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The Energy Policy Act of 2005

2005 年能源政策法令



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China Sustainable Energy Program –
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中国可持续能源项目
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BOSTON DALLAS DENVER LOS ANGELES MENLO PARK MONTREAL NEW YORK SAN FRANCISCO WASHINGTON

Overview

概要

- Key factors in U.S. energy politics/policy
 - What's in the Energy Policy Act of 2005?
 - What's not in it?
 - Does it position us for 21st Century needs?
- 美国能源政治/政策的要素
 - 《2005 年能源政策法令》包含哪些内容?
 - 《2005 年能源政策法令》未包含哪些内容?
 - 《2005 年能源政策法令》能否满足 21 世纪的需求?





Key Factors in U.S. Energy Politics and Policy

美国能源政治和政策的要素

U.S. Energy Policy: A patchwork quilt

美国能源政策：综合集成

Energy “policy” is made by countless decision makers:

- **In Washington, in the 50 states**
- **In large and small companies**
- **By consumers**
- **Other forces (for example, the economy, OPEC, China, the weather, technology)**

Energy policies often reflects:

- **Short-term conditions and politics**
- **Geopolitics of energy resources in U.S. (producer versus consumer regions)**

能源“政策”是由无数决策者共同制订的，他们分别来自于：

- 华盛顿和 **50** 个州
- 大型和小型企业
- 消费者
- 其他力量（例如：经济、**OPEC**、中国、气候、技术）

能源政策通常可以反映：

- 短期条件和政治资源
- 美国的能源地缘政治（生产商与消费者所在的地区）



Globalization and market realities 全球化与市场现实状况

U.S. energy policy reflects the realities of:

美国能源政策可以反映以下现实情况:

