中国建筑节能管理制度创新研究

Strengthening the Building Energy Efficiency (BEE) Regulatory System in China

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主要内容 Main content

六项基本制度

Six basic systems for BEE

一、新建建筑市场准入制度	1. Market entry licensing system for BEE in new buildings
二、既有建筑节能改造制度	2. System of BEE retrofitting for existing buildings
三、建筑用能系统运行管理制度	3. System for operational management of energy consumption in buildings
四、建筑能效测评标识制度	4. BEE labeling system
五、建筑能耗统计制度	5. Statistical system for buildings' energy consumption
六、建筑节能推广、限制、禁止制度	6. System for promoting, restricting, and prohibiting products/practices for BEE

主要内容 Main content

三项基本政策

Three basic policies

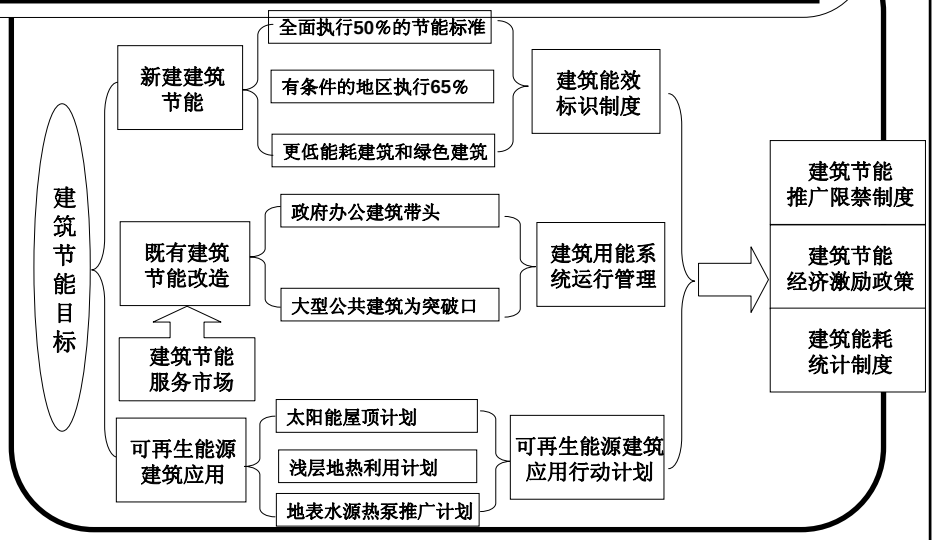
一、建筑节能服务体系的培育政策

二、建筑节能经济激励政策

三、可再生能源建筑中应用政策

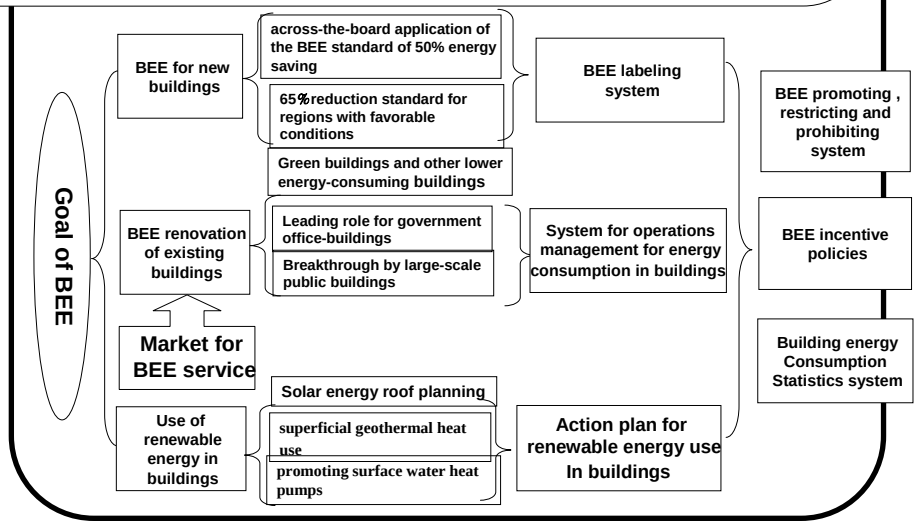
1. Policy to promote the BEE service system
2. Economic incentives for BEE
3. Policy for renewable energy use in buildings

建筑节能制度创新的体系结构



其中绿色框为基本制度

System of institutional innovation for BEE management



Green columns indicate basic policies

一、新建建筑市场准入制度
I. Market entry for new buildings

（一）新建建筑节能管理现状

（二）新建建筑市场准入制度的内容

I. **Current status of BEE management for new buildings**

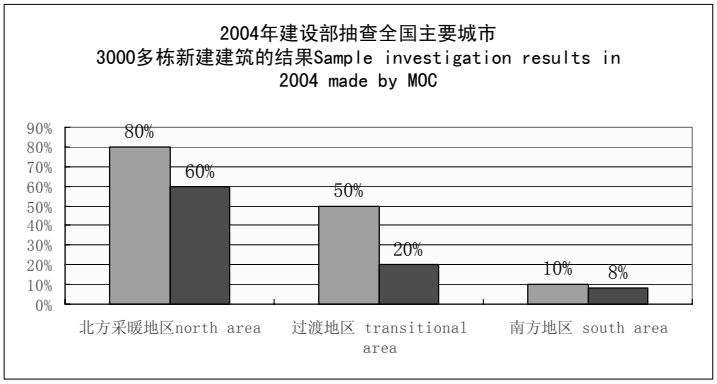
II. **Content of market entry licensing system for BEE in new buildings**

（一）新建建筑节能管理现状

(I) Current status of BEE management for new buildings

1.现有建筑节能法规和标准执行效果不佳

1. Implementation of BEE rules and standards is inadequate.



（一）新建建筑节能管理现状

(I) Current status of BEE management for new buildings

2.新建建筑节能政府监管职责不到位

Government monitoring of BEE in new buildings is insufficient.

