



利用环境税费政策 促进节能和可再生能源发展

Environmental Levy Policies Promoting Clean Energy Development

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1

提纲 Contents

一、环境税费的概念及政策设计

1. Environmental tax concepts and policy design

二、国外环境税费政策实践简述

2. International experience

三、中国环境费税政策回顾与评述

3. Evaluation of China's environmental charges policies

四、促进节能和可再生能源发展的环境税费政策建议

4. Recommendations for promoting energy savings and renewable energy development

2

一、环境税费的概念及政策设计

Environmental Tax Concepts and Policy Design

环境税的概念 Definitions

环境税是对已经证实对环境有害的实体单位征收的税赋，征收环境税的目的是环境保护和节约资源使用，是对环境有正面影响的税赋。

广义的环境税可以解释为凡与环境和生态保护相关，并基于“污染者付费”原则而由主管机关向使用者征收的税或者费用。

Environmental Tax Concepts

- Environmental taxes: collected from entities/firms proven to pollute/cause environmental damage; objective is to protect the environment protection and save resources.
- Broad understanding: environmental taxes or fees, collected by authorized agencies, are based on the principle "polluter pays."

3

环境污染控制的政策工具

Policy Instruments for Pollution Control

1. 强制性法规和直接管制性：设定排污标准或环境质量指标并通过立法手段强制执行。

2. 经济性激励政策：

• 排污税费

• 排污许可交易

• 节能和可再生能源补贴

3. 自愿性环境行动：

• 企业与政府签署相关环境协议（如节能）

• 绿色电力购买

1. Direct regulation: setting pollutant emission standards or environment quality guidelines, enforced by legislation.

2. Economic policies:

• Taxes and charges on pollution

• Tradable permits

• Subsidies for energy saving and renewable energy use

3. Voluntary action:

• Agreements about environment between enterprises and government (such as energy saving)

• Green power purchases

4

环境政策方案组合 Environmental Policy Packages

经济性工具在环境政策中很少单独采用，往往环境税与补贴、排放许可交易、自愿协议等多种方式配合实施。环境政策方案中，一般都包括以下几种组合方案：

1. **环境税和管制：**管制改革的目的主要不是取消管制而是提高政府干预的有效性。
2. **环境税和自愿方式：**自愿方式主要是企业与政府签署相关环境协议，这种方式在OECD国家很受企业欢迎。

Economic tools are rarely used alone. Environmental taxes usually are mixed with subsidies, emissions trading, and voluntary agreements.

Environmental policies always include:

1. **Environmental taxes and regulations:** the aim of regulatory reform is not to eliminate regulation but to enhance the effectiveness of governmental intervention.
2. **Environmental taxes and voluntary approaches:** voluntary approaches are environmental protection agreements between companies and governments. OECD enterprises welcome voluntary approaches.

5

环境政策方案组合（续） Environmental Policy Packages (cont.)

3. **环境税和排放交易：**二者理论上在国内和国际上都可以实施。

4. **环境税和补贴：**一些国家如德国、芬兰对可再生能源发电进行补贴。补贴还一般用于为促进提供能源效率的投资。

3. **Taxes and tradable permits:** in theory, they can be complementary instruments in both domestic and international policy.

4. **Taxes and subsidies:** some countries like Germany and Finland subsidize power generation from renewable sources. Investments to increase energy efficiency are also subsidized.

6

环境税费收入的使用

Options for the Use of Environmental Tax Revenue

环境税费的收入用途：

1. 专款专用，例如用于预算中明确规定的特殊计划，作为特殊环境基金的来源，或者支持何种环境保护相关所需要的费用。
2. 用以减少政府部门的赤字，降低当代人与后代的利息支出和未来可能的税收负担。
3. 用以增加公共支出，提高当代人（或包括后代人）的福利。
4. 用以减少或消除其他扭曲性税收（例如劳动税、企业所得税、货物税等），以达到“双红利”效果。

Environmental tax revenue uses:

1. Earmarked: contribute to a specific budgetary item, go into a special environmental fund, or fund other environmental protection expenditures.
2. Alleviate budget deficit, reduce interest, or decrease future tax burdens.
3. Contribute to public expenditures and promote present (and future generations') welfare.
4. Reduce or eliminate other distorted taxes (such as labor tax, company revenue tax, goods tax), yielding "double dividends."

7

环境税的效果

Effects of Environmental Taxes

环境税的效果主要是环境效果和经济性效果：

环境效果：主要是减少环境污染的效果

经济效果：

1. 激励效果：主要是边际污染减排成本与税率的差异可以激发纳税人环境友好的动机，节省稀有资源的使用或者减少污染；

2. 就业效果：征收环境税和减少可以降低企业劳动成本劳动税（如雇主的社会保障税）等，有可能会激励就业，取得就业和环境的“双重红利”。

Environmental taxes have primarily environmental and economic impacts.

Economic impact:

Environmental impact: reduces pollution.

1. Incentives: the difference between tax rates and marginal pollution-abatement costs can motivate taxpayers to become more environmentally aware and conserve scarce resources or reduce pollution.

2. Employment: revenues can be used to offset labor tax decrease (e.g., employer's social insurance payments) and spur employment opportunities. Both employment and environmental benefits may be realized, i.e. "double dividends."

8

环境税的效果（续）

Effects of Environmental Taxes (cont.)

3. 通货膨胀效果：一般而言，征收环境税可能会造成通货膨胀的直接效果，中性的税收转移也可能抵消环境税造成的物价上涨的直接影响；

4. 所得分配效果：随着环境税的大量开征可能产生累退效果，对低收入家庭的影响大于较高收入家庭；

5. 贸易竞争力效果：环境税对贸易产生价格和非价格影响，主要是对某些产业的国际贸易竞争力产生影响。

3. Inflation: environmental taxes can lead to inflation. However, a neutral tax shift may be offset by the increased prices brought by environmental taxes.

4. Income distribution: if environmental taxes are widely levied on goods, there may be income regression. This will impact low income families more than high income families.

5. Competitiveness: Environmental taxes have price and non-price influences on trade, particularly influencing some industries' international competitiveness.

9

影响环境税减少环境污染的因素

Factors Influencing the Impact of Environmental Taxes

1. 税基、税率和税率差异：如果税基的确定方法不恰当，不能导致预期的行为变化，而鼓励了别的不合意行为；环境税率和税率差别对替代性产品或活动有重要影响。

2. 政策方案和时间：环境税一般都是在与其他经济性工具组合实施，所以政策方案的总体设计会影响到环境效果的实现；另外，环境税动态优势的实现需要一定的时间。

3. 减免税：目前各国实施的环境税中存在大量的减免税措施，减免税直接降低了控制污染的效果，减弱了技术开发革新的动态效果。

1. Tax-bases, rates, and differential rates: if tax-bases are not designed properly, expected changes may not happen. Tax-rates and differentials have a major influence on substitute products or actions.

2. Policy packages and time: environmental taxes are always accompanied by other economic instruments. The entire design of policy packages will affect the environmental effects of taxes. Also, the taxes will need time to bring about their intended results.

3. Tax rebates and exemptions: rebates and exemptions directly decrease the abatement effects and weaken the incentive for innovation.

10

二、国外环境税费政策实践

部分OECD国家主要环境税实施状况

Use of Environmental Taxes in Some OECD Countries

国家	能源税、燃料税							其他税				
	碳税	汽车燃料税	轻型燃油税	电力税	煤炭焦炭税	航空燃油税	发动机交通工具税	废弃物最终处理税	包装税	硫税	资源开采税	
											水资源	采矿税
丹麦	▲	▲	▲	▲	▲		▲	▲	▲	▲		
挪威	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		
芬兰	▲	▲	▲	▲	▲		▲	▲	▲			▲
瑞典	▲	▲	▲	▲	▲		▲	▲		▲		▲
荷兰	▲	▲	▲		▲		▲	▲			▲	
意大利	▲	▲	▲	▲			▲					
德国		▲	▲	▲			▲					
比利时		▲	▲	▲			▲		▲			
奥地利		▲	▲	▲			▲	▲				
日本		▲	▲	▲		▲	▲					
英国		▲	▲				▲	▲				▲ 11

一些国家能源税税率税水平

Energy Taxes Levels in Selected Countries

Country 国家	Tax Level 税率	Fuels or Emissions Taxed 课税 燃料和排放物
Austria 澳大利亚	€ 0.21 to 1.42/kg	Light oil 轻油
Czech Republic 捷克	CZK 472/tonne	Light oil 轻油
Denmark 丹麦	€ 6.8/Gigajoule	Carbon dioxide 二氧化碳
Finland 芬兰	€ 16.54 to 56.80/tonne	Carbon 碳
France 法国	€ 42.52 to 80.54/kl (TIPP)	Heavy and light oil 重油和轻油
Netherlands 荷兰	€ 0.0639/kWh	Elec.; renewables partly exempt 电力, 部分可再生电力免税
Germany 德国	€ 0.06125/litre oil, gas € 0.55/kWh	Fossil fuels, electricity 化石燃料, 电力
Hungary	€ 16/tonne oil and 25% VAT	Fossil fuels, electricity 化石燃料, 电力

一些国家能源税税率水平（续） Energy Taxes Levels in Selected Countries (Cont.)

Italy 意大利	Coal: ITL 5.084/ton, Oil: ITL1.286/ton	Carbon dioxide 二氧化碳
Luxembourg 卢森堡	€ 18.59/kl	Light oil 轻油
New Zealand 新西兰	NZ\$15 /ton beginning in 2007	Carbon dioxide 二氧化碳
Norway 挪威	NOK 104/tonne	Carbon dioxide 二氧化碳
Spain 西班牙	€ 0.029/kWh	Elec.; renewables partly exempt 电（部分可再生电力免 税）
Sweden 瑞典	36.5 öre/kg emitted	Carbon dioxide 二氧化碳
Switzerland 瑞士	Varies; CHF 210/tonne maximum	Carbon dioxide 二氧化碳
United Kingdom 英国	£0.43/kWh (elec.); £0.15/kWh (gas); £1.17/kg (coal)	Business use of electricity, natural gas, coal, oil products 商用电力、天然气、 煤、石油产品

国外环境税实施效果 Impact of Foreign Environmental Taxes

1. 能源税/燃料税：英国公路燃料税通过鼓励燃料效率具有动态收益，33吨以上卡车的平均燃料效率在1993年至1998年期间提高了13%。

2. 车辆税：车辆购置税、登记税占OECD欧盟环境税的一半，这些税减少了私有车辆数量和使用。德国车辆流通税税率根据排放率确定，客运车辆中低污染或低耗油的可适用较低的税率，从1997年到2000年1月，高排放车辆从690万辆减少至300万辆。同期，达到欧2、欧3、欧4标准的车辆从620万辆增至近1600万。

1. Energy/fuel taxes: the UK's road fuel tax created incentive for fuel economy. Result: average fuel efficiency of trucks over 33 tons increased by 13% between 1993 and 1998.

2. Vehicle taxes: vehicle purchase and registration taxes account for half of the environmental taxes in OECD/EU. These taxes reduce private car ownership and use. German vehicle circulation tax rates are determined by emission rates; passenger cars classified as low-pollutant or low-fuel consumption are subject to reduced tax rates. From July 1997 to January 2000, the number of high-emission vehicles dropped from 6.9 million to 3 million cars. In the same period the number of EURO-II, III, IV compliant vehicles increased from 6.2 million to nearly 16 million.

14

国外环境税实施效果（续）

Impact of Foreign Environmental Taxes (cont.)

3. CO₂税：瑞典区域供暖、工业、家庭的CO₂排放1994年比1987年减少了800万吨，估计减排中60%是由于CO₂税导致；挪威1991年实行碳税，到1995年为止来自工厂固定燃烧排放的CO₂减少了21%；丹麦1995年实行了一系列能源政策，预计到2005年减少3.8%CO₂排放，其中2%依靠税收实现。

4. 硫税、氮税：瑞典1991年实行硫税，1989至1995年减少的硫排放中，估计30%来自于硫税，即1.9万吨SO₂排放；瑞典对工厂大型燃烧设备排放的NO_x进行收费，收取的费用根据能源净产量按比例返还，促进了能源生产中能源效率的提高，平均排放从1992年0.41kgNO_x/MWh降低至1996年征税后的0.26kg/MWh。

3. Carbon taxes: In Sweden, CO₂-emissions from district heating and the industrial and buildings sectors were about 8 million tons (19%) lower in 1994 than in 1987; 60% of the emission reduction was the result of CO₂ taxation. Norwegian CO₂ tax introduced in 1991 reduced CO₂ emissions at stationary combustion plants by 21% by 1995. The Danish energy policy package introduced in 1995 is expected to slash CO₂ emissions by 3.8% by 2005, of which 2% is attributable to taxes.

4. SO₂ and NO_x taxation: A sulphur tax was introduced in Sweden in 1991. Taxes on sulphur are estimated to have accounted for 30% of the total reduction in sulphur emissions (19,000 tonnes of SO₂) from 1989 to 1995.

The Swedish NO_x charge is on measured emissions from large combustion plants and revenues from the charge are fully refunded to polluters in proportion to their share of net energy output. Average NO_x emissions (not only in those plants that are taxed) have fallen from 0.41 kg/MWh of energy generated in 1992, the year the tax was introduced, to 0.26 kg/MWh in 1996.

15

国外环境税费政策实践简评

Summary of Foreign Environmental Tax Practices

• 不仅所有的OECD国家都在不同程度上引用了环境税费，而且费税率较高，环境相关的税费收入平均占本国GDP的2%；环境税费占欧盟国家财政收入的6.71%（1997年）。

• 开征环境税与税转移相结合，国家整体税费维持在一一定的水平，对一些部门、行业和人群实施减免

• 环境税费政策与管制政策和其它经济性政策（如公共效益基金、可再生能源电价补贴）配套使用。

• 很多国家都建立了环境税改委员会或跨政府部门的协调联合工作组，以促进环境税改革的实施。

• Environmental taxes are frequently used. Almost all OECD countries have introduced environmental taxes, and the revenue accounts for 2% of GDP on average, 6.71% of EU countries' fiscal revenue.

• Combining environmental taxes and tax shifts maintain a certain level of taxation. Rebates and exemptions can be given to specific sectors, industries, and groups.

• Environmental taxes and charges are always mixed with regulatory and other economic policy instruments (e.g., public benefits funds, renewable electricity price subsidies) in practice.

• Many countries have set up environmental tax reform commissions or inter-ministerial working groups to promote environmental taxation reform.

16

三、中国环境税费政策回顾与评述

Review and Comments on China's Environmental Policies

国内现行的能源相关的环境税费

China's Current Energy-related Environmental Taxes and Fees

1. 环境污染防治的法律:

《大气污染防治法》、《水污染防治法》、《固体废弃物环境污染防治法》对废气、废水、废渣排放确立了污染收费制度。

1. Acts on pollution and environmental protection:

The "Air Pollution Prevention and Control Act," "Water Pollution Prevention and Control Act," and "Solid Waste Prevention and Control Act" have set up charges system on waste gas, water, and materials.

2. 排污费征收法规:

2003年国务院颁布了《排污费征收使用管理条例》，国家发改委、财政部、环保总局和原国家经贸委联合制定了《排污费征收标准的管理办法》，使排污费的征收、管理和使用更加规范。

2. Codes regulating the collection of charges on pollutant emission:

In 2003, "Regulations on Pollutant Charge Levy and Use" was issued by the State Council, and "Regulations on Pollutant Charge Standard" was jointly enacted by the State Planning Committee, Ministry of Finance, State Environment Protection Bureau and State Economy and Trade Committee. These regulations normalized and improved the pollutant charge system.

17

国内现行的能源相关的环境税费（续）

China's Current Energy-related Environmental Taxes and Fees (cont.)

3. 资源保护的法律:

《矿产资源法》规定，国家实行采矿权有偿取得制度，开采矿产资源，必须按照规定缴纳矿产资源补偿费。

3. Acts on resources protection:

"Mine resources protection act" prescribes that those exploiting mine resources should pay compensatory fees.

4. 机动车税费:

车辆消费税、增值税、关税、购置税、车辆牌照费、车船使用税、新车检验费。

4. Motor vehicle taxes and charges:

The vehicle consumption tax, added-value tax, tariff, purchase and vehicle use tax, vessel tax, vehicle license tag tax, and test new vehicle charges have been implemented.

