

THE ENERGY FOUNDATION 能源基金会

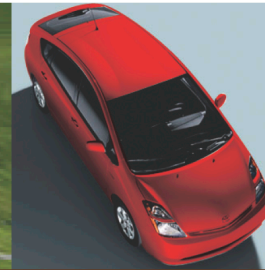
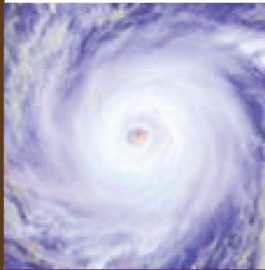
Clean technology solutions for the U.S. and China
中美清洁技术解决方案



The Energy Foundation
Toward a sustainable energy future

CALIFORNIA CLIMATE ACTION

加州应对气候变化行动



San Francisco Chronicle

California's Best Large Newspaper AS NAMED BY THE CALIFORNIA NEWSPAPER PUBLISHERS ASSOCIATION | \$1.00 ★★★★★

Cap-and-trade plan is a go

California's 'model' program ready to start on Jan. 1

By Wyatt Buchanan
CHRONICLE SACRAMENTO BUREAU

SACRAMENTO — California's plan to cap greenhouse gas

emissions and put a price on carbon is set to take effect on Jan. 1 after the Air Resources Board voted Thursday to make final adjustments in the reg-

ulation.

The state board first passed the cap-and-trade program last December. But the board, which normally allows its staff

to finalize details, took the unusual step of personally tying up the loose ends of the nation's only comprehensive limit on greenhouse gases. It is the last major regulation the board considered to meet the requirements of AB32, Califor-

nia's greenhouse gas reduction law passed by the Legislature in 2006.

The law requires the state to reduce carbon dioxide emissions to 1990 levels by 2020. The cap-and-trade element covers

Emissions continues on A15

SFGate.com | 2011年10月21日 | 再生纸印刷

旧金山记事报

加州最佳大型报纸—加州报纸出版商协会命名 \$1.00 ★★★★★

限额交易计划即将实施

加州“示范”计划将于1月1日开始

怀亚特·布坎南
萨克拉门托托局报道

萨克拉门托—在加州
空气资源委员会周四投

票做出法规的最后调整后，加州温室气体排放
限额和碳价议定计划将
于1月1日生效。
该委员会于去年12

月首次通过了限额交易
计划。不同于往常由其
员工完成细节工作，此
次该委员会亲自处理针
对温室气体的国家唯一
综合性限制的细节问题。
这是该委员会视为符合

全球气候变暖解决方案
法案(简称AB 32)要求的
最后一项重要法规。
AB 32法案为加州削减温
室气体法，于2006年经
立法通过。该法要求至
2020年，加州的二氧化碳

