

实现“十一 五”节能 目标 的政策建议

冯 飞

国务院发展研究中心
产业经济研究部

Policy Proposals for Realization of Energy Conservation Targets in the 11th Five-Year Plan period

Feng Fei

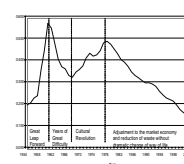
Department of Industrial Economic
Research of the Development Research
Center of the
State Council

应充分认识实现 “十一 五”节能目标 的艰巨性和问题的 本质

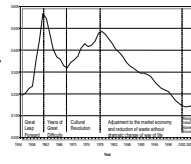
★ 驱动节能的主导因素
发生了逆转。

To fully understand the
difficulties and essences of
energy conservation targets in
the 11th Five-Year Plan
period

★ The driving factors for
energy conservation have
reversely changed.



结构性因素对
单位GDP能耗
影响的作用方
向发生了逆转。
节能内在机制
发生了变化。
在新形势下，
需要亟待建立
新的节能内在
机制。



Structure factors have
reversed effects on unit
GDP energy
consumption. There is a
change in the internal
mechanism for energy
conservation. Under
new situations, it is
urgent to build a new
internal mechanism for
energy conservation.

★ 在节能管理、政策、法
律等诸多方面存在着系统性
缺陷。

在利用财税、价格等政策激
励节能的手段不足；
法律、法规、标准等或者缺
失或者不适应新形势的需
要；
包括节能在内的能源管理体
制不顺；
体制转型中的市场机制仍不
成熟、不健全。

★ Systematic deficiencies exist in
various aspects, such as energy
conservation management, policy
and law.

These deficiencies include, an absence of
laws, rules and regulations that can adapt
to new situations; an unsmooth energy
management system which, includes
energy conservation; and an obviously
weakened ability for management of
energy. The market mechanism under
system transformation is still immature
and incomplete.

★ 当前的经济发展速度远远
高于节能目标设定时的前提条
件，加大了实现节能目标的
难度。

2010年实现6.4亿吨标准煤的
节能量（按GDP增速7.5%测
算），GDP增速比规划目标每
增加一个百分点，目标节能
量将增加约4.7%。如果GDP增
速分别达到8.5%和9.5%，目
标节能量将达到6.7亿吨和
7.0亿吨标准煤。

★ Energy conservation targets are more
difficult to achieve, because the current
economic growth is much faster than the
conditions were when the targets were set.

• It is expected, under the current growth rate, that
the total energy conservation amount needed to (in
absolute value) realize targets by 2010 is 640 million
tons of standard coal.
• For each percentage point of economic growth
higher than the planned target, the energy
conservation needed will grow by about 4.7%. If
GDP increases at a speed of 8.5% or 9.5%, the
aimed energy conservation amount should be 670 or
700 million tons of standard coal, respectively.

必须着眼于建立长效的节能新机
制

“三高三低”：中央政府关注程
度高、地方政府关注程度低，能
源短缺或供应紧张时期关注程
度高、能源供应相对充足时期关
注程度低，能源约束较强的地区
关注程度高、能源资源相对富裕
的地区关注程度低。

“三多三少”：政府动员多、企
业和消费者行动少，号召多、具
体措施少，行政性手段多、经济
与法律手段少等的问题。

It is imperative to establish a new and
long-term energy conservation
mechanism

“Three-high and three-low”: high attention from
the central government and low attention from
local governments; high attention paid during
energy shortage or strain in supply, and low
attention paid during comparatively affluent
energy supply; and high attention paid to areas
which are relatively poor in energy resources and
strongly energy-restrained areas, and low
attention paid to areas which are relatively
abundant in energy resources.

“Three-more and three-less”: More in
government mobilization, less in actions by
enterprises and consumers; more in calls, less in
specific measures; and more in administrative
means, less in economic and legal means.

