



California Energy Commission 加州能源委员会

Collaborating with China to Advance Clean Energy & Address Climate Change
与中国加强在清洁能源和气候变化上的合作

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2014年12月6日-13日



California Energy Commission *Responsibilities*

加州能源委员会 职责范围

The Energy Commission is state's primary energy policy and planning agency. The agency was established by the Warren-Alquist Act in 1974. The agency has seven core responsibilities:

- Developing State Energy Policy
- Achieving Energy Efficiency
- Certifying Thermal Power Plants
- Investing in Energy Innovation
- Transforming Transportation
- Developing Renewable Energy
- Preparing for Energy Emergencies

能源委员会是加州主要的能源政策是规划机构。该机构于1974年通过Warren-Alquist法案成立，有7项主要职责：

- 制定州能源政策
- 达成能效目标
- 认证火电厂
- 能源创新投资
- 转型交通
- 发展可再生能源
- 应对能源紧急情况





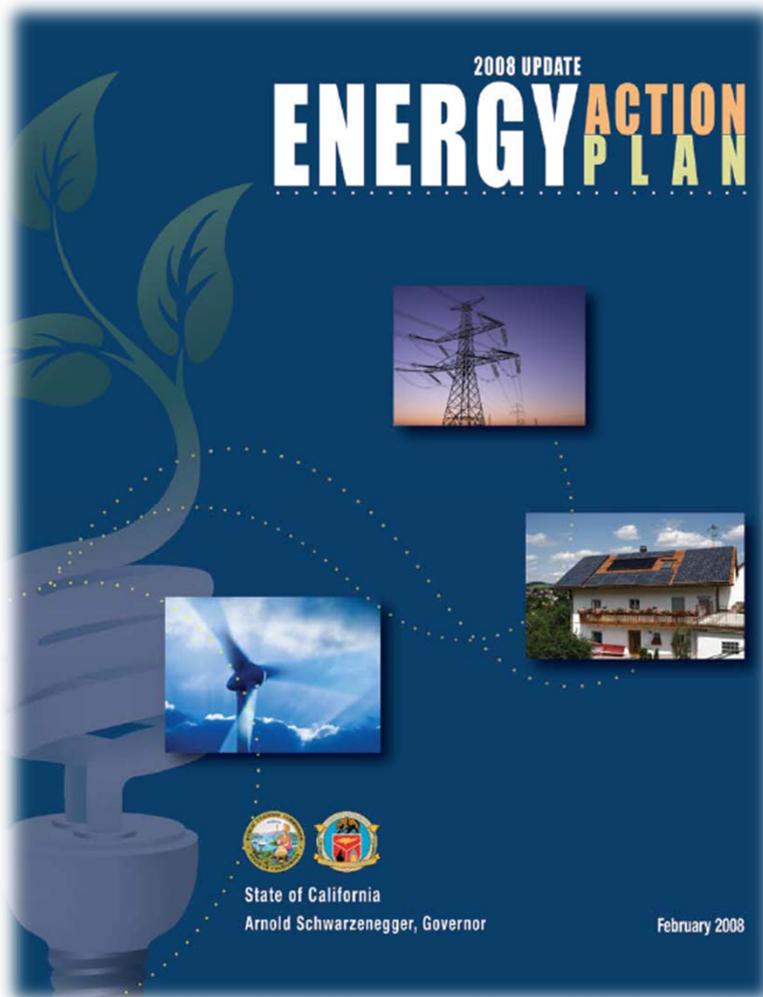
Overview of California's Electricity Generation Policies & Resources

