

BOOK LAUNCH 新书发布

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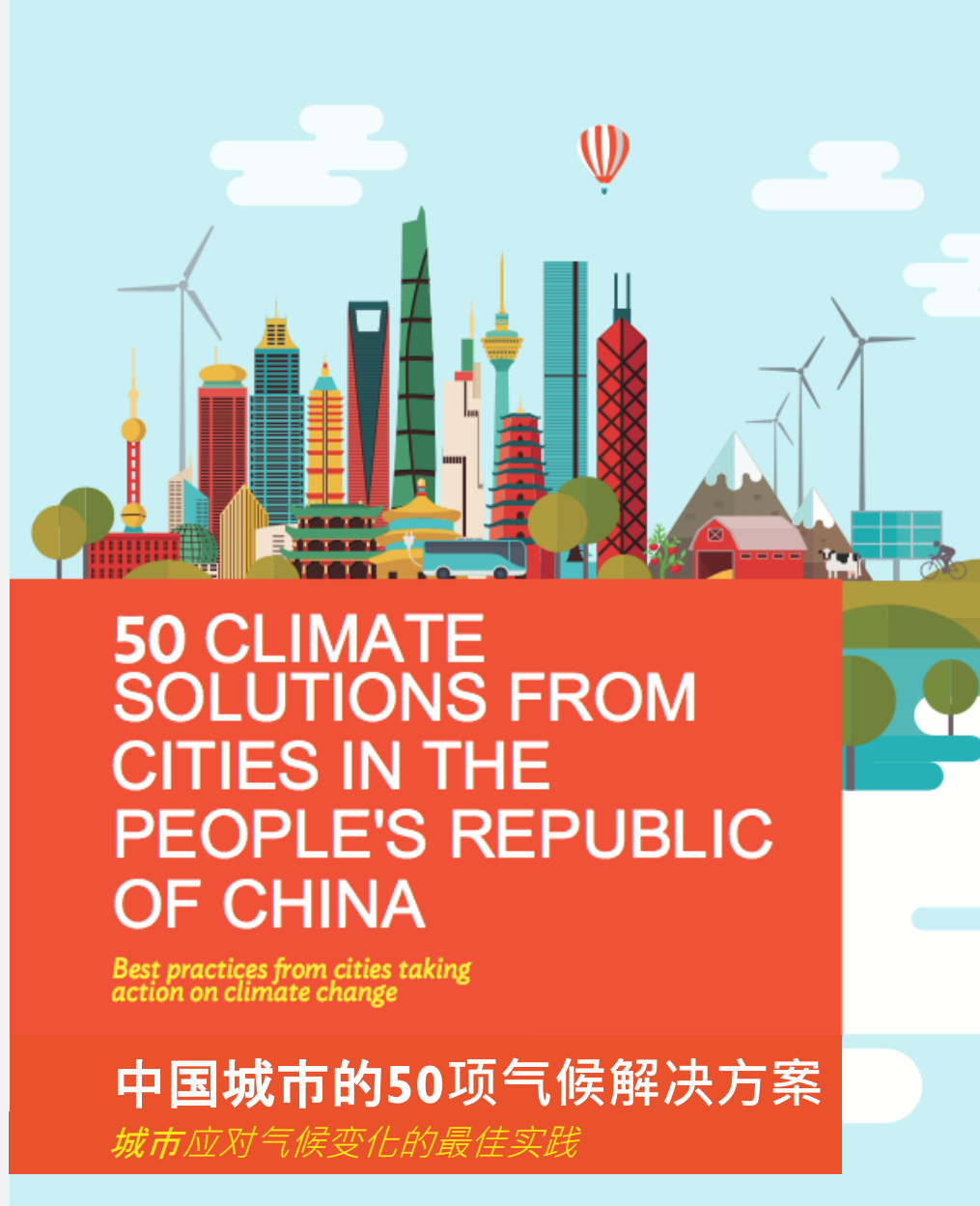
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FIVE SECTORS 五个部门