建筑节能监管通常不被纳入政府监管职责

BEE monitoring is commonly excluded from government monitoring responsibilities

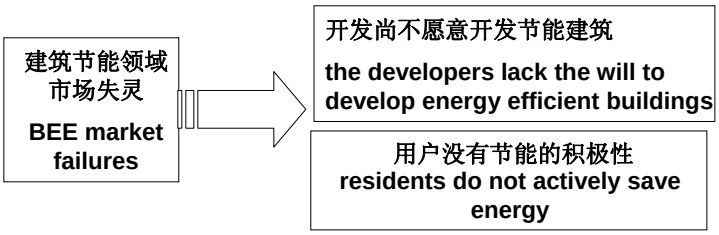
监管环节存在疏漏

There are loopholes in terms of supervision

无法形成
全过程节能监管
monitoring does not cover the construction cycle

（一）新建建筑节能管理现状
(I) Current status of BEE management for new buildings

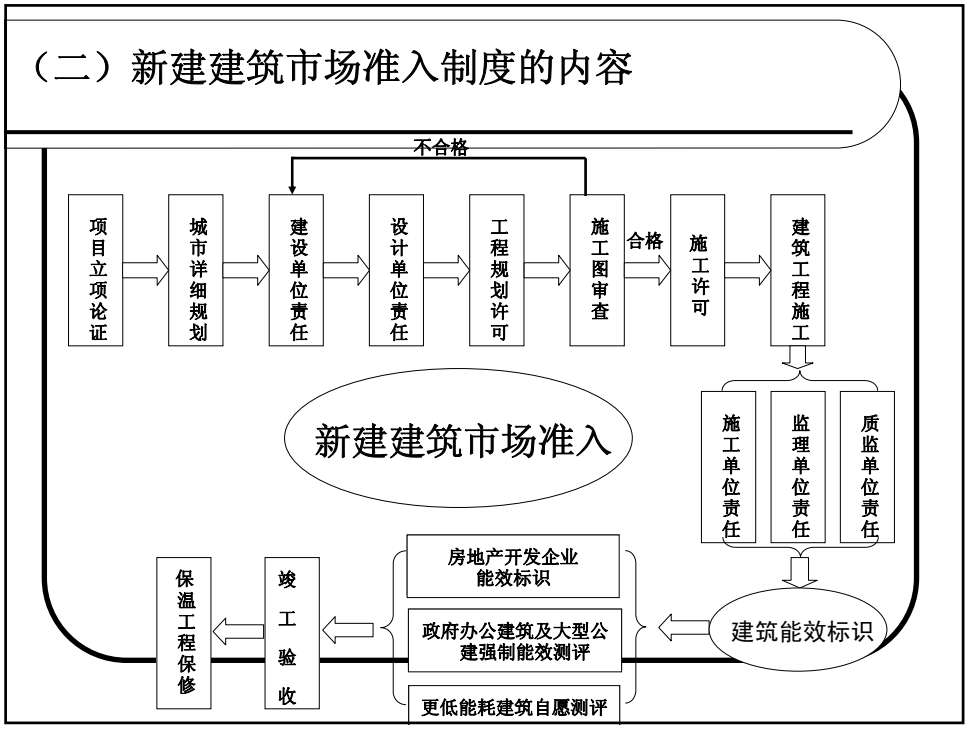
3.新建建筑节能市场主体缺少利益驱动
The BEE system for new buildings needs to be more market-oriented

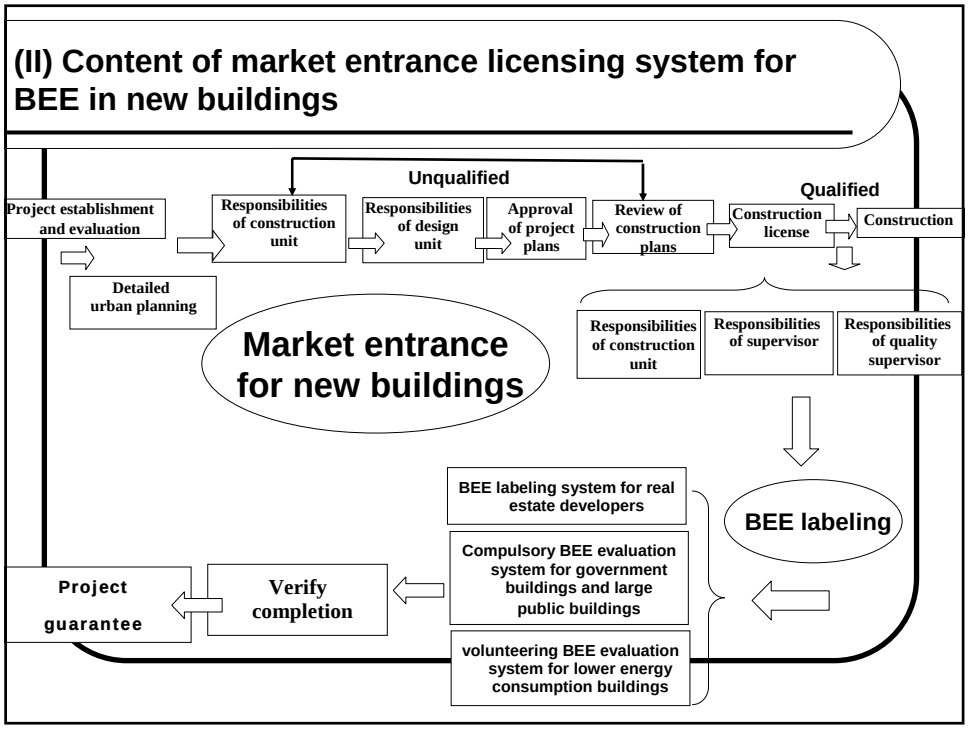


（二）新建建筑市场准入制度的内容
(II) Content of market entrance licensing system for BEE in new buildings

1. 对建筑工程项目进行全过程建筑节能管理
2. 新建建筑实行能效标识
3. 达不到建筑节能标准的新建建筑，不准进入市场

1. **Whole-Process BEE management for construction projects**
2. **BEE labeling system for new buildings**
3. **Prevention of new buildings not in compliance with BEE standards from entering the market**





二、既有建筑节能改造制度
II BEE regulatory system for existing buildings

（一）我国既有建筑节能改造面临的困难 (I) **Challenges in BEE retrofitting of existing buildings**

（二）我国既有建筑节能改造制度 (II) **BEE retrofitting system for existing buildings**

（一）我国既有建筑节能改造面临的困难
I) Challenges in BEE retrofitting of existing buildings

既有建筑节能改造涉及以下方面的问题，所以难以启动：

- 供热体制改革
- 大量技术
- 投融资
- 房屋所有权
- 政策法规等

Challenges:

- Lagging heating system reform and technology.
- Incomplete financing and investment systems.
- Complex and varied types of building ownership.
- Difficulty in calculating BEE benefits.
- Legal and policy issues.

（一）我国既有建筑节能改造面临的困难
I) Difficulties in the BEE retrofitting for existing buildings

主要原因 ：

- 供热体制改革步伐缓慢
- 建筑产权形式复杂节能改造融资体系不健全
- 节能收益难以确定节能改造技术方案亟待改进

Main Causes

- **lagging heating system reform**
- **complex and varied types of building ownership**
- **incomplete financing system**
- **difficulties in calculating BEE benefits incomplete BEE technology and innovation plans**

（一）我国既有建筑节能改造面临的困难
I) Challenges in BEE retrofitting of existing buildings

供热体制改革步伐缓慢，造成“三个没下来”：

●节能建筑的能耗没有下来；

●老百姓热费的支出没有下来；

●政府财政的补贴没有下来

Slow reform of heating system results in “three delays”:

● Delayed BEE energy consumption reduction.

● Delayed heating expenditure reduction for residents.

● Delayed governmental subsidies.