加州发电政策与资源概况



California's Energy Policy *Loading Order*

加州能源政策 负荷加载顺序



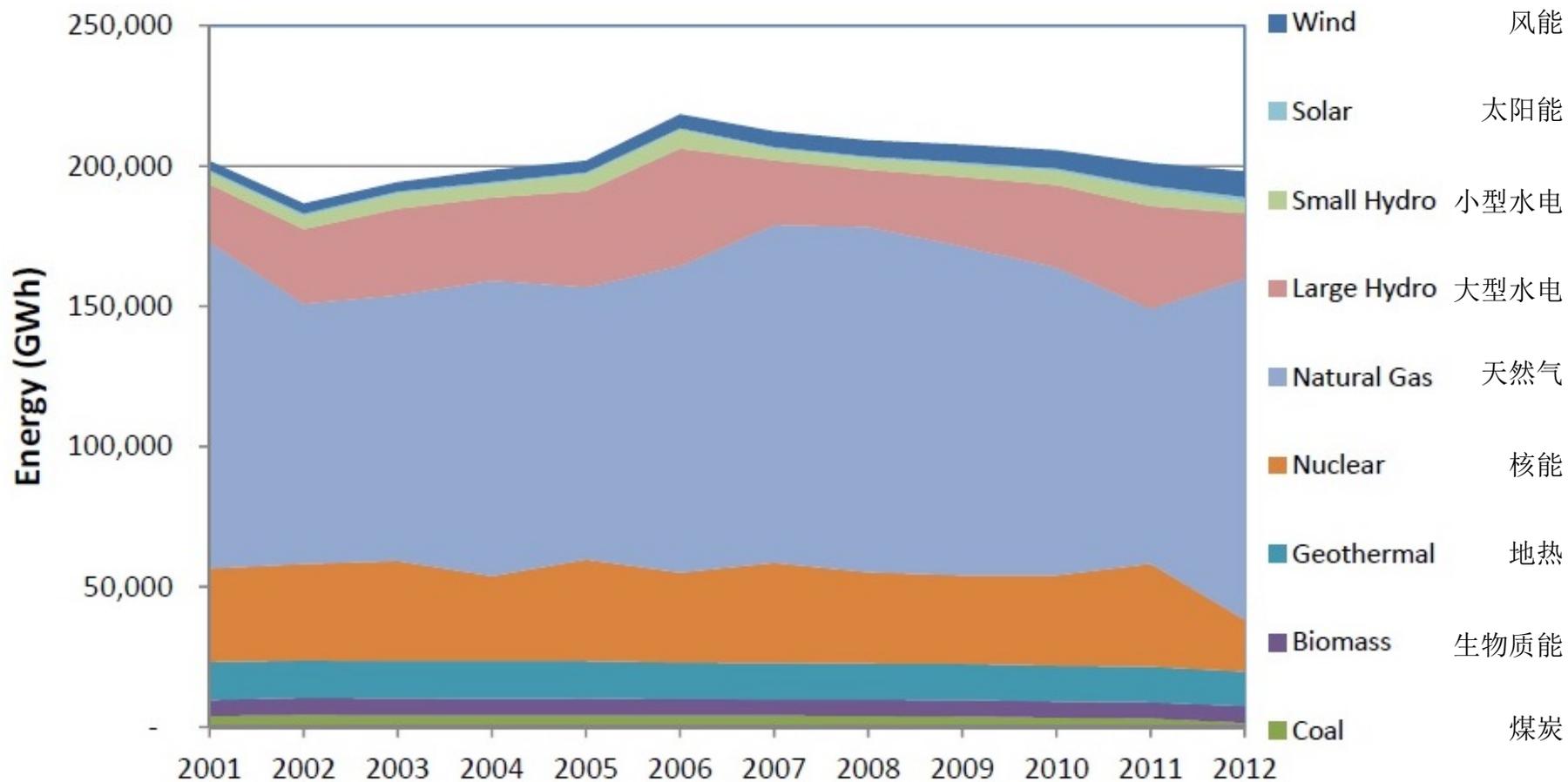
1. Energy efficiency & Demand Response
 2. Renewable Energy & Distributed Generation
 3. Clean fossil-fueled sources & infrastructure improvements
-
1. 能效与需求响应
 2. 可再生能源与分布式发电
 3. 清洁化石燃料与基建改善



In-State Electric Generation by Fuel Type

(Power Plants ≥ 1 MW)

