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# Market-based mechanisms for GHG Reduction – overview of some key lessons from international experience

## 基于市场的温室气体减排机制，国际经验概述

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# Market-based mechanisms for emission reduction: examples

## 减排的市场机制: 国际案例

- EU Emissions Trading System
- US RGGI (Regional Greenhouse Gas Initiative)
- Australian White Certificate Schemes
- Italian White Certificate Scheme
- New Zealand ETS
- And more...
- 欧盟排放交易制度
- 美国东北地区的区域温室气体减排倡议 (RGGI)
- 欧洲白色证书制度
- 意大利白色证书制度
- 新西兰排放交易制度
- 其他

# Market-based mechanisms (MBMs) for emission reduction: general points

## 减排的市场机制：基本观点

- MBMs can be useful
- However, they are just tools
- An overall low-carbon plan will need many tools; MBMs can't do the whole job
- Around the world, some success with MBMs, but also lots of mistakes
- 市场机制将发挥作用
- 但它们只是配套政策工具
- 一个全面的低碳规划需要许多配套工具，市场机制不能解决一切
- 世界范围内，有一些市场机制的成功案例，但仍存在很多问题

# Two types of market-based mechanism

## 市场机制的两种类型

**1. Permit scheme:** eg, “cap and trade” scheme

1. 许可证制度：如“总量控制与交易”制度

**2. Energy efficiency certificate scheme:** eg, “white certificate” scheme

2. 能效证书制度：如“白色证书”制度

# 1. Permit schemes

## 1. 许可证制度

- Obligated parties required to obtain a permit for each unit of emissions
- “Cap and trade” is the best-know variety of permit scheme
- Examples: the EU ETS, New Zealand ETS and RGGI in the US
- 义务方所有排放须获得许可
- “总量控制与交易”正是此类众所周知的制度之一
- 案例：欧盟排放交易制度、新西兰排放交易制度、美国东北区排放交易制度 (RGGI)

## 2. Energy efficiency certificate schemes

### 2. 能效证书制度

- One or more entities (eg, large firms or grid companies) are obligated to stay within a target level of emissions
- They do this by:
  - reducing own emissions
  - or by buying certificates representing EE implemented by others
- Eg: Australian, Italian and French white certificate schemes.
- 规定一个或多个实体（大企业或电网公司）必须控制不超过一定目标的排放
- 实体操作方法：
  - 降低内部排放
  - 或购买其他企业实施能效项目所获得的证书
- 案例：澳洲、意大利、法国的白色证书制度

# Key Lessons (1)

## 主要经验 (1)

- Market-based mechanisms must be **carefully designed and managed** to achieve a desired result
  - 基于市场的机制要得到预期的节能结果，**必须精心设计，加强管理。**
- International experience shows most market-based schemes have had to be modified numerous times to address unanticipated problems
  - 国际经验表明，大多数机制必须经过无数次的修正和完善，以应对各种始料不及的问题。
- If secondary market trading is adopted, an agency must be designated and authorized to watch its performance closely and manage it carefully
  - 若采用二级市场的交易制度，必须要指定一个机构，授权对交易进行密切监督和管理。

# Key Lessons (2)

## 主要经验 (2)

- A clearly **defined target or cap** is critical
- Policymakers often end up adding features that undermine their own cap or simply set the cap too high.
- If a scheme includes secondary market trading, the level of the cap will be the most important factor determining the value of the tradable instrument and the incentive to engage in trading
- 关键是提出**明确的目标或总量**
- 需要注意的是，相关政策部门有时可能会低估或高估总量目标。
- 如果选择通过二级市场交易制度，总量控制水平将成为最重要的因素，决定可交易证书的价值，它的激励作用也直接影响参与交易企业的积极性。