31 CITIES
31个城市

THE CITY PROJECTS IN THIS
PUBLICATION ARE DIVIDED
INTO FIVE SECTORS

本书中的城市项目被划分为以下5个部门



ENERGY
能源



LAND USE
& RESILIENCE
土地利用和气候韧性



WASTE
废弃物



MOBILITY
交通



CLIMATE
ACTION
气候行动



ENERGY 能源 (13)

Passive Buildings Deliver
Decarbonization and
Improve Living Standards

QINHUANGDAO, Hebei – P.12

Solar Micro-Grids Provide Green
Energy and Fight Poverty

WUZHONG, Ningxia – P.13

Combining Solar Power and
Organic Farming

HANCHUAN, Hubei – P.14

District Heating Powered by Air,
Ground and Waste

QINGDAO, Shandong – P.15

Rooftop Solar Energy Cuts
Costs and Carbon

QINGDAO, Shandong – P.16

Maximising Energy Recovery at
Wastewater Treatment Facility

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Panda Power: Turning the
Sun into Fun

DATONG, Shanxi – P.18

Public Sector Leading
the Charge with Energy Improvements

GUANGZHOU, Guangdong – P.20

River Water Keeping
Chongqing Ice Cool

CHONGQING – P.21

E-commerce Era Brings
Green Growth Opportunities

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Innovative Technology
Brings Near Zero Energy Building

BEIJING – P.23

Winds of Change for
District Heating

HOHHOT, Inner Mongolia – P.24

Win-Win Scheme Turns Pig
Waste into Power

HENGSHUI, Hebei – P.25



↓2.5M

TONS OF CO₂ EQUIVALENT
EMISSIONS AVERTED OVER THE
FIRST 25 YEARS OF OPERATION



Inhabitants
3,420,000



GDP per capita
CNY30,032



Geographic area
14,176 km²

CO-BENEFITS



Economic

The project is an example of the acceleration of the green economy in Datong, and its novelty features are predicted to bring extra visitors to the area.



Environmental

Annually, the panda power plant will reduce CO₂ emissions by 101,376 tons, as well as SO₂ and NO_x emissions by 1,040 and 960 tones respectively.



Social

Panda power plant has partnered with UNDP to become a hub for future climate leaders with summer camps and youth exchanges taking place.

DATONG: PANDA POWER- TURNING THE SUN INTO FUN 大同：熊猫电站 – 让阳光焕发乐趣

- Panda Green Energy in Datong is building a **panda-shaped solar power plant** covering more than **one million square meters**.

熊猫绿能集团正在大同市修建一座**熊猫形状的太阳能发电站**，占地面积超过**100万平方米**。

- Development of **100 MW solar park** in using **20% more efficient double sided solar panels**.

开发一座**100兆瓦的光伏发电园区**，采用了**双面太阳能光伏板**，效率提升**20%**。

- By completion, it **will generate** enough **electricity** for over **10,000 homes** in Datong City, Shanxi.

项目完工后，电站将足以为山西省大同市**1万多户家庭**提供电力。



BEIJING: INNOVATIVE TECHNOLOGY BRINGS NEAR-ZERO-ENERGY BUILDING 北京：技术创新带来近零能耗建筑

- Doing away with traditional heating and cooling systems, the latest renewable energy technology has been deployed in a 4,025 m² building in Beijing to achieve an 80% reduction in energy consumption and almost zero emissions.

项目摒弃了传统的供热制冷系统，而是在北京市4,025平方米的建筑面积中应用了最新的可再生能源技术，使得能源消耗量减少了80%，并且近乎实现了零排放。

- Innovative ground source heat pumps provide 65% of heating demand during winter. PV solar systems power the electrical heat pumps as well as supplying much of the power needs throughout the building.

采用了创新性的地源热泵技术，在冬季满足了65%的供热需求。太阳能光伏系统为热泵提供电力，并且还整个建筑供应了许多电力。

- The pilot building shows how to achieve more than 50% emissions savings by implementing innovative technology and is a landmark building for future development.

试点建筑表明，通过应用创新性的技术，能够实现减排50%以上，该试点也成为未来发展的地标性建筑。

↓270

TONS OF CO₂ EMISSIONS HAVE
BEEN AVOIDED IN JUST ONE
BUILDING.



