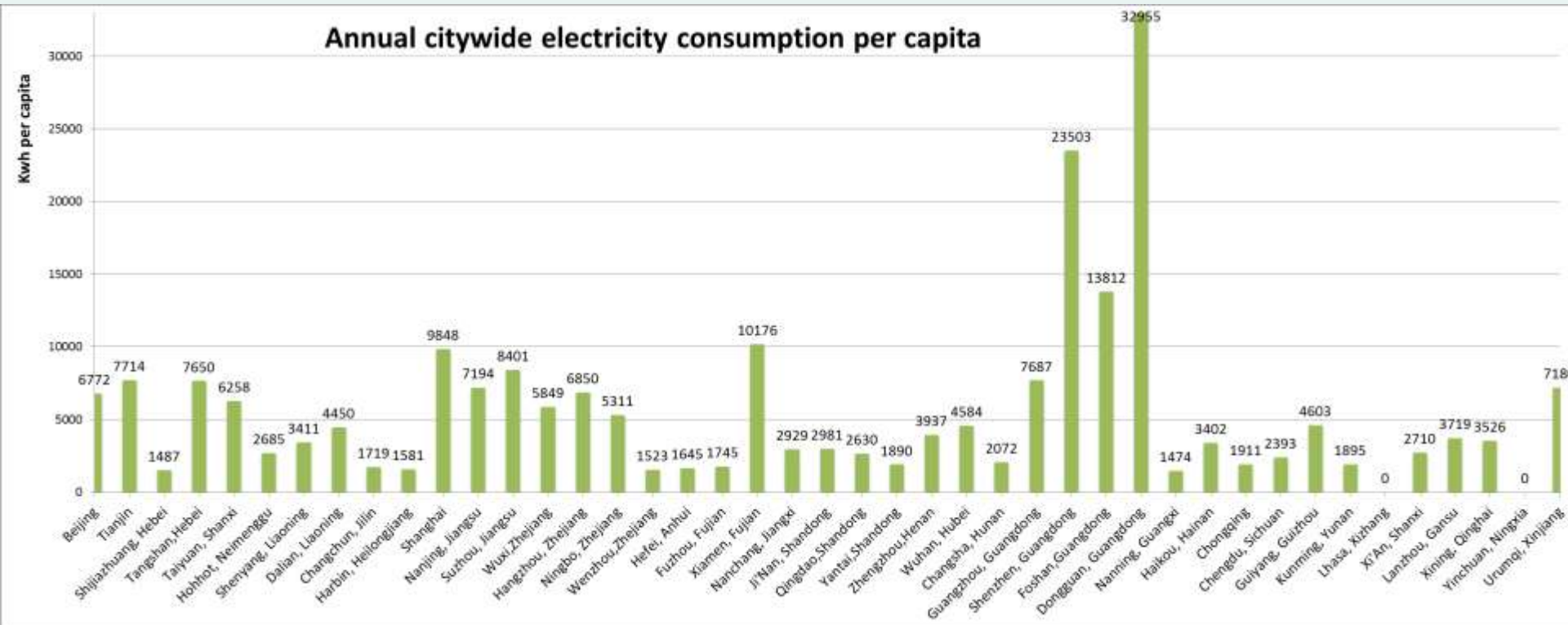
Data from 65 U.S. Cities is Already Integrated into LEED Dynamic Plaque Platform