18

1982年《办法》与2003年《条例》比较 Comparison of 1982 "Measures" with 2003 "Regulations"

	1982 年《征收排污费暂行办法》	2003 年《排污费征收使用管理条例》
收费政策	浓度收费	总量收费
	单因子收费	多因子收费
	超标收费	零起点收费
收费标准	偏低，是一种超欠量收费。所征收的排污费低于对环境造成的实际损失及企业治理污染的设施运转费用。	排污费普遍略高于污染治理设施运行成本，反映了环境容量资源的稀缺程度
收费对象	排污单位	排污者
排污费的使用	无偿拨款和有偿贷款双轨制。80%的排污费返还企业，用于本单位的污染治理，20%用于环保部门自身的建设	收支两条线：收费纳入财政预算，为环保专项资金，用于重点污染源防治、区域性污染防治、污染防治新技术新工艺的开发示范和应用以及国务院规定的污染防治项目。

9

1982年《办法》与2003年《条例》比较 Comparison of 1982 "Measures" with 2003 "Regulations"

	"Temporal measures on charges on pollutant emissions"	"Regulation on Pollutant Charge Levy and Use"
Charges policy	Concentration charge	Gross charge
	Single factor charge	multi-factors charge
	Charge for exceeding standard	Charged from zero
Standard	Rather low. The charge is lower than actual environmental loss and operation expenditures of producing pollution.	The charges are higher than cost of producing pollution.
Object	Emission pollutant entity	Polluter
Use of revenue	Free appropriate funds and loans. 80% of revenues from charges refunded to enterprises, 20% used in environment protection sectors.	Revenue goes to Environment Protection Fund managed by national fiscal budget, used for regional pollution reduction, R&D, and demonstration

现有环境收费政策的不足

Deficiencies in Existing Environmental Taxes and Fees

1. 现有的环境收费水平不能反映环境价值；例：燃煤电站排污收费政策内部化的成本为0.0096元/kWh, 而环境污染的价值付算为0.0938元/kWh。

2. 缺乏促进生产和消费方式转变和资源节约税费政策工具；

3. 环境税费用没有与节能和可再生能源结合起来；

4. 税费政策指定和实施条块分割，缺乏协调。

1. Existing environmental tax and charge levels are lower than the costs of pollution abatement and do not include externalities. For example, internalized cost of coal fired power plants is 0.0096 yuan/kWh, while environmental cost 0.0938yuan/kWh.

2. Taxes and charges do not create enough incentive to change production and consumption patterns.

3. Revenues from taxes and charges are not channeled into energy efficiency and renewable energy development.

4. Implementation of tax and charges policies is disjointed.

21

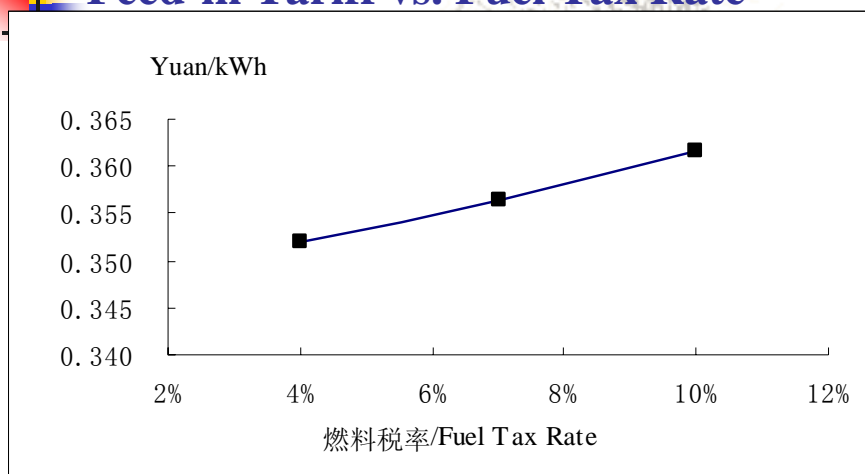
上网电价：煤电 对比 可再生电力

Feed-in Tariff: Coal vs. Renewables (yuan/kWh)

	Coal fired Power Plant 600MW 煤电厂	Wind Farm 20MW 风电	Biogas from Industry effluents 4.1mw 沼气
No environment taxes or charges 无环境税收	0.34516	0.68393	0.40030
Under current pollution levy 目前污染水水平	0.35456	0.68393	0.40030
Internalization of environment values 将环境成本计入电价	0.46428	0.68393	0.40030

22

上网电价与燃料税率的关系 Feed-in Tariff vs. Fuel Tax Rate



23

节能电厂的竞争力分析 Competitiveness of Energy Saving Power Plants

	亚临界电厂 Quasi Critical Power Plant (yuan/kWh)	超临界电厂 Super Critical Power Plant (yuan/kWh)
No environment taxes or charges 无环境税收	0.2044	0.2230
Under current 目前污染水平 pollution levy	0.2306	0.2354
Internalization of 将环境成本计入电价 environment values	0.5408	0.5109

能源税为31.5 元/吨时，两者发电成本均为0.2635 元/ kWh.

The feed-in tariff is the same for the two plants when raising an energy tax of 31.5 yuan/ton

24

环境税费对节能和可再生能源发展的作用

The Role of Environmental Levy Policy

1. 现行的排污收费标准对节能和可再生能源发电项目缺乏激励。

2. 提高排污收费标准实现环境价值的内部化会显著提高节能和可再生能源发电项目的市场竞争力。

3. 引入能源税也会显著提高节能和可再生能源发电项目的市场竞争力。

4. 为了促进节能和可再生能源发展，需要环境税费和其他经济性政策（如价格）配套使用。

1. Existing environmental levy policy cannot create enough incentive for energy saving and renewable energy projects

2. Internalizing environmental costs by raising the pollution charge rate can increase the competitiveness of energy saving and renewable power projects

3. Introducing an energy tax can also increase the competitiveness of energy saving and renewable power projects

4. Integrate environmental levy policy with other policies promoting energy saving and renewable energy development.

25

四、促进节能和可再生能源发展的税费政策建议

Policy Recommendations

1. 进一步明确环境费税征收与使用的指导思想和原则，使之从根本上成为减少污染，保护环境，节约资源，促进可再生能源发展的重要调控手段。

2. 统筹规划，综合利用各种环境经济激励政策，建立并形成完善的环境费税体系框架，推进“资源节约型”和“环境友好型”社会的建设，促进经济、环境、能源的协调和可持续发展

1. Formulate guiding principles for environmental levy policy reform. This will decrease pollution, protect the environment, save energy, and develop renewable energy resources.

2. Formulate a complete environmental tax and charge policy framework by integrating different economic policy instruments, promoting a “resource saving” society and the sustainable development of the economy, environment, and energy system.

26

四、促进节能和可再生能源发展的税费政策建议 Policy Recommendations

3. 将环境税费政策与国家法律、法规相结合，发挥直接管制手段的作用，以保障经济激励政策实施的效果。

4. 将环境税费的经济激励政策与公众和企业的自愿行动相结合，鼓励和提高公众和企业的环境意识和参与意识，在全社会形成保护环境、节约资源的舆论压力和社会风气。

5. 加强统筹规划和顶层设计，推进环境税费改革，建立和完善相应的法律、法规体系，形成政府引导、法律保障、市场驱动、公众参与的节约资源、保护环境法规政策体系和市场机制。

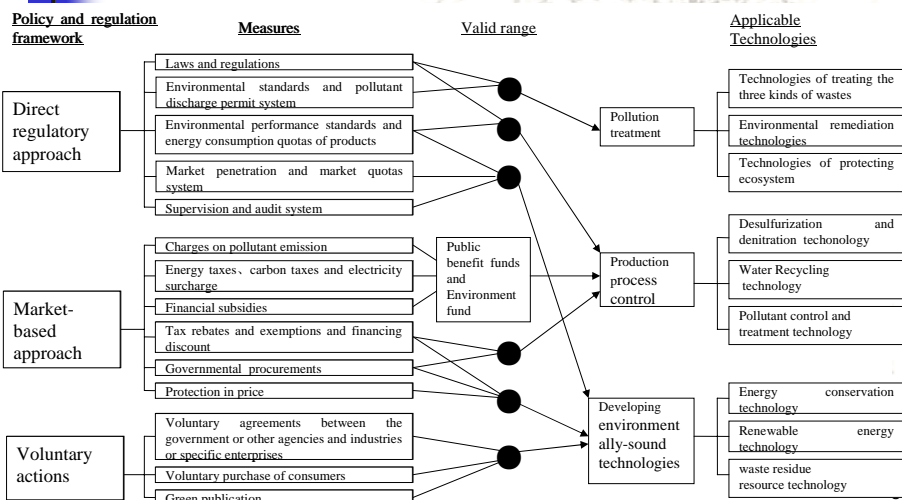
3. Integrate environmental tax and charge policies with laws and codes, using direct regulatory policy tools to ensure the effect of economic incentive policies.

4. Integrate environmental tax and charge policies with voluntary actions, encouraging and improving the public's and enterprises' environment awareness and forming a "protect environment, save resource" atmosphere in Chinese society as a whole.

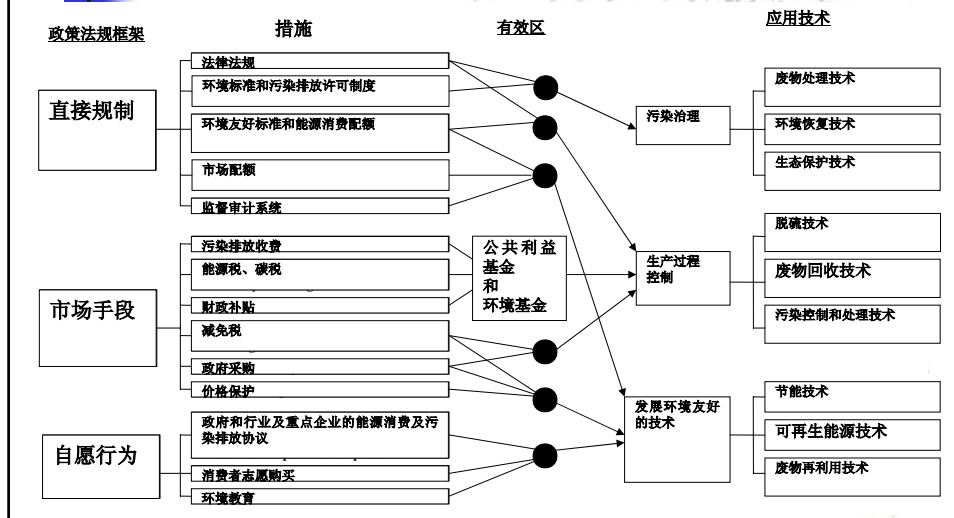
5. Improve overall planning, promoting environmental tax reform, building a well-coordinated policy system, and forming a "resource saving and environment protection" law system and market mechanisms. The government should guide; law, safeguard; market, drive; and public, participate.

27

Environmental Policy System to Promote Environmental Technological Innovation and Use 促进能源科技创新和使用的环境政策体系



Environmental Policy System to Promote Environmental Technological Innovation and Use 促进能源科技创新和使用的环境政策体系



四、促进节能和可再生能源发展的税费政策建议 Policy Recommendations

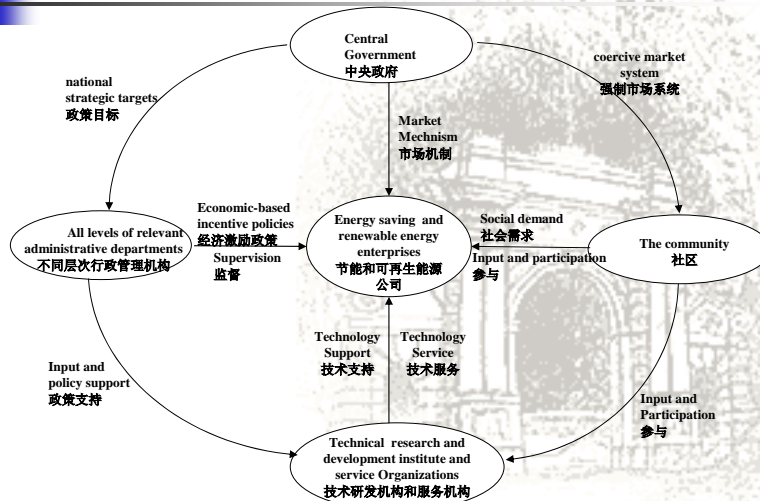
6. 充分利用环境税费激励政策，促进节能和可再生能源领域的技术创新，以技术进步推进资源节约和环境保护。

7. 以环境税费政策为导向，建立起激励节能和可再生能源大规模产业化发展的市场机制。

6. Utilize environment taxes to promote energy savings and technological innovation in the renewable energy field, save resources, and protect the environment.

7. In line with environmental tax policies, establish market mechanisms promoting large scale industrialization of energy saving products and renewable energy.

Mechanism to Promote Energy Conservation and Renewable Energy Development 节能和可再生能源发展促进机制



31

四、促进节能和可再生能源发展的税费政策建议 Policy Recommendations

8. 将环境费税改革的长远目标与近期可实施的措施相结合，积极推进，稳步实施，不断取得新的成效。

8. Realize the long term objective, environmental tax reform, through short-term realizable measures, active promotion, and steady implementation.

32

环境税收政策的国际经验

International Best Practices in Environmental Levy Policy

*Presentation at the Energy Foundation's
International Forum on Tax and Fiscal Policies to Promote
Clean Energy Development*

Lynn Price

能源分析部 环境能源技术处
劳伦斯·伯克利国家实验室

*Energy Analysis Department
Environmental Energy Technologies Division
Lawrence Berkeley National Laboratory*

北京
2005年11月17日
Beijing

17 November 2005

劳伦斯·伯克利国家实验室

环境税：定义

Environmental Levy: Definition

- 为减少对环境的负面影响，向污染源收取的税款或费用。
- A tax, fee, or charge imposed on a source of pollution for the purpose of reducing negative impacts on the environment.



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环境税：应用

Environmental Levy: Applications

因违反环境保护规定而收取的费用

Fee or charge for violation of environmental regulations

对污染源征收的税款、费用

Tax, fee, or charge on sources of pollution



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因违反环境保护规定而收取的费用

Fees for Violation of Environmental Regulations

- 刑事处罚
 - 刑事处罚需要通过较长的司法程序，证明其犯罪意图或作为个人或集体一部分所犯下的疏忽。
- 民事处罚
 - 可以通过司法或行政程序实施
 - 只需要表明已经违反了规定
- Criminal
 - Criminal penalties require lengthy judicial proceedings to prove criminal intent or negligence on the part of individuals or corporations
- Civil
 - Can be applied through judicial or administrative proceedings
 - Only necessary to show that a violation of regulations has occurred

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因违反环境保护规定而收取的费用 Fees for Violation of Environmental Regulations

- 一般来说对违规排放者收取的费用按日计算
- 通常每例违反规定的个案都有最高罚款限额
- 可以根据具体情况由行政部门或司法部门调整收费额度，包括：
 - 违规的严重程度
 - 是否为故意行为
 - 违章者的支付能力
 - 违章者行为对其周边人群的利益影响
- Typically fees are set per day in which an emitter is in violation
- Often there is a maximum fine per violation
- Fees can be adjusted by administrative and judicial authorities based on considerations including:
 - seriousness of offence
 - intent of violator
 - ability to pay of the violator
 - benefit to community of violator's activities

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案例分析：美国《空气洁净法案》相关案例 Examples: U.S. Clean Air Act Cases

- 伊利诺斯州电力公司 (Dynergy) 因某燃煤发电厂违反《空气洁净法案》而被处以 900 万美元的民事罚款，加上承诺安装价值 5 亿美元的新污染控制设备，并支出 1500 万美元用于额外的环境项目。
- Clean Air Act violations at coal-fired power plants owned by Illinois Power (Dynergy) resulted in a \$9 million civil penalty plus a commitment to install \$500 million of new pollution control equipment and spend \$15 million for supplemental environmental projects.



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案例分析：美国《空气洁净法案》相关案例

Examples:U.S. Clean Air Act Cases

- Boise Cascade 支付了 435 万美元的民事罚款，并承诺在其胶合板和刨花板厂投入 1800 万美元用于安装最先进的空气污染控制设备。
- Boise Cascade paid \$4.35 million in civil penalties and committed to install state-of-the-art air pollution control equipment in its plywood and particle board plants at a cost of \$18 million.