Inhabitants
21,720,000



GDP per capita
CNY114,590



Geographic area
16,410 km²



CO-BENEFITS

Economic

Compared to traditional buildings, this project saved 341 MWh in 2015, corresponding to almost CNY240,000 of avoided expense.



Environmental

The pilot building has achieved 80% energy savings. In addition, the project has also made significant water and material savings, improving environmental standards and comfort.



Health

The pilot building regularly monitors PM_{2.5}, the concentration of volatile organic compounds and CO₂, as well as real-time information on temperature and humidity, ensuring high air quality and, safeguarding the health of those who occupy the building.



RESILIENCE AND LAND 气候韧性和土地利用 (9)

Reforestation Captures
Carbon and Boosts the Economy
DAXING'ANLING, Heilongjiang – P.28

Saplings Sequester Carbon
and Attract Tourists
BEIJING – P.29

Green Infrastructure to
Improve Climate Resiliency
CHANGDE, Hunan – P.30

Redevelopment Incorporates
Sustainable Design
SHANGHAI – P.32

Sponge Infrastructure Improves
Resilience and Water Security
JIAOZHOU, Shandong – P.33

Holistic Approach to Water
for Climate Adaptation
NINGBO, Zhejiang – P.34

Linking Green
Spaces for Cyclists
XINING, Qinghai – P.35

World's Largest Beach
Park Serves as Flood Defence
WUHAN, Hubei – P.36

Innovative Low-carbon
Business Development
SHANGHAI – P.37





↑350

KM OF CYCLEWAYS TO BE BUILT
BY 2020

 Inhabitants
2,300,000

 GDP per capita
CNY49,400

 Geographic area
7,649km²

Xining Greenway in Qinghai is linking scenic spots in and around the city with designated cycle paths.

青海省的西宁绿道将市内及周边的各个景观点串联起来，并且开辟出专门的骑行道。

Along the banks of the Huangshui river and beyond, Xining city is planting trees and building 350 km of designated cycle lanes that link the city center with scenic spots in the surrounding mountains via green spaces.

西宁市在黄水河河岸及其延伸地块上种植树木，打造了350公里的专门的骑行道，通过绿色空间将城市中心和周边山区各个景观点串联起来。

By replacing car journeys with bike rides, the city hopes to reduced CO₂ emissions, by 12,000 tons annually by 2020, and improve local air quality.

如果小汽车出行被替换为自行车骑行，西宁市希望由此在2020年前每年减排二氧化碳1.2万吨，同时改善地方的空气质量。

CO-BENEFITS

Environmental

By encouraging a greater number of cycle journeys, Xining hopes to reduce carbon and particulate emissions in the city, and enhance greener lifestyles for its residents.

Health

Increased mobility has great impacts for public health and leads to a reduction in lifestyle diseases. The project's green infrastructure will also help to reduce the urban heat-island effect.

Social

Xining Greenway is becoming a new leisure and fitness space for citizens of all ages and backgrounds, with many new businesses opening along the cycle paths.

QINGHAI: LINKING GREEN SPACES FOR CYCLISTS 青海：为骑行者串联起绿色空间

↓1.5M

TONS OF CO₂ WERE SEQUESTERED
BETWEEN 2010-2014



Inhabitants
450,000



GDP per capita
CNY30,800



Geographic area
83,000 km²

CO-BENEFITS



Economic

The project has created job opportunities for 5,460 people to prepare the land, plant trees, manage the forest land during the project implementation period.



Environmental

The reforestation project will increase forest coverage, decrease air pollution, increase biodiversity, enhance the stability of forest ecosystems and improve soil and water conservation capacity.



Health

The reforestation project will re-establish the forest, which will contribute to improving the air quality for the local citizens.

DIAXING'ANLING: REFORESTATION CAPTURES CARBON AND BOOSTS ECONOMY

大兴安岭：再造林项目固碳并促进经济

- Diaxing'anling shifted from logging to forest tourism, improving both carbon sequestration and the local economy.

大兴安岭从伐木产业转向森林旅游，既存储固定了碳汇也改善的地方经济。

- Four forest farms are involved in this project. A total of 39,514 ha. of forest were planted between 2010 and 2014.