排放削减至1990年水平。
限额交易要素包括
见 A15



Governor
Schwarzenegger

前任州长
阿诺德·施瓦辛格



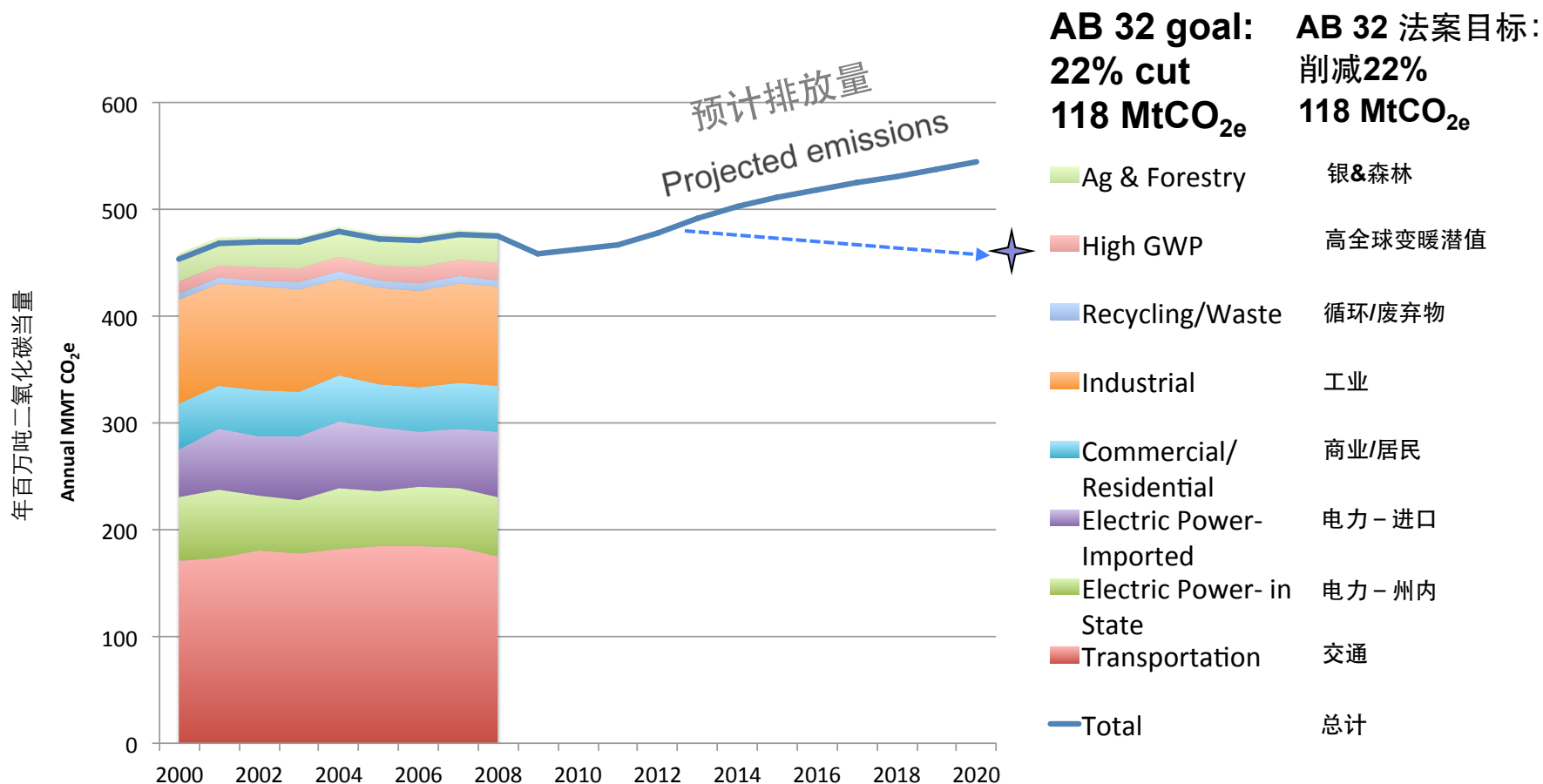
Governor
Brown
现任州长
布朗



CARB Chair
Mary Nichols
玛丽·尼古拉斯
加州空气资源委员会主席

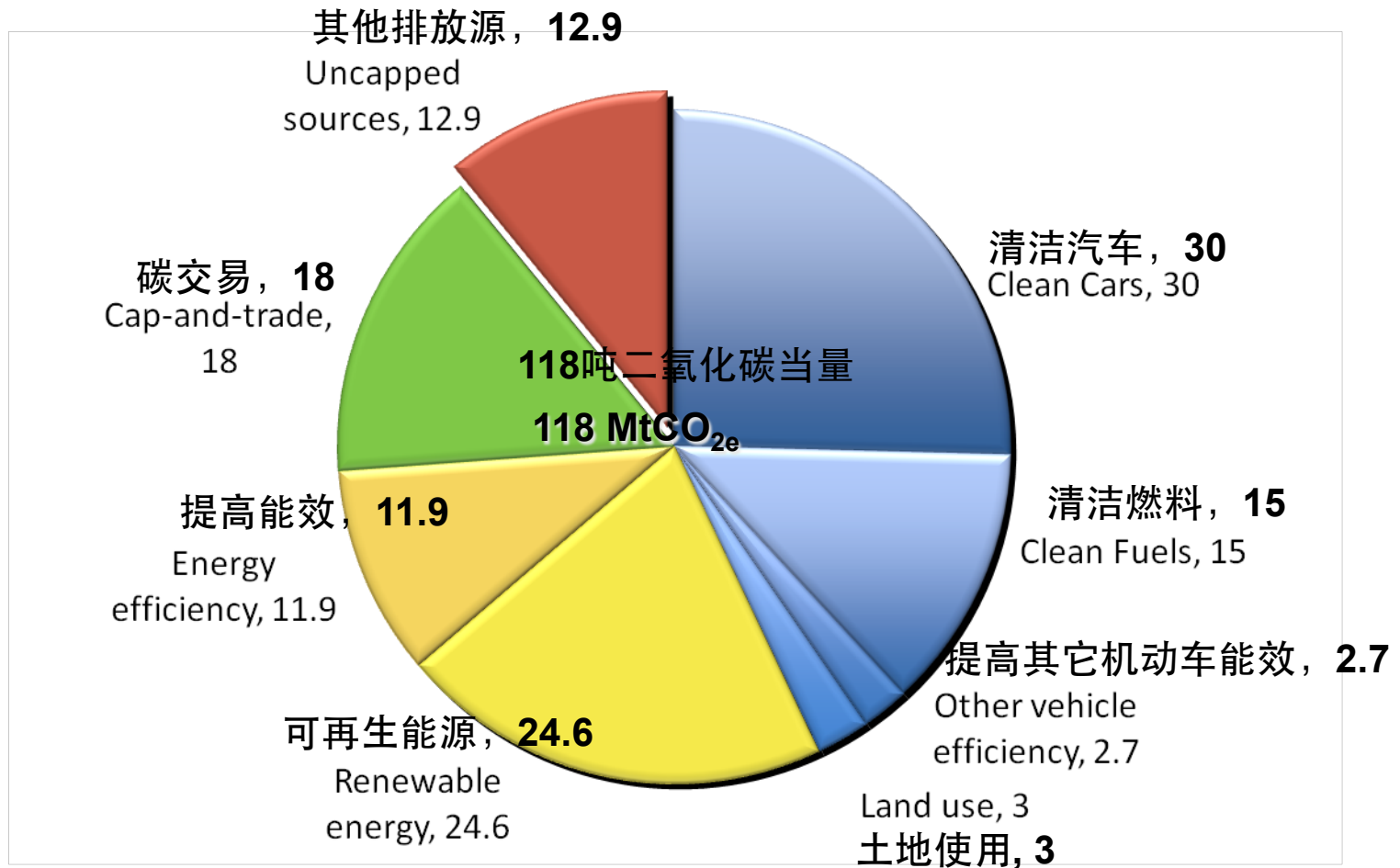
California's Climate Goal

加州温室气体减排目标



AB 32 Reduction Measures

AB 32 法案减排措施