- **Energy prices set in international markets**

能源价格由国际市场确定

- **Pressure from growing demand in other countries**

其他国家/地区需求不断增加产生的压力

- **Supplies concentrated in particular regions**

供应集中在某些地区

- **Energy impacts cross national boundaries**

能源影响超出国界范围

Oil 石油

Gas (LNG) 天然气

Coal 煤炭

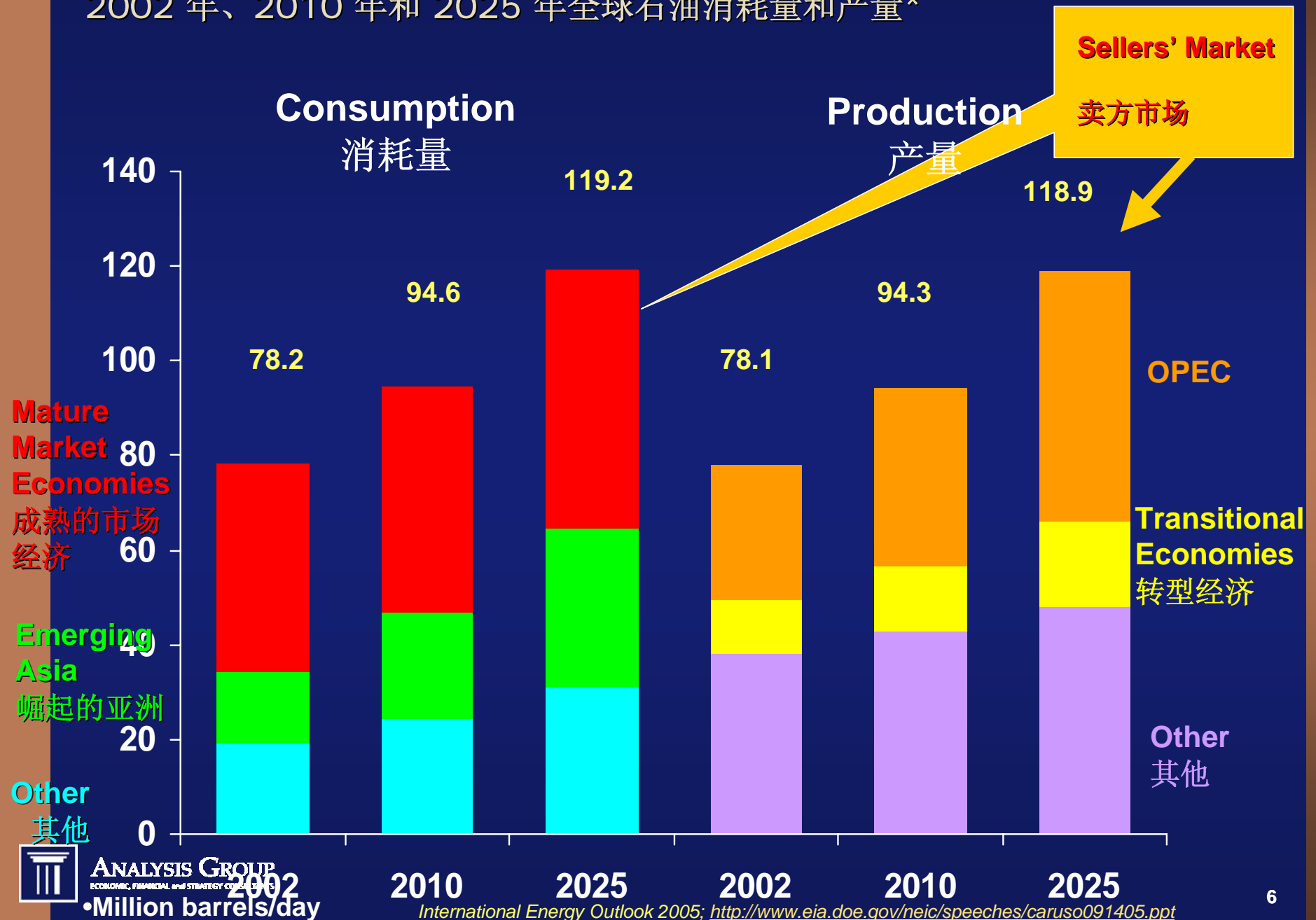
CO₂ 二氧化碳

NO_x 氮氧化物

SO₂ 二氧化硫



World Oil Consumption and Production*, 2002, 2010, and 2025 2002 年、2010 年和 2025 年全球石油消耗量和产量*