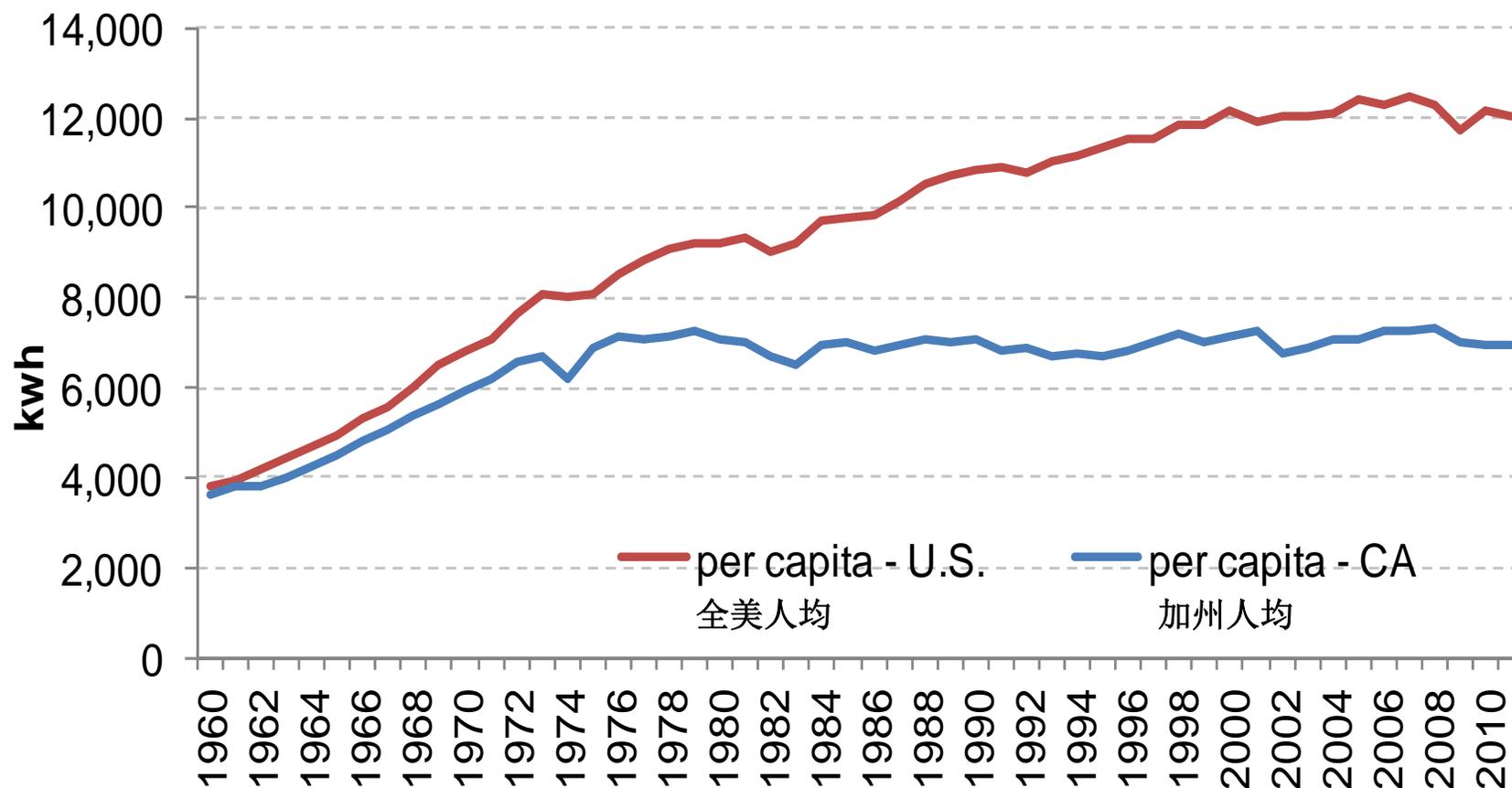
加州发电量构成 (装机容量1MW或以上电厂)



Source: CEC-1304 Power Plant Data Reporting



U.S. vs. CA – Per Capita Electricity Consumption (Excluding Distributed Generation) 全美与加州人均电力消耗 (不包括分布式发电)