本项目涉及到了四个森林农场，在2010年至2014年期间，造林面积总共达到39,514公顷。

- Since 2012, reforestation has been eligible for China Certified Emission Reduction, meaning that forest carbon sequestration can be sold to offset greenhouse gas emissions and be traded under the emissions trading schemes in the PRC.

自2012年起，再造林项目可被纳入到中国经核证的减排量中，这意味着林业碳汇可用于出售，以抵消温室气体排放量，并纳入到中国的排放交易体系中进行交易。





WASTE 废弃物 (6)

Smart Route Planning
Tool Cuts Emissions

WUHAI, Inner Mongolia – P.40

Responsible Recycling
of Kitchen Waste Cuts Emissions

CHENGDU, Sichuan – P.41

Green Haven Rises from
the Ashes of Old Landfill Site

WUHAN, Hubei – P.42

Changing Attitudes with
Improved Waste Management

NINGBO, Zhejiang – P.43

Turning Waste into Walls
WEIHAI, Shandong – P.44

Extracting Energy from
Sludge Cuts Coal and Pollution

SHANGHAI – P.45





↑12M

VISITORS TO THE 2015 GARDEN
EXPO ON THE OLD LANDFILL SITE



Inhabitants
10,600,000



GDP per capita
CNY111,469



Geographic area
8,494 km²

Wuhan transformed over 50 hectares of closed landfill into a garden.

武汉市改造了一座50多公顷的已闭用的填埋场，改成一座花园。

Measures. Restoration process started in 2014. It introduced proper planting techniques, diverse plant species, and measures to improve the soil.

相关措施：有关复原进程始于2014年，引入了诸多恰当的种植技术、多样化的植物种类、以及改良土壤的相关措施。

Landfill site hosted the International Garden Expo in 2015.

填埋场所在场址于2015年承办了国际园林花卉博览会。

CO-BENEFITS



Economic

The project saved CNY829 million by using aerobic ecological restoration compared to conventional restoration methods.



Health

Restoring the landfill site ensures reduced air pollution for more than 100,000 people living in close proximity to the landfill.



Social

The new ecological park improves the quality of life for the citizens of Wuhan and promotes economic and social development in the surrounding areas.

WUHAN: RENEWAL OF LANDFILL SITE

武汉：填埋场的翻新再利用

WUHAI: SMART ROUTE PLANNING TOOL CUTS EMISSIONS

乌海：路线规划智能工具减少排放

- Introducing an intelligence system into the sanitation process allows monitoring and optimization of the system which is reducing the carbon dioxide emissions, and improving the overall performance.

为城市的环卫体系引入了一套智能系统，得以对环卫体系进行监测和优化，由此减少了二氧化碳排放，并改善了整体运行绩效。

- Wuhai, has designed an environment sanitation cloud platform linking 194 vehicles to a centralized system. The smart system gives an overview of vehicle performance and automatically generates optimal route plans for the fleet's waste collection across the city. With optimized vehicle routes, workforce efficiency is improved, and the running time and distances of sanitation vehicles is reduced.

乌海市设计了一套环境卫生云平台，将194辆相关车辆连接到一个中央系统上。这一智能系统能够给出车辆绩效的概况，并且自动规划出车队在全城收集废弃物的最优路线。车辆路线实现优化之后，车队的效率提高了，各个清洁车辆的运行时间和距离都有减少。

↓27K

LITERS OF FUEL SAVED
ANNUALLY THANKS TO ROUTE
OPTIMIZATION

 Inhabitants
558,000

 GDP per capita
CNY102,725

 Geographic area
2,350 km²



CO-BENEFITS

Economic

Each year, fuel consumption is reduced by 26,907 liters, saving the city CNY139,900 annually.

Environmental

More efficient fuel and resource use enabled through the cloud platform, reduces CO₂ and particulate emissions in the already polluted city of Wuhai.

Social

The project supports more than 1,200 jobs, and substantially improves the working conditions for Wuhai's sanitation workers.