已将美国 65个主要城市的数据整合进LEED Dynamic Plaque平台

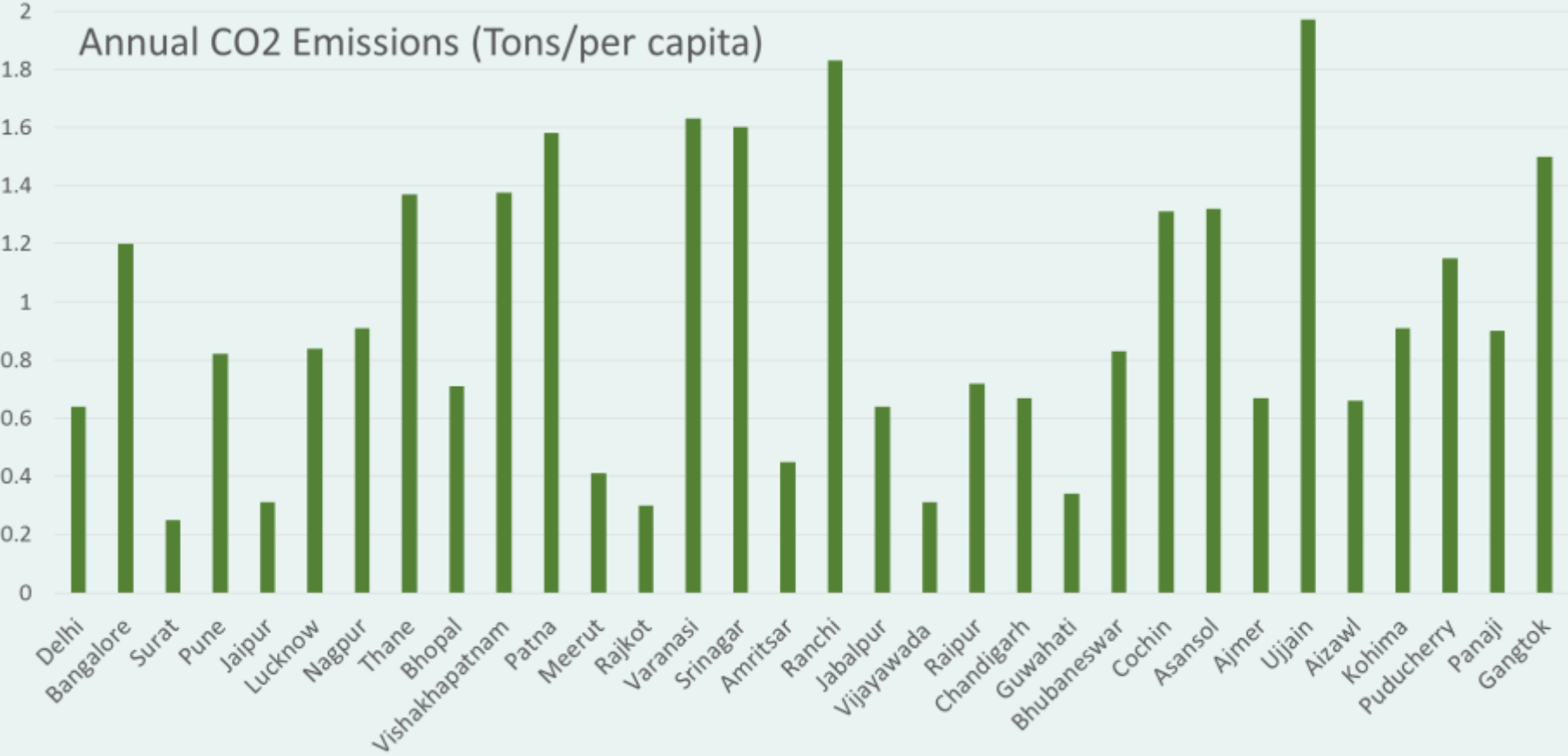


Data from 43 Chinese Cities is Ready to be Integrated into LEED Dynamic Plaque Platform

已将中国 43个主要城市的数据整合进LEED Dynamic Plaque平台



Data from 55 Indian Cities is Ready to be Integrated into LEED Dynamic Plaque Platform
已将印度55个主要城市的数据整合进LEED Dynamic Plaque平台



Suggested Targets and Strategies

建议 目标和策略

- **Energy**
 - **Reduce Energy Demand**
 - **Utilize Renewable Energy**
 - **Require energy codes or building rating systems like China 3 Star or LEED**
- **能源**
 - **减少能源需求**
 - **使用可再生能源**
 - **要求建筑采用节能规范或建筑评级系统，如中国绿色建筑三星级认证系统或美国的LEED绿色建筑评级系统**

#Detailed Targets and Strategies are available in: Environmental Sustainability Framework for Smart Cities, prepared By U.S. Green Building Council (USGBC) & The Energy Resources Institute (TERI)

Suggested Targets and Strategies

建议 目标和策略

Water

- **Reduce water demand by effective management**
- **Utilize all methane generated from the waste water treatment plants for energy.**

水

- **通过有效的管理，减少水资源的消耗**
- **搜集并利用污水处理厂产生的甲烷气体作为能源**

Suggested Targets and Strategies

建议 目标和策略

- **Waste**
 - **100% collection of municipal solid waste**
 - **Separation of waste that can be recycled**
 - **Produce energy from all organic wastes**
- **废弃物**
 - **对城市固体废弃物进行100%的收集**
 - **将废弃物进行垃圾分类，便于回收利用**
 - **利用有机废物生产能源**