推进节能工作的四个原则

★ 采取综合措施，强调经济激励。

对象	经济 手段	法律 手段	行政 手段
政府		有效	有效
国有企业等	基 本 有效	有效	部 分 有效
非 国 企 业	有效	有效	效 果 有限
公 众 、 消 费 者	有效	有效	效 果 有限

Four principles for promoting energy conservation

★ Comprehensive measures should be adopted
and economic incentives stressed

Objects	Economic means	Legal means	Administra tive means
Governme nts		Effective	Effective
State- owned enterprises etc.	Basicly effective	Effective	Partially effective
Non-state owned enterprises	Effective	Effective	Limited effect
Publics and consumers	Effective	Effective	Limited effect

★ 中央与地方联动，落实各自责任。

建立起比较科学的节能指标分解办法，建立科学的监督机制、考核评价制度以及准确及时的统计体系。

落实到中央政府相关部门，明确中央政府各部门的责任，切忌将节能责任简单下移。

★ 标本兼治，重在控制源头。

三个源头：消费方式；
能源密集型产业的新增投资；
能源密集型产品的出口。

★ The central government and local governments should work together to improve their accountability

- To create a more scientific method to disaggregate energy conservation tasks, to establish a supervision mechanism and evaluation system, and to build a database system.
- Tasks should be assigned to the relevant departments of the central government; energy conservation responsibilities of various departments of the central government should be clarified; and the cases of simply transferring responsibilities to a lower level should not be allowed.

★ Both temporary and permanent solutions should be developed, with focus on control of sources

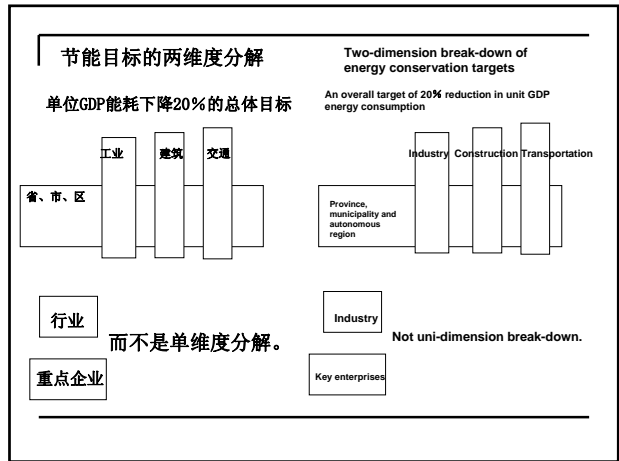
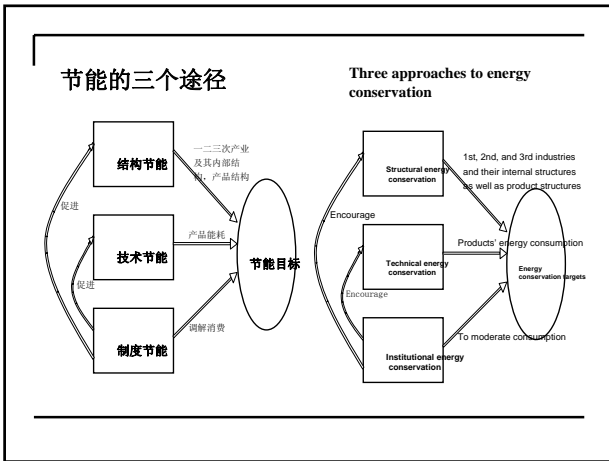
Three sources: consumption modes; new investment in energy-intensive industry; and export of energy-intensive products.