CLIMATE ACTION

气候行动 (13)

Empowering the Next
Generation for Climate Action

WUHAN, Hubei – P.48

Growing GDP whilst
Reducing Emissions

QINGDAO, Shandong – P.49

Ambitious and 100% Compliant
Emissions Trading Scheme

SHANGHAI – P.50

Youth Network Engages and Inspires
Tomorrow's Climate Leaders

GUANGZHOU, Guangdong – P.51

Economic Incentives to Reduce
Consumption and Go Green

SUZHOU, Jiangsu – P.52

Decoupling Emissions and
Growth with Market-Based Tools

SHENZHEN, Guangdong – P.54

Low-Carbon Collective
Inspires and Educates

ZHONGSHAN, Guangdong – P.55

Growing Up: Efficient,
Vertical Farming

BEIJING – P.56

Planning for the Future
with Smart Data and Financing

HEFEI, Anhui – P.57

Low-carbon Passport
Improves Ecotourism

NANPING, Fujian – P.58

Residential Communities Creating
Change from the Ground Up

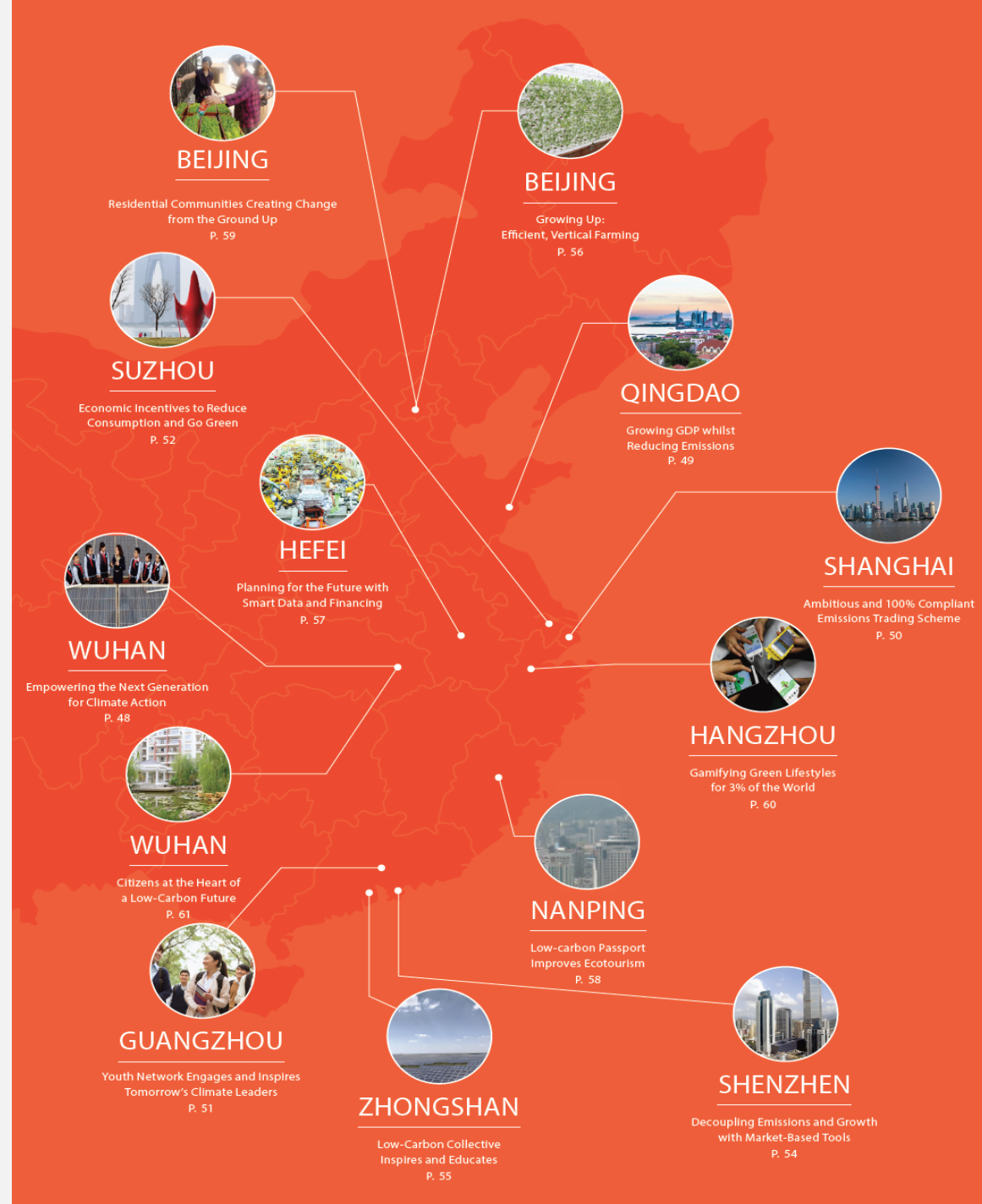
BEIJING – P.59

Gamifying Green
Lifestyles for 3% of the World

HANGZHOU, Zhejiang – P.60

Citizens at the Heart
of a Low-Carbon Future

WUHAN, Hubei – P.61





↑1.7K

STUDENTS ATTRACTED TO
INTERNATIONAL SUMMITS HELD
BY CYCAN

 Inhabitants
14,040,000

 GDP per capita
CNY145,254

 Geographic area
7,434 km²

Guangzhou has created an ambitious network of climate action youth leaders to re-shape the approach to climate action in the next generation.

广州市建立了一个雄心勃勃的、包含诸多气候行动青年领袖的网络，以重新塑造未来一代开展气候行动的方法。

The China Youth Climate Action Network, associated with the Climate Action Network, works to raise public awareness on climate change and transition to sustainable energy, while also engaging and inspiring youth communities in the PRC.

中国青年应对气候变化行动网络是气候行动网络的成员，致力于提升公众应对气候变化和可持续能源转型的意识，并且推动和鼓励中国的青年群体。

The network has a number of running projects. One such project is a low-carbon campus project, which aims to empower university students to take control of energy management on their campus and cut emissions from universities.

该网络正在开展诸多项目，其中一个叫做低碳校园项目，旨在为大学学生赋予相关能力，掌管其校园的能源管理，并减少校园产生的碳排放。

CO-BENEFITS

