

低碳城市技术规划与实践

——以深圳国际低碳城为例

Planning and practice of low carbon city technology

——Taking Shenzhen International Low Carbon City as an example

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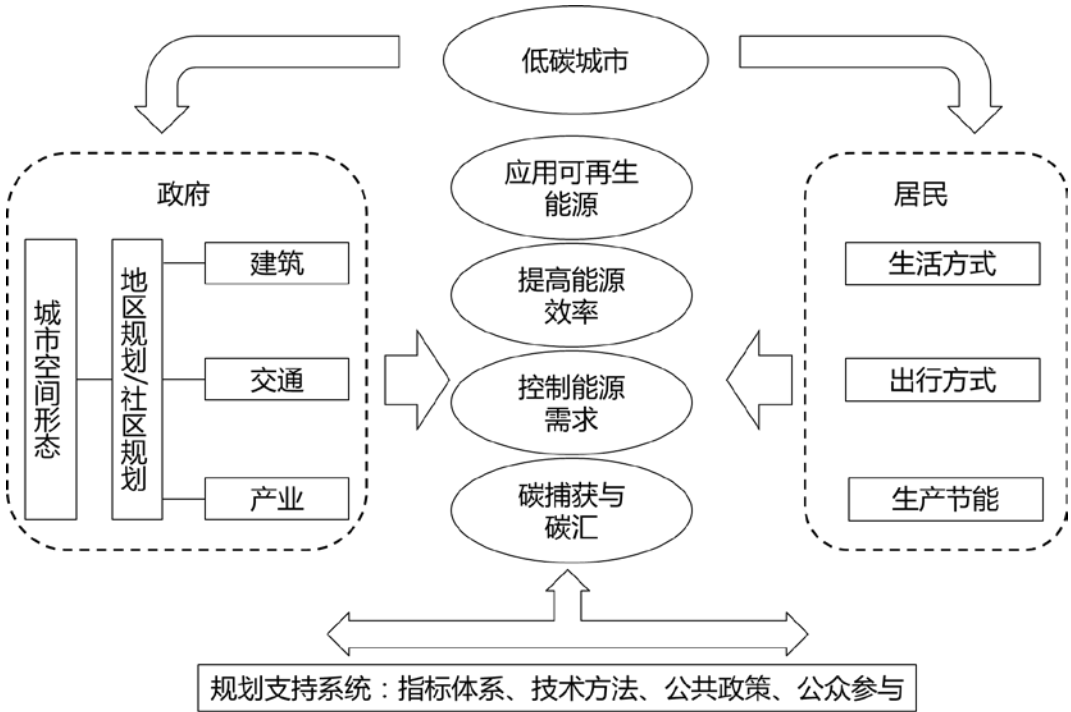
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1. 低碳城市概念与中国发展现状

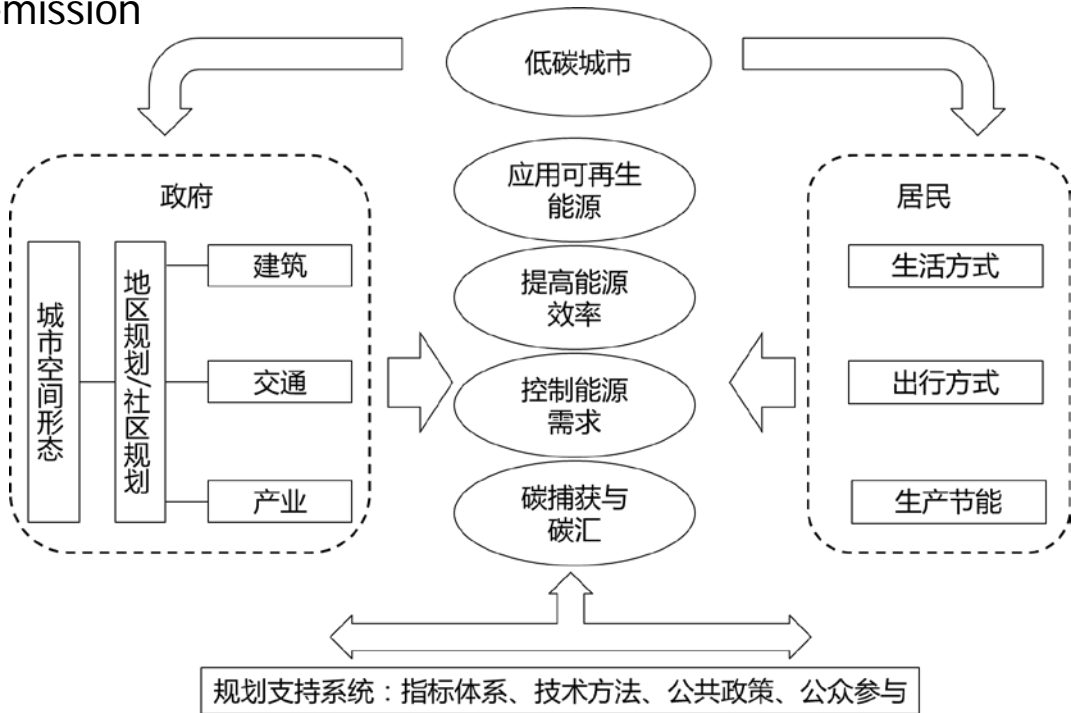
- **概念**：低碳城市是指在经济、社会、文化等领域全面进步，市民生活品质不断提升的前提下，减少城市消费CO2排放量，实现可持续发展的宜居城市。
- **战略目标**：能源、经济、社会、排放低碳化



低碳城市规划概念框架

1. Low Carbon City Concept and Development Situation in China

- **Concept** : Low Carbon City refers to the livable city under the premise of the overall progress in economic, social, cultural and other fields and constantly improvement of the quality of life, to reduce city CO2 emission and achieve sustainable development.
- **Strategic aims** : Energy, economy, society, low carbon emission



Low carbon city planning concept frame

1. 低碳城市概念与中国发展现状

低碳城市发展现状：

- 截至2014年底，中国已确定**6个省区**低碳试点，**36个低碳试点城市**，低碳城市试点已基本在全国范围内全面铺开。
- 中国287个地级市中，提出低碳目标的城市已超**259个**，占90%以上，但完整的成功案例未有出现。

低碳城市试点五大任务：

- 编制低碳发展规划
- 制定支持低碳绿色发展的配套设施
- 加快建立以低碳排放为特征的产业体系
- 建立温室气体排放数据统计和管理体系
- 积极倡导低碳绿色生活方式和消费模式