（二）我国既有建筑节能改造制度—相关主体责任
(II) System of BEE retrofitting for existing buildings-Responsibilities of involved parties

1、政府责任

- 对居住建筑和政府办公建筑，政府必须给予相应投入；
- 对公益性机构的公共建筑，应根据机构收益的不同，政府给予不同的投入力度（政府办公建筑和大型公共建筑作为改造重点）

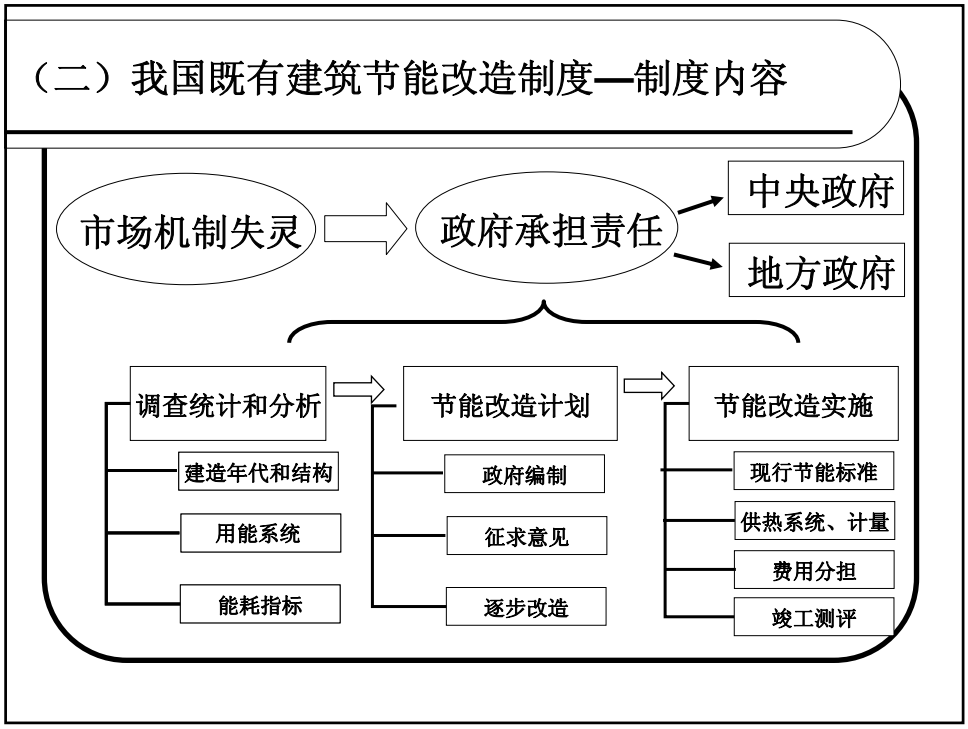
- **1. Government responsibilities**
- The government shall give financial input for residential and government buildings.
- The government shall give different levels of financial input to public buildings, according to the differing benefits to involved parties (the emphasis is on government office buildings and large public buildings).

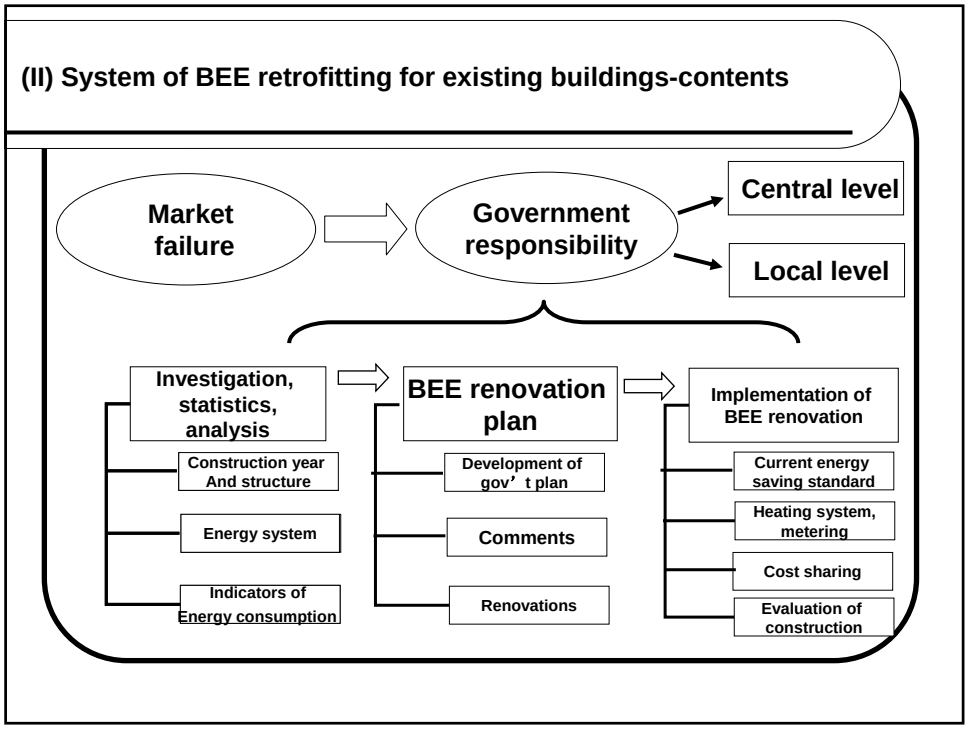
（二）我国既有建筑节能改造制度—相关主体责任
(II) System of BEE retrofitting for existing buildings-Responsibilities of involved parties

2、业主责任

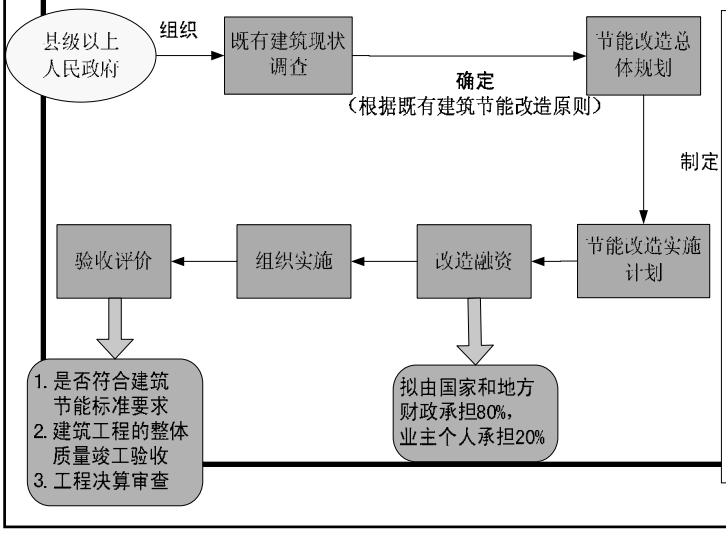
- 对商业性公共建筑，业主应承担改造支出责任
- 维护建筑业主的合法权益
- 鼓励市场化手段节能改造

- **2. Owners' responsibilities:**
- For commercial public buildings, the owners shall take on expenditures of BEE retrofitting.
- The legal rights of owners shall be protected.
- Market-based mechanisms and measures for BEE retrofitting are encouraged.





（二）我国既有建筑节能改造制度—实施程序
(II) System of BEE retrofitting for existing buildings – implementation procedures



- **Renovation cost for government office-buildings is included in the financial budget**
- **State and local governments, and property owners share the renovation costs for residential buildings.**
- **Renovation fees for other buildings are the owners' responsibility.**

三、建筑用能系统运行管理制度
III. Management system of building energy consumption systems

（一）我国建筑用能系统能源消耗过高	**(I) High building energy consumption in China**
（二）建筑用能系统运行管理制度的内容	**(II) Content of Building Energy Management Mechanism**
（三）大型公建和政府办公建筑用能管理思路	**(III) Considerations for energy management of large public buildings and government office buildings**

（一）我国建筑用能系统能源消耗过高
(I) High energy consumption of construction and buildings

1.大型公共建筑

2.政府办公建筑

1. Large-scale public buildings
2. Governmental office-buildings

（一）我国建筑用能系统能源消耗过高——大型公建
(I) High energy consumption of buildings: Large-scale public buildings

大型公共建筑能耗过高

- 以北京为例，全市的宾馆、饭店、商厦、写字楼等大型公共建筑面积仅占民用建筑的5.4%，但全年耗电量却高达33亿度，接近全市居民生活用电的一半，单位面积年均耗电量是普通住宅的10—15倍.