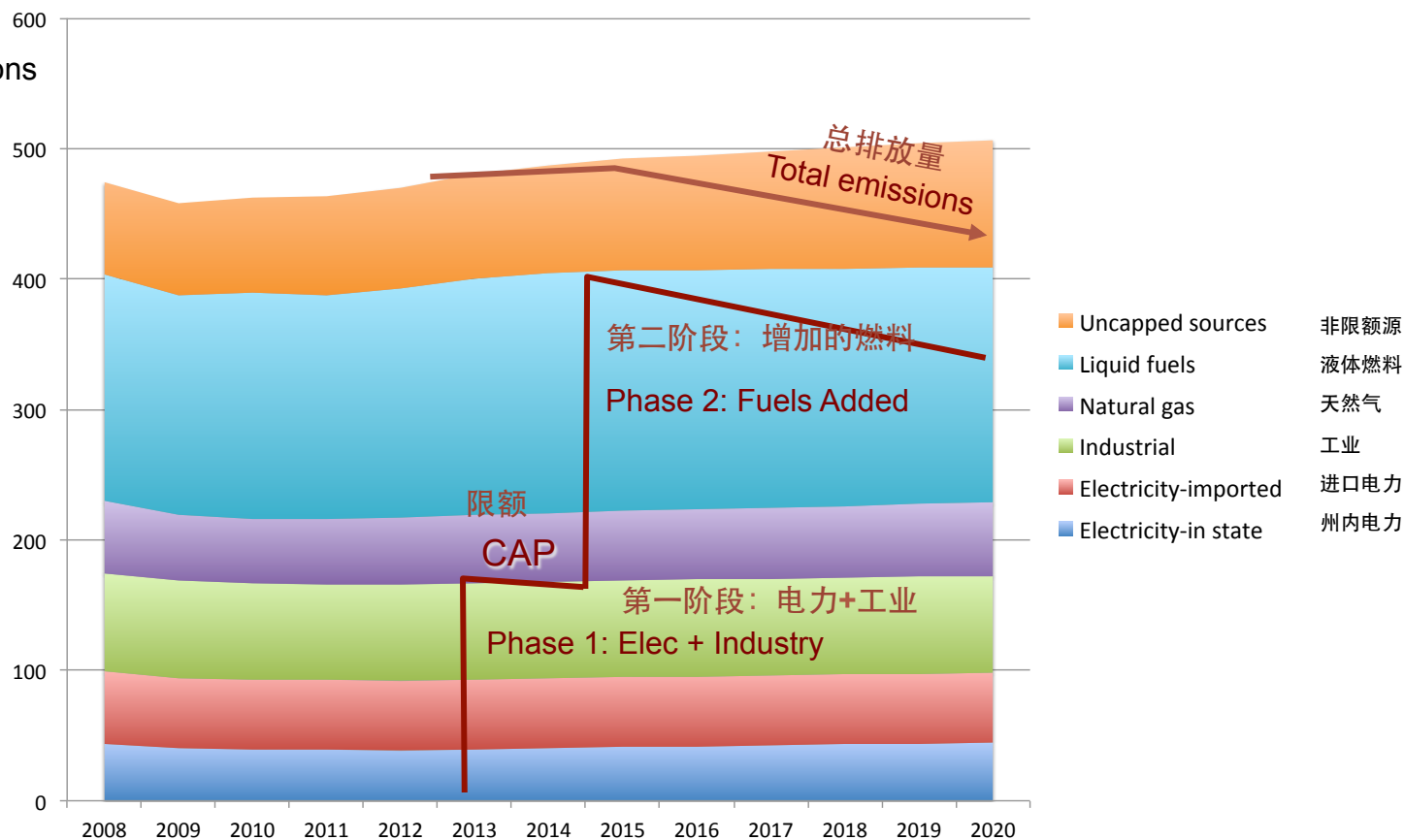


Phasing in the Cap

逐步扩大限排范围

预计排放量
二氧化碳当量

Projected emissions
MtCO_{2e}



Allowances and compliance-I

配额和分配-I

- Large point sources ($>25,000$ tCO_{2e}/y) are covered, as well as electricity importers, natural gas distributors, and transportation fuel suppliers.
 - Includes about 650 facilities.
 - Mandatory reporting since 2008.
 - Distribution utilities receive ~90% free allowances.
 - Must auction their allowances and use proceeds for ratepayer benefit.
- 范围包括直接排放源(年排放高于25000 吨二氧化碳当量)、供电公司、天然气公司和交通燃油供应商。
 - 共包括约650个设施。
 - 早在2008年已开始要求进行温室气体强制性报告制度。
 - 供电公司获得超过~90% 的免费配
 - 必须以拍卖方式分配所获配额，收益使用符合纳税人利益