● 第一批试点城市：8市（2010.8）
● 第二批试点：29省市（2012.11）
✓ 碳排放权交易试点：7个（2013-2014年启动）

1. Low Carbon City Concept and Development Situation in China

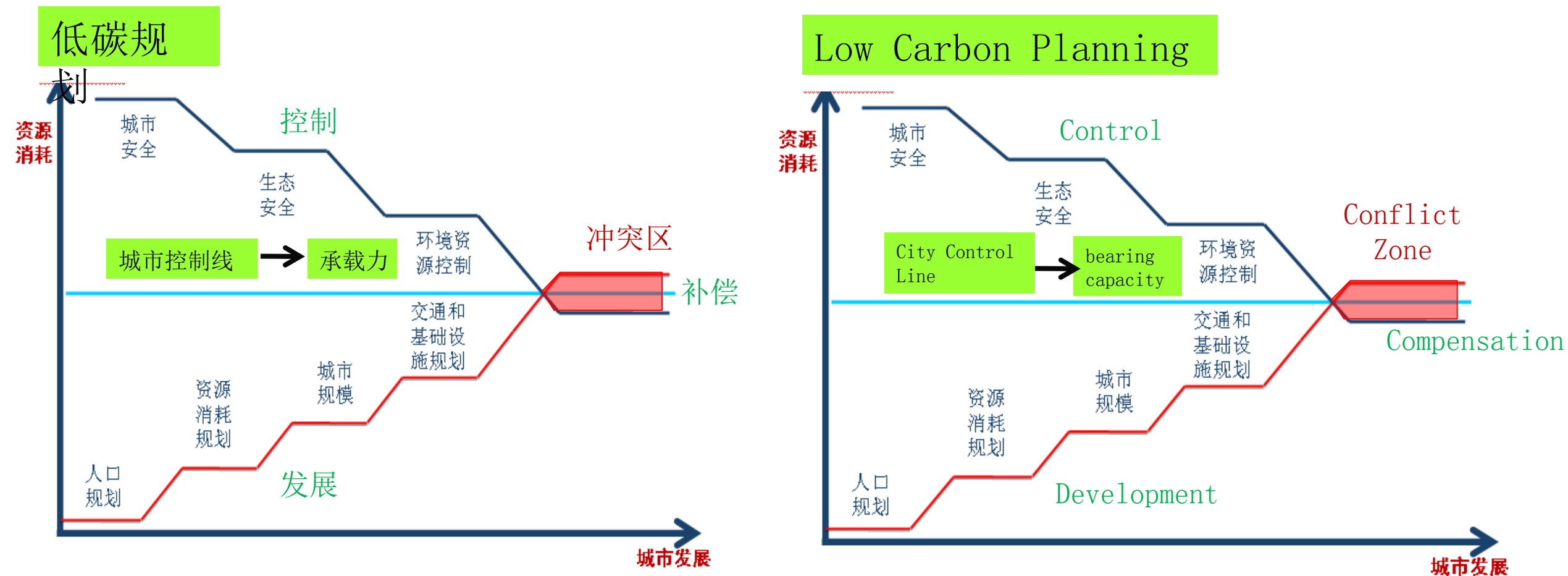
Low Carbon City Development Situation:

- Until the end of 2014, China has confirmed 6 Provinces and Districts Pilots and 36 Low Carbon Pilot Cities. Low Carbon Cities have spread all over China.
- Among Chinese 287 prefecture-level cities, 259 cities have proposed low carbon goals, which occupied over 90%, but there are no completed and successful cases.

5 Tasks of Low Carbon Pilot Cities :

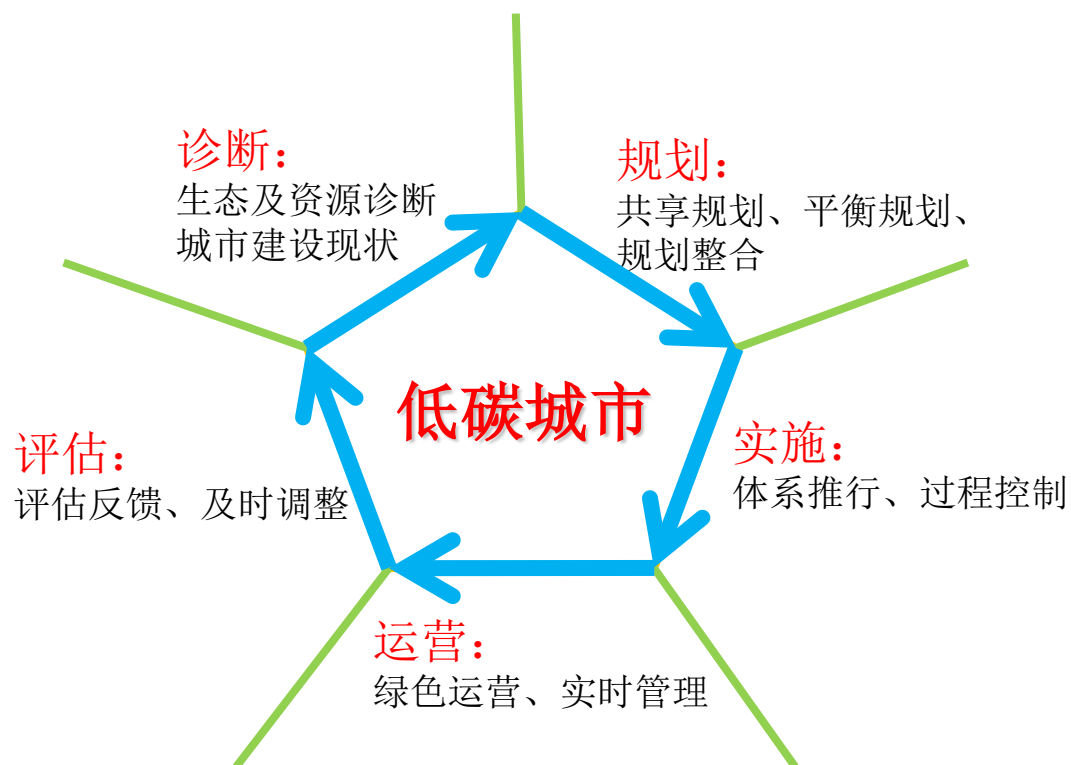
- Work out on low carbon development planning
- Perfect supporting facilities to support low carbon and green development
- Speeding up build the industrial system with low carbon emission characters
- Build greenhouse gas emission data statistical and management system
- Initiate low carbon and green living ways and consumption patterns

2. 低碳城市规划方法与发展策略 2. Methodologies and development strategy of low carbon city planning



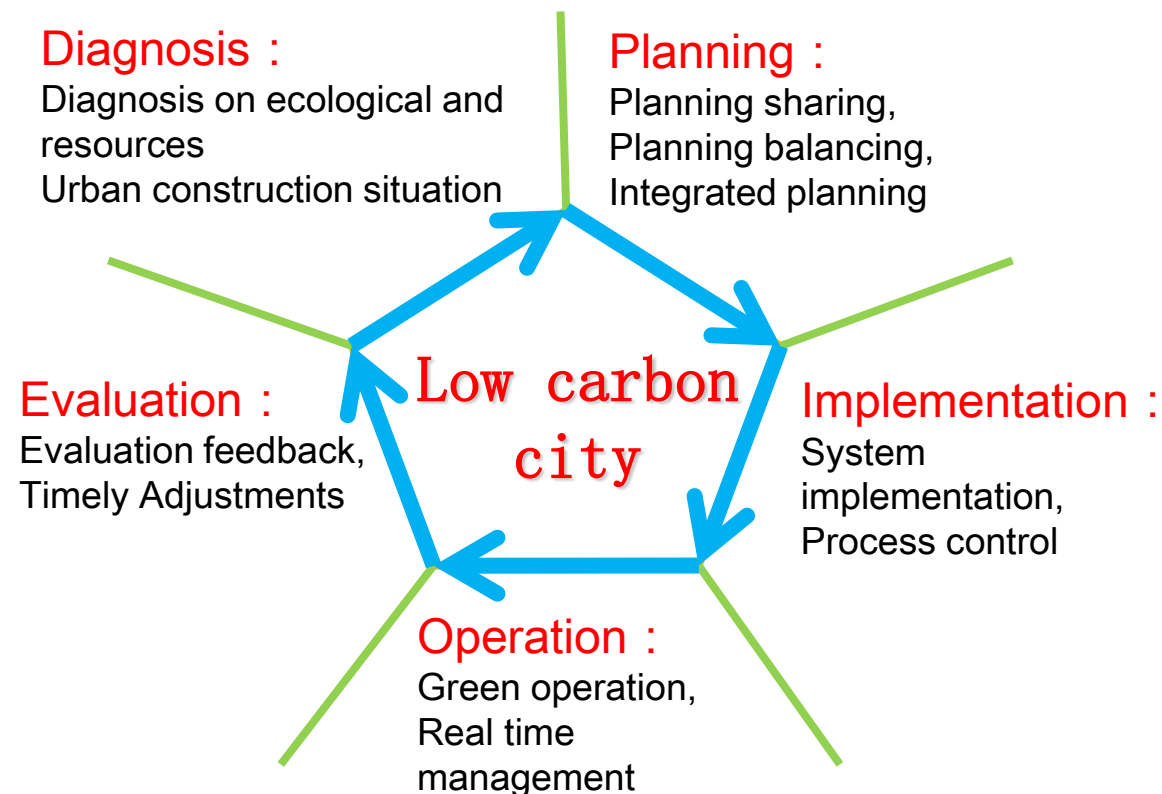
2. 低碳城市规划方法与发展策略

- **推行策略：**诊断、规划、实施、运营、评估



2. Methodologies and development strategy of low carbon city planning

- **Implementation strategies:** Diagnosis, planning, implementation, operation, evaluation