Economic

Inspiring future entrepreneurs to focus their innovative efforts on green and clean technology could have untold economic benefits for the world's second largest economy.

Environmental

Empowering a generation who have faced some of the worst environmental conditions ever is a potent accelerator of future change for the environment.

Social

Providing a platform for environmentally conscious youth to engage in climate action can open their eyes to future careers influencing PRC's green transition.

GUANGZHOU: YOUTH NETWORK ENGAGES AND
INSPIRES TOMORROW'S CLIMATE LEADERS
广州：青年网络推动并鼓励了未来的气候领袖

SHANGHAI: EMISSIONS TRADING SCHEME

上海：排放交易体系

- One of the PRC's earliest market-based Emissions Trading Schemes (ETS) boasts impressive success metrics, and is also providing lessons for other PRC mitigation projects.

作为中国最早的以市场为基础的排放交易体系之一，上海市取得了引人注目的多方位成果，也为中国的其他减缓项目带来诸多借鉴。

- The first ETS pilots was launched in 2013 in Shanghai. The scheme creates a carbon market where emitters can buy and sell credits that permit them to emit greenhouse gases.

上海市于2013年发起了最初的一批排放交易体系试点。该体系构建起一个碳市场，使得各个排放单位能够买卖其排放温室气体的许可证。

- Around 60% of the city's total emissions are covered by the scheme, which uniquely includes the aviation sector. Since its creation, a total of 26.7 million emissions allowances have been traded, representing CNY414 million.

该体系纳入了全市大约60%的排放总量，还独特地包含了航空部门。自启动以来，总共已有2670万吨排放配额进行了交易，交易额达到4.14亿元人民币。

↑100%

COMPLIANCE OVER
THE PAST FOUR YEARS



Inhabitants
24.190.000



GDP per capita
CNY113,719



Geographic area
6,340 km²

CO-BENEFITS

Economic

Since the initiation of the ETS, a total of 26.7 million emissions allowances have been traded, representing CNY 414 million.

Environmental

The scheme is estimated to have saved around 300 million tons of CO₂ equivalent since its inception in 2013.

Health

Reducing emissions is also associated with improving air quality - one of Shanghai's greatest health-related problems.