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案例分析：美国《空气洁净法案》相关案例

Examples:U.S. Clean Air Act Cases



- 康菲石油公司 (ConocoPhillips) 交纳了 450 万美元的民事罚款，并投入 5.25 亿美元用于安装全新的控制设备以减少石油精炼所产生的污染，同时还承诺投资 1000 多万美元用于额外的环境项目。
- ConocoPhillips paid a \$4.5 million civil penalty, spent \$525 to install innovative control technologies to reduce emissions at its petroleum refineries, and committed to spend more than \$10 million on supplemental environmental projects.

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美国环境税

U.S. Environmental Levies

- 经协商或法庭判决的税额可能比法规中规定的最高数额高出几倍。
- 罚款最高可达 10 亿美元，并包括以下承诺：
 - 投资新的排放控制技术
 - 公开污水排放监控记录
 - 承担额外的环境项目
- Negotiated or court-ordered settlements can be many times higher than maximum fines outlined in regulations.
- Penalties can be up to one billion dollars, plus include commitments to:
 - invest in new emissions control technology
 - publicize effluent monitoring data
 - undertake supplemental environmental projects

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额外的环境项目

Supplemental Environmental Projects

- | | |
|--|---|
| <ul style="list-style-type: none">• 公共卫生• 环境恢复项目• 污染防治• 可再生能源与能效• 审计与评估• 提高守法意识 | <ul style="list-style-type: none">• Public Health• Environmental Restoration• Pollution Prevention and Pollution Reduction• Renewable Energy and Energy Efficiency• Audit and Assessment• Compliance Promotion |
|--|---|



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环境税：应用

Environmental Levy: Applications

因违反环境保护规定而收取的费用

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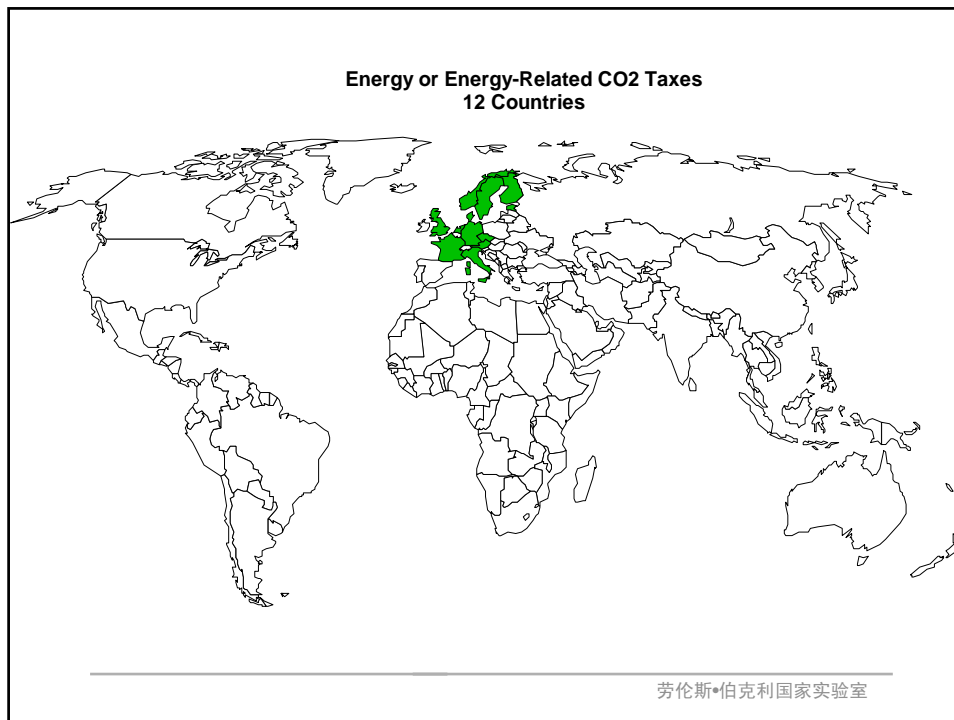
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能源或与能源相关的 CO₂ 税

Energy or Energy-Related CO₂ Taxes

- 作为一种用于降低能源消费或者 CO₂ 排放的政策，征税被用在特定的能源或者电力上
- 自从 20 世纪 90 年代以来，该税种在欧洲就非常普遍
- 12 个欧洲国家有能源或者与能源相关的（CO₂）税：奥地利、捷克共和国、丹麦、爱沙尼亚、芬兰、法国、德国、意大利、荷兰、挪威、瑞典和英国
- As a policy to reduce energy consumption or associated CO₂ emissions, taxes are applied to specific fuels or electricity
- Common in Europe since the early 1990s
- 12 European countries have energy or energy-related CO₂ taxes: Austria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Italy, Netherlands, Norway, Sweden, and the United Kingdom

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能源税或二氧化碳 (CO₂) 税: 优势

Energy or CO₂ Taxes: Advantages

- 种类广泛的与环境有关的或“绿色”的税种在理论上被认为优于其他政策手段，因为它们使环境成本内部化并和消费联系起来。
- 目标是用于降低对征税产品的需求
- 增加的税收可用来调整工业其他方面的成本（例如与劳动力相关的税），从而使环境税成为了税收中立的税种
- 降低污染和相关的有害健康及劳动者生产力的影响
- Broad category of environmental or “green” taxes is considered theoretically superior to other policy instruments because they internalize the environmental costs associated with consumption
- Aims to reduce demand for the product taxed
- Raises revenues, which can be used to offset other costs to industry (such as labor-related taxes), resulting in a revenue-neutral tax
- Reduces pollution and related detrimental health and labor productivity impacts

能源税或二氧化碳(CO₂)税: 缺点 Energy or CO₂ Taxes: Disadvantages

- 很可能产生预期不到的不良效应，例如在社会的某些特定阶层中（如贫困家庭）或者在竞争的工业部门中，产生不均衡效应。
- 控制以及支持相关的税收对于政府来说成本昂贵
- 有可能遭到强烈的反对，同时，政策的制定也会陷入政治争论中
- Possible undesirable effects such as disproportional impact on certain sectors of society (e.g. poor households) or on the competitiveness of industrial sectors
- Controlling and sanctioning related to taxes can be expensive for governments
- Can result in strong opposition and enactment can become mired in political debate

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丹麦 - 二氧化碳税 Denmark – Carbon Dioxide Tax

- 丹麦于 1992 年引入二氧化碳税，旨在鼓励提高能源效率并过渡到使用二氧化碳排放较少的燃料。
- 1996 年，丹麦对该税制进行了调整，凡是加入自愿协议的能源密集型行业只需交纳较低的税款：
 - 加入协议的税款为：每吨二氧化碳 0.40 欧元
 - 未加入协议的税款为：每吨二氧化碳 3.40 欧元
- Introduced a CO₂ tax in 1992 with the goal of encouraging energy efficiency and switching towards fuels with less CO₂ content
- In 1996, designed the program so that energy-intensive industries that entered into voluntary agreements paid a lower tax:
 - Tax with agreement: €0.40 per ton CO₂
 - Tax without agreement: €3.40 per ton CO₂

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丹麦 - 二氧化碳税 Denmark – Carbon Dioxide Tax

- 作为交换，各个行业部门同意：
 - 进行广泛的能源审计
 - 采用所有已确定的节能技术和措施，这些技术和措施的回收期为四年或更短
 - 实施综合性的能源管理计划
- 政府还将通过降低劳动力市场的税收来"循环"财政税收，并拨款 30% 至 50% 投资用于提高能源效率。
- In exchange, industries commit to:
 - undergo an extensive energy audit
 - implement all energy-saving technologies and measures identified that have a 4-year or shorter simple payback period
 - implement a comprehensive energy management plan
- Government also "recycles" revenues through reductions in labor market contributions and grants of 30% to 50% for energy efficiency investments

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丹麦 - 二氧化碳税 Denmark – Carbon Dioxide Tax

- 在 1996 到 2001 年期间，大约有 300 家公司加入了自愿协议，这些公司的能源消耗占丹麦工业总消耗量的 60%。
- Between 1996 and 2001, approximately 300 companies entered into the voluntary agreements, representing 60% of total industrial energy consumption in Denmark

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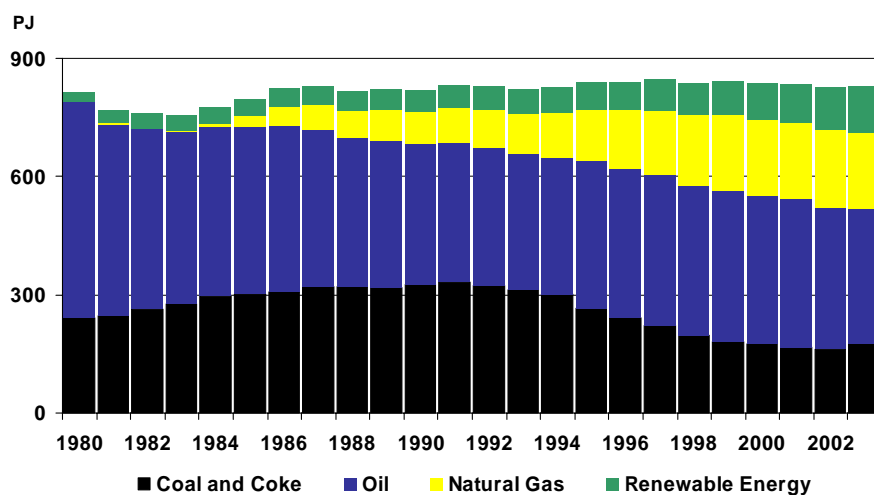
丹麦 - 二氧化碳税 Denmark – Carbon Dioxide Tax

- 协议带来的成效：
 - 能源效率方面投资具有更高的优先权
 - 各家企业更加重视能源管理
 - 三年后，每份协议的能源消耗总量降低了 2% 至 4% - 和没有税收政策及自愿协议相比，年节能率超出约 1%。
- 二氧化碳税的成效：能源消耗更为稳定，并且逐步放弃含碳量高的燃料
- Results of the agreements:
 - investments in energy-efficiency were given higher priority
 - companies take energy management more seriously
 - a reduction in energy consumption of 2% to 4% of total energy consumption per agreement after three years - exceeding business-as-usual by about 1% per year
- Results of the CO₂ tax: stable energy consumption and shift away from carbon-intensive fuels

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Denmark: Energy Consumption by Fuel 丹麦：燃料能源消耗



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英国 – 气候变化税 UK – Climate Change Levy

- 2001年引入
- 增加了大约**10-15%** 的燃料费用
- “税收中立”---所得循环至商业企业
- 能源税用在工业、商业、农业和公共部门
- 未应用于家庭消费者和慈善机构
- Introduced in 2001
- Adds about 10-15% to fuel bills
- “Revenue neutral” – receipts recycled to business
- Energy tax applied to industry, commerce, agriculture, and the public sector
- Does not apply to domestic customers or charities

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英国 – 气候变化税 UK – Climate Change Levy

- 气候变化税:
 - 煤炭每吨二氧化碳征收 7 欧元
 - 天然气每吨二氧化碳征收 13 欧元
 - 用电每吨二氧化碳征收 14 欧元
- 签署气候变化协议并达到既定目标的企业可少交纳 80% 的税。
- Climate Change Levy:
 - €7 per ton CO₂ for coal
 - €13 per ton CO₂ for natural gas
 - €14 per ton CO₂ for electricity
- Levy reduced 80% for enterprises that enter into Climate Change Agreements and meet their negotiated targets

劳伦斯•伯克利国家实验室



英国 - 气候变化税 UK - Climate Change Levy

- 政府向提高能源效率的项目提供信息、建议和低息贷款，并向减少碳排放量技术的初期发展提供风险投资。
- 企业可以申请由税前利润冲抵节能设备（由政府清单列明）100%的投资。
- Government provides information, advice, low cost loans for energy efficiency projects, and venture capital for investments in early-stage carbon reduction technologies
- Business can claim 100% tax allowances on their capital spending on energy saving equipment (specified in a government list) against their taxable profits

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英国 - 气候变化税 UK - Climate Change Levy

- 在第一个目标阶段期间 (2001 至 2002 年)，行业减少碳排放 **4.3MtC**，超出目标 3 倍。
- 在第二个目标阶段期间 (2003 至 2004 年)，行业总计减少碳排放**4MtC**，超出目标值的两倍。
- During the first target period (2001-2002), industry achieved reduction of 4.3MtC against estimated baselines, three times above the target
- During the second target period (2003-2004), industry realized total reductions of 4 MtC, more than double the target

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环境税收政策最佳实践

Best Practices in Environmental Levy Policy

- 税收收入通常用于改善环境或提高能源效率
 - 采用退税补偿或其它激励措施，增加对高能效设备的投资
 - 信息与援助项目
- 实现既定节能目标的企业可享受退税补偿或减税优惠
- Revenues from levies are used to promote environmental or energy efficiency improvements
 - Tax rebates or incentives for investments in energy efficient equipment
 - Information and assistance programs
- Levy rebates or reductions for industries that meet negotiated energy efficiency targets

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谢谢！
Thank You!

为获取更多信息，请联系：
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中华人民共和国
环境监察
EPI

环境监察

中国排污收费政策的发展历程和作用

The development and function of China's pollution charges policies

排污收费制度是中国环境管理的一项基本制度，是促进污染防治的一项重要经济政策。


排污收费制度实施**20**多年来，对促进企事业单位加强经营管理、节约和综合利用资源、污染治理，提高环境保护监督管理能力发挥了重要的作用。

- (1) A basic part of environmental management in China
- (2) An important economic policy preventing and controlling pollution.

Over the past 20 years, the pollution charges system has encouraged enterprises and institutions to

- (1) strengthen management,
- (2) integrate resource use,
- (3) treat pollution, and
- (4) improve their environmental supervision and management capacity.

国家环境保护总局环境监察局



中华人民共和国
环境监察
EPI

环境监察

中国排污收费政策的发展历程和作用

The development and function of China's pollution charges policies

- 排污收费源于“污染者负担”原则
- 排污收费政策作为国外发达国家经验被中国借鉴

中国的排污收费政策在发展的过程中，与世界银行、亚洲开发银行、经合组织、以及美国、德国、法国、英国、澳大利亚、新西兰等国际组织和国家进行长期的合作与交流，汲取了很多有益的经验，也得到了一些资金和技术上的援助。

Pollution charges originated from the “Polluter Pays Principle”

Developed in China based on experience in developed countries

Contributed to the development and reform of pollution charges policies:

- (1) **International organizations:** World Bank, ADB, Organization for Economic Cooperation and Development
- (2) **Countries:** U.S., Germany, France, Australia, New Zealand

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中国排污收费政策的发展历程和作用

The development and function of China's pollution charges policies


- 《中华人民共和国环境保护法（试行）》（1979年9月）
第十八条 超过国家规定的标准排放污染物，要按照排放污染物的数量和浓度，根据规定收取排污费。
- 国务院《征收排污费暂行办法》（1982年7月）

China's *Environmental Protection Law* (Trial Implementation) (September 1979), Article 18:

“Those discharging pollutants in excess of the national discharge standard shall pay a pollutant charge fee in accordance with the provisions based on the quantity and concentration of discharged pollutants.”