2. 低碳城市规划方法与发展策略



低碳城市规划设计 五大策略 SMART

2. Methodologies and development strategy of low carbon city planning



Low Carbon city planning Five strategies SMART

3. 实践案例——深圳国际低碳城

3. Practical cases——Shenzhen International Low Carbon City

深圳国际低碳城于2012年5月确定为中欧可持续城镇化合作伙伴旗舰项目

努力打造成为国家低碳发展综合试验区和低碳国际合作的重要平台

建设国际低碳城，是深圳三十年低碳绿色实践和城市转型发展经验的总结、聚集和示范，探索低耗能、低排放、低污染条件下实现高质量增长的有效路径。

Shenzhen International Low Carbon City was determined to be the flagship project in China-Europe Sustainable Urbanization Partnership.

Strive to become an important platform for national low carbon development comprehensive experimental zone and low carbon international cooperation.

The construction of international low carbon city, is Shenzhen's experience summary , aggregation and demonstration of the past 30 years' low carbon green city practice and city development transformation, strive to build a green and low carbon development and upgrade edition.

2012年	
面积:	53.14km ²
人口:	23万人
人均GDP:	深圳的1/4
单位土地面积GDP:	深圳的1/6
万元GDP碳排放:	深圳的2.5倍



2012	
Area:	53.14 km ²
Population:	230,000
GDP/Person:	1/4 of Shenzhen
GDP/Unit land area:	1/6 of Shenzhen
Carbon emission/ 10,000 Yuan GDP:	2.5 times of Shenzhen

资料来源：深圳国际低碳城发展2014年度报告

3. 实践案例——深圳国际低碳城

立意高远，小心试验

三层次规划内容

区域**53**平方公里

拓展区**5**平方公里

启动区**1**平方公里

总体空间规划
系统性、全局性的框架搭建

综合规划
制定详细方案，全面示范

投融资规划
聚焦重大项目，先行示范



3. Practical cases——Shenzhen International Low Carbon City

Great foresight, careful test

Zone area: **53** km²

Development zone area: **5** km²

Starting zone area: **1** km²

3 levels planning content

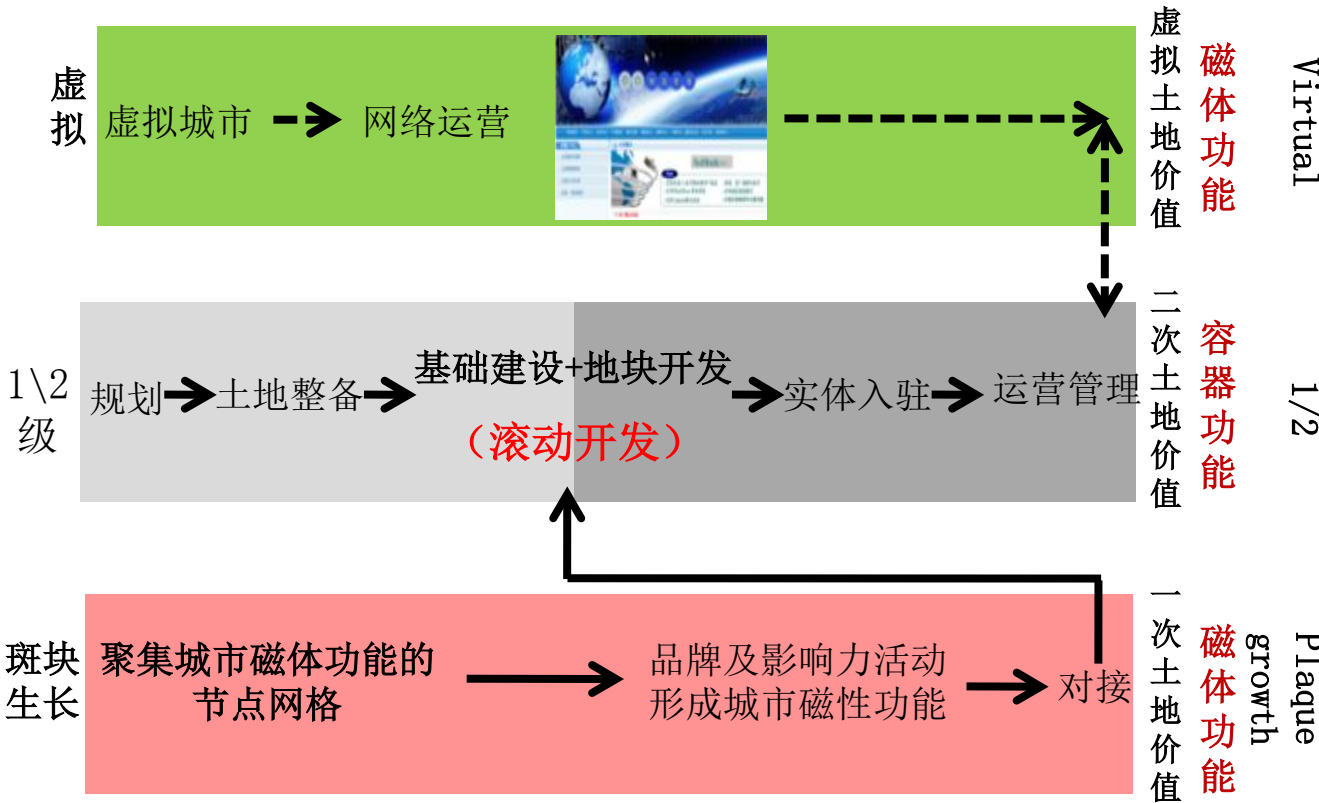
Overall space planning
Systematic and overall framework