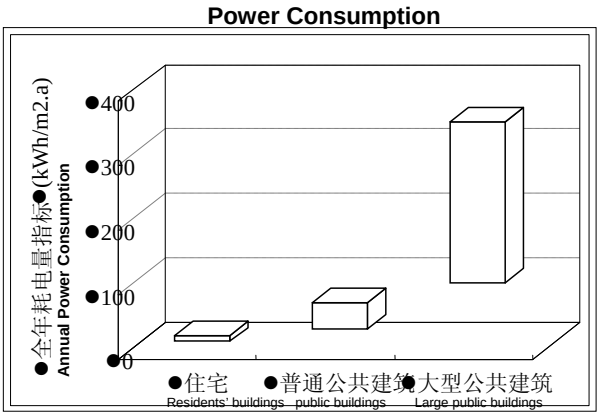
- **Large-scale public buildings consume too much energy:**

Beijing: the area of restaurants, commercial buildings, and other large-scale public buildings account for 5.4% of all civil buildings, but consume 3,300 million Kwh annually (nearly half of civil power consumption.)

Average annual unit power consumption is as much as 10-15 times of that of common residential buildings.

（一）我国建筑用能系统能源消耗过高——大型公建
(I). High Building Energy Consumption: Large Public Buildings

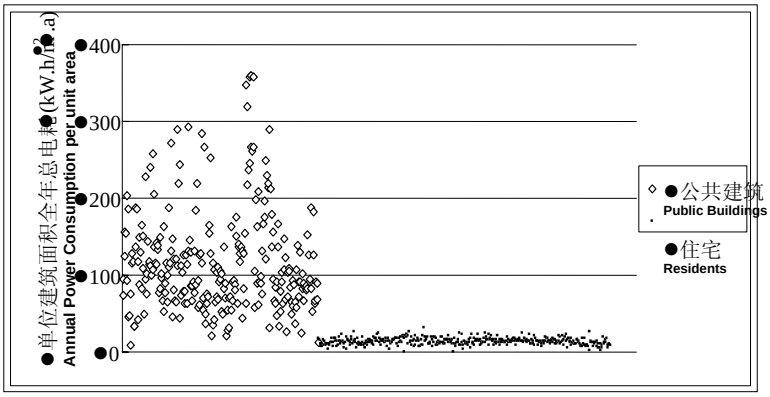
不同性质建筑物的电耗比较



（一）我国建筑用能系统能源消耗过高——大型公建
(I). High Building Energy Consumption: Large Public Buildings

北京市建筑能耗调查数据结果

Survey on building energy consumption



（一）我国建筑用能系统能源消耗过高——政府办公楼

(I). High Building Energy Consumption: Government Office Buildings

- **政府办公建筑能耗浪费严重**

  北京政府机构能源消费中，单位建筑面积年耗电量约为80—150千瓦时，是居民住宅的4—8倍；行政机关年人均用能3.35吨标准煤，比全市人均生活用能0.47吨标准煤高出7倍。

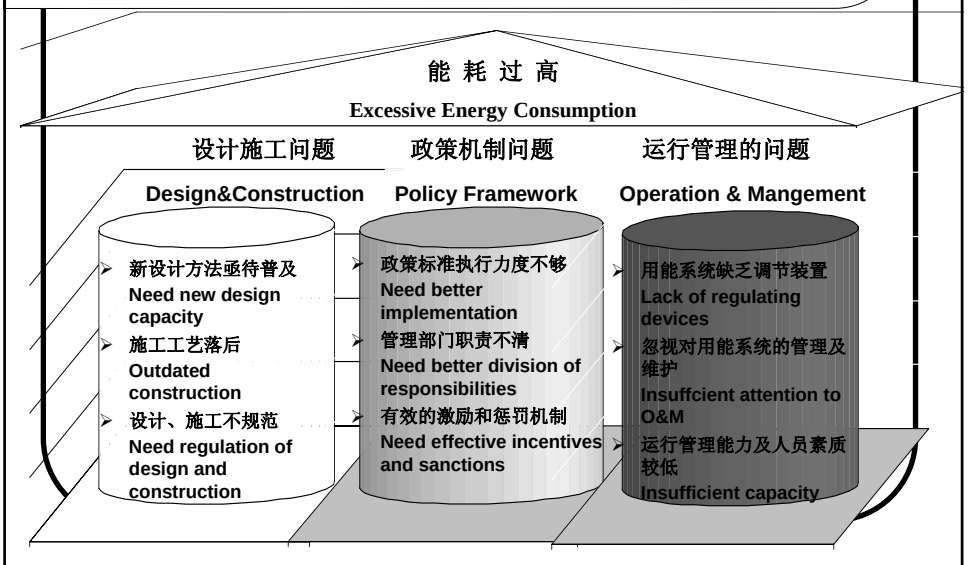
Government office buildings: LOW energy efficiency

Beijing government organizations consume 80 to 150kwh per unit area, which is 4 to 8 times higher than residential consumption.

3.35 tons of coal equivalent is consumed per government official, which is about 7 times the consumption per resident (0.47tsc).

（一）我国建筑用能系统能源消耗过高的原因分析

(I). High Building Energy Consumption: Why?



（二）建筑用能系统运行管理制度的内容—思路
(II). Operation and Management of the Building Energy Consumption System

强制实施
- 建筑能源消耗统计
- 建筑用能审计
- 建筑用能定额
- 公共建筑温度控制

市场推动
- 鼓励建筑节能服务企业
- 发展合同能源管理模式

重点突出
- 政府办公建筑 大型公共建筑

- **Mandatory Implementation**
  - **Collecting Consumption Statistics**
  - **Energy Auditing**
  - **Energy consumption rationing**
  - **Temperature control for public buildings**
- **Market-based Promotion**
  - **Support BEE service providers**
  - **Promote contracted energy management model**
- **Priorities**
  - **Government office buildings**
  - **Large public buildings**

（二）建筑用能系统运行管理制度的内容
(II). Operation and Management for Building Energy Use

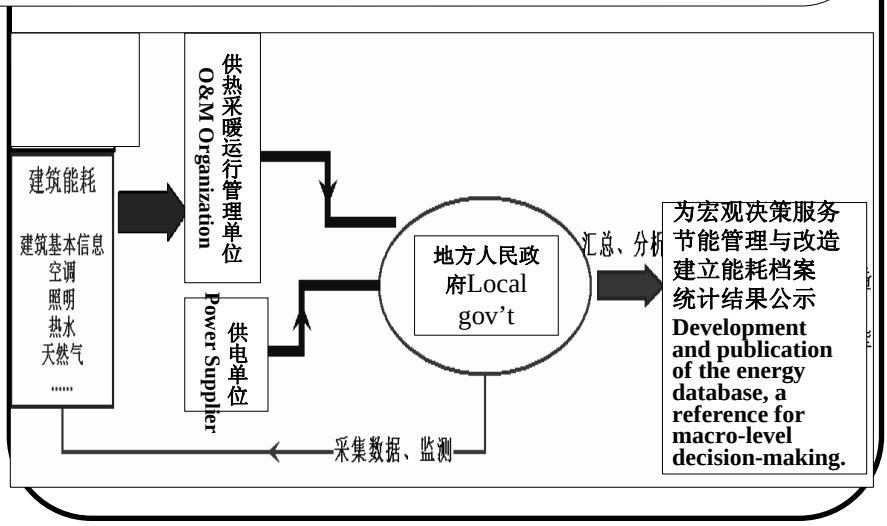
1. 建筑用能计量、统计
2. 建筑用能定额管理
3. 建筑能效审计

Responsibilities:

- **Measurement and collection of consumption statistics.**
- **Management of energy consumption rations.**

1. **Energy efficiency auditing**

1. 建筑用能计量、统计
Measuring and Collecting Consumption Statistics



2.建筑用能定额管理
Management of Energy Consumption Rationing

对象：政府办公建筑和大型公共建筑

Recommendations: Large public buildings and government office buildings

第一步：确定重点用能单位；

第二步：能耗数据统计；

第三步：制定用电定额（能耗数据统计＋能效审计）；

第四步：修正用能定额。

I. Identify the main energy consumers.

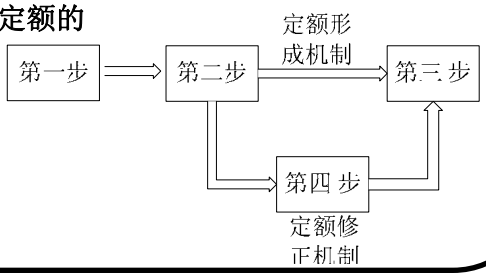
II. Record energy consumption data.

III. Develop power consumption rations (energy consumption data record＋energy efficiency auditing).

IV. Modify rations.

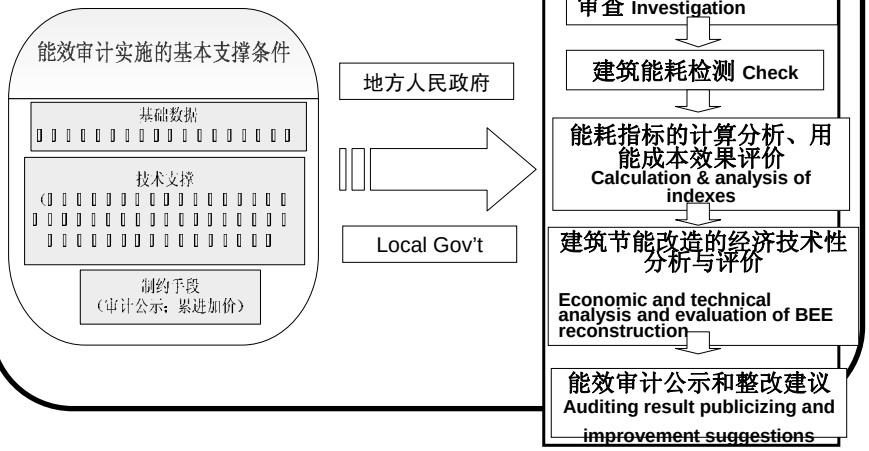
2.建筑用能定额管理
Management of Energy Consumption Rationing

- 根据能耗计量和能效审计确定用能定额的定额形成机制，有效的保证确定的用能定额能如实反映建筑物能耗的地方性、行业性。以定额修正为基础的定额修正机制，有效的保证用能定额的动态时效性
- **Develop mechanisms for ration management.**
- **Develop mechanisms to update and modify rations.**

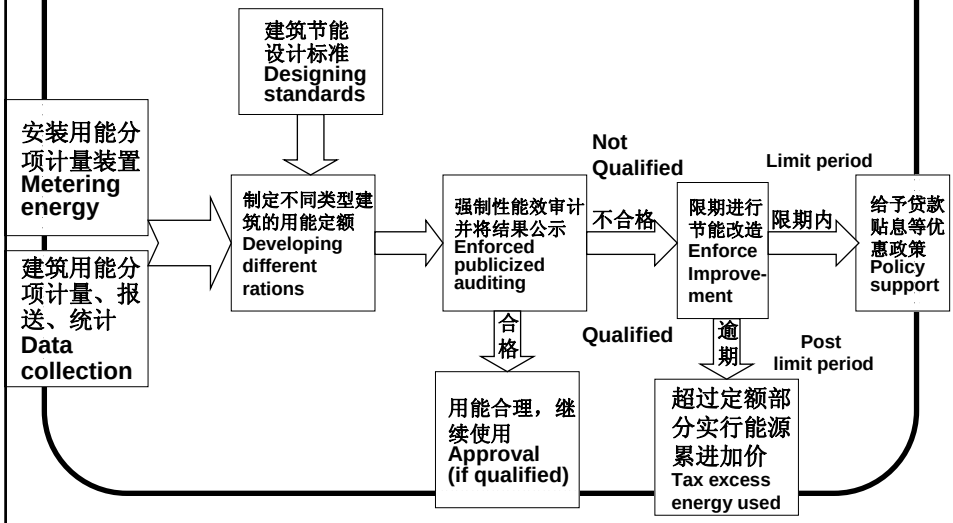


3. 建筑能效审计
Energy Efficiency Auditing

对象：政府办公建筑和大型公共建筑
Government office buildings and large public buildings



（三）大型公建和政府办公建筑用能管理思路
(III). Recommendations: Energy management of Large Public Buildings and Government Office Buildings

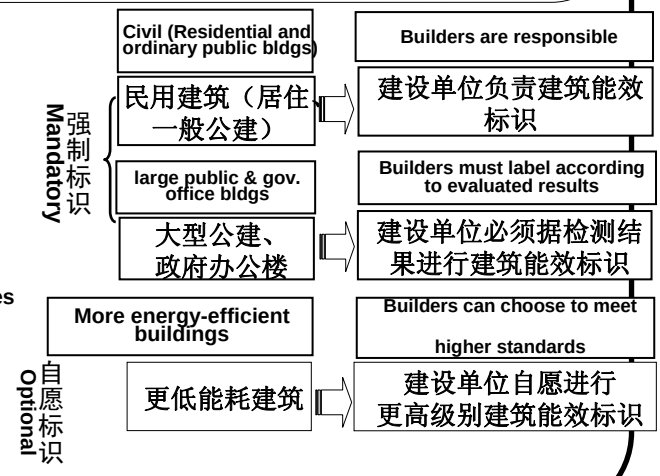


四、建筑能效标识制度
IV. BEE Labeling

标识的作用:

提高监管的手段
扩散信息的措施
引导用户需求
技术进步的引导
经济激励的依据

Functions:
- **Improve monitoring**
- **Disseminate measures**
- **Guide technology innovation**
- **Guide demand**
- **Acts as basis for economic incentives**



五、建筑能耗统计制度

V. Building Energy Consumption Recording Mechanism

（一）我国建筑能耗统计的现状

（二）我国建筑能耗统计制度的实施思路

1) **Present status of building energy consumption recording**

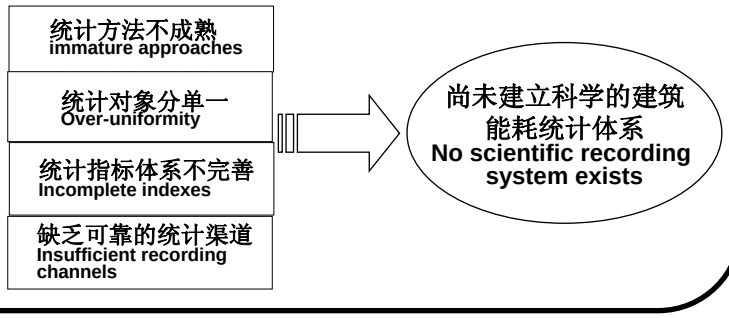
2) **Implementation of a building energy consumption recording system**