State Council's “Tentative Provisions on Pollution Charges” (July 1982)

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中国排污收费政策的发展历程和作用

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排污收费政策的理论基础:

- 环境资源价值理论
- 环境问题的外部不经济性理论
- 污染者付费原则

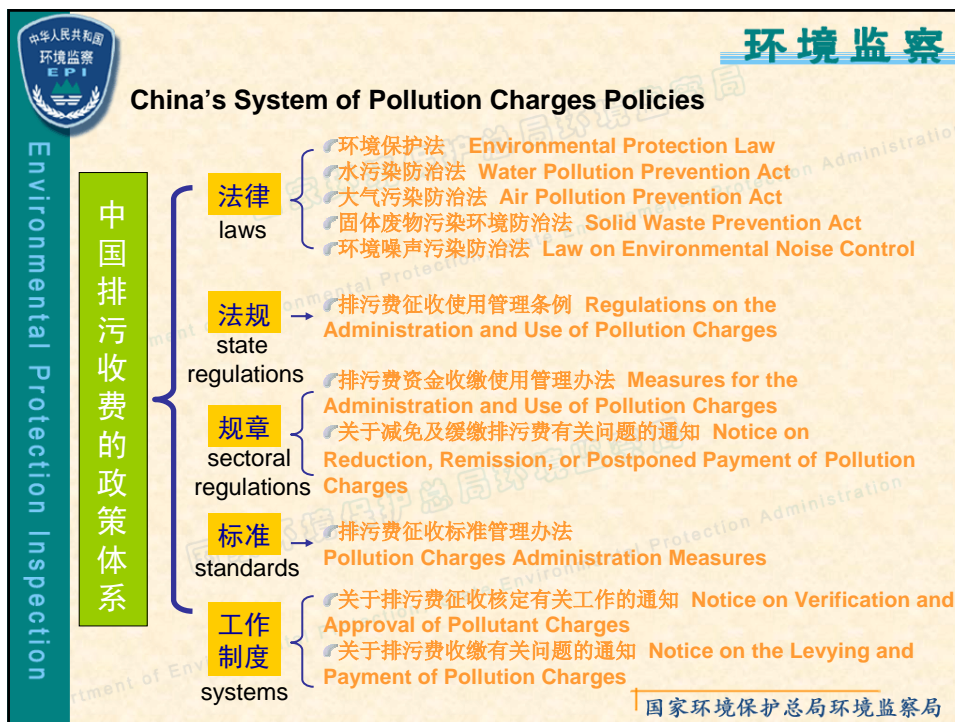
Theoretical basis of pollution charges system:

Theory of environmental resources value

Theory of the externality of environmental costs

Polluter pays principle

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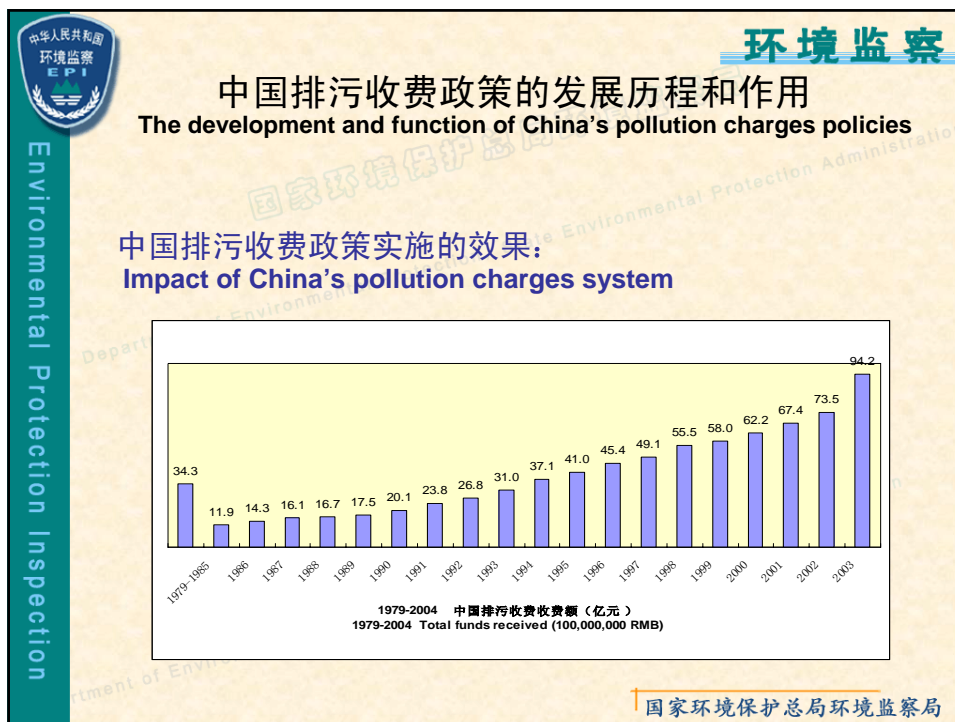
中国排污收费政策实施的效果:


- ◆ 促进了企业加强经营管理和综合利用，降低物耗、能耗，减少污染排放。
- ◆ 可靠的环境保护资金渠道，拉动了污染治理的投入。
- ◆ 至2004年，全国共征收排污费766亿元，已经用于污染治理的达391亿元。

Impact of China's pollution charges system:

- ◆ To encourage enterprises to (1) strengthen management, (2) integrate resource use, (3) reduce energy consumption, and (4) reduce emissions.
- ◆ Environmental protection funds are a dependable source of funds for pollution prevention and control
- ◆ By 2004, 76.6 billion RMB had been levied in China; 39.1 billion RMB had been used for pollution prevention and control.

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中国排污收费政策的发展历程和作用

The development and function of China's pollution charges policies

中国排污收费政策实施的效果:

- ◆ 环境执法的重要手段。

排污收费在环境执法中发挥着越来越大的作用，已经成为环境管理的重要手段和有效的载体。


Impact of China's pollution charges system

- ◆ An important of environmental enforcement tool

Pollution charges

- (1) assist environmental protection enforcement;
- (2) have become important and effective environmental management tool.

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中国排污收费政策的改革

Reforming China's pollution charges policies

中国经济的高速发展、经济总量不断增加，粗放型经济增长方式没有根本改变，经济结构不够合理，在很多排污企业还在超标准排放污染物的同时，污染物排放总量也在急剧增加。中国提出了污染物排放总量控制的政
策，排污收费政策也随之进行了改革。

2003年1月，中国国务院颁布了《排污费征收使用管理条例》（国务院令369号），于2003年7月1日正式实施。


Although China's economy continues to grow rapidly, there are problems:

- (1) No fundamental change in extensive mode of economic growth.
- (2) Economic structure somewhat unsound.
- (3) Many enterprises exceed pollution limits.

To address these problems, China proposed a policy to control total pollution amount and reformed the pollution charge system.

The State Council issued "Administration Regulations on the Levying and Use of Pollutant Charges" on 2 January 2003.
It become effective on 1 July 2003.

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中国排污收费政策的改革


Reforming China's pollution charges policies

《排污费征收使用管理条例》构筑了以总量控制为原则、以环境标准为法律界限的新的排污收费框架体系，其核心内容体现在三个方面：

“Administration Regulations on the Levying and Use of Pollutant Charges”:

- delineated a new pollution charges framework
- based on the principle of total pollution control
- established environmental standards as legal limits

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中国排污收费政策的改革

Reforming China's pollution charges policies

➤实现了排污收费标准的4个转变

- 由超标收费向总量收费转变
- 由单一浓度收费向浓度与总量相结合的收费转变
- 由单因子收费向多因子收费转变；
- 由低收费标准向高于治理成本的标准转变

➤It made 4 changes to the pollution charging system

- Changed from non-compliance fee to gross charge
- Changed from charging based solely on concentration to charging based on concentration and total quantity
- Changed from single-factor charges to multi-factor charges
- Changed from low charge level to charging in excess of treatment costs.

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中国排污收费政策的改革

Reforming China's pollution charges policies

➤ **排污费征收使用管理严格实行收支两条线**

- ◆ **管理体制**
环保开票、银行代收、财政统管，征收的排污费纳入财政预算，全部用于污染治理。
- ◆ **使用方向**
重点污染源防治
区域性污染防治和污染防治新技术、新工艺的开发、示范和应用等。

➤ **The 2003 pollution charges reform also strictly separated pollution charges collection and disbursement.**

- ◆ **Management system**
The environmental protection department makes out invoices, the bank receives them, and the finance department manages the funds. Pollution charges should be part of the finance department budget and should be used entirely for pollution treatment.
- ◆ **Fund usage**
 - (1) pollution prevention and control
 - (2) development, demonstration, and use of new pollution control technologies and processes

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中国排污收费政策的改革

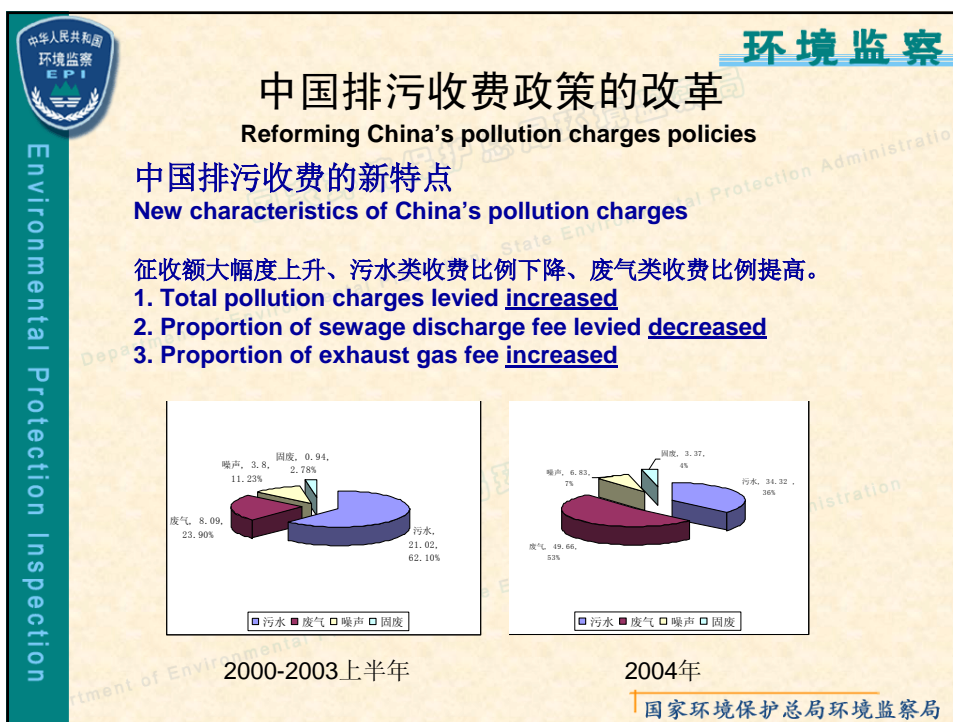
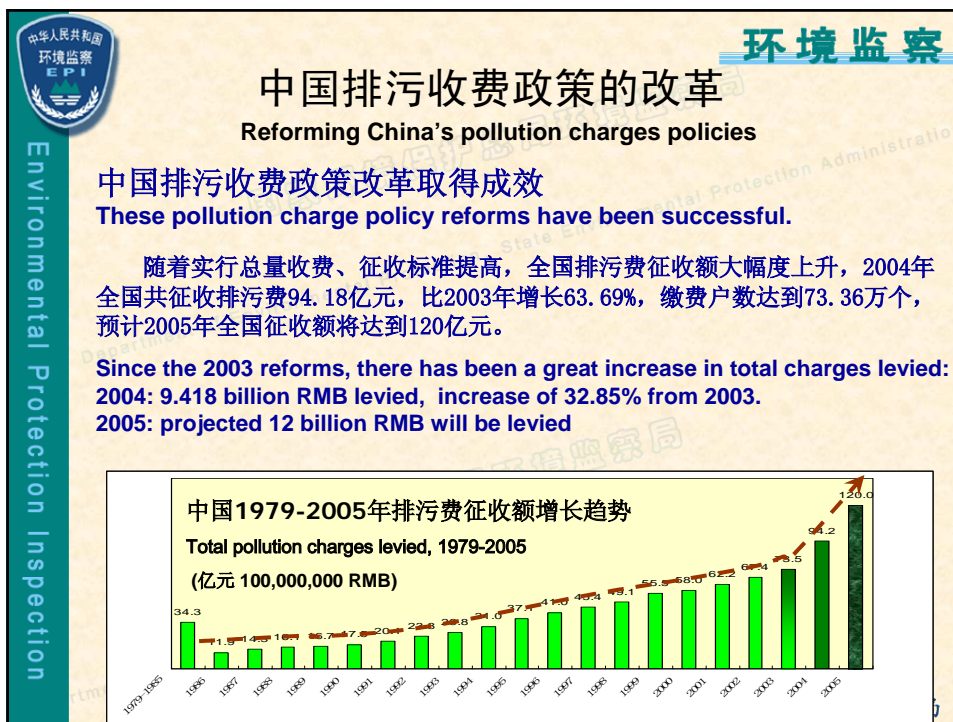
Reforming China's pollution charges policies


➤ **加大环保执法力度、规范执法行为、构建强有力的监督、保障体系、突出政务公开。**

The 2003 pollution charges reform also

- (1) Strengthened environmental enforcement,
- (2) Standardized enforcement,
- (3) Established a strong supervision system, and
- (4) Made the government's administration of environmental protection more transparent.

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中国排污收费政策的改革

Reforming China's pollution charges policies

中国排污收费政策需要继续完善

- 排污收费标准低于治理成本

例如，每公斤二氧化硫收费标准为0.63元，不利于二氧化硫排放总量的削减，特别是火电厂的脱硫。

对机动车等流动污染源没有实施排污收费，对改善大中城市的大气环境质量未能充分发挥经济手段的作用。

- 排污费资金使用范围比较窄

Pollution charges policy reform needs to go further

- Pollution charges are still less than pollution treatment costs

E.g., SO₂ pollutant charge is 0.63 RMB/kg SO₂ emitted. This is too low to yield significant SO₂ pollution reduction.

Policies do not impose pollution charges on mobile pollution sources (e.g., motor vehicles).

- The range of pollution charge usage is limited.

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结合排污收费工作促进节能减污

Pollution charges will both promote energy savings and reduce pollution

中国经济的持续高速发展，正面临能源短缺与环境恶化双重压力

《中共中央关于制定国民经济和社会发展第十一个五年规划的建议》


“要把节约资源作为基本国策，发展循环经济，保护生态环境，加快建设资源节约型、环境友好型社会，促进经济发展与人口、资源、环境相协调。推进国民经济和社会信息化，切实走新型工业化道路，坚持节约发展、清洁发展、安全发展，实现可持续发展。”

Along with its sustained, rapid economic development, China now faces energy shortage and growing environmental damage.

From China's 11th Five-Year Plan:

“To take resources saving as the basic country policy, to develop a circular economy, to protect the environment ...”

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结合排污收费工作促进节能减污

Pollution charges will both
promote energy savings and reduce pollution

- ✓ 节约资源、能源，减少污染物排放是实现上述要求的重要方面
- ✓ 通过总量排污收费，促进企业节约资源、能源，减少污染物排放。
- ✓ 排污费资金使用向节能减污方面倾斜。
- ✓ 环保部门可以联合有关部门和能源基金会等组织，在钢铁等行业试点。

- ✓ Saving energy and resources and reducing pollution are vital for realizing the above-mentioned national goals.
- ✓ A gross pollution charge encourages enterprises to reduce pollution, discharge and use resources and energy more efficiently.
- ✓ Employing pollution charges tips the balance in favor of energy savings and pollution reduction.
- ✓ Environmental protection departments can work with related government departments and the Energy Foundation to conduct pilot policy programs in steel industry.

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谢谢！

Thanks!