Comprehensive planning
Detailed plans and comprehensive demonstration

Investment and financing planning
Focus on major projects, first demonstration

3. 实践案例——深圳国际低碳城

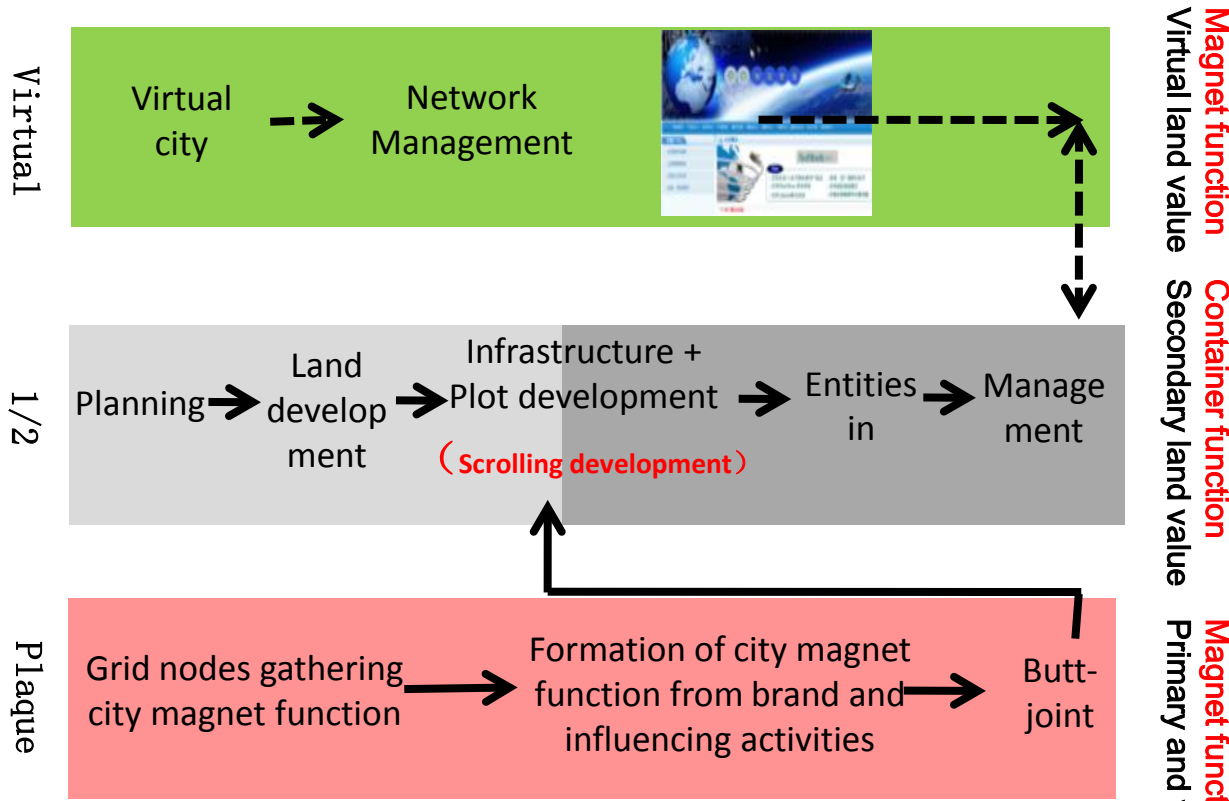
梯级城市开发模式探索：斑块生长



半步走打造片区活力磁体：聚人气

3. Practical cases——Shenzhen International Low Carbon City

Cascade City development pattern exploring: **Plaque growth**



A half-step to build the zone a dynamic magnet: Gather popularity

3. 实践案例——深圳国际低碳城

低碳城“半步走”模式

- 1、以最快速度搭建宣传**窗口**，全面展示低碳城理念和技术，给人信心
- 2、建立低碳技术研发和孵化**平台**
- 3、城乡共建的微缩示范，成为城市发展新的**爆发点**

三个项目

- 综合服务中心：**微缩城市，模块生长，实验平台**
- 客家围屋改造：**城乡共建，品质提升，文化传承**
- 现有厂房改造：**产业升级，孵化成长，配套完善**

三个活动

- 首届国际低碳城论坛
- 低碳技术交易展会
- 国际低碳创意大赛

3. Practical cases——Shenzhen International Low Carbon City

Low carbon city “half-step” pattern

- 1、 Build the propaganda **window** with the fastest speed, to comprehensively display low carbon city concept and technology and give people confidence.
- 2、 Build low carbon technology research and hatching **platform**.
- 3、 Miniature demonstration of combined urban and rural construction, to be the new **explosion point** of city development.

3 Projects

- Administrative service centre: **A miniature city, module growth, experimental platform**
- Hakka round house transformation: **Urban and rural construction, quality promotion, cultural inheritance**
- The existing plant transformation: **Industrial upgrading, hatching growth, perfect supporting**

3 Activities

- The first international low carbon city forum
- Exhibition on low carbon technology transaction
- International low carbon creative competition

3. 实践案例——深圳国际低碳城

绿色建筑的打造和提升

客家围屋改造

保留原有格局
建筑展示传统低碳技术



客家围屋绿色改造

现有厂房改造

传统工业作坊的低碳生态改造
立体绿化提升
资源、能源系统改善



现有厂房绿色改造

3. Practical cases——Shenzhen International Low Carbon City

To build a green building and promotion

Hakka round house transformation

Retain the original pattern
The building shows the traditional low carbon technology



Hakka round house transformation

The existing plant transformation

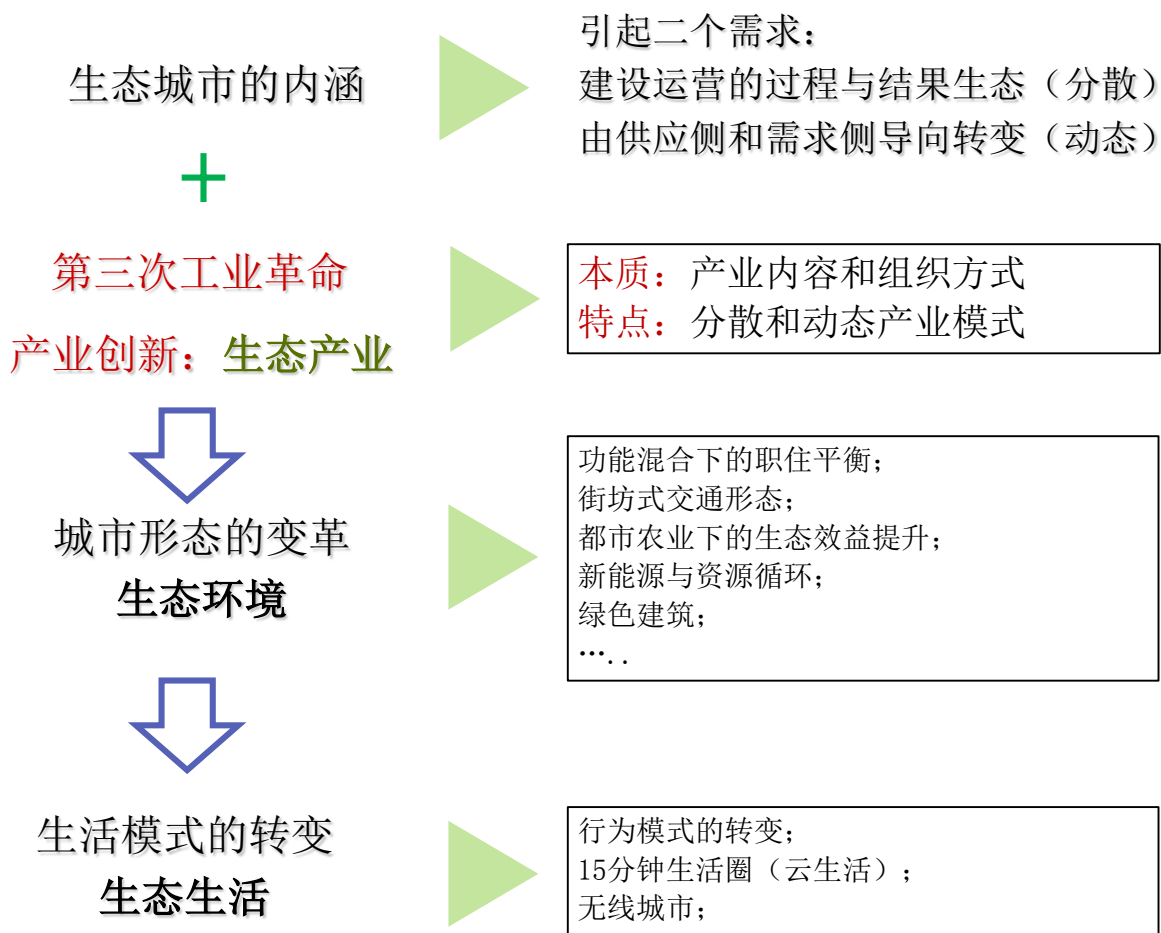
Stereo greening promotion
Improving the resources, energy system