★ Short- and long-term measures should be created simultaneously, with a focus on establishing a long-term mechanism

★ 长短结合，重在建立长效机制。

对象	经济手段	法律手段	行政手段
政府		有效	有效
国有企业	基本有效	有效	部分有效
非国有企业	有效	有效	效果有限
公众、消费者	有效	有效	效果有限

Objects	Economic means	Legal means	Administrative means
Governments		Effective	Effective
State-owned enterprises, etc.	Basically effective	Effective	Partially effective
Non-State-owned enterprises	Effective	Effective	Limited effect
Publics and consumers	Effective	Effective	Limited effect



Possibilities for achieving energy conservation targets for high, middle and low economy growth scenarios

	GDP 9.5%	8.5%	7.5%
GDP	9.5%	8.5%	7.5%
产业结构	10.0:46.8:43.2	10.4:46.8:43.8	10.7:45.0:44.3
一二三	2004年为11.9:48.0:40.1	1st: 2nd: 3rd 11.9:48.0:40.1 (in 2004)	
在考虑结构变化以及技术进步	11.6% 13.3% 15.9%	Energy conservation after consideration of structure change and weak technical progress	11.6% 13.3% 15.9%

如不采取进一步的节能措施根本无法实现节能目标。

GDP增速对实现节能目标有着决定性作用。结构节能是实现节能目标的关键。结构节能对实现节能目标的贡献率为60-70%，技术节能的贡献约30-40%。

加快技术进步和提高能源价格是实现节能目标的关键性措施。

It is totally impossible to accomplish the energy conservation targets without further energy conservation measures. GDP growth rate has a decisive role in the realization of energy conservation targets. Structural energy conservation is the key to achieving energy conservation targets. Structural energy conservation will have a contribution rate of 60-70% for realizing energy conservation targets, and technical energy conservation will have about 30-40%. Quickening technical progress and raising energy prices are two critical measures for realizing energy conservation targets.

技术节能潜力大，但“十一五”期间只能部分实现

Technical energy conservation has great potential, but targets can only be partially achieved in the 11th Five-Year Plan period.

单位	2000年	2005年	目标水平
火电供电煤耗	392	370	312
吨钢可比能耗	784	714	610
电解铝交流电耗	1548	1462	1410
铜冶炼综合能耗	1277	780	500
炼油综合能耗	118	104	73
乙烯综合能耗	1125	986	629
大型合成氨综合能耗	1327	1314	1000
烧碱（隔膜法）综合能耗	1553	1503	1283
水泥综合能耗	181	153	127
平板玻璃综合能耗	25	22	17
建筑陶瓷综合能耗	10.0	9.9	6.7

抓好新增投资节能是实现技术节能的关键措施之一。

加快淘汰落后生产能力是实现技术节能同样关键。2005年,全国中小企业能源消费占工业部门的50%左右,产品单耗比大企业高30%-60%。

抓好新增投资节能、淘汰落后生产能力和实施节能改造是实现技术节能的三个途径

New investment in technical energy conservation is a key measure for achieving conservation targets. Quickly eliminating backward production capacity is also critical for achieving technical energy conservation as well. In 2005, energy consumption by SME in China accounted for about 50% of the entire industry, and energy consumption per unit product by SME was 30%-60% higher than that by large-scale enterprises.

Three approaches to technical energy conservation are: new investments in energy conservation, elimination of backward production capacity and reformation for energy conservation.

Regional energy conservation targets should be made and implemented in a scientific way.

需要科学制定和落实地区的节能目标。

各地经济发展目标和远大于国家目标,各地的能源消耗量之和也大于国家目标,值得关注。

从目前的情况看,单位GDP能耗低的地区往往是经济发达地区,考虑到地区节能目标的确定还需要与地区经济社会发展政策统筹起来,必须要建立科学的节能目标分解方法,能源统计、监察、考核体制的建立与完善是落实地区节能目标的关键。

还要进一步明确中央与地方的各自责任,中央政府要着眼解决全局性的政策问题,尽快解决目前地方政府政策手段不足的问题。

It is noteworthy that the sum of all provinces' economic development targets largely surpass the nation's targets as a whole, as well as the sum of all provinces' energy consumption.