Imported Crude Oil Prices: Nominal, Real 进口原油价格：现时价格与不变价格

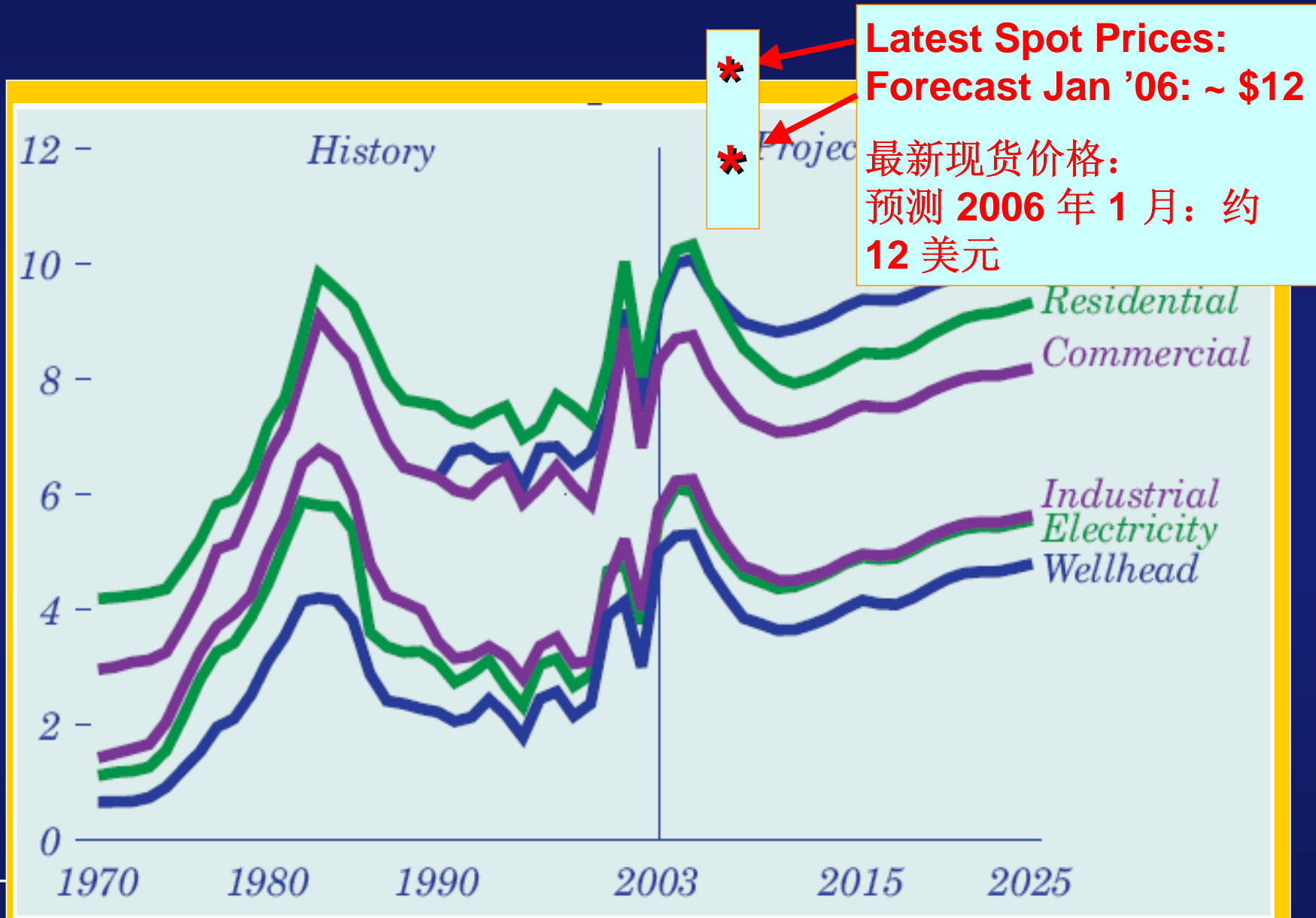


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EIA, Short-Term Energy Outlook, September 2005

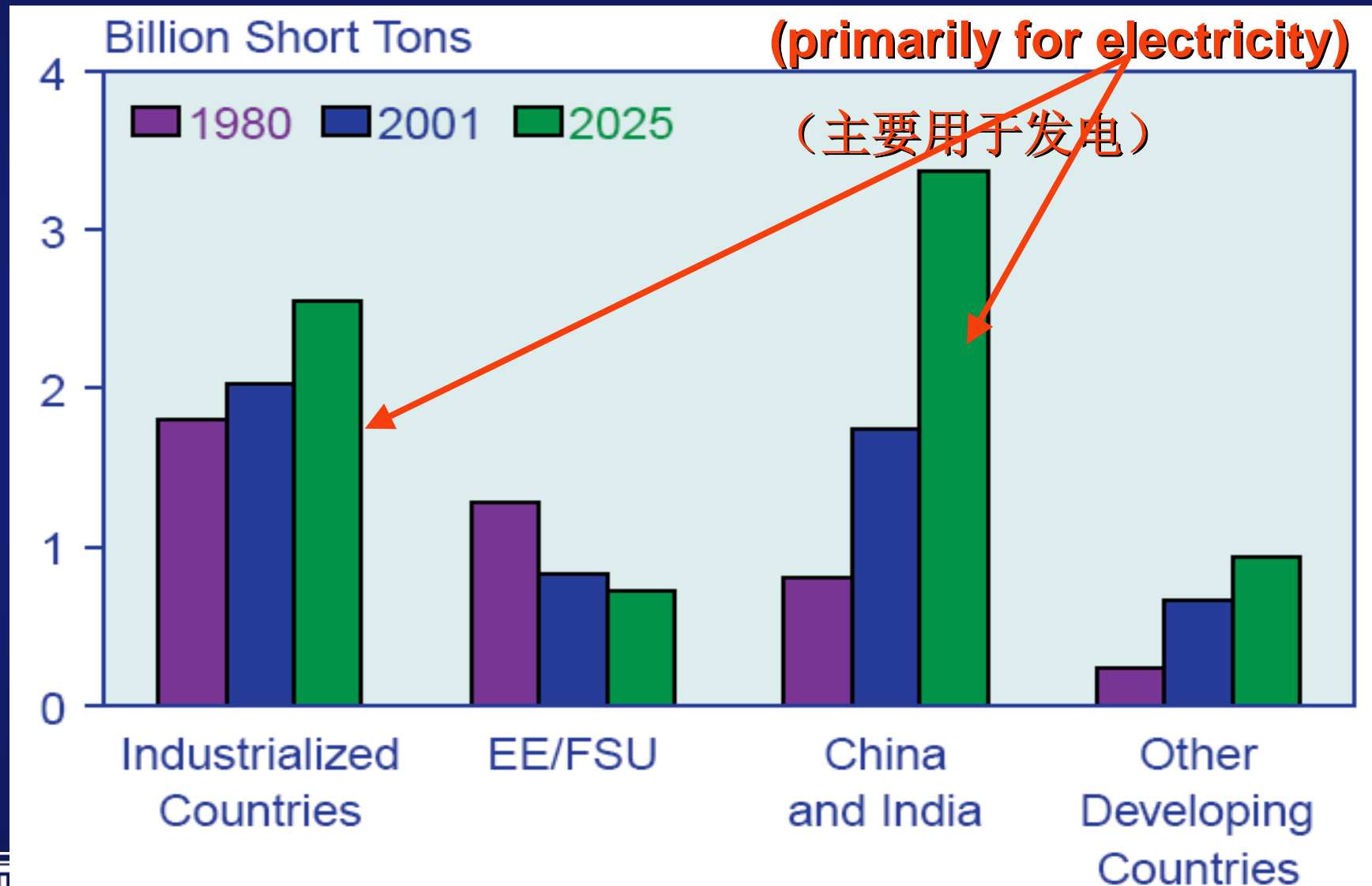
EIA, Short-Term Energy Outlook, 2005 年 9 月