The existing plant transformation

3. 实践案例——深圳国际低碳城

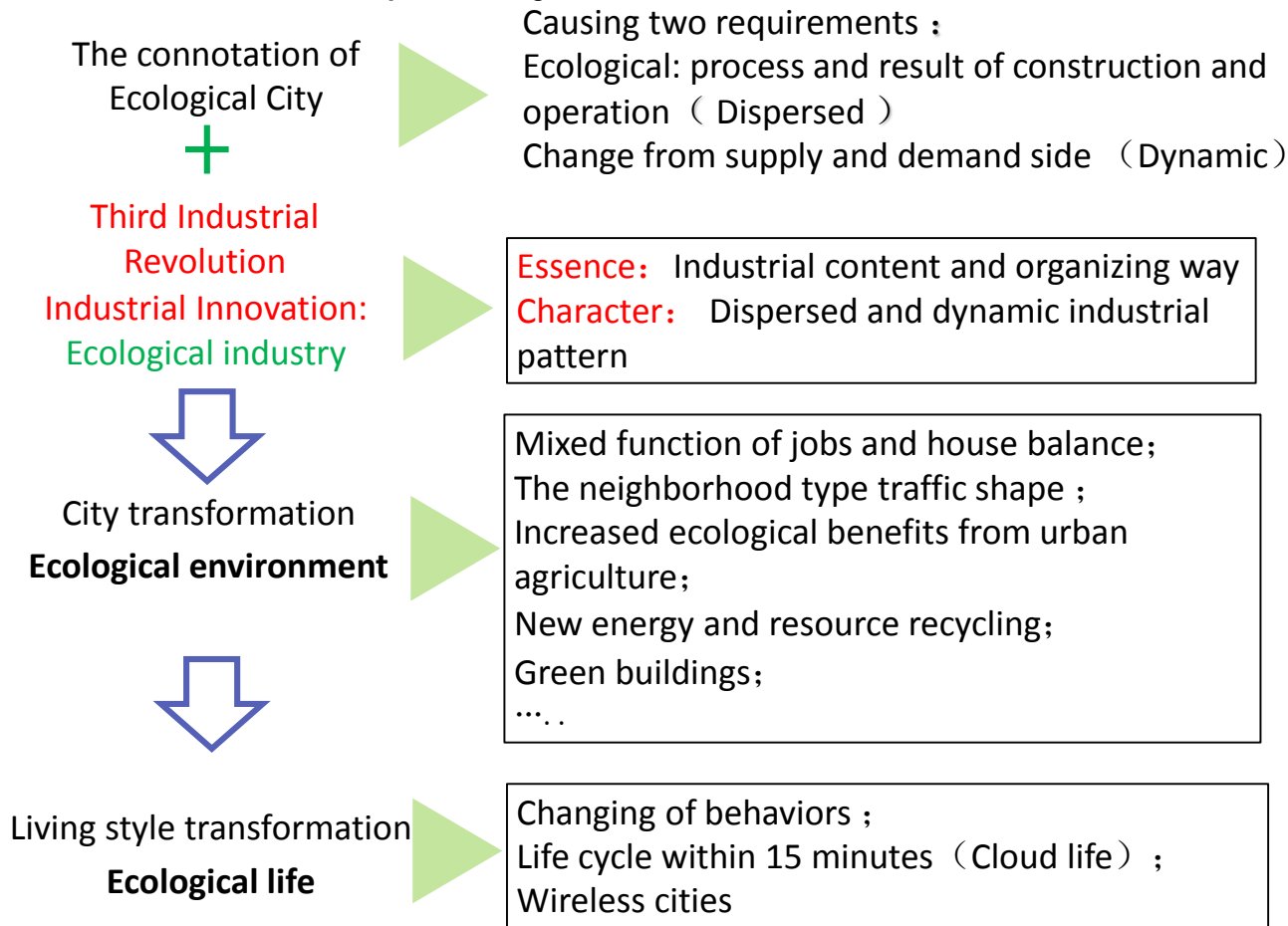
弹性灵活的产业空间布局



多协同发展低碳产业经济：聚财气

3. Practical cases——Shenzhen International Low Carbon City

Flexible industrial spatial layout

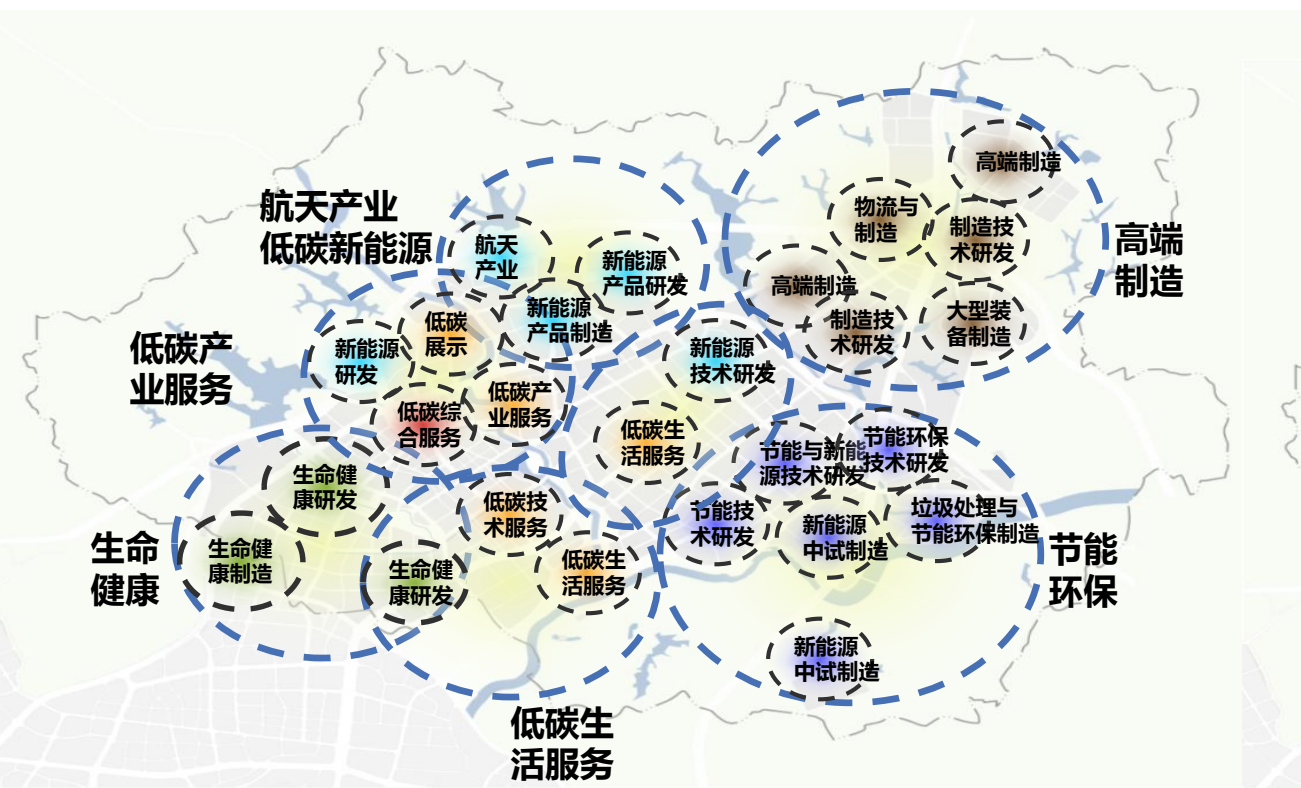


Collaboratively develop low carbon industry economy: Accumulate wealth

资料来源：深圳国际低碳城发展2014年度报告