Allowances and compliance-II

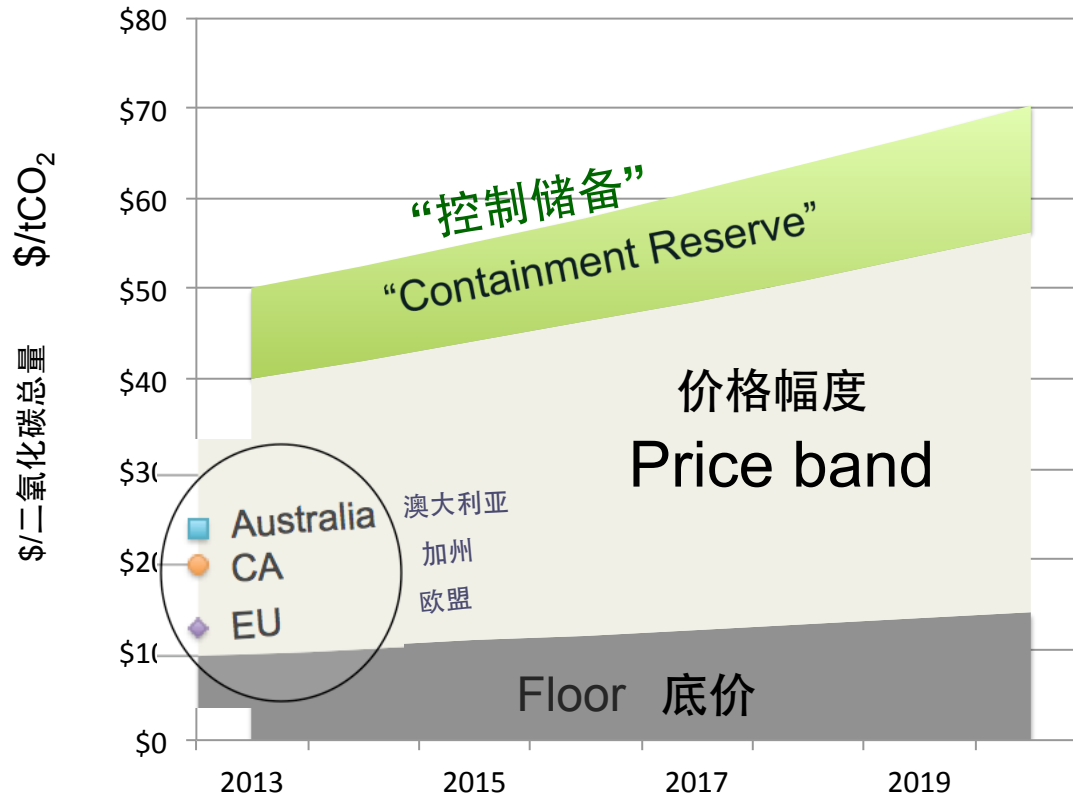
配额和分配- II

- Electricity generators must purchase all allowances at auction.
 - Industrial sources receive ~90% free allowances, declining over time, based on efficiency benchmark, updated annually.
 - Transportation fuel and natural gas suppliers must purchase all allowances beginning in 2015.
- 发电企业必须通过竞拍方式购买所需配额
 - 工业直接排放源将获得~90% 免费配额，免费配额逐年减少，调整方式和能效标杆挂钩。
 - 交通燃料和天然气供应商必须通过竞拍方式购买始于**2015**年的所需配额