Rising Natural Gas Demand (for Power); Gas Prices Roaring Upward
天然气需求不断增加（用于发电）；天然气价格激增



Growing coal use expected worldwide

全球煤炭使用量增长情况预测



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CO2 Emissions by Country: Total emissions since 1950

世界各国二氧化碳排放量：1950 年至今的总排放量



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Graphic from: Michael Glantz, "What Makes Good Climates Go Bad? ... and ... "Why Care?" USAEE/IAEE Meeting, 9-19-05.

•Billions of tons of carbon dioxide emissions

图片来源: Michael Glantz, "What Makes Good Climates Go Bad? ... and ... "Why Care?" USAEE/IAEE Meeting, 9-19-05.

Supply – demand balance:

供需平衡:

Oil:

- Huge demand pressure (e.g., U.S., China, India)
- Incremental production and reserves: **OPEC**
- Refining: extremely tight capacity in U.S.

Gas:

- N. American demand pressure (to produce power)
- Declining N. American production
- Improving economics of LNG

Coal:

- Largest domestic fuel resource
- Rising demand, rising costs
- Significant environmental impacts (CO₂)

石油:

- 巨大的需求压力（例如：美国、中国、印度）
- 增加的产量与储量: **OPEC**
- 炼油：美国炼油能力吃紧

天然气:

- 北美需求压力（发电）
- 北美产量不断下降
- **LNG** 的经济价值不断提高

煤炭:

- 最大的国内燃料资源
- 需求量与成本不断增加
- 严重影响环境（二氧化碳）





Energy Policy Act of '05: What's in It

2005 年能源政策法令： 包含哪些内容

Energy Policy Act – Overview

能源政策法令 – 概要

- **An economic stimulus package for energy**
- **Congressional passage in July 2005**
- **Signed by President Bush in August 2005**
- **1st comprehensive energy Act in 13 years**
- **Complex law: 1725 pages**
- **\$14.6 billion – U.S. budget estimate**
- **Support from “producer” states; less support from “consumer” states**
- **Enacted one month before Hurricane Katrina**
- **一整套能源经济刺激方案**
- **2005 年 1 月由国会通过**
- **2005 年 8 月由布什总统签署**
- **13 年以来美国出台的第一个综合性能源法令**
- **该法令面面俱到：1725 页**
- **146 亿美元 – 美国预算估计**
- **获得能源“产出州”的广泛支持；而能源“消耗州”的支持率非常低**
- **在卡特里娜飓风发生前的一个月颁布**