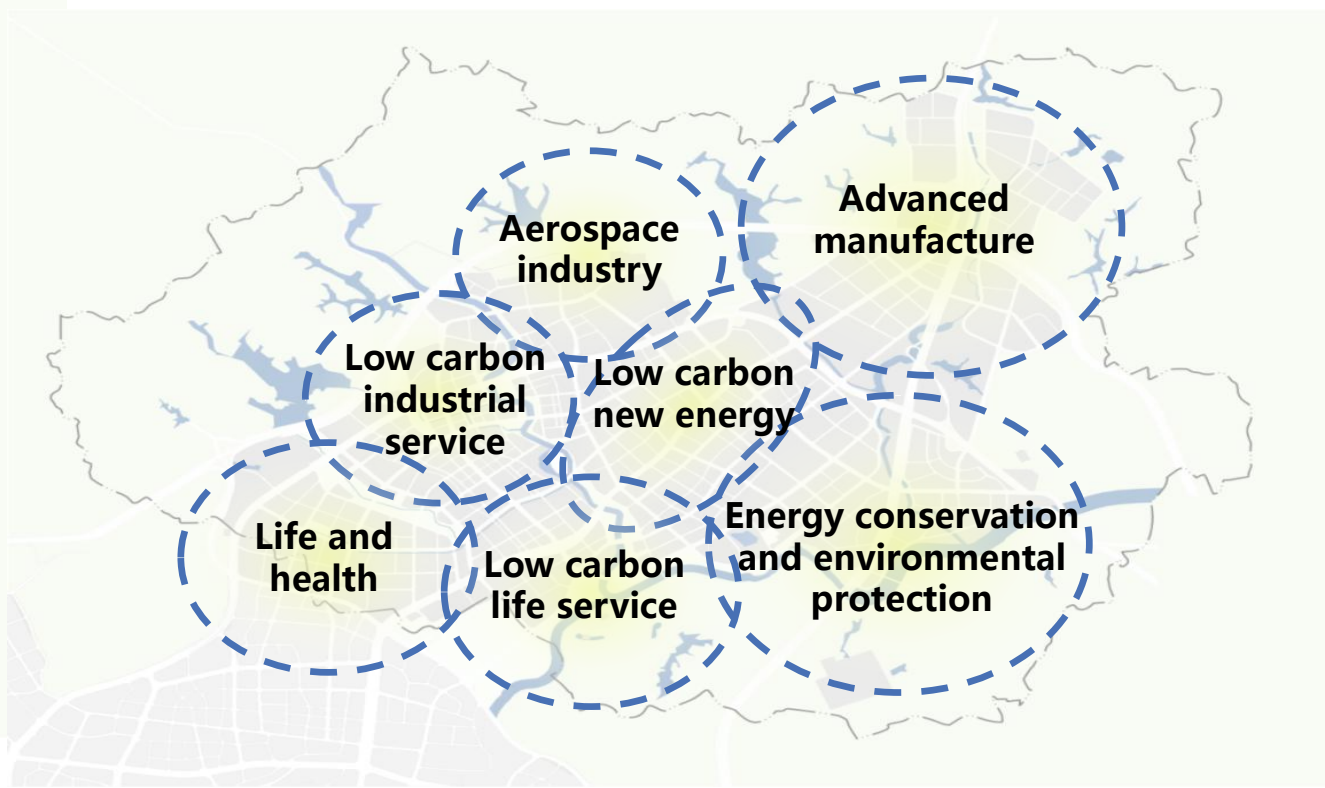
3. 实践案例——深圳国际低碳城

同一层次产业弹性布局，同类产业集聚发展
圈层式布局，由中心往外产业层级渐变
用地功能配比，配套服务供给，道路交通结构



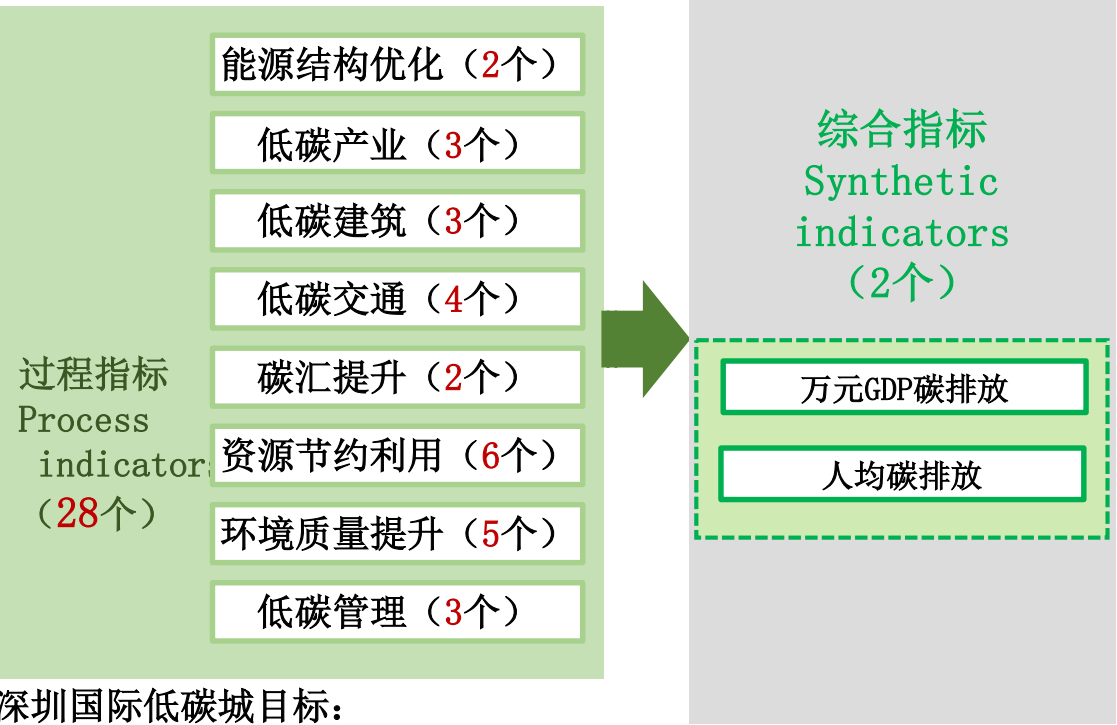
3. Practical cases——Shenzhen International Low Carbon City

Flexible layout of same level industries, Similar industrial agglomeration development,
Ring type layout, gradually change from the centre to the outside