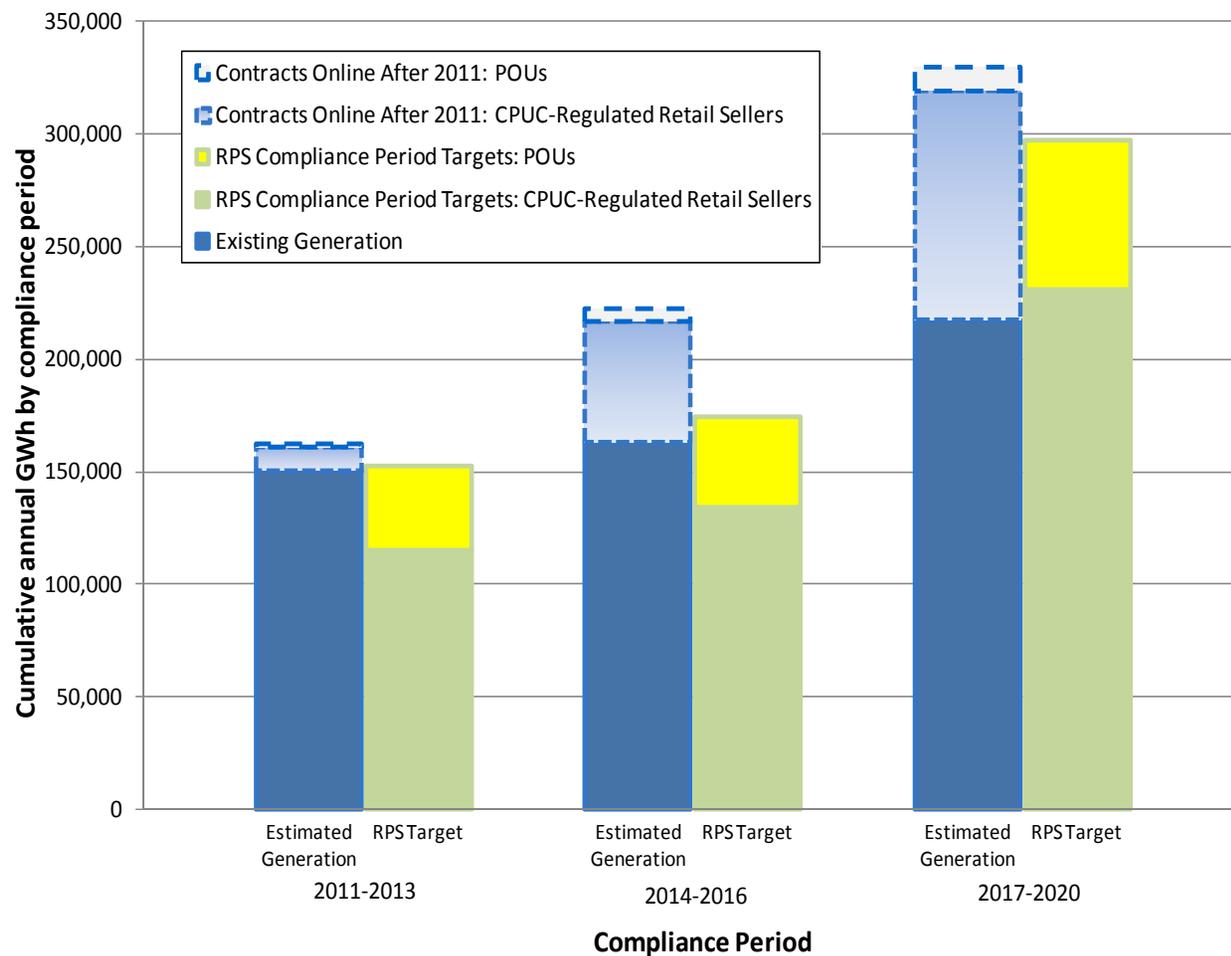


Source: Based on U.S. Energy Information Administration, Population U.S. Sensus Bureau (Sources [1]-[9]), as modified by California Energy Commission, Demand Analysis Staff in February 2013.



California's Renewable Generation Renewable Portfolio Standard (RPS) Goals

加州可再生能源发电 可再生能源组合标准目标



Source: California Energy Commission Total System Power (accessed January 24, 2013) and estimate of forecasted RPS procurement using Energy Commission POU contract database (updated November 2011), CPUC RPS Project Status (January, 24, 2013), and CPUC RPS Compliance Filings March 1, 2012 (accessed March 1, 2013).