The Energy Policy Act:
Tax code provisions
能源政策法令:
税法条例

\$14.6 billion

146 亿美元

Gas pipelines 天然气管道

Electric transmission lines 输电线路

Geological exploration/drilling 地质勘探/开采

Refinery investments 炼油厂投资

**Changes depreciation,
amortization**

变更折旧、分期偿还

Advanced nuclear power plants 先进的核电站

Renewable power plants 可再生发电厂

Efficient appliance manufacturers 节能型设备制造商

Bio-diesel, ethanol producers

生化柴油、乙醇生产商

**Tax credits for
investments & production**

投资与生产减税优惠

Clean coal power plants 环保型燃煤发电厂

Efficient appliances 节能型家用电器

Fuel cells, micro-turbines 燃料电池、微型燃气轮机

Purchases of hybrids 购买混合型动力汽车

Tax credits for purchase

购买减税优惠



The Energy Policy Act – An Energy Stimulus Package

能源政策法令– 一整套能源刺激方案

■ Incentives for investment:

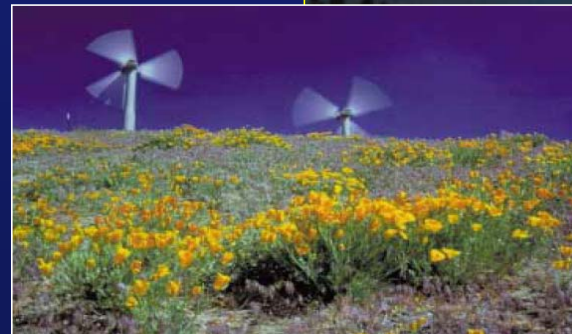
■ Risk mitigation, e.g.,

- Nuclear accident liability insurance
- Insurance to cover permitting/ delays for first 6 new nuclear plants
- Loan guarantees for “clean”
- “innovative technologies” (IGCC, nuclear, wind, biomass)
- Budget authority for energy R&D

■ 刺激投资:

■ 降低风险, 例如:

- 核事故责任险
- 为前六个新建核电站的审批和延期提供保险
- “清洁”项目贷款担保
- “创新技术” (IGCC、核能、风能、生物能)
- 能源研发预算授权



The Energy Policy Act: Reduced barriers to resource development

能源政策法令：减少资源开发障碍

- Lack of information: Oil/gas in 200 mile off shore waters
- Permitting issues:
 - Streamlining permitting for drilling on federal lands
 - Clarifying federal jurisdiction (e.g., LNG approvals)
 - Priority “critical national” energy facilities and corridors
- Lower fees: reduced royalties for drilling on U.S. land
- 缺乏信息: 石油/天然气储藏在 200 英里之外的近海水域
- 审批问题:
 - 简化在联邦政府的土地上进行开采的审批程序
 - 明确联邦权限（例如：**LNG** 审批）
 - “关键的国家级”能源设施和能源走廊优先考虑
- 降低费用: 降低在美国国土上进行开采的矿区使用费



The Energy Policy Act: Purchase requirements and standards

能源政策法令：购买规定和标准

- Renewable motor vehicle fuel
 - RPS (biofuels) – 7.5 billion gallons/year by 2012
- Federal agency renewable electric standard
 - RPS (wind, biomass, solar)
- Appliance efficiency standards
 - (15 appliances)
- 可再生机动车燃料
 - RPS配额制（生化燃料）– 截至2012 年为 75 亿加仑/年
- 联邦署可再生电能标准
 - RPS（风能、生物能、太阳能）
- 设备节能标准
 - （15 种设备）



The Energy Policy Act: Electric supply provisions

能源政策法令：供电条例

- **New Electric Reliability Organization**
- **New “national interest transmission corridors”**
- **Requires new incentives for transmission investment**
- 新的电力可靠性组织
- 新的“国家利益输电走廊”
- 需要新的刺激措施鼓励对输电进行投资