# Key Lesson (3)

## 主要经验 (3)

- **Linking the scheme to energy efficiency is essential**
  - US RGGI is a good example: auction permits and use revenue for EE
- **Relying on price signals alone to reduce energy use and deliver gains in energy efficiency is unrealistic because, to achieve results, these prices will have to be unacceptably high**
- **关键是将市场机制与能效挂钩**
  - 美国东北区排放交易制度 (RGGI) 是个很好的案例：通过拍卖排放许可和合理支配收益提高能效
  - 单靠价格信号来减少用能和提高能效是不现实的，将最终导致这些价格高得离谱。

# Key Lesson (4)

## 主要经验 (4)

- **Limiting** the initial pilot programs to the **power sector** is a reasonable approach
- No government has yet been successful in designing a single comprehensive market-based mechanism that covers all sectors
- Many governments have initially limited the focus to the power sector (or just a few sectors)
- As policies are fine-tuned, coverage can be broadened
- 合理的做法是，从**电力部门**开始初步试点
- 目前尚未有任何一个国家成功地设计出一个全面的市场机制，能够覆盖**所有用能部门**
- 很多国家都把**电力部门**（或少数几个部门）作为初步的重点
- 随着政策的不断调整和完善，可以将政策的**覆盖范围**不断扩大。

# Regional Greenhouse Gas Initiative (RGGI) 区域性温室气体倡议 (RGGI)



# RGGI: Key Points

## 区域性温室气体倡议 : 要点

- 美国首个提出以市场为基础的强制性 CO<sub>2</sub> 减排计划
- 设定电力行业 CO<sub>2</sub> 排放量上限；到 2018 年实现减排 10%
- “限额和投资”是个双管齐下的减排战略
  - 二氧化碳津贴被拍卖
  - 至3/11/11，区域拍卖产生了 8.61亿美元
  - 拍卖收入投资于州上政府的可再生能源和能效方案
- First mandatory, market-based CO<sub>2</sub> emissions reduction program in U.S.
- Power sector CO<sub>2</sub> capped; 10% reduction by 2018
- Cap-and-Invest: a two-pronged reduction strategy
  - CO<sub>2</sub> allowances are auctioned.
  - As of 3/11/11 , regional auctions generated USD \$861 million.
  - Auction revenue is invested in state programs for renewable energy and energy efficiency.

# RGGI Mechanisms

## 区域性温室气体倡议机制

- 3<sup>rd</sup> party audit and verification of allowance auctions
- Transparency through market monitoring reports for each quarterly auction, summarizing results and bidding behavior
- Regulations and procedures adopted by each state
- 2012 mid-course review to assess progress, consider and recommend future program direction and emissions goals
- 第三方审计与许可额度拍卖审核
- 对结果和投标活动进行总结，透明化每季度拍卖的监测报告
- 各州采纳的法规和程序
- 2012年进行中期阶段评估，考虑并建议未来项目的方向和排放目标

# RGGI Benefits to Date

## 迄今区域性温室气体倡议所取得的效益

- **\$441 million invested in additional energy efficiency programs, resulting in energy savings of \$1.1 billion**
- **Additional gross state product of \$2.6 billion**
- **Estimate of 45 job-years per \$1 million of energy efficiency funding, or over 20,000 new job-years as of March 2011.**
- 获得了额外的4.4亿美元能效项目的投资，使得节能11亿美元
- 额外的州内生产总值26亿美元
- 估计每100万美元的能效资金能提供45个年度就业，或2011年3月前新增超过20,000个年度就业

# Conclusion

## 结论

- The most successful market-based mechanisms are combined with programs that invest directly in energy efficiency
- Permit schemes can “recycle”, or reinvest, revenue from permit sales into cost-effective efficiency programs
- Energy efficiency certificate schemes achieve this same result more directly by requiring obligated parties to invest in energy efficiency or buy efficiency certificates
- 最成功的市场机制能与那些直接投资能效的项目相结合
- 许可证制度可“再循环”，或“再投资”，即将许可证销售所得的收入重新投入到成本效益好的能效项目中。
- 能效证书制度能更直接的达到同样的效果，即要求配额对象企业通过对能效项目进行投资，或通过购买能效证书实现节能目标。

## About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at [www.raonline.org](http://www.raonline.org)

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