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中国环境税收政策框架设计与实施战略

The Design Framework and Implementation Strategy for China's Environmental Taxation Policy

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Chinese Academy for Environmental
Planning

2005年11月17日

提纲 Outline

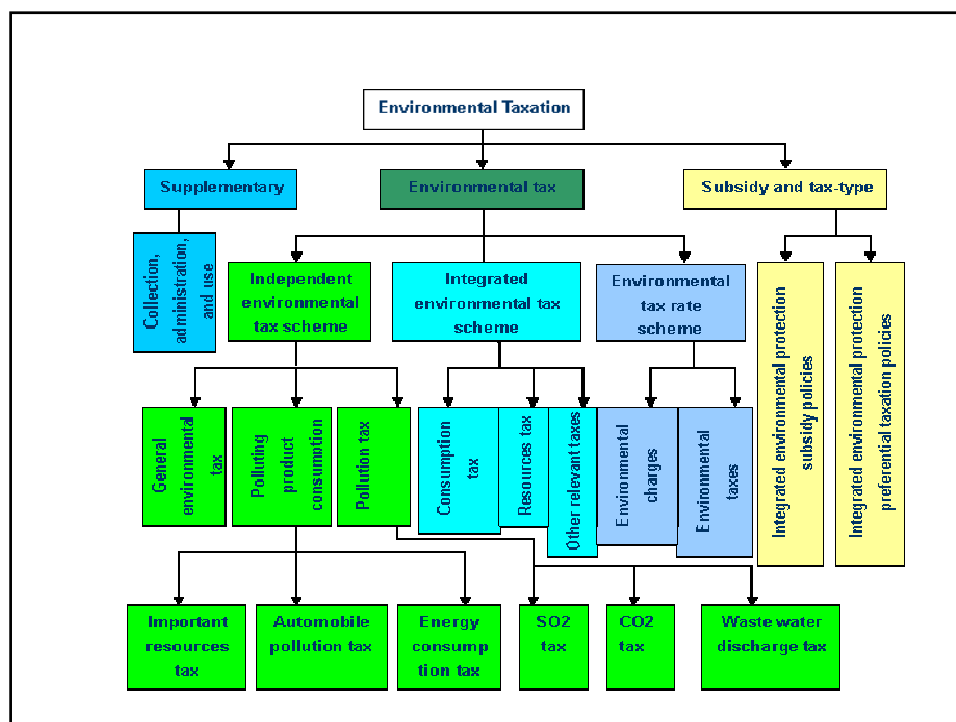
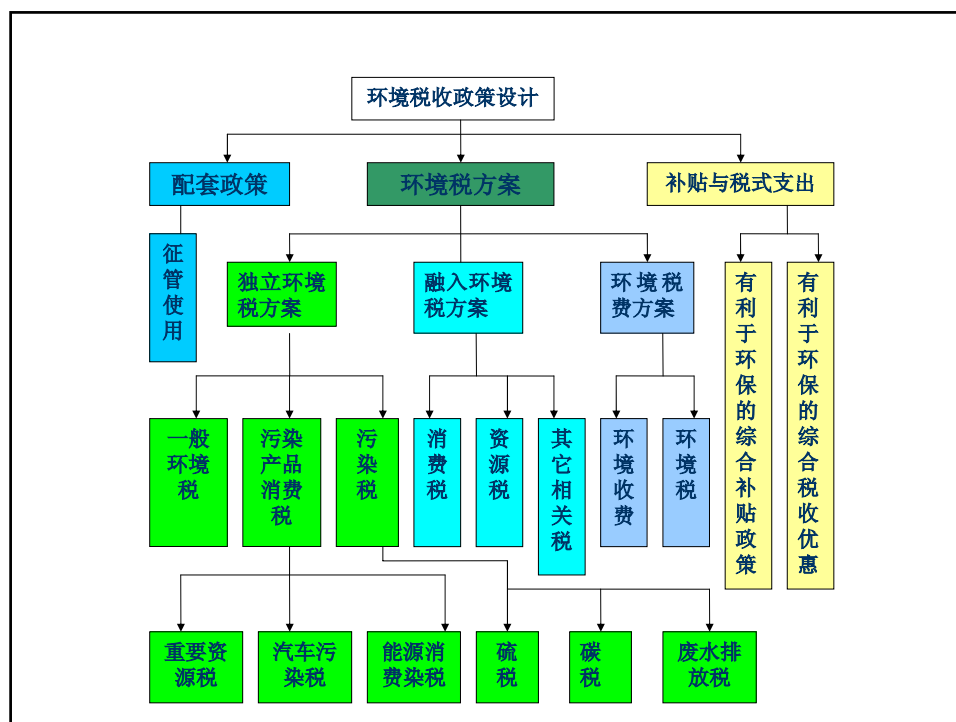
- 引言
- 环境税收政策框架
- 环境税方案设计
- 环境税实施战略
- Introduction
- Framework for China's environmental taxation policy
- Design of the environmental taxation policy
- Implementation strategy for the environmental taxation policy

1.引言 Introduction

- 对环境税收政策 的全面理解
- 引进环境税收政策的必要性
- 引进环境税收政策是一项艰巨的任务
- 基于科技攻关课题《环境税收政策框架与实施研究》的成果
- Understanding the environmental taxation policy
- Need for the environmental taxation policy
- The arduous task of introducing the environmental taxation policy in China
- Based on the findings a key government research project

2.环境税收政策框架 Framework of China's environmental taxation policy

- 综合型环境税收政策
- 三种环境税方案
- 刺激污染控制是主要目的
- 有效性、经济效率、公平性、管理的可行性、可接受性、与其他税费的协调等
- Integrated environmental taxation policy
- Three options for environmental taxation
- Main objective: stimulate pollution control
- Consider effectiveness, efficiency, equity, feasibility, and coordination with other taxes



3.环境税方案设计 Design of the environmental taxation policy (1)

- 独立环境税方案
 - 一般环境税
 - 直接污染税
 - 污染产品税
- Independent environmental taxes
 - General environmental tax
 - Direct pollution taxes
 - Polluting products taxes

一般环境税 General environmental tax

- **纳税人：**凡是缴纳增值税、消费税和营业税（以下简称“三税”）的单位和个人。包括缴纳“三税”的外商投资企业和外国企业
- **计税依据：**以应缴“三税”税额为计税依据
- **税率：**初步可以确定为“三税”的1—4%
- **减免税规定：**一般不规定减免税
- **Taxpayer:** All units and individuals who pay VAT, consumption tax, and sales tax (hereafter called “the 3 taxes”), including foreign-invested and foreign-owned enterprises
- **Basis for tax calculation:** The amount of “the 3 taxes” paid will be the basis for calculating the tax
- **Tax rate:** Preliminarily set as 1-4% of “the 3 taxes”
- **Provisions for tax reduction and exemption:** None

直接污染税 Direct pollution taxes

- 二氧化硫税税制设计
- 氮氧化物税税制设计
- Design of the SO₂ tax
- Design of the NO_x tax

二氧化硫税税制设计 Design of the SO₂ tax

- 征税对象: 其征收范围是排放SO₂的行为
- 纳税人: 向大气中排放SO₂的所有排放者
- 征收依据: SO₂的实际排放量
- 税率: 参考有关研究确定
- 征收: 可以委托环境监察部门征收
- Object of taxation: SO₂ emissions
- Taxpayer: All emitters of SO₂
- Basis for taxation: Total amount of SO₂ emitted
- Tax rate: To be set based on relevant research
- Collection: May be assigned to environmental supervision department

氮氧化物税制设计 Design of the NO_x tax

- **纳税人：**燃煤锅炉使用单位和机动车拥有者
- **征收依据：**征收依据是NO_x的实际排放量
- **税率：**参照SO₂税税率和1997年环科院提出的NO_x收费标准，税率为每吨1200元
- **征收：**可以委托环境监察部门征收
- **Taxpayer:** Coal-fired boiler users and motor vehicle owners
- **Basis for taxation:** Total amount of NO_x emitted
- **Tax rate:** SO₂ tax rate and the NO_x charge rate suggested by the Chinese Academy of Environmental Planning in 1997. Tax rate is 1200 RMB/ton
- **Collection:** May be assigned to environmental supervision department

3.环境税方案设计 Design of the environmental taxation policy (2)

- **融入环境税方案**
 - 消费税
 - 资源税
 - 水资源环境税
 - 其他相关税种
- **Integrating environmental taxes into current taxation categories**
 - Consumption tax
 - Resource tax
 - Water resource environmental tax
 - Other related taxes

消费税 Consumption tax

- **新增税目:** (1) 新增资源消耗大的、污染严重产品税目; (2) 煤炭和清洁能源消费税目, 实行差别税率, 煤炭消费税要考虑环境成本, 清洁能源实行低差别税率
- **税率调整:** (1) 提高汽油、柴油消费税税率, 建议考虑环境成本; (2) 对排气量相同的小汽车视其是否安装尾气净化装置而区别对待; (3) 对清洁汽车实行低差别税率或免征
- **New tax items:** (1) Add a tax on products that consume excessive energy or cause serious pollution. (2) Adopt a differential tax rate for coal and clean energy consumption items; add environmental costs to the coal consumption tax and set a low differential tax rate for clean energy.
- **Tax rate adjustment:** (1) Improve fuel quality; improve vehicle fuel economy; take environmental costs into consideration. (2) Treat small cars differently if they have exhaust purification devices. (3) Set a low differential tax rate or exempt taxes for clean automobiles.

资源税 Resource tax

- **新增税目:** (1) 淡水资源税目; (2) 森林资源税目, 对采伐森林资源征税; (3) 草地资源税目, 对草地开发和利用征税。自然放牧免征
- **税率调整:** 调整煤炭、石油、天然气和黑色金属矿原矿的资源税率, 将资源的稀缺性和生态补偿与恢复成本纳入税率
- **New tax items:** (1) Freshwater resources tax. (2) Forest resources tax; levy taxes on forest resources felling. (3) Grassland resources tax; levy taxes on grassland development and utilization. Natural grazing is exempt from taxation.
- **Tax rate adjustment:** Adjust the resources tax rates for coal, oil, natural gas, and crude ferrous metals; include resources rarity and ecological compensation and rehabilitation costs into the tax rate.

水资源环境税

Water resource environmental tax

- **征税对象：**作为原料和生活用途的水
- **纳税人：**所有使用水的企业、单位以及个人
- **计税依据：**以水的使用数量作为计税依据
- **税率：**可暂定为水费的20—30%
- **征收：**可以沿用现有的管理办法，由征收水费单位按规定税率代收代缴
- **Object of taxation:** Water as a raw material and water for domestic use
- **Taxpayer:** All enterprises and units which use water.
- **Basis for tax calculation:** Total amount of water used
- **Tax rate:** May be temporarily set as 20-30% of the water fee
- **Collection:** Existing administrative measures may be adopted to allow the water fee collection agency to collect the tax

3.环境税方案设计 Design of the environmental taxation policy (3)

- **环境税费方案**
 - 环境税费形式的选择
 - 我国环境收费制度的完善
- **Integrating environmental taxes and charges**
 - Selection of taxes or charges
 - Perfecting the current pollution levy system

环境税费方案要点

Key points regarding the environmental tax rate scheme:

- 作用机理是通过改变价格信号来影响污染者的生产和消费行为
- 环境收费和环境税并存将长期存在，需要综合考虑环境收费和环境税对污染企业、消费者和当地政府的影响
- 环境收费中几个大的收费项目有可能转为环境税，包括污水处理收费、二氧化硫排污收费等
- 维持现行的环境收费制度，引进新的环境税是我国环境税收政策的优先考虑领域，应重点考虑制定碳税、生态税和ODS税
- The rationale is to affect polluters' production and consumption behavior through changing pricing
- Environmental charges and environmental tax will co-exist. Must consider the impact of environmental charges and environmental tax on polluting enterprises, consumers, and local governments
- Sewage treatment charge, SO₂ emissions charge may be incorporated into environmental charge
- Maintaining the current environmental charge system and introducing environmental taxes are the priority. Consideration should also be given to a carbon tax, ecological tax, and ODS tax

3.环境税方案设计 Design of the environmental taxation policy (4)

- 环境税式支出政策
 - 明确环境税式支出政策范围，增强针对性
 - 调整优惠政策的手段和形式
 - 确定环境税收政策的优惠力度
 - 与其他类型的税收优惠政策之间的协调，制定综合性税收优惠政策
- Using tax revenue
 - Specify the scope of environmental expenditures; set a clear aim.
 - Adjust the means and form of preferential policies.
 - Determine the amount of tax breaks to be given.
 - Coordinate with other preferential taxation policies; formulate integrated preferential taxation policies.

4.实施战略 Implementation strategy (1)

- 循序渐进、分步实施
 - 先易后难、先旧后新、先融后立
 - 消除扭曲：不利于环境的补贴和税收优惠政策
 - 综合考虑：环境税和环境收费
 - 融入优先：型环境税方案对现有税制进行绿色化
 - 独立最后：独立型环境税方案是最后选择
- Step-by-step approach
 - FIRST: easy ones, old ones, and harmonize
THEN: hard ones, new ones, and establish new rules
 - Remove subsidies and preferential taxation policies detrimental to the environment.
 - Give comprehensive consideration to environmental tax and charge policies.
 - Implement integrated environmental tax schemes to make existing taxation system "greener."
 - Introduce independent environmental tax schemes.

4.实施战略 Implementation strategy (2)

- 突出重点、试点示范
 - 污染产品税
 - 煤炭资源税
 - 水资源费改税
- Highlight key areas; conduct pilots and demonstration work
 - Polluting products tax
 - Coal resources tax
 - Water resources fee changed to tax

4.实施战略 Implementation strategy (3)

- 综合制定补贴和税式支出政策
 - 制定税收优惠政策时应综合考虑经济、社会和环境的影响
 - 补贴政策不应以环境为代价
- Formulate integrated subsidy and tax expenditure policies
 - Economic, social and environmental impact should be taken into account when preferential tax policies are formulated.
 - Subsidy policies should not be formulated at the expense of the environment.

4.实施战略 Implementation strategy (4)

- 完善环境税的配套政策和相关工作
 - 向公众宣传环境税收，提高纳税心理准备
 - 确定环境税在税制改革中的地位
 - 改进环境税的征收管理
 - 加强环境税收的基础工作，包括深入研究
- Improve environmental taxation supplementary policies and related work
 - Publicize environmental taxation to the public
 - Proper positioning environmental taxation in taxation system
 - Improve collection and management of the environmental tax
 - Strengthen basic work in environmental taxation

建立中国环境税的
道路是曲折的, 但前途是光明的

*The way to introduce Environmental
Taxes in China is devious,
but the future is luciferous*

Please visit

中国环境规划院

<http://www.caep.org.cn>



中长期能源税、碳税的政策设计研究

Energy Tax and Carbon Tax for the Mid- and Long-term

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Energy Research Institute

研究目标 *Objectives*

- 开发构架一个经济/能源模型
- Develop an economic/energy model
- 利用该模型对我国可能采取的促进能源可持续发展的 财税政策进行定量的成本效益分析
- Using this model, conduct a quantitative cost-benefit analysis of adopting several potential tax and fiscal policies promoting sustainable energy development in China
- 对能源财税政策的设计和和实施提出政策建议
- Provide policy recommendations regarding the design and implementation of energy-related tax and fiscal policies

具体研究内容 *Research activities*

- 构架和扩展能源模型，以适应对能源财税政策和经济政策实施效果进行分析研究的需要。主要扩展工作包括IPAC-SGM模型中税收收入的分配和使用，以及IPAC-AIM / 技术模型中技术的扩展和财税政策评价。
- 2020年中国基准能源情景的构建。作为能源财税和经济政策分析研究的参考情景。
- 财税政策研究。中国现行的财政政策和与能源有关的财税政策；国际能源财税政策实践；中国可持续能源发展财税政策指标设定
- Develop an energy model to make it suitable for analyzing the effects of fiscal, tax, and economic policies; main development activities in the IPAC-SGM model include modeling the distribution and utilization of tax revenue; main development activities in the IPAC-AIM/Technology model include technology expansion and assessment of tax and fiscal policies.
- Establish a 2020 energy scenario to serve a baseline against which the effects of tax, fiscal, and economic policies are measured.
- Research energy-related tax and fiscal policies, used in China and abroad; set targets for tax and fiscal policies for sustainable energy development in China.

具体研究内容（续） *Research activities (cont.)*

- 中国可持续能源发展财税政策设定：
主要包括机动车燃料税、能源税、环境税、碳税等，也考虑进行能源投资等财政政策的分析。通过国际对比分析，以及国内财政和经济政策体制，现有税收，确定税率，时间，分配，以及相关的技术进步因素等，作为利用模型进行定量分析的基础。
- 利用构架的模型分析、评价所设定的财税政策的效果。
- 对能源财税政策的设计和 implement 提出政策建议
- Design tax and fiscal policies for sustainable energy development, particularly a vehicle fuel tax, energy tax, environmental tax, carbon tax, and energy-investment policies. By analyzing both international best practice and current tax, fiscal, and economic policies in China, determine an appropriate tax rate, initiation time, tax revenue distribution, and technology development factors, and make them the basis for quantitative model analysis.
- Use the model to analyze and evaluate the effects of selected tax and fiscal policies,
- Provide policy recommendations for the design and implementation of energy-related tax and fiscal policies.