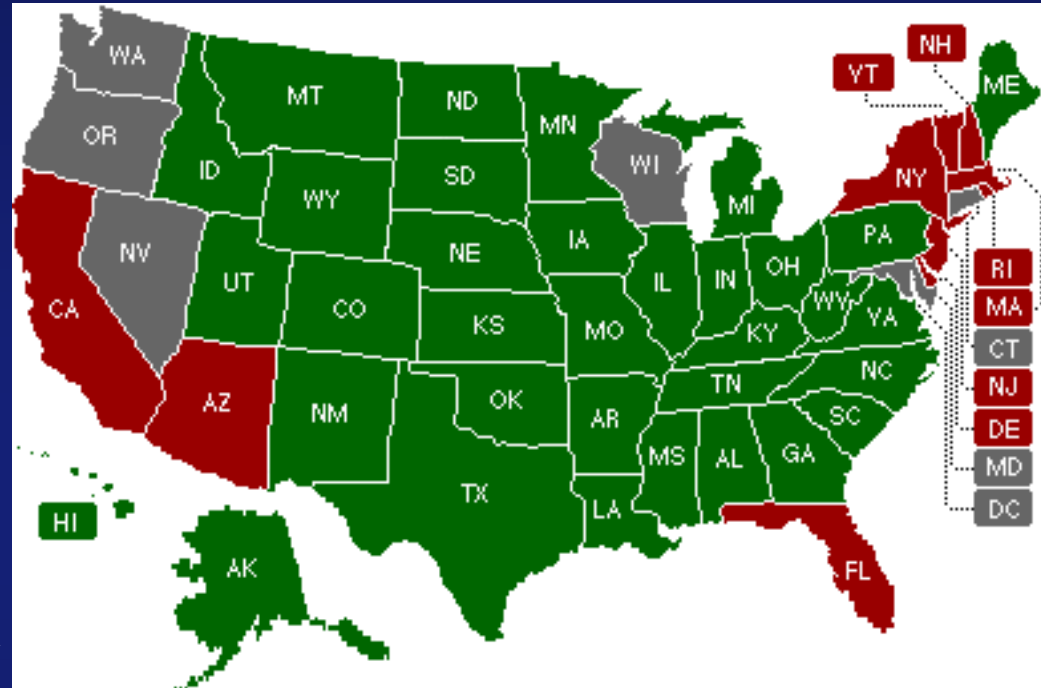
The Energy Policy Act :
Does it get us where we
need to go?

能源政策法令：
能否实现我们的目标？

Energy Policy Act – observations

能源政策法令 – 评论

- Congress gave President Bush the law he wanted
- The bill has elements for producers and consumers
- “Clean energy” provisions depend upon future annual national budgets – making them relatively fragile
- 国会同意布什总统签署该法案
- 该法案中有关于生产商与消费者的规定
- “清洁型能源”条例取决于今后的国家年度预算 — 使得这些条例的约束力相对较弱



= Majority of state's delegation voted AGAINST

该州大多数代表投反对票

= Majority of state's delegation voted FOR

该州大多数代表投赞成票

= Split delegation (equally # voted FOR and AGAINST)