（一）我国建筑能耗统计的现状

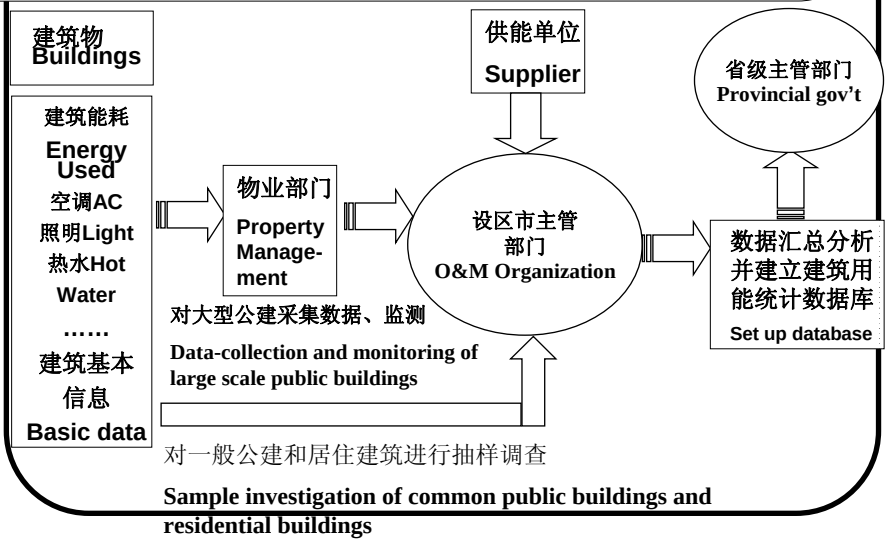
1. Present status of BE Consumption Recording

我国目前的建筑能耗统计作为能源统计中的一个消费环节，长期被分割混杂在能源消耗的各个领域。（例如，住宅的能耗被归入城乡人民生活能源消费，而其他各类建筑能耗被归入非物质生产部门的能源消费）

Current BE consumption recording is scattered among many sectors and categories.



（二）我国建筑能耗统计制度的实施
2. Implementation of a BE Consumption Recording System



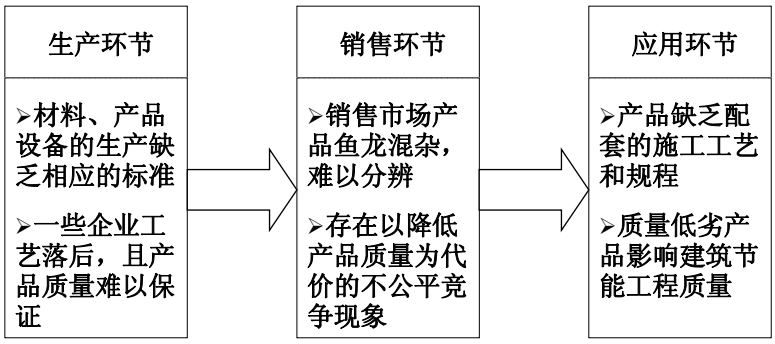
六、建筑节能推广、限制、禁止制度
VI. BEE System of Promotion and Prohibition

（一）制度实施的意义 **(I) The significance of system implementation**

（二）制度实施的内容 **(II) Content of regulations**

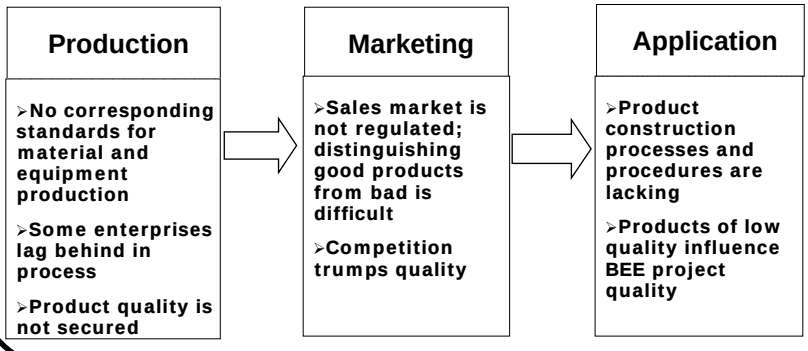
（一）建筑节能推广限禁制度实施的意义

1. 我国建筑节能技术、材料、产品设备的现状



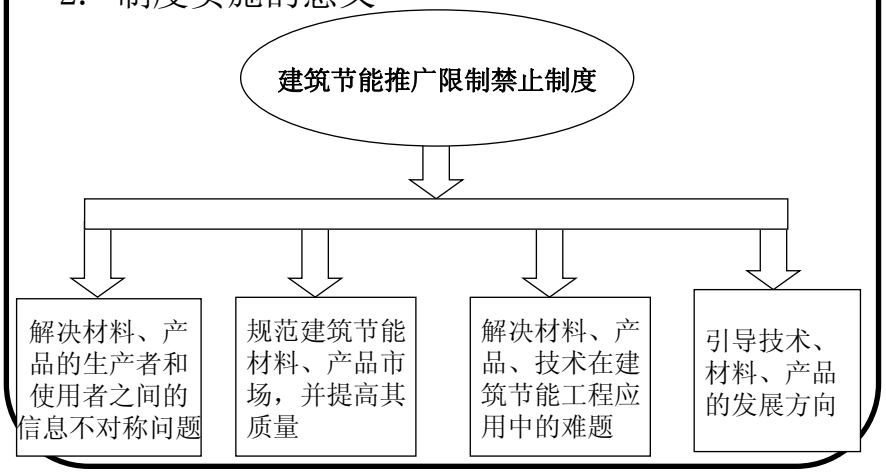
(I) Significance of BEE System of Promotion and Prohibition

1. Current condition of China's BEE technologies, materials, products, and equipment



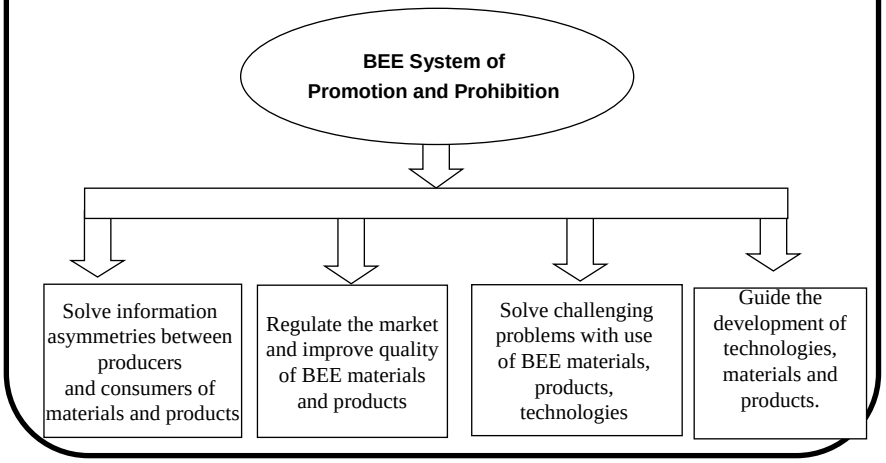
（一）建筑节能推广限禁制度实施的意义

2. 制度实施的意义



(I) Significance of BEE System of Promotion and Prohibition

2. Significance of system implementation



（二）制度实施的内容
(II) Regulation Content

- **国家推广、限制和禁止目录：**

  国务院主管部门制定并公布建筑节能新技术、新工艺、新设备、新材料、新产品推广目录，以及限制或者禁止使用能耗高的技术、设备、材料和产品的目录。

- **National catalogue for promoted and prohibited items:**
- The department under the State Bureau in charge of the construction sector will formulate and publish new BEE technologies, techniques, equipment, and materials. The catalogue will indicate which technologies, equipment and materials are promoted, and which are limited or prohibited due to high energy consumption levels.