Suggested Targets and Strategies

建议 目标和策略

- **Transportation**

- **Encourage walking with safe sidewalks**
- **Encourage bicycles with separate bike lanes**
- **Increase public transit (buses and subways)**
- **Convert city vehicles to electric and biofuels**

- **交通**

- **确保人行道的安全，并鼓励人们步行出行**
- **促进城市建设与机动车道相分离的自行车道，并鼓励人们骑自行车出行**
- **加强建设公共交通系统（公交车和地铁）**
- **促进城市传统能源汽车向电动车和生物燃料汽车转变**

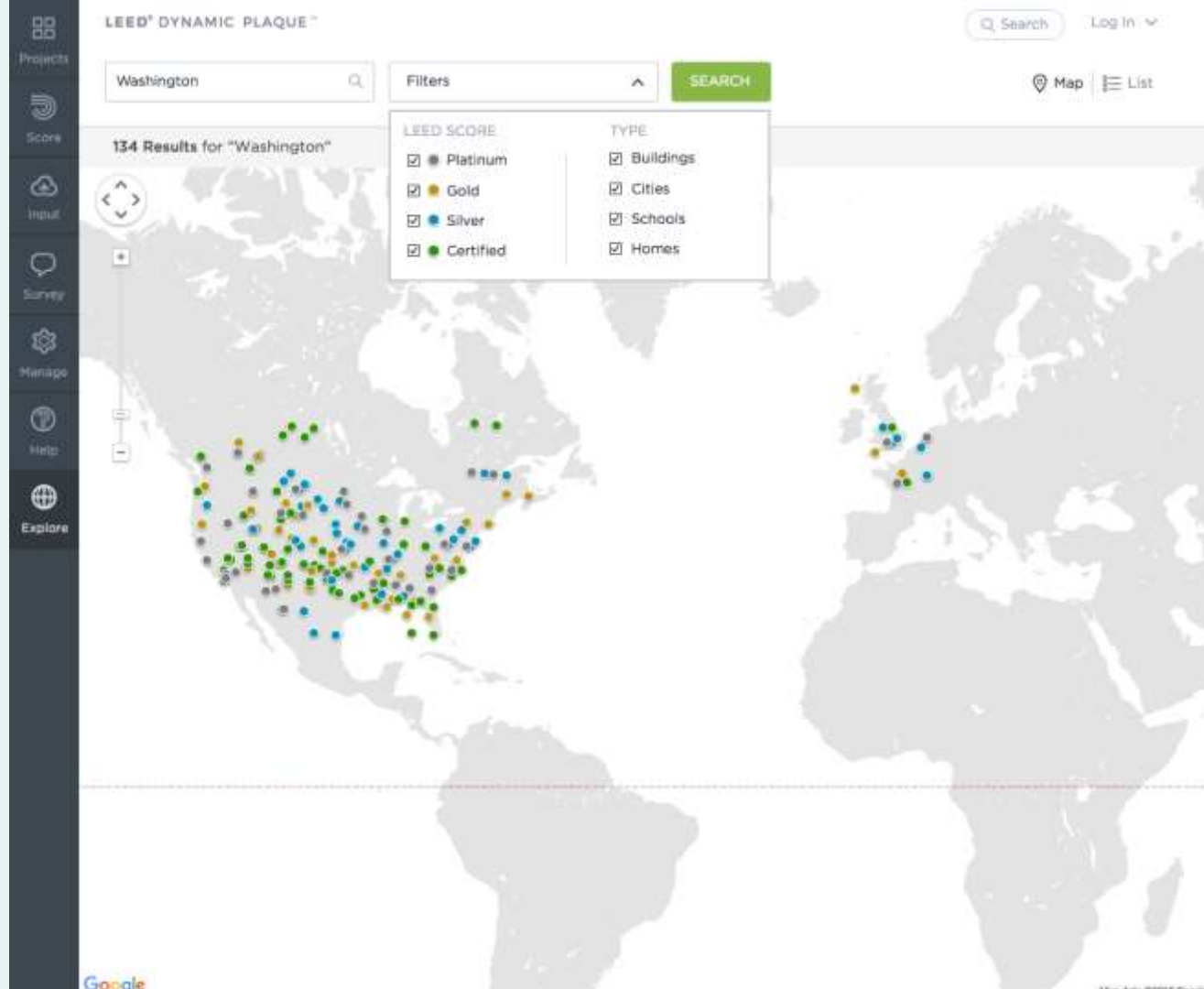
Suggested Targets and Strategies

建议 目标和策略

- **Human Experience**
 - **Improve human health**
 - **Increase green jobs and employee productivity**
 - **Make cities safe, clean, and livable**
- **居民体验**
 - **提高居民健康水平**
 - **增加绿色就业、提升员工工作效率**
 - **使得城市变得安全、清洁且宜居**