投反对票和投赞成票的代表相等（反对票与赞成票票数相同）

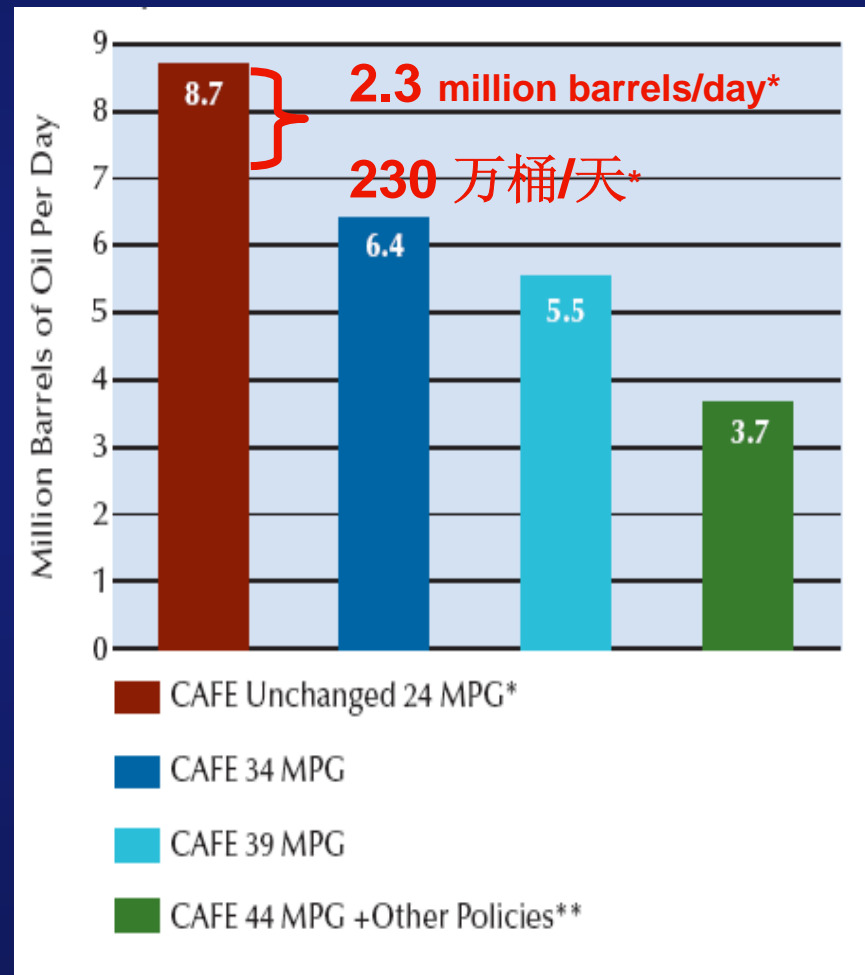


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What's not in the new law? – 1

新法案中未包含哪些内容? - 1

- Inadequate reduction of oil use in cars
 - Ethanol requirement is in the law
 - But no change in CAFÉ standards (same for decades)
 - Inadequate long term support for renewable motor fuels (cellulosic biomass)
- 汽车耗油量未明显降低
 - 该法案中包含关于乙醇的规定
 - 但 **CAFÉ** 燃油经济性标准未发生任何变化（几十年一直未变）
 - 对可再生机动车燃料缺乏长期支持（纤维质生物能）



What's not in the new law? – 2

新法令中未包含哪些内容? - 2

- **No mandatory climate change control policy**
 - **But the Senate adopted the following resolution:**

- 没有强制性气候变化控制政策
 - 但参议院通过了以下决议:

“...before the end of the first session of the 109th Congress, Congress should enact a comprehensive and effective national program of mandatory, market-based limits on emissions of greenhouse gases that slow, stop, and reverse the growth of such emissions at a range and in a manner that - (1) will not significantly harms the United States economy; and (2) will encourage comparable action by other nations that are major trading partners and key contributors to global emissions.”

“...在 109 届国会第一次会议闭幕之前，国会应颁布一项综合性、强制性、全国性的有效计划，以根据市场情况在一定范围内降低、停止温室气体排放增长速度，甚至温室气体排放呈负增长，但前提条件是：(1) 不会严重影响美国经济；并 (2) 鼓励其他主要贸易国以及温室气体排放大国采取有力的措施。”



Votes on the Senate Resolution 对参议院决议的投票情况

Supporting: 53

支持: 53 票



“clean
power
states”

“清洁型
发电州”