Currently, the regions with low energy consumption per unit GDP tend to be developed regions. In view of the need to align a region's energy conservation target with its economic and social development policies, it is necessary to create a scientific method to break down energy conservation targets. The establishment and improvement of energy statistics, supervision and appraisal systems are the key to meeting regional energy conservation targets.

The individual responsibilities of the central and provincial governments should be further defined. The central government should focus on the full-scale policies, and address the deficiency of local governments' policy measures.

近期可采取的政策建议

★ 充分调动一切行政资源,加强节能管理

一是在中央政府层面,建议组建综合性能源管理机构,尽快落实国家节能中心的组建工作,落实中央政府有关部门的各自职责。

二是建立科学的监督机制和考核评价制度,将节能环保目标的落实情况作为干部政绩考核的重要内容。

三是建议将节能目标进行行业分解,制定针对性的节能政策,包括能效准入条件、产品能效标准标识、行业技术政策、落后生产能力退出等政策,四是强化节能监管,加强节能标准执行的监管,改变在建筑等领域“有标准、不执行”的现状,加强重点用能单位监管,加强能源审计队伍和审计能力建设。

五是总结节能目标地方分解工作中的经验和教训,研究比较科学的指标分解方法,为今后此项工作的完善奠定基础。

Suggestions that can be adopted in the near future

★ To mobilize administrative resources to strengthen energy conservation management.

• First, we recommend that the central government create a comprehensive energy management agency to carry out the establishment of a national energy conservation center.

• Second, we recommend the formation of scientific supervision mechanisms and evaluation systems, so government officials are evaluated based on their achievement of conservation goals.

• Third, we recommend disaggregating energy conservation targets for different industries. Then specific energy conservation policy should be made targeting the issues in each industry.

• Fourth, regulation of energy conservation should be improved. In addition, energy audit teams and their capabilities should be strengthened.

• And fifth, to summarize lessons in disaggregating energy conservation targets into local governments to lay a solid foundation for future improvement of this task.

★ 建立有效的财税激励政策

一是必须尽快改变当前节能投资规模以及在能源工业投资中比例“双低”的局面,大幅增加节能投资。“十一五”时期节能总投资需求为1万亿元左右,节能投资占能源工业总投资的比例可达15%左右。

二是实施所得税优惠政策。

三是扩大消费税征收范围。

四是尽快开征燃油税。

五是深化资源税改革。

六是研究开征能源税。

七是完善出口退税和关税政策。

★ To make an effective fiscal and tax incentive policy

• First, it is urgent to significantly increase investments in energy conservation. Total energy conservation investment in the 11th Five-Year Plan period will be about 1 trillion yuan, and energy conservation investment's proportion in total energy industry investment will reach up to 15%.

• Second, to enforce income tax preferential policies for income tax.

• Third, to enlarge the levying scope of consumption tax.

• Fourth, to levy the fuel tax as soon as possible.

• Fifth, to deepen the reform of resource tax.

• Sixth, to study the feasibility of levying energy tax.

• And seventh, to improve policies on export tax rebate and tariff policies.

★ 加快推进能源价格形成机制改革

★ To push forward the reform of energy price formation mechanism

	上游	中游	下游
电力	发电	输电、配电	售电
	市场主导定价	政府调控	市场主导定价
煤炭	勘探、开采	运输	批发零售
	市场主导定价	市场主导定价	市场主导定价
石油	勘探、开采	成品油	批发零售
	市场主导定价	市场主导定价	市场主导定价
天然气	勘探、开采	管道运输	批发零售
	市场主导定价	政府调控	市场主导定价
	Upstream	Mid-stream	Downstream
Electricity	Power Generation	Transmission and distribution	Sales
	Market-led pricing	Governmental modulation	Market-led pricing
Coal	Survey and exploitation	Transportation	Wholesales and retails
	Market-led pricing	Market-led pricing	Market-led pricing
Oil	Survey and exploitation	Finished oil	Wholesales and retails
	Market-led pricing	Market-led pricing	Market-led pricing
Natural gas	Survey and exploitation	Pipeline transportation	Wholesales and retails
	Market-led pricing	Governmental modulation	Market-led pricing