构架和扩展能源模型

Developing the energy model

(1) IPAC-SGM: 税收返还

- 模型设置的税收收入使用如下
70%用于政府收入, 作为一般政府性支出;
30%作为节能和新能源发展支出;
- 税收中性:
个人收入所得税: 下降10%
企业所得税: 下降4%
- 国际价格: 设置价格影响参数

(1) IPAC-SGM: Tax revenue distribution

- Utilization of tax revenues in the model:
70% is general government income used for common government expenses
30% is used for energy conservation and new energy development
- Tax neutrality:
Reduce individual income taxes by 10%
Reduce corporate income taxes by 4%
- International prices: Set price effect parameters

构架和扩展能源模型(续)

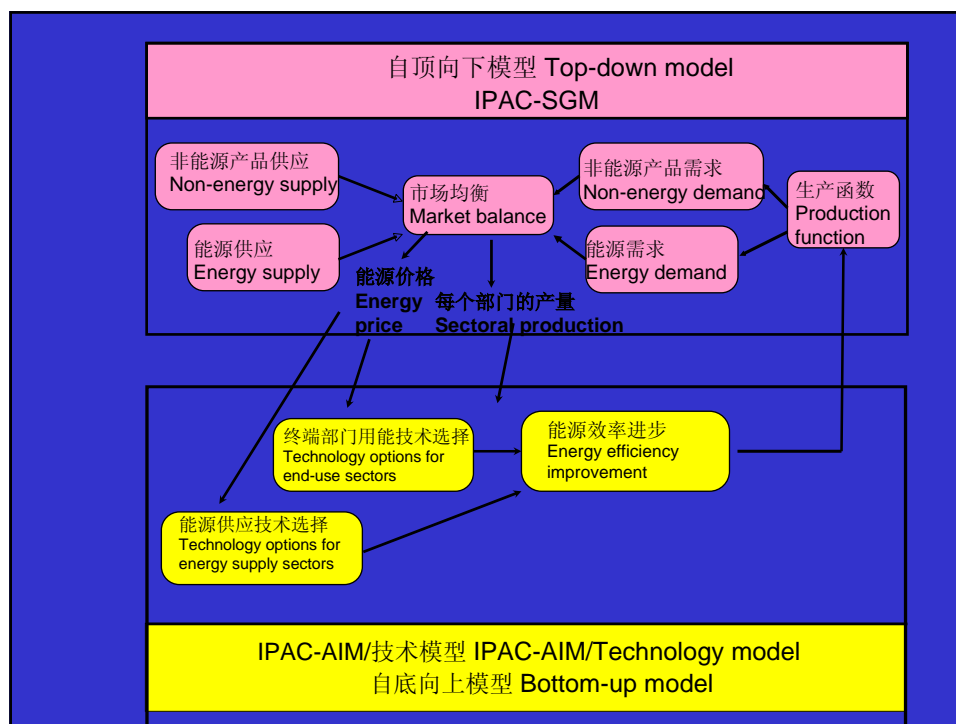
Developing the energy model (cont.)

(2) IPAC-AIM/技术模型

- 技术进步
- 部门影响:
设置技术进步参数
- 价格弹性

(2) IPAC-AIM/Technology model

- Technological progress
- Sectoral effect:
Set technological-innovation parameters
- Price elasticity



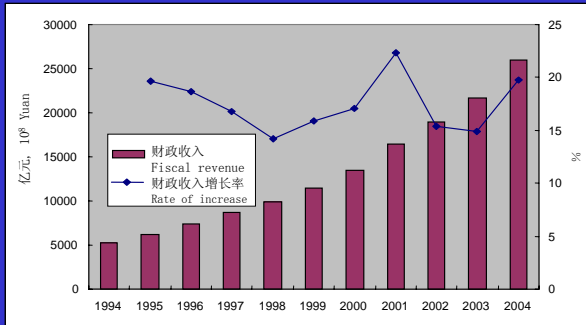
财税政策的评价指标

Tax and fiscal policy assessment indices

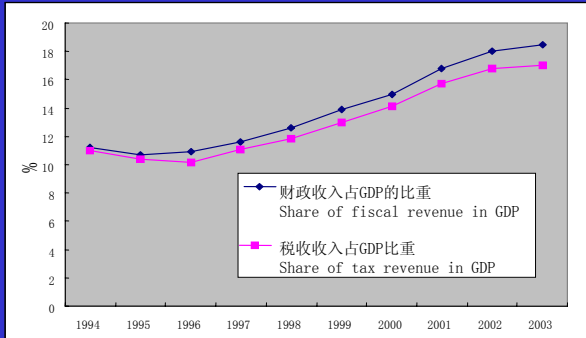
指标类 Index description	分指标 Index	子指标 Sub-index
能源指标 Energy Index	节能量 Energy conservation	各种能源 All Energy types
环境指标 Environmental Index	污染物减排量 Decrease in emissions	SO ₂
		PM ₁₀
		NO _x
		CO
		CO ₂
		水污染 Water Pollution
经济指标 Economic Index	GDP变化 GDP Change	
	就业 Employment	

中国的财政政策 Fiscal policies in China

中国 1994—2004年
财政收入及其增长率
Fiscal revenue in
China and its rate of
increase, 1994-2004

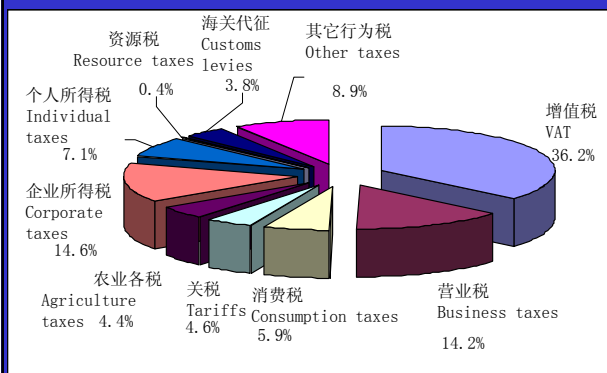
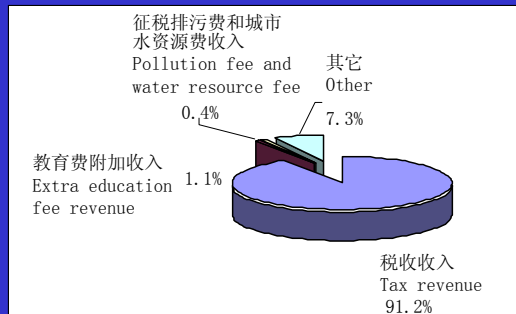


中国1994—2003年
财政收入与税收收入占
GDP比重
Share of tax and
fiscal revenue in
China's GDP, 1994-
2003



中国的财政政策 Fiscal policies in China

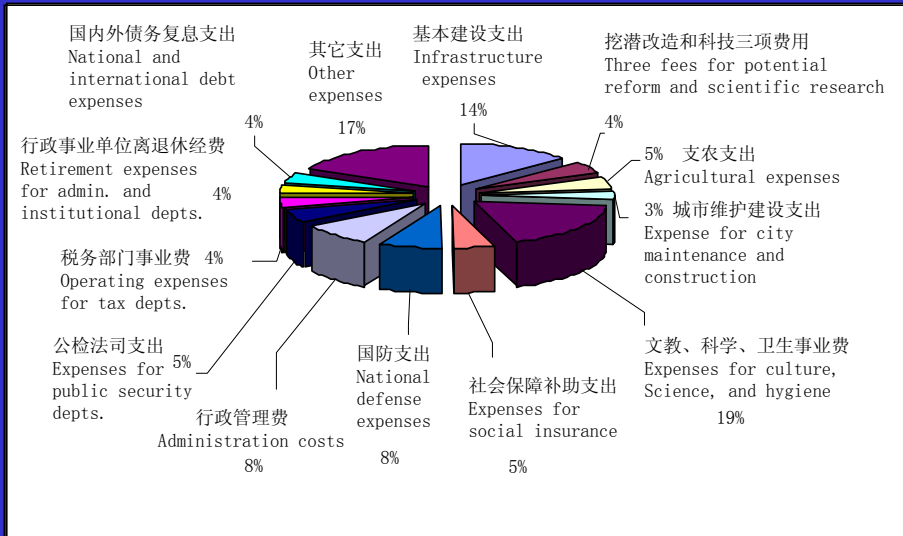
中国2003年财政收入构成
Breakdown of fiscal
revenue in 2003



中国2003年税收构成:
个人、企业所得税,
增值税, 营业税
合计: 72.1%
资源税: 0.4%

Breakdown of tax revenue
in 2003:
Individual and Corporate Income
Taxes, VAT, Business Taxes
Total: 72.1%
Resource Taxes: 0.4%

中国的财政政策 Fiscal policies in China



中国与能源有关的财税政策状况 Energy-related tax and fiscal policies in China

■ 促进矿产资源保护和扩大能源供应

增值税、资源补偿费、资源税、能源交通重点建设基金、固定资产方向调节税、

税收优惠政策、煤炭企业亏损补贴政策、鼓励扩大煤炭出口政策.....

■ 促进能源节约和提高能源效率

1994年前：节能投资信贷和税收优惠、节能效益还贷、节能科研基金、其他补贴

等财税经济政策；

1994年后：消费税、示范和推广节能新机制、贷款优惠、减免税、能源价格政策、节能基金、DSM、

■ Promoting mining resource protection and expanding energy supply:

VATs, resource compensation fees, resource taxes, energy and transportation system construction, fixed-asset direction adjustment taxes, tax reductions, subsidies for in-debt mining enterprises, incentive policies for coal export, etc.

■ Promoting energy conservation and efficiency:

Before 1994: Preferential loans and tax breaks for energy conservation investment, using energy conservation benefit as loan repayment, energy conservation research funding, other subsidies, etc.

After 1994: Consumption taxes, demonstration and spread of new energy conservation mechanisms, preferential loans, tax reductions/exemptions, energy pricing policies, energy conservation funding, DSM, etc.

中国与能源有关的财税政策状况 (续)

Energy-related tax and fiscal policies in China (cont.)

- 促进新能源和可再生能源发展
减免关税、税收优惠、贴息贷款、价格优惠、研发基金、专项发展资金（地方、全国）
- 排污收费制度
2003年后实行新标准,按总量收费,如SO₂收费由0.2元/公斤提高到目前为止,0.632元
- Promoting new energy and renewable energy development:
Tariff reductions/exemptions, tax reductions, deducted interest loans, preferential pricing, research funding, special development funding (local and national)
- Pollution fee regulations:
A new standard went into effect in 2003. The standard collects fees according to total pollutant amount. The standard raised pollution fees; i.e., the SO₂ fee increased from 0.2 RMB/kg to 0.632 RMB/kg.

中国与能源有关的财税政策评述

Evaluation of energy-related tax and fiscal policies in China

- 当前不健全的能源财税体系已不能有效的支持国家能源发展战略目标的实现
- 与能源有关的税收范围小、税率低、税率的确定没有考虑环境因素
- 对能源资源的无序开发和回采率低造成的资源浪费问题缺乏应有的政策措施
- Current energy-related tax and fiscal policies are inadequate for reaching the national energy development strategy target.
- The Energy-related taxes are limited in range, too low, and do not take into account the environment.
- There is a lack of policies addressing resource waste resulting from unregulated energy resource exploitation and low recovery rates.

中国与能源有关的财税政策评述(续)

Evaluation of energy-related tax and fiscal policies in China (cont.)

■ 节能领域的财税政策缺乏

■ There are not enough tax and fiscal policies in the energy conservation field.

■ 开发新能源和可再生能源的激励政策落实不到位

■ Incentive policies for new energy and renewable energy development are poorly implemented.

■ 在促进能源效率与能源供应活动公平竞争以及推进财税机制创新方面政府的作用发挥不够

■ Government actions to improve energy efficiency, promote fair competition in energy supply production, and establish innovative in tax and fiscal policies have been insufficient.

国际能源财税政策实践

International energy-related tax and fiscal policies

1. 能源税/碳税

征税国家：丹麦、芬兰、荷兰、挪威、瑞典、英国、美国、新西兰、欧盟

1. Energy/carbon tax

Countries that already levy such taxes: Denmark, Finland, Holland, Norway, Sweden, U.K., U.S., New Zealand, EU

实践经验：

- 设计能源税/碳税时主要考虑的问题是，税率，实施时间和步骤，税收的减免和返还，对不同区域、行业、阶层的影响，实施碳税所带来的碳泄漏问题等

Experiences:

- 根据本国国情设定相应的税率

- Main considerations in designing energy/carbon taxes: tax rate; initiation time and procedure; tax breaks; the effects of taxes; carbon leakage

- 采用分阶段实施的策略，以避免对经济的剧烈冲击，减少负面影响，将其实施成本最小化

- Set tax rates appropriate to national situation.
- Implement tax step-by-step in order to avoid abrupt changes in and negative impact on the economy and minimize the costs of implementation.

国际能源财税政策实践（续）

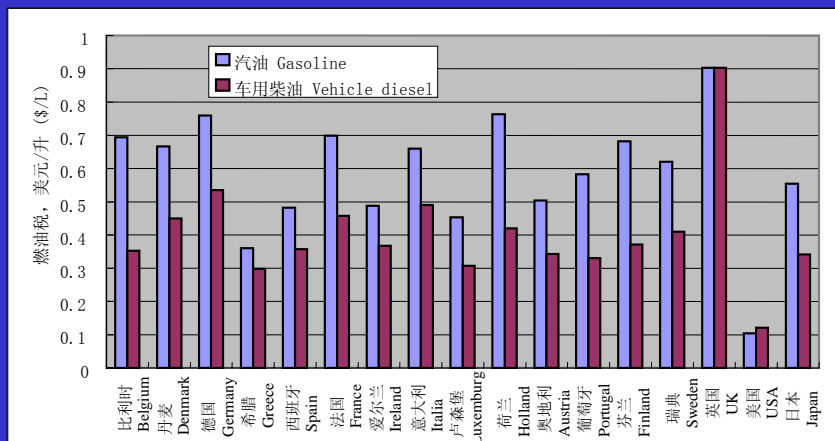
International energy-related tax and fiscal policies (cont.)

- 对高耗能行业实施税收减免和与国家签订自愿协议相结合的办法，避免对行业产品的国际竞争力产生影响
- 能源税/碳税收入纳入国家的税收收入中再分配，力求保持税收的中性，资助能源效率的提高和再生能源的发展
- 为避免实施效果的矛盾，在设计能源税/碳税时先能源量和碳量并重，再逐步过渡到纯粹的碳税
- 协调好征收对象（生产方和消费方）
- 能源税/碳税需要与其他政策配合，才能发挥其最佳效果
- For energy-intensive industries, use tax breaks in combination with voluntary agreements to avoid diminishing their ability to compete abroad
- Tax revenues from energy/carbon taxes should be included in the national tax system to maintain the tax neutrality and used to support energy efficiency and renewable energy development
- First adopt an energy/carbon (50/50) tax, then change it into a pure carbon tax
- Coordinate levy targets (production side and consumption side)
- The energy/carbon tax must be harmonized with other policies to maximize its effect

国际能源财税政策实践(续)

International energy-related tax and fiscal policies (cont.)

2. 燃油税 Fuel tax



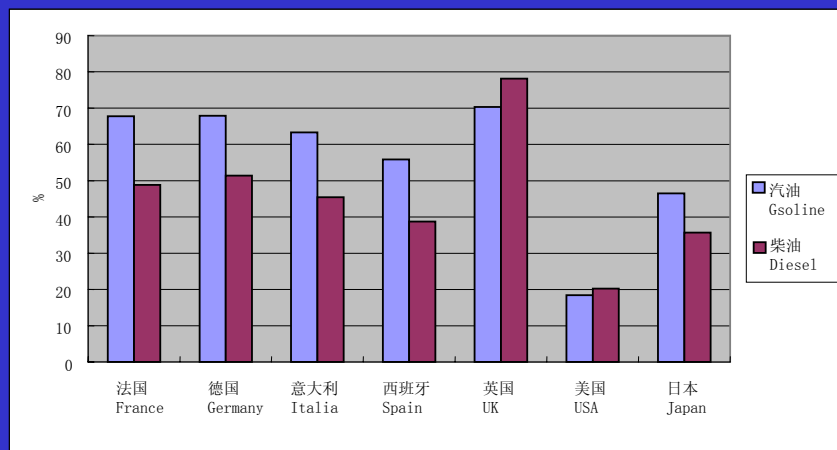
欧洲国家、美国和日本的燃油税(2002年2月)

Fuel taxes in European countries, the U.S., and Japan (Feb. 2002)

国际能源财税政策实践(续)

International energy-related tax and fiscal policies (cont.)