（二）制度实施的内容
(II) Regulation Content

- **地方推广、限制和禁止目录：**

  省、自治区、直辖市人民政府主管部门在制定本地区推广、限制和禁止目录时，不得有地区歧视，不得搞变相推荐。

- **基本原则：**

符合建筑节能技术政策；
不得有地区保护；
不得搞变相推荐。

- **Catalogue of local promoted and prohibited items:**

  When formulating the local catalogue, local governments are prohibited from regional discrimination or bias in promoting items.

Basic Principles：

- **Be in accord with BEE technical policies.**
- **Prohibit regional protectionism.**
- **Prohibit bias in promotion**

七、建筑节能服务体系的培育政策
VII. Policy to Promote the BEE Service System

（一）建筑节能服务的概念

(I) Definition of BEE service

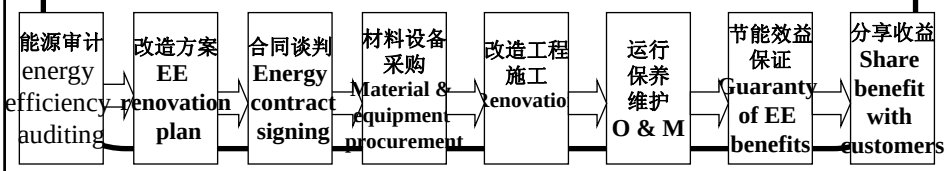
（二）我国培育与规范建筑节能服务的内容

(II) Promoting and regulating the content of BEE service

（一）建筑节能服务的相关概念
(I) Definition of BEE service

- **服务内容：**对建筑节能的设计、融资、改造、采购、运行管理、能效审计和测评提供全过程或者若干阶段的服务。
- **主要方式：**合同能源管理（EMC）

- **Service scale:** whole-process or partial service will cover BEE design, financing, renovation, procurement, O&M, energy efficiency auditing and testing
- **Main methods:** Energy Management Contract （EMC）



（二）我国培育与规范建筑节能服务的内容
（II）Developing and regulating the BEE service content

1. 实施原则与思路
2. 政策实施内容

1. **Principles and thoughts**
2. **Content of policy implementation**

（一）实施原则与思路
(I) Principles and thoughts

➢ 原则

政府引导，规范起步；
加强监管，稳步推进；
结合国情，接轨国际。

Principles

- Government guides regulation from the initial stages.
- Enhance supervision, promoting developments in a stable fashion.
- Bring together domestic and international experience.

（一）实施原则与思路
(I) Principles and thoughts

- **开始阶段：**以政府监管、经济激励为主，培育建筑节能服务市场；
- **过渡阶段：**以政府监管和市场机制引导相结合，发展成熟的建筑节能服务产业和市场；
- **成熟阶段：**按照市场化的原则进行配置，政府以监督为主。

- **Initial stage:** cultivate market for BEE services.
- **Transitional stage:** combine government supervision with market guidance to develop a mature market and industry for BEE services.
- **Mature stage:** market-oriented distribution will be adopted and the government will play the role of supervisor.

(二) 政策实施内容
(II) Content of Policy Implementation

- **建筑节能服务的监管**

建筑节能服务企业：资质管理

建筑节能服务人员：职业资格管理

Supervision of BEE services:

- Management of BEE service enterprises' qualifications
- Management of staff in the field of BEE service

(二) 政策实施内容
(II) Content of Policy Implementation

建筑节能服务的激励措施：

- 建筑节能服务机构享受与国家高新技术企业同等的优惠政策。建筑节能服务机构实行低税率或免征税的优惠政策。“免二减三”的优惠政策。

BEE service incentives:

- Those in the BEE service field will qualify for the preferential policies for national hi-tech enterprises, such as lower tax rate or tax exemption (exemption for the first two years, 25% exempt in the next three years).

八、建筑节能经济激励政策
VIII Economic Incentives for BEE: Contents

（一）实施建筑节能经济激励政策的必要性
(I) Implementing Economic Policies to Stimulate BEE

1.建筑节能较强的正外部效应需要政策激励

1. The significant positive externalities of BEE need policy stimulation.

2.建筑节能的大量工作需要稳定的资金支持

2. BEE-related work is very substantial and needs stable funding support.

(一)实施建筑节能经济激励政策的必要性
(I) Implementing Economic Policies to Stimulate BEE

3.激励政策是政府宏观调控的有效手段

3.Incentive policies are effective methods of government macro-level controls

4.激励政策缺失是建筑节能进展缓慢的主要障碍

4.The lack of incentive policies is slowing the progress of BEE.

二）我国建筑节能经济激励政策的思路及框架
(II) Framework of China's BEE Economic Incentive Policy

政策设计思路

(1)针对建筑节能的不同程度，经济激励政策应区别对待，达不到节能标准的不予激励；

(2)针对不同的行为主体，经济激励政策应区别对待；

Policy Design Concepts

(1)The policy will differentiate between different levels of BEE; those who fall short of BEE standards will not qualify for incentives.

(2) The policy will differentiate between major entities.

二）我国建筑节能经济激励政策的思路及框架
(II) Framework of China's BEE Economic Incentive Policy

政策设计思路

(3)不同建筑的经济激励政策应区别对待，如居住建筑和公共建筑、新建建筑和既有建筑应有区别；

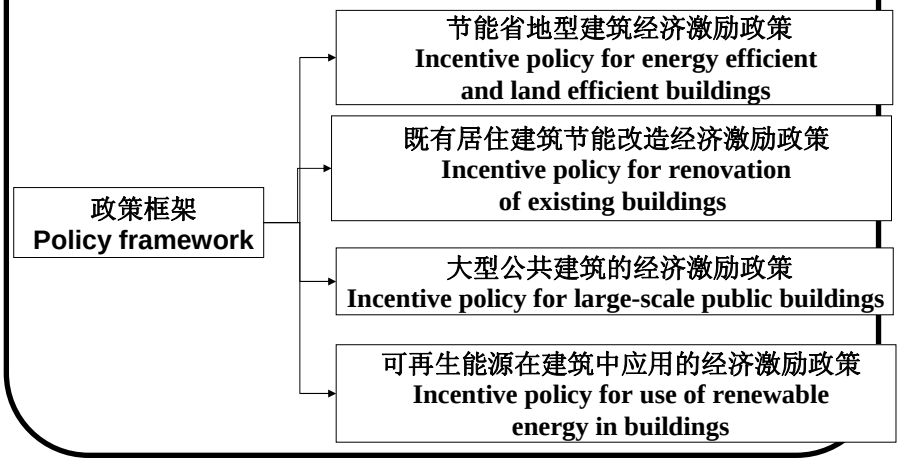
(4)参照国际经验，我国现阶段大部分建筑为非节能建筑，应主要采用财政补贴政策推进建筑节能改造。

Policy Design Concepts

(3) Incentive policy will differentiate between buildings (i.e. residential vs. public vs. newly-built).