MOBILITY 交通 (9)

Carpooling Tackles
Congestion and Emissions

BEIJING – P.64

Electric Taxis Replace
Traditional Fleet

TAIYUAN, Shanxi – P.65

Supercapacitor Technology Leading
the Charge for Public Transport

HUAI'AN, Jiangsu – P.66

Speedy and Comfortable Commute
with Shared Bus Service

BEIJING – P.67

Cycling Scheme Incentivizes
Carbon Reductions

WUHAN, Hubei – P.68

Buses Go Truly Zero
Emission with Solar Power

SHANGHAI – P.70

Bus Rapid Transit
Unlocks Urban Mobility

YICHANG, Hubei – P.71

Zero-emission
Hydrogen Bus Fleet

FOSHAN, Guangdong – P.72

Cleaner Mobility
Through Car Sharing

CHONGQING – P.73





↑90%

INCREASE IN BUS MODE SHARE
DURING PEAK MORNING TRIPS



Inhabitants
4,130,000



GDP per capita
CNY89,978



Geographic area
21,227 km²

Yichang's new Bus Rapid Transit system is offering an efficient and accessible means of transport for citizens, improving urban mobility and air quality.

宜昌市全新的快速公交系统为市民提供了一种高效易达的出行方式，改善了该市的交通情况和空气质量。

Providing citizens with a 24 km green public transport corridor offers a cheaper and more efficient means of urban mobility.

为市民提供了一条24公里的绿色公交出行通道，城市交通有了一种价格更低廉且更有效率的方式。

Over the 3 months following the BRT's opening, city car mode share dropped from 40% to 30% and bus mode share increased from 18% to 34% of morning peak trips. Bus waiting times have reduced from 13 minutes to 6 minutes in BRT locations.

快速公交投入运行后的3个月里，该市早高峰期间的机动车出行比例从40%降低至30%，公交出行比例从18%提升到34%。快速公交沿途站点的公交车等待时间也从13分钟减少到6分钟。

CO-BENEFITS



Economic

The economic benefits of the BRT project include reduced congestion, improved commute times, fewer road accidents and savings to vehicle operating costs.



Health

Taking cars off the road contributes to reduced particulate and NOx emissions - the primary contributors to respiratory illnesses.



Social

Following consumer surveys, female passengers felt the BRT offered them additional security at the stations compared to previous bus stops and commuters rated the conditions inside the buses highly.

YICHANG: BUS RAPID TRANSIT UNLOCKS URBAN MOBILITY

宜昌：快速公交解锁城市出行

SHANGHAI: BUSES GO TRULY ZERO EMISSION WITH SOLAR POWER

上海：太阳能使公交巴士实现真正零排放

- Shanghai is the first city in the PRC to generate power for the city's electric buses using a rooftop PV system on the bus depot.
在公交枢纽站安装屋顶光伏系统并为电动公交车提供电力，上海市是中国的第一城。
- The 195 kW rooftop PV system is providing enough energy to recharge 6 buses at the same time, and the expected annual power generation is up to 20 MWh. Each electric bus typically travels between 100 and 120 kilometers a day, consuming 220 to 230 kWh.
该195千瓦屋顶光伏系统足以同时为6辆公交车充电，预计每年发电量将达到20兆瓦时。每辆电动巴士通常每天行驶100至120公里，耗电220至230千瓦时。
- The solar power installation will not only benefit the environment, but will also bring economic benefits for the bus company through reduced electricity costs.
该太阳能系统不仅有助于保护环境，而且通过减少电力费用还为巴士公司带来经济效益。

↓150k

KILOMETERS OF BUS JOURNEYS
PER YEAR POWERED BY THE
SOLAR SYSTEM

Inhabitants
24,190,000

GDP per capita
CNY113,719

Geographic area
6,340 km²



CO-BENEFITS

Economic

Distributed PV generates 20 MWh of green power per year, which according to the current electricity tariff in Shanghai will save the bus company CNY 170,000 annually.

Environmental

Using solar power to generate energy, substituting fossil fuels, will reduce 6 tons of oxynitride and 160 carbon dioxide emissions.

Health

Using solar energy to power electric buses reduces vehicle emissions, urban haze, and air pollution, bringing many benefits to human health.



THANK YOU!

谢谢大家！