LEED Online Offers World Cities a Platform to Compare and Compete

“LEED在线”为
全世界的城市
提供比较和竞
争的平台



LEED Online – Cities Dashboard

← → ↺ 🏠 plaque.qas.leedon.io/dashboard/ 🔍 ⭐ ⚙️

LEED® DYNAMIC PLAQUE™ Search Cities +

| | | | | |
|--|--|---|--|--|
| <p>San Francisco, CA 500000000 San Francisco, California</p> <p>ACCESS</p> | <p>New York City, NY 500000000 New York City, New York</p> <p>ACCESS</p> | <p>Madison, WI 500000002 Madison, Wisconsin</p> <p>ACCESS</p> | <p>Philadelphia, PA 500000003 Philadelphia, Pennsylvania</p> <p>ACCESS</p> | <p>Chicago, IL 500000004 Chicago, Illinois</p> <p>ACCESS</p> |
| <p>Oakland, CA 500000005 Oakland, California</p> <p>ACCESS</p> | <p>San Diego, CA 500000006 San Diego, California</p> <p>ACCESS</p> | <p>Portland, OR 500000007 Portland, Oregon</p> <p>ACCESS</p> | <p>Seattle, WA 500000008 Seattle, Washington</p> <p>ACCESS</p> | <p>Newark, NJ 500000009 Newark, New Jersey</p> <p>ACCESS</p> |
| <p>Boston, MA 500000010 Boston, Massachusetts</p> <p>ACCESS</p> | <p>Milwaukee, WI 500000011 Milwaukee, Wisconsin</p> <p>ACCESS</p> | <p>Minneapolis, MN 500000012 Minneapolis, Minnesota</p> <p>ACCESS</p> | <p>Cambridge, MA 500000013 Cambridge, Massachusetts</p> <p>ACCESS</p> | <p>San Jose, CA 500000014 San Jose, California</p> <p>ACCESS</p> |
| <p>Washington, DC 500000015 Washington, District of Columbia</p> <p>ACCESS</p> | <p>Buffalo, NY 500000016 Buffalo, New York</p> <p>ACCESS</p> | <p>Long Beach, CA 500000017 Long Beach, California</p> <p>ACCESS</p> | <p>Los Angeles, CA 500000018 Los Angeles, California</p> <p>ACCESS</p> | <p>Berkeley, CA 500000019 Berkeley, California</p> <p>ACCESS</p> |

LEED

Suggested Action Plan for Cities

- ***Invite Cities*** in to participate on the LEED Dynamic Plaque Platform
- ***Support cities*** for data collection with standardized online platforms
- Provide an ***open data platform*** for all city data
- ***Dynamically track performance***
- ***Provide world outreach*** in online and print media and Conferences
- ***Assist in deploying policies, codes and practices***
- ***Share best practices and Recognize Outstanding Leaders***
- ***Help improve urban performance*** with tools like LEED, EDGE, PEER, etc.
- ***Training and Capacity building*** – suggest workshops and education tools

建议城市的行动计划

- 邀请城市加入LEED Dynamic Plaque平台
- 为城市的数据收集提供标准化的网络平台
- 为所有城市数据提供公开的数据平台
- 动态追踪城市工发展表现情况
- 通过网络、印刷媒体和会议等方式，为城市提供世界服务
- 协助城市部署政策、规范，以及开展实践
- 分享最佳实践，并表彰卓越领导人
- 利用LEED, EDGE, PEER等工具，提升城市发展水平
- 技术培养和能力建设——建议采用研讨会和其他教学方式

Everyone in a green building within this generation.