California's Climate-Energy Nexus

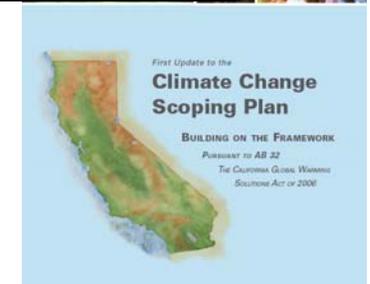
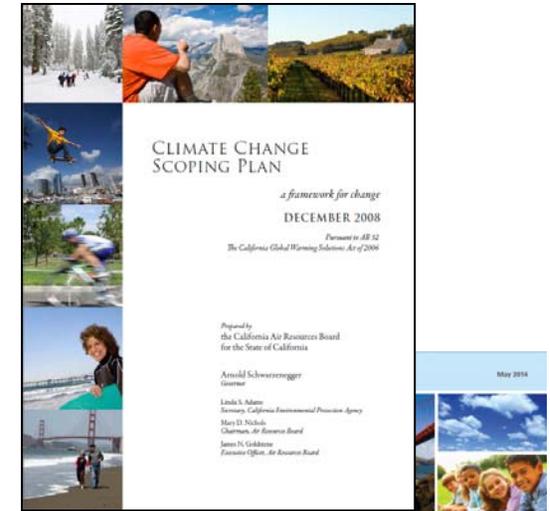
加州气候-能源关联



Assembly Bill 32: *The California Global Warming Solutions Act of 2006*

议会法案 32：2006年加州全球变暖应对法案

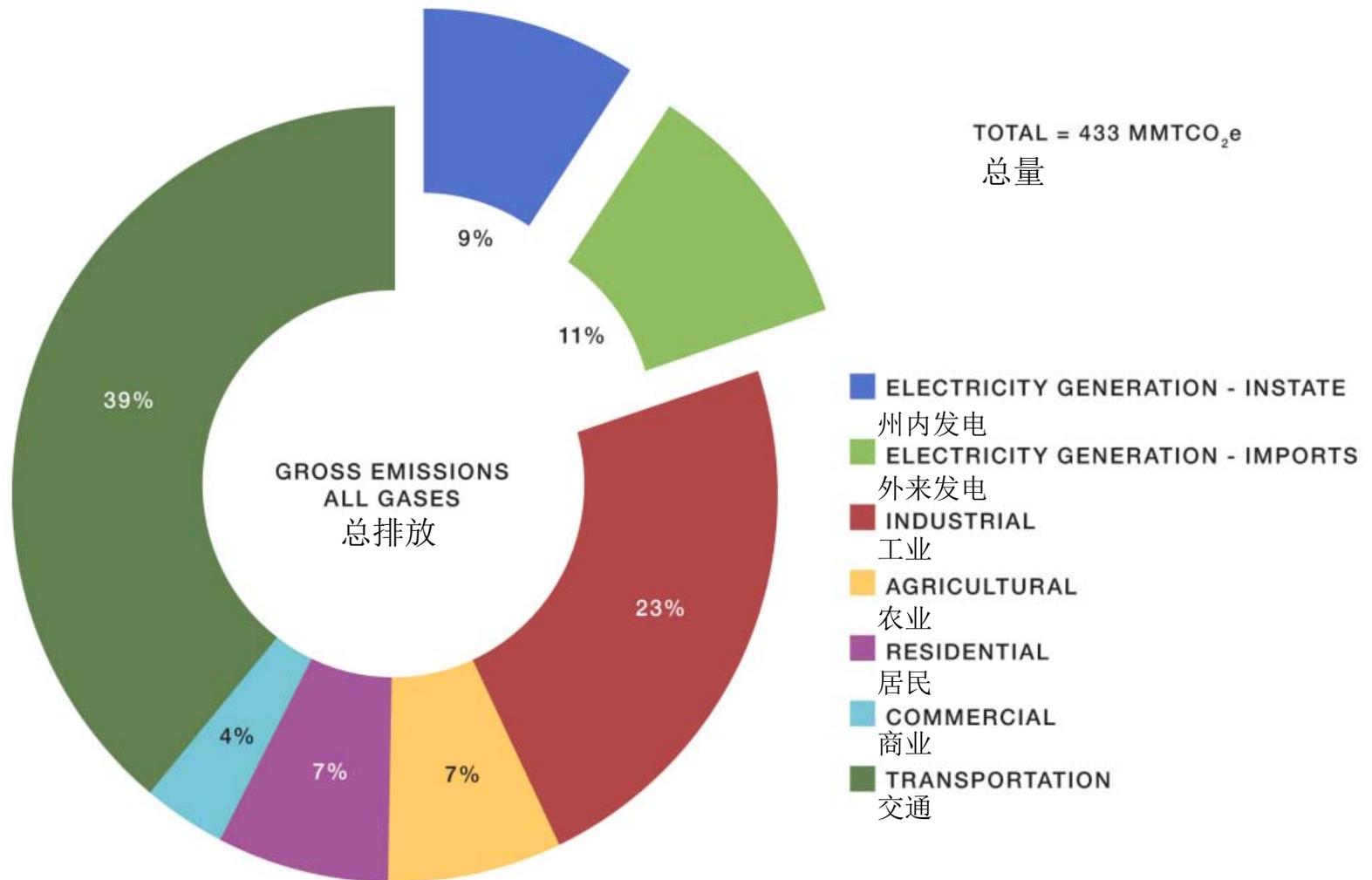
- AB 32 (2006) - landmark legislation requiring California to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020
- AB 32 directed the California Air Resources Board (ARB) to establish a comprehensive program of regulatory/market mechanisms to achieve real, quantifiable, cost-effective reductions of GHG. (Cap & Trade)
- In December 2008, ARB adopted the "Scoping Plan" -- California's policy blueprint containing the broad overview of programs, measures, and approaches to achieve the required GHG emission reductions.
- 议会法案32（2006）——要求加州于2020年将温室气体排放降至1990年水平的标志性立法
- 议会法案32引导加州空气资源委员会（ARB）制定了一个监管/市场机制综合性项目以达成实际的、可量化的、高成本效益的温室气体减排（总量控制和交易机制）。
- 2008年12月，加州空气资源委员会采纳了“气候变化领域规划”——该规划涵盖了项目、措施和手段的全面概述，成为了加州温室气体减排的政策蓝图。