2.燃油税 Fuel tax



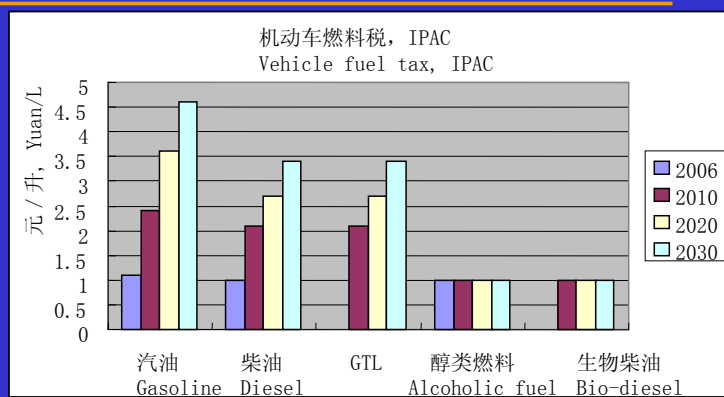
欧洲国家、美国和日本的燃油税(2002年2月)燃油税在油价中的比例

Share of fuel tax in oil price in European countries, the U.S., and Japan (Feb. 2002)

中国可持续能源发展财税政策设定

Establishment of tax and fiscal policies for sustainable energy development in China

1.机动车燃料税(费改税和进一步的机动车燃料税) Vehicle fuel tax

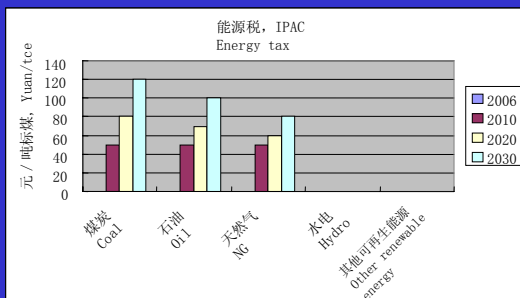


	2006	2010	2020	2030
汽油 Gasoline	1.1(费改税, change fee to tax)	2.4	3.6	4.6
柴油 Diesel	1(费改税, change fee to tax)	2.1	2.7	3.4
GTL		2.1	2.7	3.4
醇类燃料 Alcoholic fuel	1	1	1	1
生物柴油 Bio-diesel		1	1	1

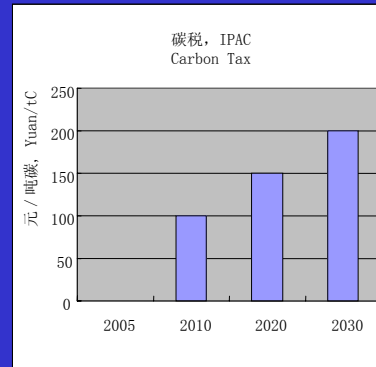
中国可持续能源发展财税政策设定(续) Establishment of tax and fiscal policies for sustainable energy development in China (cont.)

2. 能源税 (考虑因素: 基于热值, 支持清洁能源) Energy tax (based on heat value; supports clean energy)

	2006	2010	2020	2030
煤炭 Coal	0	50	80	120
石油 Oil	0	50	70	100
天然气 Natural Gas	0	50	60	80



3. 碳税 Carbon tax



中国可持续能源发展财税政策设定(续) Establishment of tax and fiscal policies for sustainable energy development in China (cont.)

4. 终端能源价格 End-use energy price (IPAC-SGM)

		2005	2010	2020	2030
石油制品 Oil products	RMB/Ton	2822	3116	3912	4430
天然气 Natural Gas	RMB/m ³	1.61	1.6	1.67	1.76
煤炭 Coal	RMB/Ton	495	496	500	489
电力 Electricity	RMB/KWh	0.45	0.46	0.47	0.47
醇类燃料 Alcohol Fuels	RMB/Ton	2900	2900	2900	2900
生物柴油 Bio-diesel	RMB/Ton	5300	4300	3900	3800

5. 税收收入的使用 Utilization of tax revenues

模型设置的税收收入使用如下:

- 70%用于政府收入, 作为一般政府性支出;
- 30%作为节能和新能源发展支出;

In the model:

- 70% is general government revenue used for common government expenses
- 30% is used for energy conservation and new energy development

中国可持续能源发展财税政策设定(续)

Establishment of tax and fiscal policies

for sustainable energy development in China (cont.)

6. 税收中性

个人收入所得税：下降5%；
企业所得税：下降3%。

7. 价格弹性

主要应用于对于机动车燃料税的分析，考虑成本上升对于大众出行的影响。由于目前缺少详细研究，暂时采用其他国家的研究结果，将价格弹性定为-0.25。

6. Tax neutrality:

Reduce individual income taxes by 5%

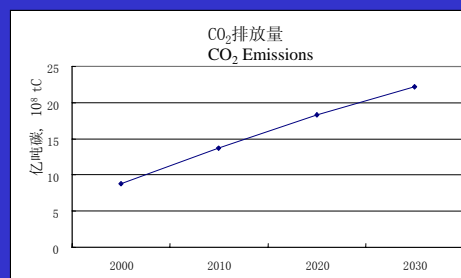
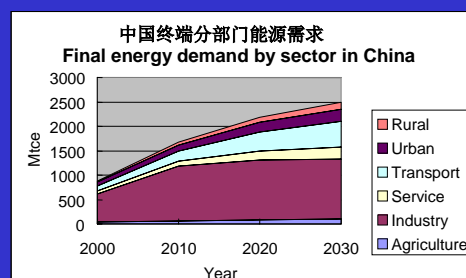
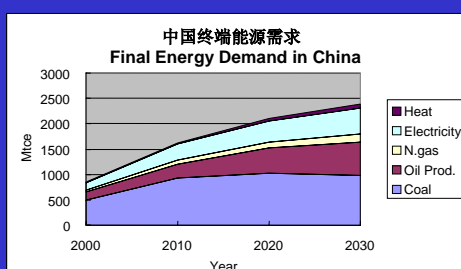
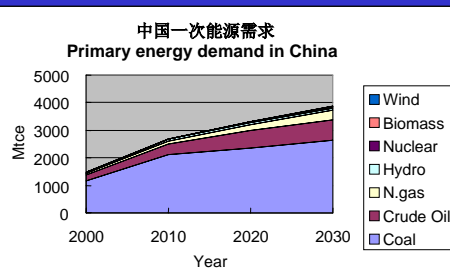
Reduce corporate income taxes by 3%

7. Price elasticity:

Mainly used to analyze the impact of a vehicle fuel tax on amount of driving. Set at -0.25 based on international studies.

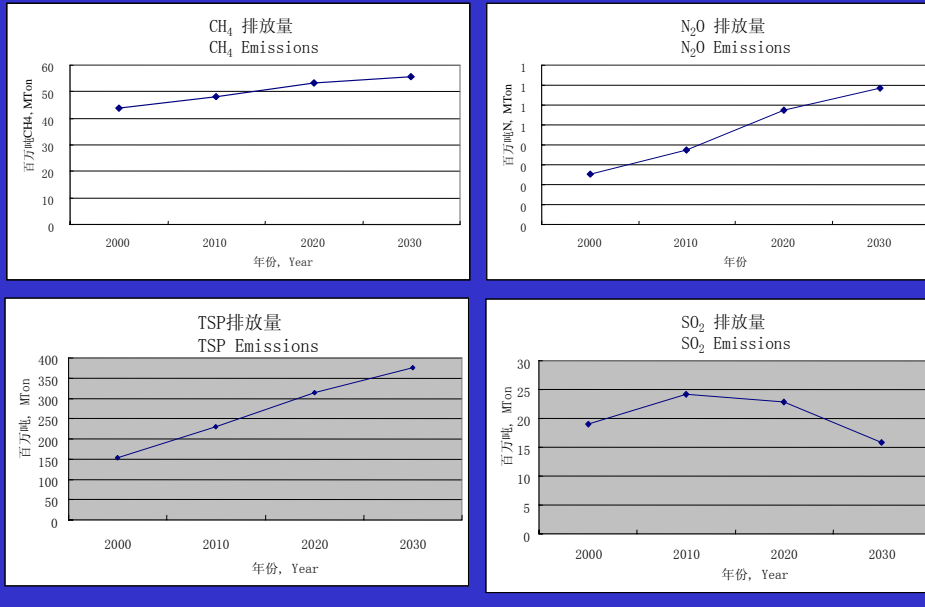
模型分析及结果: 基准情景

Modeling analysis results: Baseline scenario



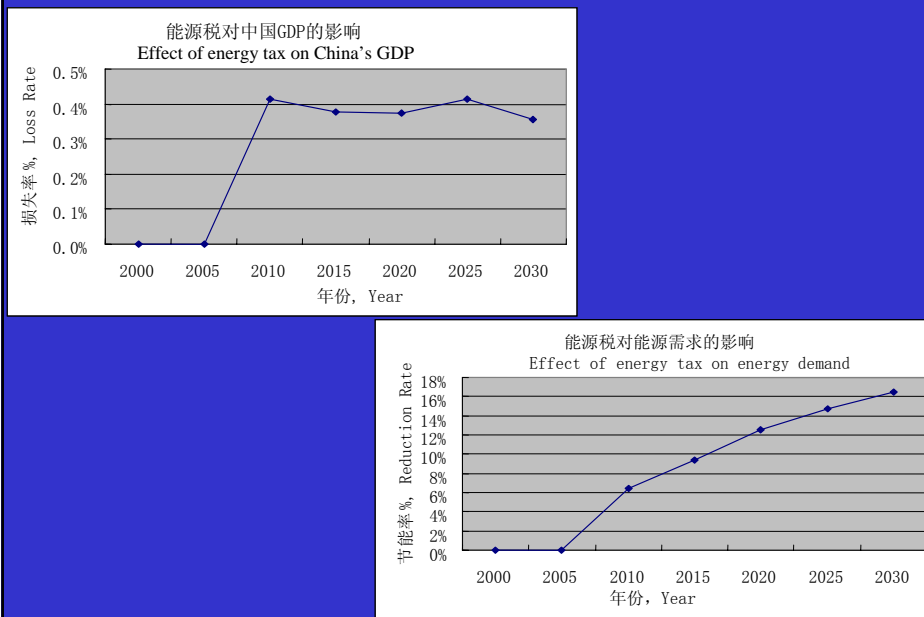
模型分析及结果: 基准情景(续)

Modeling analysis results: Baseline scenario (cont.)



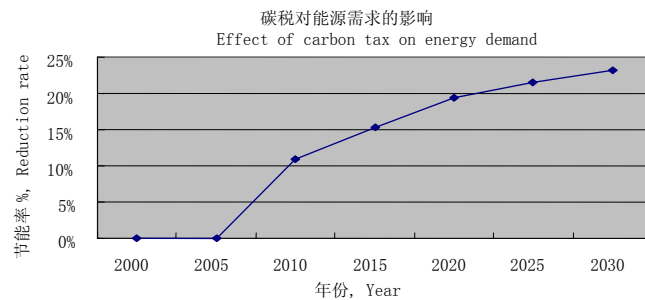
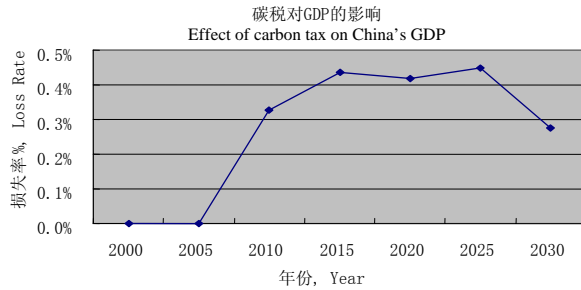
模型分析及结果: 征收能源税情景

Modeling analysis results: Energy tax scenario



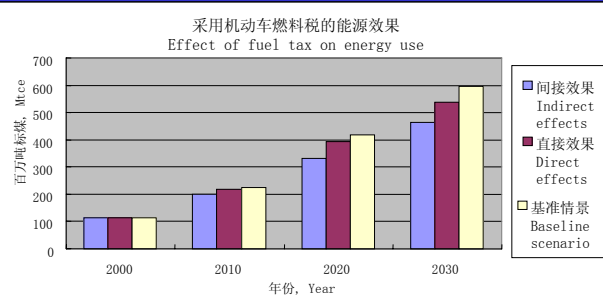
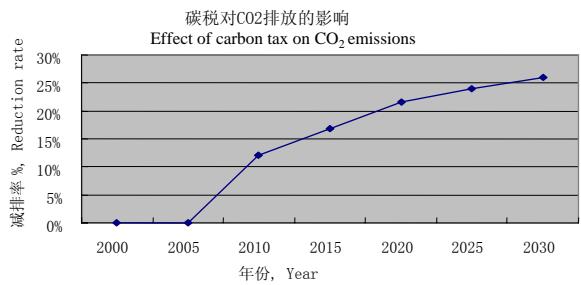
模型分析及结果: 征收碳税情景

Modeling analysis results: Carbon tax scenario



模型分析及结果: 征收燃料税情景

Modeling analysis results: Fuel tax scenario



初步结论 *Primary conclusions*

- 初步分析结果表明, 征收能源税对抑制能源需求有明显作用, 2020年征收能源税情景与基准情景相比: 能源需求量下降了12.7%, 节约能源约4亿吨标煤, 环境效果也是显而易见的。
- 由于能源价格上升对经济的抑制作用, 以及能源产业产值下降, 对GDP产生了一定的负面影响, GDP损失率为0.38%(622亿), 从GDP增长率来看, 由5.6%下降为5.579%, 基本上没有变化。
- An energy tax will reduce energy demand. Energy demand in the energy tax scenario is 12.7% lower than in the baseline scenario in 2020, saving about 400 million tce energy.
- Because an increase in energy price restrains economic development and decreases production in the energy industry, an energy tax will reduce GDP. The GDP loss rate is 0.38% (62.2 billion RMB), i.e., the rate of GDP increase drops from 5.6% to 5.579%.

初步结论 (续) *Primary conclusions (cont.)*

- 如考虑我国能源系统快速发展带来的社会成本, 主要包括能源安全成本、扩大国际场所引发的成本、环境成本等, 能源税的引入效果将会更明显。特别是最近我国拟采用机动车燃料税的讨论, 给引入能源税带来了很好的契机。相对于目前所考虑的费改税, 直接引入能源税将简单得多。
- 如实施机动车燃料税对能源需求不仅对公众选择机动车后对能源需求的直接影响, 还有征收燃料税后导致出行成本上升, 而引发的交通需求下降所带来的间接影响。
- - Other social benefits of an energy tax: improved energy security, decreased reliance on imported energy, improved environment
- Considering these benefits makes an energy tax even more attractive.
- Recent discussion of a vehicle fuel tax provides a good opportunity to introduce an energy tax.
- Adopting an energy tax is easier than the current plan of changing the fee to a tax.
- A fuel tax will decrease energy demand in two ways:
 - Directly: by changing the types of vehicles consumers purchase
 - Indirectly: by decreasing the amount of driving

下一步工作 *Further work*

- 模型的完善: 纳税方式, 进出口影响, 税收对消费行为影响分析, IPAC-SGM模型的进一步分析
- 税收的流向
- 价格弹性
- 参数组合/情景设置
- Complete and improve the model, particularly taxation modes, effects of import and export, effects of tax on consumption behavior, and further analysis of IPAC-SGM model
- Tax flow
- Price elasticity
- Add parameters/scenario development

下一步工作 (续) *Further work (cont.)*

- 进一步研究合理的税率。在目前模型研究的基础上, 利用评价指标, 需要对多种税率的效果进行分析, 提出可以采纳的税率
- 进一步对国外制定财税政策时所遇见的问题进行评价
- 对国内实施能源财税政策 (能源税、燃料税和碳税) 的机制进行研究
- Further study appropriate tax rate. Analyze the effects of all tax rates and propose the most suitable rate.
- Further study problems encountered by foreign countries in establishing similar tax and fiscal policies
- Study mechanisms for the implementation of energy, fuel, and carbon taxes in China

政府能源管理体制与 监管制度的改革

Reform of the Government Energy
Administration and Regulatory System

国务院发展研究中心产业经济研究部

研究框架 Research Framework

- | | |
|----------------------|---|
| 一、能源管理体制、监管制度存在的主要问题 | 1. Major Problems in China's Energy Administrative and Regulatory Systems |
| 二、国际经验与现代监管理论 | 2. International Best Practices and Modern Regulation Theories |
| 三、改革目标与原则 | 3. Reform Objectives and Principles |
| 四、我国能源管理新体制的初步构想 | 4. Initial Thoughts on China's New Energy Administrative System |

一、能源管理体制、监管制度存在的主要问题

Major Problems in China's Energy Administrative and Regulatory Systems

(一) 机构：综合协调能力不强

步调难以一致，部门、地方利益左右国家利益，重当前、轻长远。

1. Institutions: Lack coordination capability

The "3 discrepancies" problem: discrepancies between (1) objectives and pace, (2) national and local interests, and (3) short-term and long-term benefits

(二) 能力：执行能力不够

以前置性审批替代事中监督与管理。部门之间缺少有效的制衡。

2. Policy Implementation: Unsatisfactory

The government management system is putting more emphasis on the examination and approval of policies than their regulation and management.