Prices and cost containment

价格和成本控制



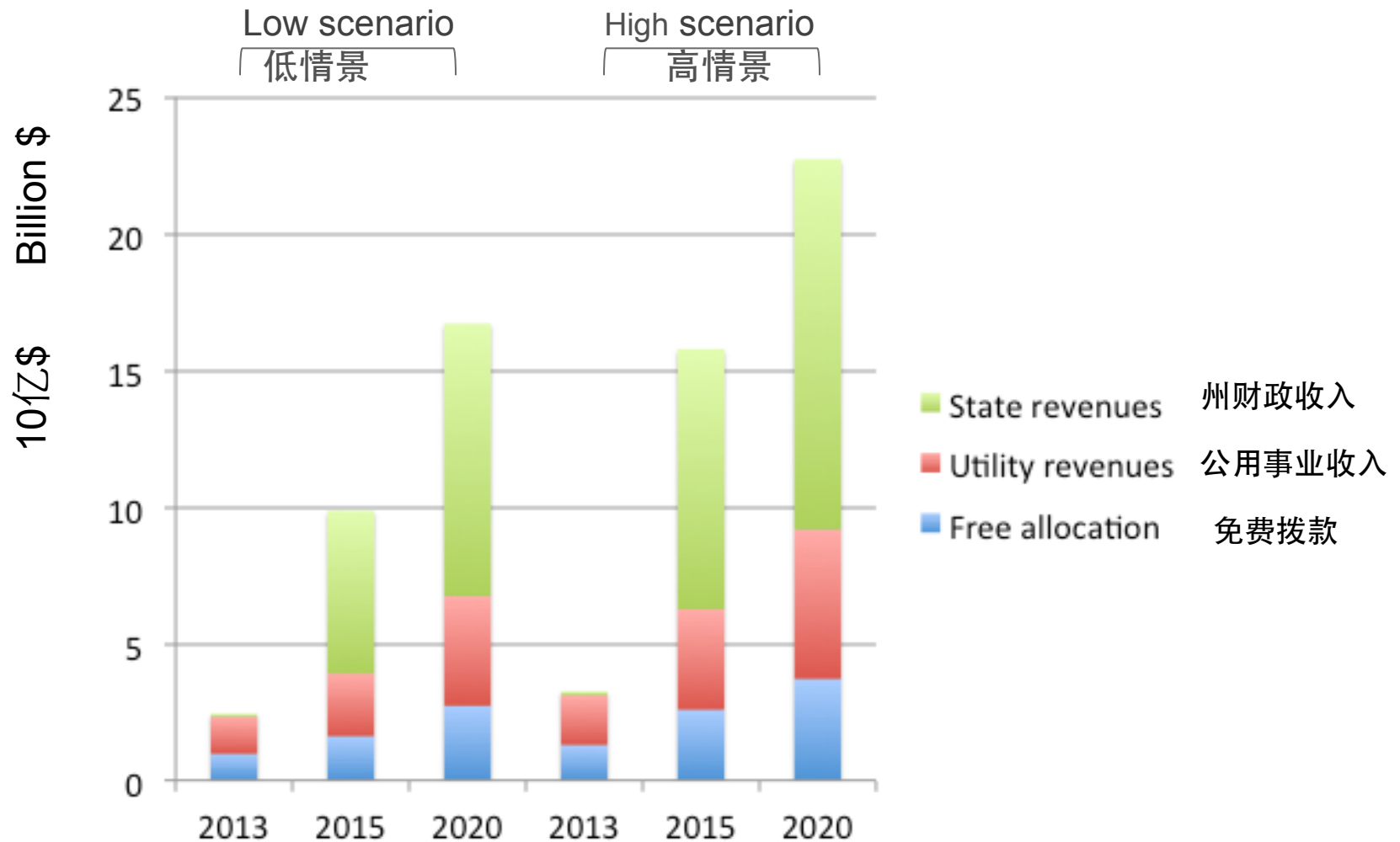
Cost containment mechanisms:
成本控制机制

- Offsets (8% maximum)
碳补偿指标(最高8%)
- Banking and Borrowing
银行和借款
- Reserve Allowances
配额库
- Linking?
其它联系?



Scale of market

市场规模



Source: EF preliminary estimates 来源：能源基金会初步估算

THE ENERGY FOUNDATION



Economic Impacts

经济影响

- Studies have forecast minimal economic impacts from AB 32
GSP: +.2% to -0.6%
Jobs: Net 100,000 job growth.
Small job loss in energy intensive industries; job growth in construction and services
- Clean tech jobs growing 3x faster than overall employment
- California attracts more than 60% of U.S. clean tech investment

- 研究预测实施AB 32法案的最小经济影响是：
 - 州生产总值(**GSP**): 不超过正2%到 负0.6%
 - 就业: 净增10万个工作岗位。
高耗能行业就业有微小影响;
建筑和服务业工作岗位增加
- 清洁技术方面工作岗位的增长为整体行业就业增长的三倍
- 美国60%以上的清洁技术投资在加州

Sources: Air Resources Board, UC Berkeley, ICF, Center for Resource Solutions, Next Ten

来源: 空气资源委员会, 加州大学伯克利分校, ICF咨询公司, “未来十年”组织(Next 10)



Next steps

- Set up market infrastructure and oversight
- Decide revenue allocation
- Consider linking to other programs (Canada, RGGI, Europe, China?)

未来举措

- 建立市场基础设施和监管
- 决定配额收益分配方式
- 考虑与其它项目的联系
(加拿大、美国东部温室气体减排行动(RGGI)、欧洲和中国)



讨 论

Discussion