★ 建立能效准入制度和落后产能退出机制

★ To create the energy-efficiency entry approval system and the backward production capacity exit mechanism

投资准入:针对能源密集型产业制定能效准入条件,大幅度提高这些行业的能效准入标准,建立起能效、环保、安全三个要求的新类型的市场准入制度。

产品准入:显著改善产品的能效标准标识制度。如果在“十一五”时期新增16项终端用能产品能效标准以及修订6项标准,将实现节能量超过2000万吨标准煤。

建立落后产能的退出机制。其一是通过财政等手段建立落后产能的退出援助机制。其二是更多利用经济手段,通过提高能源产品价格,使得落后产能不仅能效水平落后,而且经济利益也落后,避免出现以往“淘汰、复燃,再淘汰,再复燃”循环往复的不良局面。还可引入在发达国家较多采用的诸如发电权交易等市场化手段,通过市场解决落后产能淘汰后的出路。

• Investment entry approval: Energy-efficiency entry approval conditions should be specified and raised for energy-intensive industries, to form a new market entry approval system based on energy-efficiency, environmental protection, and security.

• Product entry approval: To significantly improve a product energy-efficiency identification system for high energy consumption products. During the 11th Five-Year Plan period, if 16 energy-efficiency standards for energy-using products are created and 6 ones are revised, energy conservation will be equivalent to more than 20 million tons of standard coal.

To create a backward production capacity's exit mechanism. First, fiscal measures should be used to build an assistance mechanism for backward production capacity's exit. And second, more economic measures should be applied. By raising energy products' prices, we can make the backward production capacity backward not only in terms of energy efficiency, but also in economic benefits. When the production capacity that is backward in all aspects is eliminated by the market, the previous unfavorable circle of "elimination, re-emergence, re-elimination, and re-emergence again" can be avoided. Such market means as generation rights trade often adopted in the developed countries can also be introduced to address, via market, the post-elimination development of backward production capacity.

★ 加强环境监督，实现节能与环保双赢

重要指标的敏感性分析

指标	敏感性分析	SO ₂ 万吨	COD万吨
GDP	平均增长率增加1%	77.1	67.5
单位GDP能耗	少实现1%	20.7	-

★ To strengthen environmental supervision for win-win of energy conservation and environmental protection

Sensitivity Analysis of Important Indicator

Indicator	Sensitivity Analysis	SO ₂ (10000 tons)	COD (10000 tons)
GDP	1% increase in average growth rate	77.1	67.5
Energy Consumption per Unit GDP	1% less in realization	20.7	-

一是要改变当前环境监督被动、后置（主要在末端治理）的状况，在源头强化环境监督，真正将环境保护作用经济发展的内生决策变量。

二是加强过程监督，形成政府监督、公众参与、企业负责的多层次环境保护体系，完善、严格排污收费，加大对环境违法的惩罚力度，明显增大违法成本。

三是在总结经验的基础上，强化环境保护垂直管理的力度，避免地方保护主义干扰环境监督工作。

四是研究建立排污交易制度，以最小化的经济成本获得最大化的环境效益。

五是增加环境保护投入，加强环保队伍和能力建设。

• First, in order to change the current passive environmental enforcement, it is necessary to strengthen environmental supervision to truly make environmental protection the endogenous decision-making variable of economic development.

• Second, to strengthen supervision China must form a multi-layer environmental protection system with government's regulation, public's participation and enterprise's commitment, in order to regulate sewage discharge, to punish environmental offences, and to increase the costs of violation.

• Third, to strengthen vertical management of environmental protection.

• Fourth, to research and build emission-trading system to maximize environmental benefits and minimize economic costs.

• And fifth, to increase investment in environmental protection, and to strengthen environment protecting teams and their capabilities.

谢谢! Thanks!