一、能源管理体制、监管制度存在的主要问题

Major Problems in China's Energy Administrative and Regulatory Systems

(三) 职能：重经济、轻外部性

客观上造成了重供应、轻节约

3. Function: More focus on economic regulation than externalities

Resulted in more emphasis on production than on conservation

(四) 中央与地方：政策目标的不一致

短期与长期，能源富集地区与能源短缺地区。

4. Discrepancies between central and local government policies

Discrepancies between long-term and short-term objectives

一、能源管理体制、监管制度存在的主要问题

Major Problems in China's Energy Administrative and Regulatory Systems

(五) 监管：职能不到位、监管真空

监管职能的配置（价格、准入）

(六) 人员：严重短缺

13亿人口大国在中央政府层面仅几十人，美国15100人（联邦雇员）

5. Regulation: Inadequate Regulatory power is lacking (pricing and market entry)

6. Personnel: Severe understaffing













Only a few dozen people work in the central government's energy management department, in comparison with 150,000 federal employees engaged in energy management full-time in the U.S. Department of Energy.

一、能源管理体制、监管制度存在的主要问题

Major Problems in China's Energy Administrative and Regulatory Systems

目前政府的作用程度

Key components and foci of China's existing energy administrative and regulatory systems

	经济性 Economic Returns	节能 Energy Conservation	环保 Environmental Protection	安全 Security
事前 Before				
事中 During				
事后 After				

二、国际经验与现代监管理论

International Best Practices and Modern Regulation Theories

OECD23个案例国家

机构形式 Institutional structure	国家 Country
既有部级机构，也设立了独立的监管机构 Have both a ministry-level government agency and an independent regulatory agency	美国 U.S.
	英国 U.K.
	意大利 Italy
	法国 France
	爱尔兰 Ireland
	丹麦 Denmark
	葡萄牙 Portugal
	捷克 Czech Republic
	加拿大 Canada
	澳大利亚 Australia

二、国际经验与现代监管理论

International Best Practices and Modern Regulation Theories

部级机构，委托另一个独立的部级监管机构 Have a ministry-level government agency, which entrusts regulatory responsibility to independent ministry-level agency	芬兰 Finland
	匈牙利 Hungary
	荷兰 Netherlands
	挪威 Norway
	瑞典 Sweden
部级机构，委托独立的顾问机构 Have a ministry-level government agency, which entrusts regulatory responsibility to an independent consulting agency	比利时 Belgium
	希腊 Greece
	卢森堡 Luxembourg
	西班牙 Spain
只有部级机构 Only have a ministry-level government agency	德国 Germany
	日本 Japan
	新西兰 New Zealand
	瑞士 Switzerland

二、国际经验与现代监管理论

International Best Practices and Modern Regulation Theories

	美国 UNITED STATES	日本 JAPAN
名称 Name	能源部 Department of Energy	经济产业省自然资源和能源署 Ministry of Economic and industrial Development's Natural Resources and Energy Department (NRED)
职能 Functions	负责能源供应安全、核安全，管理能源科学研究、能源技术发展、能源效率提高、石油储备以及能源信息的收集和分析。 Energy supply safety, nuclear security, energy research management, energy technology development, energy efficiency improvement, oil reserve management, and energy information collection and analysis	负责能源供应安全，国际能源合作、石油储备、能源效率提高、能源科学技术的研发、新能源的开发。 Energy supply safety, international energy cooperation, oil reserve management, energy efficiency improvement, energy technology research and development, and new energy development
立法 Legal basis	能源部组织法及相关专业性法规 Department of Energy organic law and related laws in energy field	专业性法规，无能源机构组织法 No organic law; only special energy laws
预算 Budget	233亿美元（2006） US \$23.3 billion	1312亿日元（节能）+1449亿日元（新能源）+960亿日元（能源R&D） 131.2 billion Japanese Yen (JPY) (energy conservation) + 144.9 billion JPY (new energy) + 96 billion JPY (energy R&D)
人员 Personnel	联邦雇员15100人，合同雇员99237人 15,100 federal employees; 99,237 contracted employees	463人 463 people

二、国际经验与现代监管理论

International Best Practices and Modern Regulation Theories

	英国 UNITED KINGDOM	印度 INDIA
名称 Name	英国贸工部能源团队 Department of Trade and Industry's Energy Group	电力部、煤炭部、石油天然气部、非常规能源部 Electricity Ministry, Coal Ministry, Oil and Natural Gas Ministry, and Special Energy Resource Ministry
职能 Functions	负责能源供应安全，可持续发展与环境，燃料缺乏，核安全与出口管制，公司社会责任。 Energy supply security, sustainable development and environmental protection, nuclear security and export management, corporate social responsibility	电力部负责电力立法、规划，政策制定，项目审批。煤炭部负责煤炭勘探、开发战略和政策的制定、重要项目的审批。石油和天然气部负责石油、天然气的开发、炼制、运输、销售、存储以及进出口。非常规能源部负责与可再生能源的规划、政策制定及实施及相关事宜。 <i>Electricity Ministry</i> : Electricity legislation, strategic planning, and project approval; <i>Coal Ministry</i> : coal exploration, strategic planning, major project approval; <i>Oil and Natural Gas Ministry</i> : oil and natural gas exploration; oil refining, transport, sales, reserves, and import/export; <i>Special Energy Resource Ministry</i> : renewable energy planning, policy making and implementation
立法 Legal basis	专业性法规，无能源机构组织法 no organic law; only special energy laws	电力部有电力管理法，煤炭部有煤炭法，石油天然气部有石油法。 Electricity Administration Law; Coal Law; Oil Law
预算 Budget	贸工部总预算为53亿英镑，能源部分不详 Department of Trade and Industry: 5.3 billion Pounds; Energy Group: no figures available	不详 no figures available
人员 Personnel	贸工部职员11474，其中总部4247人，能源部分不详 Department of Trade and Industry: 11,474 people, 4,247 of which work in the headquarters; Energy Group: no figures available	不详 no figures available

二、国际经验与现代监管理论

International Best Practices and Modern Regulation Theories

	美国 UNITED STATES	日本 JAPAN
与其他机构的关系 Relationship with other institutions	能源部在能源政策制定和能源管理方面占主导地位。国防部、商业部、住房与城市发展部、内务部、农业部、美国邮政局分管系统内的节能工作，并与能源部进行协调。 Department of Energy (DOE) oversees energy policy making and energy management. Other Departments (Defense, Commerce, Agriculture, etc.) manage energy conservation within their jurisdiction, in coordination with DOE.	自然资源 and 能源署在能源政策制定和能源管理方面占主导地位。教育、文化、体育、科学、技术省负责核反应堆的研发和基础研究，环境省参与制定与环境问题相关的政策，土地、设施以及交通省制定交通政策并推荐节能标准，外务省参与国际能源合作。NRED oversees energy policy making and energy management. Education, Culture, Sports, Science, and Technology Ministries manage nuclear reactor R&D and fundamental research; Environmental Ministry formulates environmental policies; Land, Infrastructure, and Transportation Ministry formulates transportation policy and recommends energy efficiency standards; Foreign Affairs Ministry participates in international energy cooperation.
中央与地方的关系 Relationship between central and local authorities	州际间的事务归联邦政府管理，州内事务由州公用事业委员会管理。 Federal government manages interstate affairs; State public utility commissions manage intrastate affairs.	自然资源 and 能源署负责国家层面上能源管理，无地区性办公室。但地方政府对区域内的电站审批、核电站管理以及环境标准制定上有一定的权力。NRED manages national energy affairs; it has no regional offices. Local governments have the power to approve power plant construction, manage nuclear power plants, and set environmental standards.

二、国际经验与现代监管理论

International Best Practices and Modern Regulation Theories

	英国 UNITED KINGDOM	印度 INDIA
与其他中央管理机构的关系 Relationship with other institutions	主体上由贸工部管理，贸工部在能源政策制定和能源管理方面占主导地位。但在节能和环境保护方面，环境、食品和农村部负主要责任，在交通节能和二氧化碳减排上交通部负主要责任。 Department of Trade and Industry oversees all energy affairs, but focuses primarily on energy policy development. Department of Environment, Food, and Rural Affairs manages energy conservation and environmental protection. Department of Transportation manages transportation energy efficiency and carbon emissions reduction.	1992年以前，能源部主导能源管理。1992年以后，能源部拆分为电力部、煤炭部、石油天然气部、非常规能源部，按行业对能源进行管理，各部门对所管理部门的事务有着全面的管理权。 Prior to 1992, the Ministry of Energy (MOE) oversaw energy management. Since 1992, MOE has been divided into the Electricity Ministry, Coal Ministry, Oil and Natural Gas Ministry, and Special Energy Resource Ministry, each of which manages different energy aspects.
中央与地方的关系 Relationship between central and local authorities	近年来苏格兰和威尔士开始对一些区域内的能源事务进行管理。 In recent years Scotland and Wales have begun to manage their own regional energy affairs.	采用垂直化管理，中央政府在能源管理上占主导地位。 Vertical management system; Central government oversees all energy management.

二、国际经验与现代监管理论

International Best Practices and Modern Regulation Theories

现代能源监管体制的主要特征

- 监管机构的独立性
- 政监分离
- 放松经济性监管，加强垄断环节与社会监管
- 法律授权，依法监管，有效监督和制衡机制

Features of a modern energy regulatory system

- Independent regulatory institution
- Separation of administration and supervision
- Loosen economic regulation, while enhancing anti-monopoly and social regulation
- Regulate and supervise by the law; effective monitoring and balance mechanisms

三、改革的目标与原则

Objectives and Principles of Reform

近期目标（1-2年）：完善机构职能，转变管理重点。

Short-Term Target (1-2 years):

Improve regulatory function, shift management focus, strengthen coordination capability of energy management departments

能源办（协调职能）、电监会（电价监管）。

State Energy Office (coordination), Electricity Regulation Commission (electricity pricing management).

从供应转到更加关注需求，从经济性监管转到社会性监管为重点。

Shift in regulatory focus:

energy production and supply
→ demand
economic regulation
→ social regulation.

三、改革的目标与原则

Objectives and Principles of Reform

中期目标（2-5年）：
改革政府机构设置，理顺中央与地方关系。

以增强政府的行政执行能力为主线，改革能源管理机构。

从组织保障、制度保障两个方面，实现中央与地方目标的一致性。

Medium-Term Target (2-5 years):

Restructure government bodies by clarifying central and local governments' respective responsibilities.

Energy administrative bodies should be reformed with a focus on strengthening government administrative capacity.

Unify the organizational and safeguard systems of the central and local governments.

三、改革的目标与原则

Objectives and Principles of Reform

远期目标（5-10年）：
形成依法管理、有效推动可持续发展的新型管理体制

长效机制的形成：依法管理。

重点：节能和提高能效，能源安全，保证能源可持续发展战略的实施。

Long-term Target (5-10 years):

A new powerful, efficient, and legally-based management system and mechanism for sustainable development.

A long-term development mechanism governed by laws.

Foci: saving energy, improving energy efficiency, ensuring energy safety, and developing renewable resources.

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

按照政监分离的原则，改革能源领域的政府管理机构设置

“Separate administration and supervision.”

双层结构：综合性的能源管理机构（能源部或工业能源部）和专业性的能源监管机构（能源监管委员会）

“Two-tier structure”: Separate energy management bodies (Ministry of Energy) from specialized energy regulatory agencies (Energy Regulatory Commission)

中央与地方：地区派出，省（条块混合）

Relationship between central and regional authorities: regional authorities represent corresponding central agencies.

好处：综合、协调
加强专业化监管
增强国家政策的执行力

Strengthens:

- enhances integrity and congruity in energy administration
- carries out specialized regulation effectively
- enforces national policies

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

按行业

	煤炭	石油	天然气	电力	核能	可再生能源
能源政策的制定	能源部、发改委					
投资	能源部、国土资源部	能源部	能源监管会	能源监管会	能源部	能源部
价格	能源部，价格分析及评估，不直接控制		能源监管会	能源监管会	核电，能源监管会	发电，能源监管会
财政与税收	财政部、税务总局					
科技	科技部、发改委					
信息汇总与分析	能源部、能源监管委员会（电力、天然气的信息分析）					

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

Energy Administrative and Regulatory Departments and Agencies by Industry

	Coal	Gasoline	Natural Gas	Electric Power	Nuclear Energy	Renewable Resources
Formulating Energy Policies	Ministry of Energy (MOE), National Development and Reform Commission (NDRC)					
Investment	MOE, NDRC, Ministry of Land Resource (MLR)	MOE, NDRC	Energy Regulatory Commission (ERC)	ERC	MOE	MOE
Pricing	MOE, Price Analysis and Evaluation without Direct Control		ERC	ERC	Nuclear Power and Energy Regulatory Commission	Electric Power and Energy Regulatory Commission
Finance & Taxation	Ministry of Finance (MOF), State Administration of Taxation (SAT)					
Technology	NDRC, Ministry of Technology (MOT)					
Information Collection & Analysis	MOE, ERC (Electric Power and Natural Gas Information Analysis)					

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

按功能

	供应侧	需求侧		
		工业	建筑	交通
节能	能源部	能源部	建设部	交通部（未来运输部）
环保	环保总局			
安全	主要是供应侧，石油安全（能源部），天然气、电力安全（能源监管会），核安全（核安全局），煤炭等生产安全（安监总局）			
质量	主要是供应侧，电力、天然气（能源监管会），其他不做特殊性管理安排。			

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

Energy Administrative and Regulatory Departments and Agencies by Function

	Supply Side	Demand Side		
		Industry	Construction	Communications
Energy Efficiency	MOE	MOE	Ministry of Construction (MOC)	Ministry of Communications (Future Transportation Department)
Environmental Protection	State Environmental Protection Administration (SEPA)			
Security	Mainly production safety on supply side, including gasoline (MOE), natural gas and electric power (ERC), nuclear energy (Nuclear Safety Center) and coal (State Administration of Work Safety)			
Quality	Mainly on supply side, including electric power and natural gas (ERC), without special requirements for the others.			

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

管理职能的转变

从供应侧到需求侧

前置审批：着眼于外部性的准入管理，环保、资源、能效等准入标准，导向性、公开、透明。

事中监督、监管、检查：能源审计，机构、人员保障。

事后查处：着眼于对违法、违轨者依法惩罚。

Shifting administrative functions:

Shift administrative focus from supply side to demand side.

Examination and approval periods:

- Focus on market access management and setting standards regulating environment, efficiency, etc.
- Emphasize the direction and transparency of policies.

During projects:

- Focus on regulation, administration, and examination.
- Improve energy efficiency auditing system, organizational structure, and manpower security.

Post-project period:

- Focus shifted to the punishment of regulation violators and loss compensation.

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

实现监管转型：经济性监管
转向社会性监管

市场准入监管：公开准入制度，
无所有制歧视，透明化和申诉制

价格监管：改革价格形成机制，
对自然垄断环节实行有限监管，
保护性监管与激励性监管，完善
财务制度，成本与信息披露，价
格听证

社会性监管：加强资源利用效率、
安全性、环境保护等

市场秩序监管：反垄断，促进有
效竞争，对可能影响市场结构的
大购并案进行审查等

Transforming regulation:
economic regulation → social regulation

Improve market access regulations:

(1) publicize regulations, (2) abolish ownership
discrimination, (3) make policies transparent, (4)
establish a proper complaint system.

Improve pricing regulation:

(1) reform pricing mechanism, (2) regulating
monopolies, (3) use both regulations and incentives,
(4) improve the financial, cost, price hearing, and
information notification systems.

Strengthen social regulation:

(1) improve resource utilization efficiency, (2)
protect the energy supply, (3) protect the
environment.

Reinforce market order regulations.









(1) Counter monopolies, (2) encourage competition,
(3) examine merger and acquisition cases.

四、我国能源管理新体制的初步构想

Initial Thoughts on China's New Energy Administrative System

未来的政府作用程度

Key components and foci of China's existing energy management and
regulation system

	经济性 Economic Returns	节能 Energy Conservation	环保 Environmental Protection	安全 Security
事前 Before				
事中 During				
事后 After	