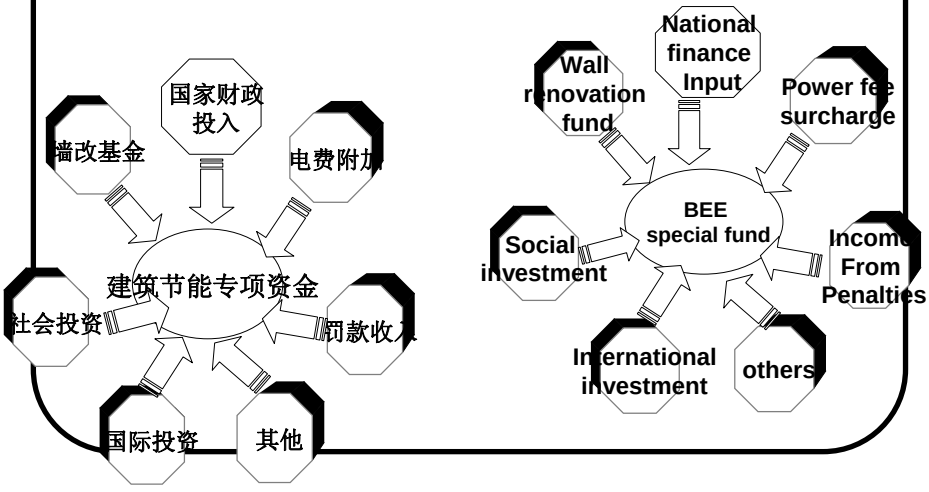
(4) Most buildings in China are not currently energy efficient buildings, so, as international experience suggests, financial subsidies should be adopted to promote BEE renovation.

二）我国建筑节能经济激励政策的思路及框架
(II) Framework of China's BEE Economic Incentive Policy



（三）政策实施的可行性
(III) Feasibility of Policies

1. 拥有稳定的资金来源 1. Stable source of funding



（三）政策实施的可行性
(III) Feasibility of policies

2.依托现有的财税体制

制定的激励政策中无需增加新税种，不影响现有的税收体系；

可依据国家正在实施的税收优惠和财政补贴等政策，如新型墙体材料的增值税减免、高新企业的所得税减免，以及墙改基金按规定返还等。

2. Basis is current financial system

- With no additional tax added to incentives, the current tax system will not be influenced.

（三）政策实施的可行性
(III) Feasibility of Policies

2.依托现有的财税体制

可依据国家正在实施的税收优惠和财政补贴等政策，
如新型墙体材料的增值税减免、高新企业的所得税减免，
以及墙改基金按规定返还等。

2. Basis is current financial system

- Make use of current preferential tax policies and financial subsidies, such as exemption or reduction of AVT for new wall materials, exemption or reduction of income tax for new tech enterprises, and refundable special fund for wall renovation.

三）政策实施的可行性
(III) Feasibility of Policies

3.法规体系提供保障

国家正在加强建设推进建筑节能的能力，为加强建筑节能的监管力度，相关行政主管部门正逐步建立健全建筑节能法规体系，这将为建筑节能激励政策的实施提供法律保障。

3. Legal and regulatory system safeguards

- Capacity for promoting BEE is being built.
- In order to enhance supervision of BEE, administrative departments are establishing a sound BEE legal system, which will safeguard BEE incentive policies.

三）政策实施的可行性
(III) Feasibility of Policies

4.技术标准给予支撑

相关部门正在制定建筑节能设计、施工、验收等标准，建筑节能的应用技术不断成熟，这为实施激励政策提供了有力支撑。

4. Support from technical standards

- Relevant departments are formulating standards for BEE design, engineering and checking.
- Corresponding BEE technologies are being developed, which will be powerful supports for incentive policies.

（三）政策实施的可行性
(III) Policy Feasibility

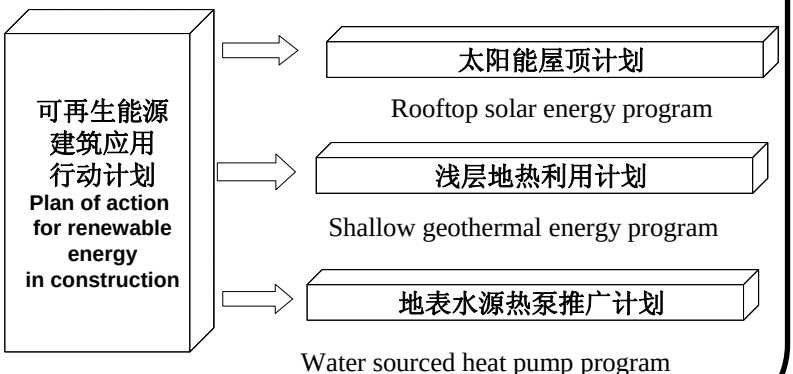
4.技术标准给予支撑

同时推进建筑节能的相应配套制度也不断完善，包括能效标识认证制度、公共建筑用能定额制度等，为实施激励政策提供评价依据，使得激励政策更具可操作性。

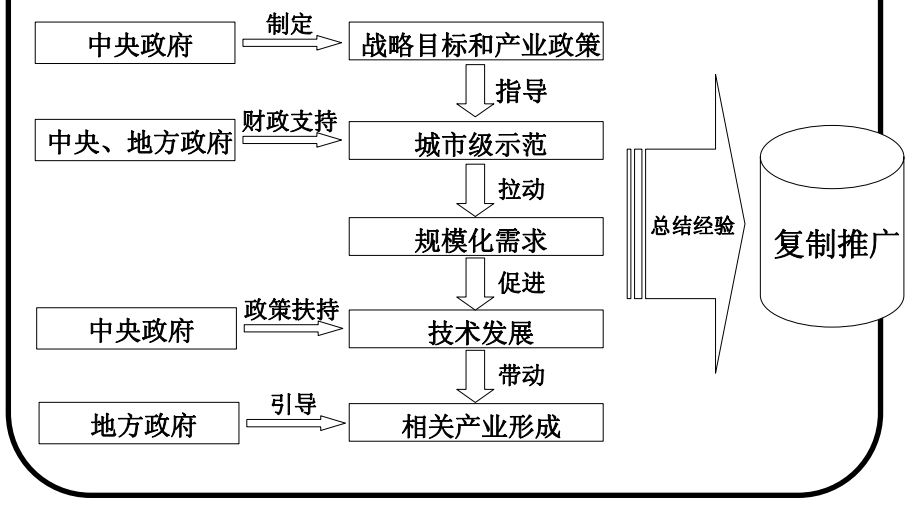
Support from technical standards

- BEE-related sectors are developing, including an energy efficiency labeling and certification system, and public building energy quota system, which will be the basis for evaluation and feasibility assessment for incentive policies.

九、可再生能源建筑中应用政策
(IX) Policy for Renewable Energy Use In Buildings



九、可再生能源建筑中应用政策
(IX) Policy for Renewable Energy Use in Buildings



九、可再生能源建筑中应用政策
(IX) Policy for Renewable Energy Use in Buildings