California's 2011 Greenhouse Gas (GHG) Emissions *By Sector*

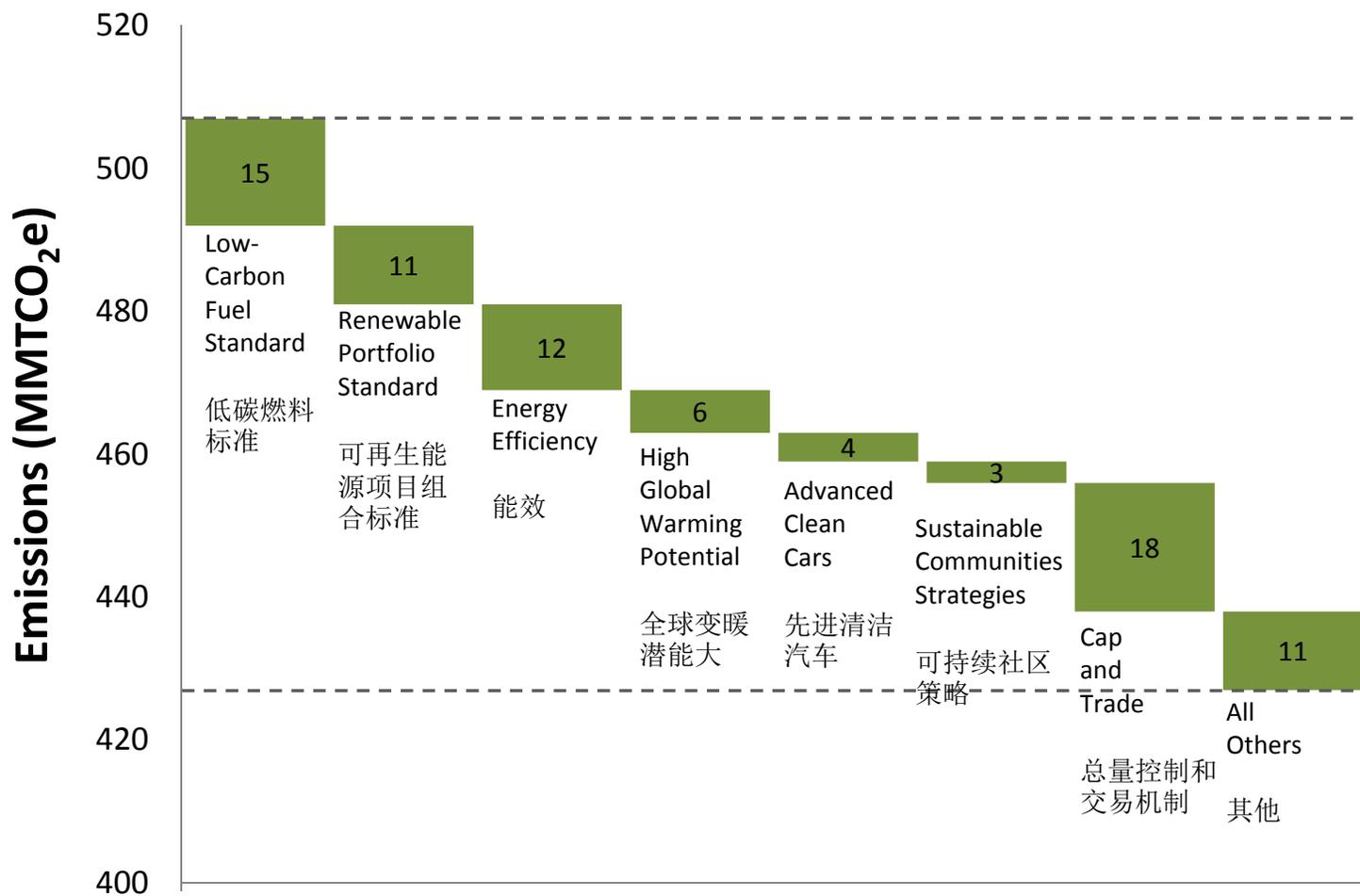
加州2011年温室气体部门排放情况





Policy Actions to Reduce GH Emissions

降低温室气体排放的政策措施





Collaboration with China

与中方合作



Sharing Best Practices 分享最佳实践

- *Exchanging clean energy policy development & implementation best practices:*
 - Hosted 16 Chinese Delegations since Trade Mission to China in April 2013 from varying levels of the Chinese government, energy research centers, electric utilities, renewable energy developers, investment firms and energy product manufacturers
 - Areas of Discussion:
 - Renewable energy policies, goals, programs and development opportunities
 - Building and appliance energy efficiency standards
 - Designing and implementing effective energy efficiency programs
 - Energy research and development initiatives
 - Alternative fuels production
 - Energy storage demonstration projects
 - Met w/China National Reform & Development Commission in February 2014 to follow-up on MOU signed by Governor Edmund Brown
- *交流清洁能源政策发展与实施的最佳实践:*
 - 自2013年4月贸易团出访中国以来，已经接待了16个中国代表团，其成员来自于各级政府、能源研究机构、电力企业、可再生能源开发商、投资公司和能源产品制造商。
 - 探讨领域
 - 可再生能源政策、目标、项目和发展机会
 - 建筑和设备能效标准
 - 行之有效的能效项目设计与实施
 - 能源研究和开发意向
 - 替代性燃料生产
 - 蓄能演示项目
 - 2014年2月与中国国家发改委会面，就加州州长签署的MOU后续事情进行会谈。





Sharing Best Practices 分享最佳实践

- *Exchanging Clean Energy Policy Development & Implementation Best Practices Cont'd:*
 - Participated in the United States-China Clean Energy Research Center – Building Energy Efficiency (CERC-BEE) annual meeting in late August 2014.
 - Engaging Lawrence Berkeley National Laboratory-China Energy Group (LBNL-CEG) on their appliance and building energy efficiency standards Chinese training programs
- *交流清洁能源政策发展与实施的最佳实践（续）：*
 - 2014年8月参加中美清洁能源联合研究中心-建筑能效(CERC-BEE)年会
 - 参与劳伦斯伯克利国家实验室中国团队(LBNL-CEG)的设备与建筑能效标准中国培训项目

热烈欢迎莅临建科大楼的各位领导和嘉宾朋友!