为这一代每一个人的绿色建筑



LEED ON



Extra Slides

Our Rationale for Cities

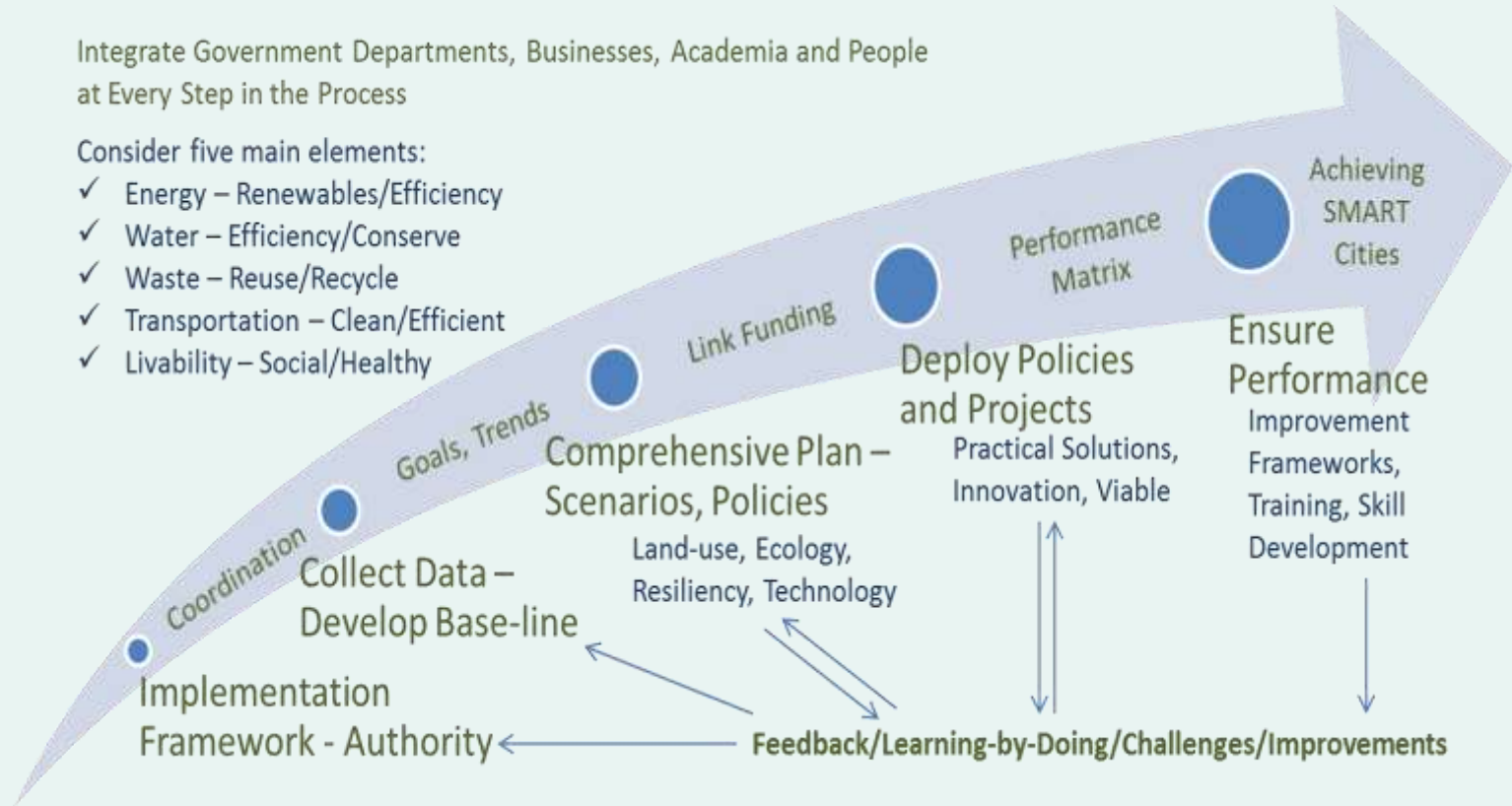
- Cities are at the *forefront* of implementing most innovative and practically viable solutions.
- *Investments made today* in urban infrastructure and buildings will shape these cities for the next few generations.
- The construction of these cities is achievable with the *right tools, commitment and local leadership*.
- Cities need to strive to address *ambitious but achievable goals*, with a set of guidelines and detailed strategies.
- Cities collect much of the needed information currently, but need to assemble it into a format that will help them *plan, implement, manage and demonstrate measurable progress*.

Suggested Comprehensive Implementation Approach

Integrate Government Departments, Businesses, Academia and People
at Every Step in the Process

Consider five main elements:

- ✓ Energy – Renewables/Efficiency
- ✓ Water – Efficiency/Conserve
- ✓ Waste – Reuse/Recycle
- ✓ Transportation – Clean/Efficient
- ✓ Livability – Social/Healthy



- Implementation of Action Oriented Viable Solutions
- Phased approach for 1-5 years with Capacity Building



CITIES OF THE FUTURE...

Will be successful ONLY if they are GREEN

- Efficient
- Affordable
- Resilient

Green cities will utilize

- Energy efficiency
- Renewable energy
- Smart grid
- Integrated urban design