3. 实践案例——深圳国际低碳城

独具特色的低碳指标体系



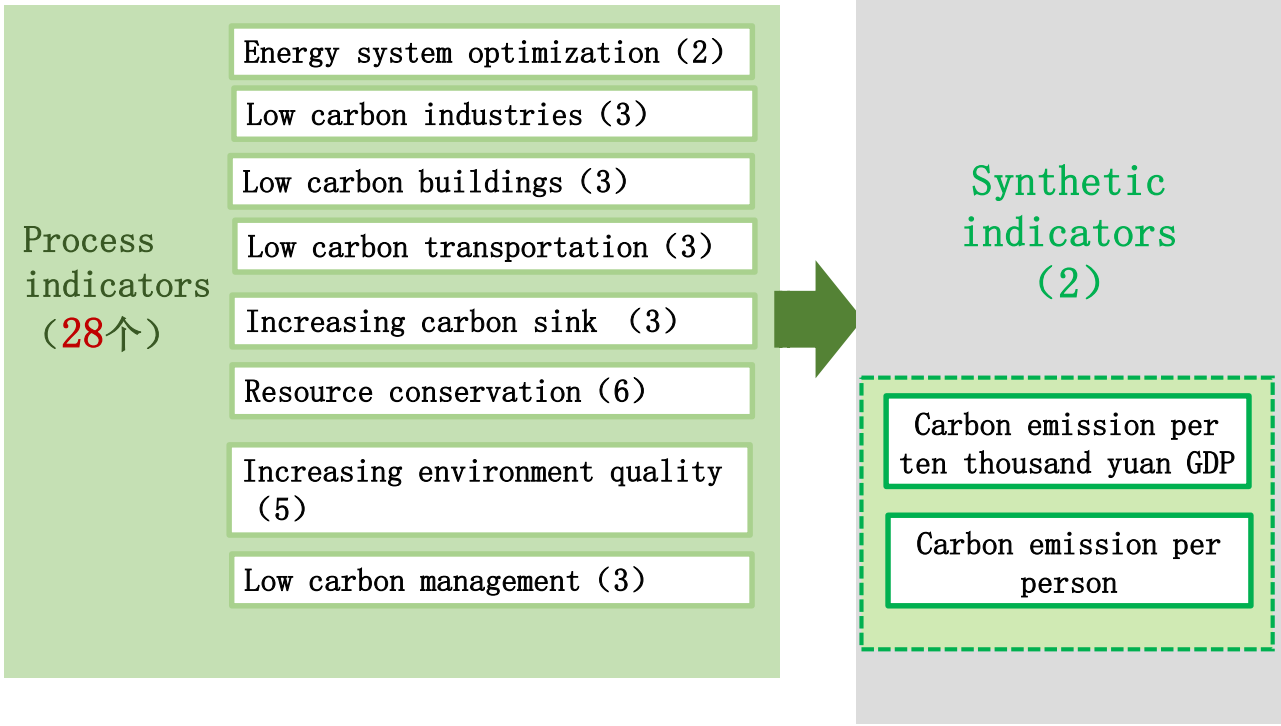
深圳国际低碳城目标:

- 期望在规划期 12年间实现欧盟发达国家30-40年实现的碳减排强度，缩短碳减排的间距；
- 深圳国际低碳城指标体系将是引导国际低碳城实现该目标的措施和路径，将从低碳产业、低碳建筑、低碳交通以及能源结构调整等版块去实现。

资料来源：深圳国际低碳城发展2014年度报告

3. Practical cases——Shenzhen International Low Carbon City

Unique low carbon index system



Aims of Shenzhen International Low Carbon City:

- To achieve 30 to 40 years carbon emission intensity reduction in developed countries in the 12 years planning period , and shorten the space of carbon emission;
- The Shenzhen International Low Carbon City Index System will lead the measures and paths for International Low Carbon City to achieve this goal in terms of low carbon industries, low carbon buildings, low carbon transportation and adjustments in energy structure.

3. 实践案例——深圳国际低碳城

七个维度的低碳指标体系实施路径

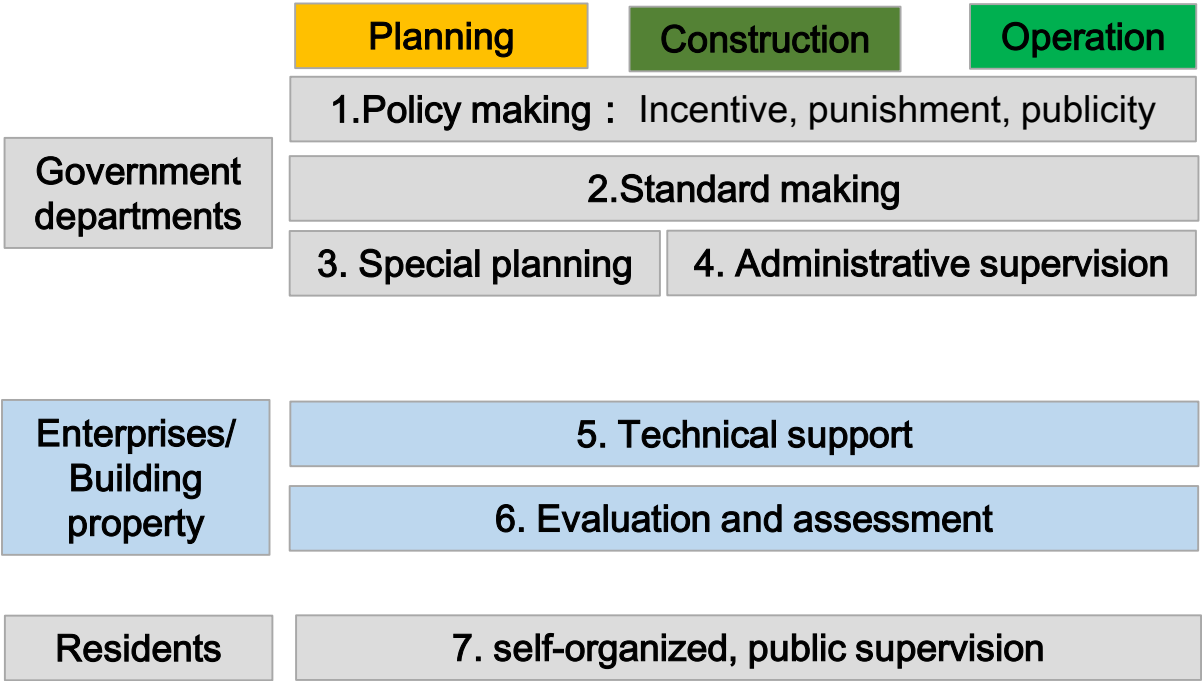
在低碳城的**规划、建设和运营**的全生命周期中，
针对**政府部门、企业和居民**等不同利益主体，
建立**27个过程指标**的具体实施措施，以实现各指标的目标值。



3. Practical cases——Shenzhen International Low Carbon City

Seven dimensional low carbon index system implementation paths

During the low carbon city whole life cycle of **planning, building and operation**,
For the different interest subjects, **government departments, enterprises and residents**,
Implement specific measures for **27 process index** , to achieve the index’s targets.