U.S.-CHINA CLEAN
ENERGY RESEARCH CENTER
中美清洁能源联合研究中心



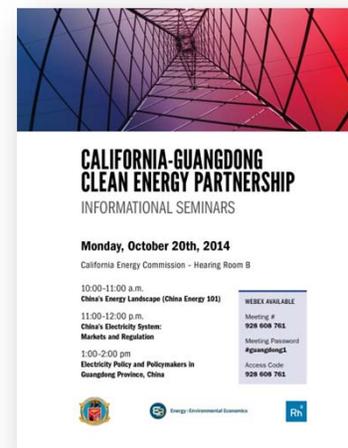
Developing Partnerships 发展合作伙伴关系

- *Supporting third party clean energy and air pollution-greenhouse gas reducing programs:*
 - The Energy Commission is working with ICLEI – Local Governments for Sustainability on their California-China Urban Climate Collaborative program.
 - Another Energy Commission partner that is facilitating the success of these activities is the Energy Foundation which continues to be a supporter of the Energy Commissions engagement with China.
 - Energy Commission is working with consultants on a *California-Guangdong Clean Energy Partnership* project, which is focused on identifying and sharing best practices, challenges and opportunities confronting both California and Guangdong's electricity sector (i.e. electricity system planning and operations, energy efficiency, distributed generation).



- *支持第三方清洁能源和温室气体减排项目*

- 加州能源委员会与地方环境行动国际委员会在加州-中国城市气候合作项目中合作。
- 能源基金会作为加州能源委员会的长期合作伙伴，一直在支持能源委员会与中国的合作。
- 能源委员会与专家合作参与加州-广东清洁能源合作伙伴项目，该项目旨在找出和分享加州和广东电力部门的最佳实践、挑战和机遇（即电力系统规划与运营、能效、分布式发电）。





Facilitating Opportunities 促进机遇

- *Facilitating networking and business development opportunities for California clean energy businesses:*

- Partnered with the China-US Energy Efficiency Alliance and other California state agencies to host a roundtable discussion with over 75 participants from California clean energy businesses, state and local government, and civil society interested in energy and environmental issues, and cooperation with China.
- Participating in this Trade Mission to China for US energy efficiency product manufacturers, designers, installers and consultants.
- The Energy Commission has and will continue to facilitate California clean energy business development opportunities in China with California's clean energy associations, in partnership with the California-China Trade and Investment Office.

- *为加州清洁能源企业促进关系网络搭建和商业发展机会*

- 与中美能效联盟和其他加州机构合作举办圆桌会议，邀请对能源环境问题和与中国合作感兴趣的加州清洁能源企业、州和地方政府及民间团体参加，与会者超过75人。
- 代表美国能效产品制造商、设计商、安装商和顾问参与此次贸易代表团中国之行。
- 能源委员会一直并将继续与加州清洁能源协会、加州-中国贸易与投资办公室共同努力，继续促进加州清洁能源产业在中国的发展机会。





Other California-China *Collaboration Activities* 其他加州-中国合作活动

• California Air Resources Board

- Hosted representatives from Beijing Environmental Protection Bureau (BEPB) for 3 months for in-depth training on vehicle emissions standards
- Hosted various delegations and participated in workshops in China with BEPD and the Ministry of Environmental Protection to discuss advanced air pollution control systems, policies and regulations
- Hosted 5 delegations in Sacramento and 4 webinars/video conferences with officials from the Chinese National Development and Reform Commission regarding California's Cap-and-Trade/Emissions Trading System

• California-China Trade & Investment Office

- Targeting trade and investment opportunities in the clean technology industry between California and China
 - Technologies that are less environmentally impactful and utilize less resources than conventional technologies, and reduce pollution/waste

• 加州空气资源委员会

- 接待来自北京市环保局的代表参加3个月的汽车排放标准深度培训
- 接待不同代表团，并与中国环保部和北京市环保局一同参与研讨会，讨论先进空气污染治理系统和政策法规
- 在Sacramento接待5个代表团，与国家发改委官员进行四次在线研讨/视频会议，讨论加州总量控制与交易机制项目/碳排放交易系统

• 加州-中国贸易和投资办公室

- 针对中加之间清洁技术产业贸易和投资机会
 - 与传统技术相比，对环境影响低、资源消耗低、并减少污染/废料的技术



Thank You 谢谢

Chair Robert B. Weisenmiller
California Energy Commission

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Trade Mission to China
December 6th – 13th, 2014