Coal
regions

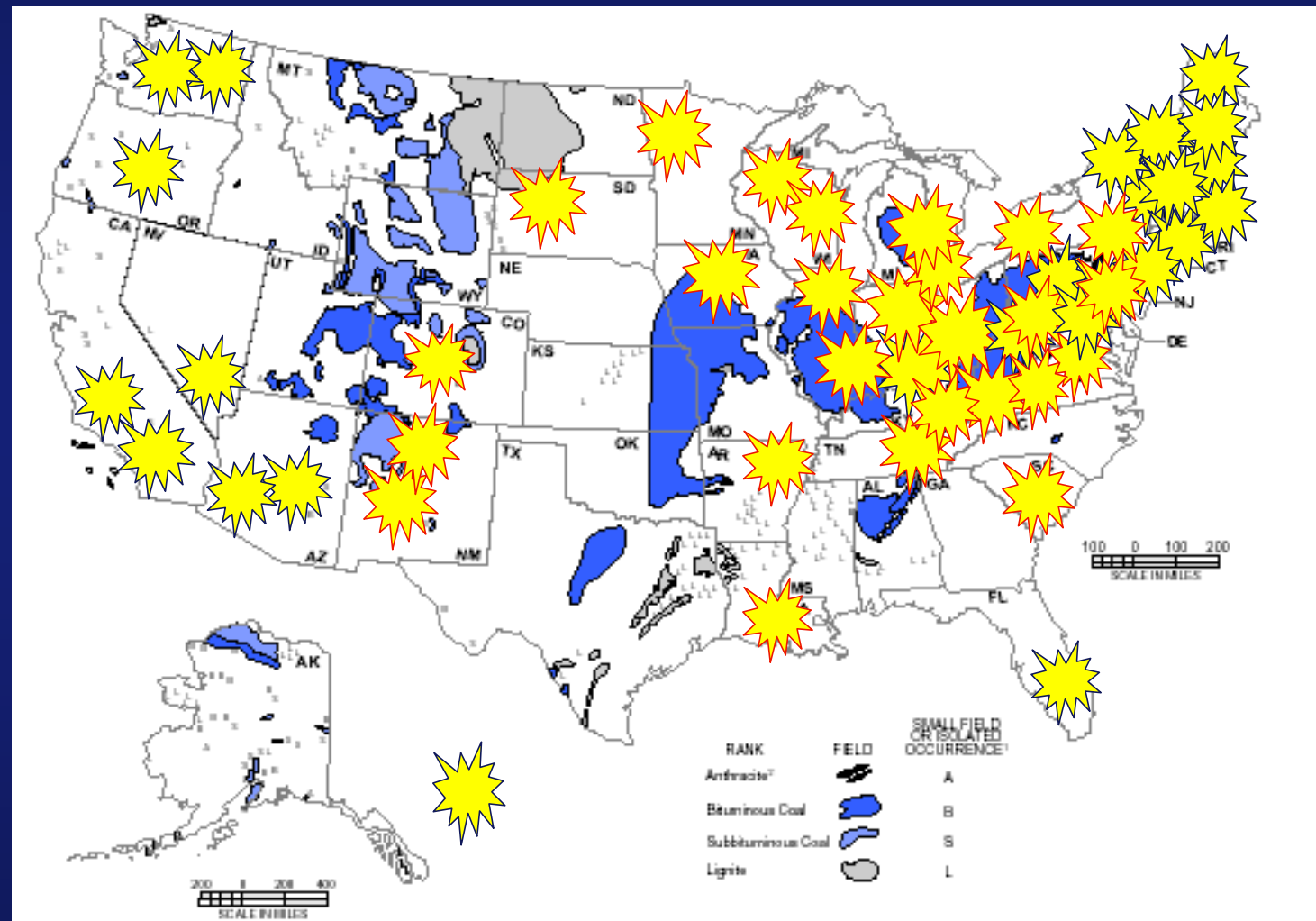
产煤区

Opposing: 44

反对: 44 票

Not voting: 3

弃权: 3 票



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US Coal Reserves, 1997 Update, 1999

Update, 1999

Lessons from the Act

该法令的意义

- Act has incentives for diverse types of investment in energy technologies and developments:
 - Tax credits, tax accounting changes
 - Loan guarantees, other risk insurance
 - Government grants
 - Expect additional oil and gas supplies in long run
 - Expect more infrastructure investment
- 该法案可刺激对能源技术和开发进行多渠道投资：
 - 减税优惠、税务会计变更
 - 贷款担保、其他风险保险
 - 政府补助
 - 预期在较长的一段时间内会有其他石油与天然气供应渠道
 - 预期会进行更多基础设施投资



Lessons from the Act

该法令的意义

- U.S. finds it easier to use carrots than sticks
 - Need to better control oil use in motor vehicles
 - Need to control greenhouse gas emissions
- Technological opportunity for clean energy technologies, but it depends upon:
 - Tough decisions in annual Congressional budgets
 - Follow-through by agencies
- Post-Katrina: reveals gaps in the Act
 - Consumers' buying smaller vehicles, driving less; U.S. manufacturers feeling the pinch
 - Growing interest in climate change
- 美国会发现胡萝卜政策比大棒政策更容易实施
 - 需要更好地控制机动车的耗油量
 - 需要控制温室气体排放
- 为清洁型能源技术提供了机会，但取决于以下条件：
 - 国会年度预算中的艰难决策
 - 各部门的贯彻情况
- 卡特里娜飓风发生之后：反映了该法令的差距
 - 消费者购买的车辆越来越小，驾驶次数越来越少；美国制造商越来越感受到压力
 - 对气候变化更加关注