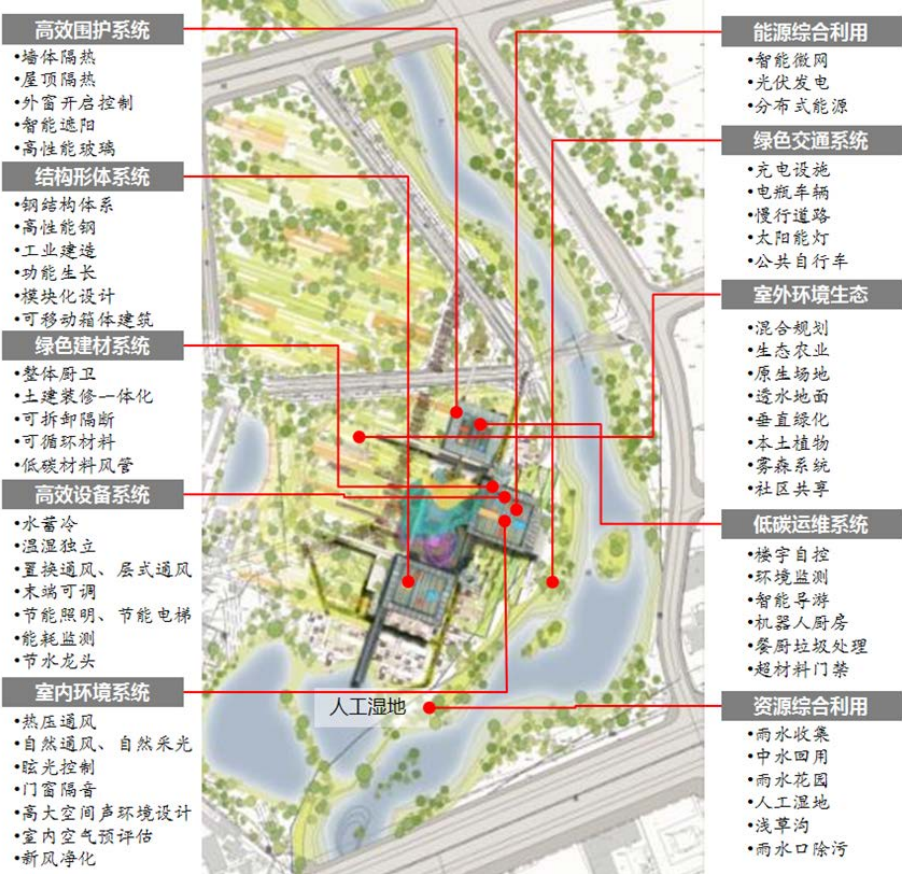


3. 实践案例——深圳国际低碳城

应用高效围护系统、运维系统等97项低碳技术

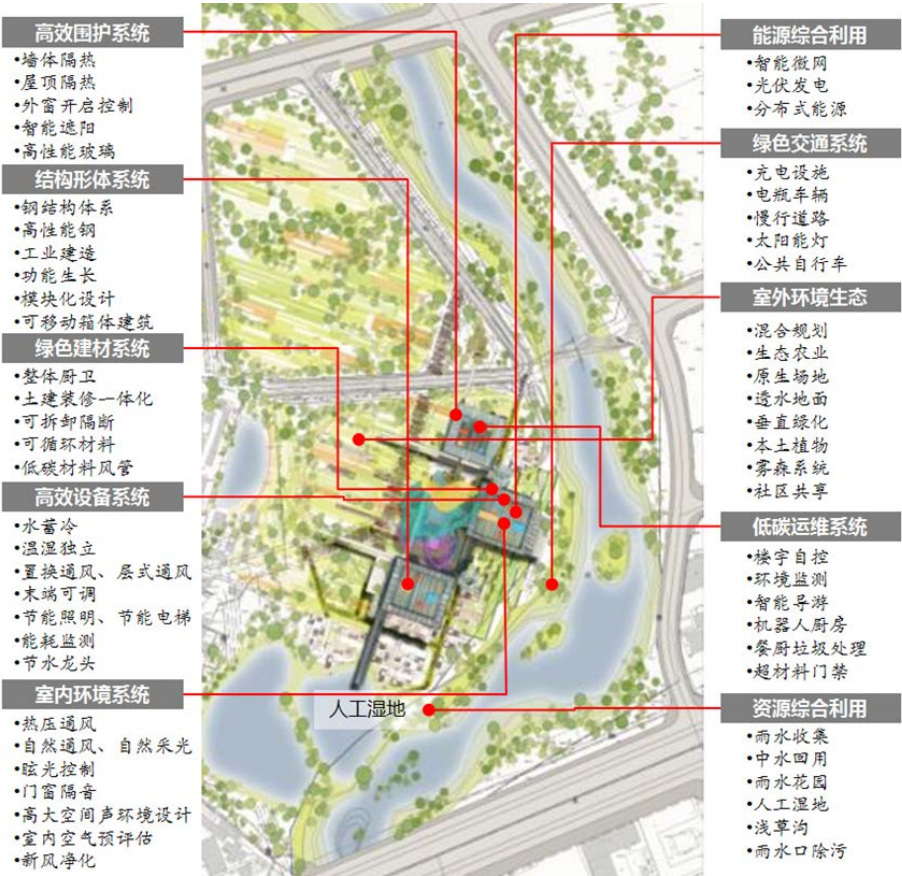
本身为各项低碳技术提供了最佳的实践应用机会

从设计到运维的各个阶段都进行了统筹，起到良好的展示示范作用。



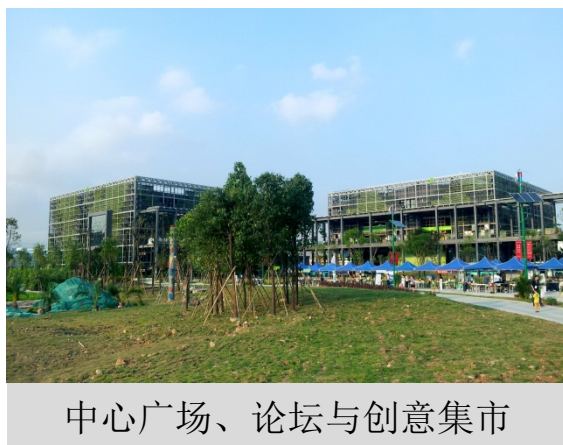
3. Practical cases——Shenzhen International Low Carbon City

97 low carbon technologies are applied including high efficiency enclosure system, operation system and so on



3. 实践案例——深圳国际低碳城

低碳之城，还生态予自然



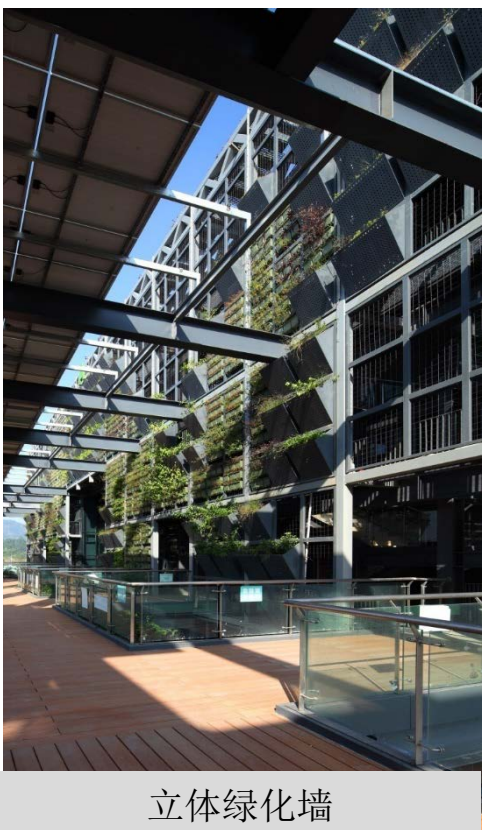
3. Practical cases——Shenzhen International Low Carbon City

Low carbon city, ecological in nature



3. 实践案例——深圳国际低碳城

低碳之城，还生态予自然



丁山河湿地



3. Practical cases——Shenzhen International Low Carbon City

Low carbon city, ecological in nature



Vertical greening wall



Dingshan River Wetland



Service Centre

4. 结语：未来低碳城市发展之路

国际化城区 低碳品质与氛围



4. Summary: Develop ways for future low carbon cities



**城市化极可能是无可比拟的未来光明前景之所在，
也可能是前所未有的灾难之凶兆，所以未来会怎
样就取决于我们当今所做所为。
——联合国助理秘书长沃利恩**

Urbanization may provide an unexampled bright prospect for the future, but also may be a knell for an unprecedented calamity, and our future is decided by what we do nowadays.

--Wally Ndow, the assistant secretary-general of the United Nations

