

2017 State Utility Commissioners Clean Energy Policy and Technology Leadership Mission

2017州公共事业委员会委员 清洁能源政策和技术领导力访问团

**Presented By:
演讲人**

**Commissioner Jeremy Oden
Alabama Public Service Commission
阿拉巴马州公共服务委员会
Jeremy Oden 委员**

Alabama Public Service Commission



The State of Alabama

阿拉巴马州



- Population: ~ 4.9M
- Key industries: Agriculture (Poultry & Timber), Automobile, Manufacturing
- Port of Mobile one of nation's largest handlers of coal imports and exports
- 人口：约490万
- 关键产业：农业（家禽&木材），汽车，制造业
- Mobile港是美国最大的煤炭进出口港之一



Alabama's Economic Relationship with China

阿拉巴马州与中国的经济关系

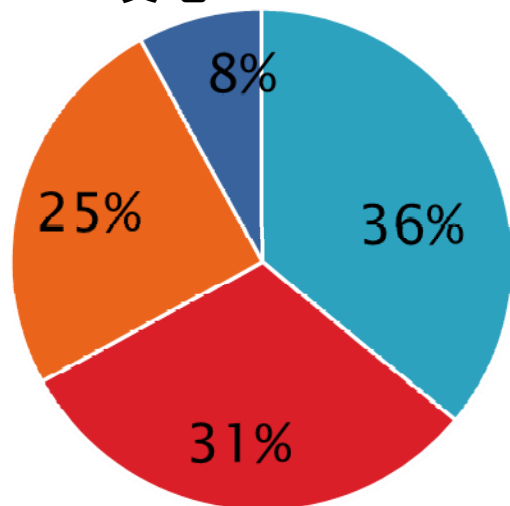
- Alabama is home to three Chinese companies that employ an estimated 700 Alabamians
- China is Alabama's second largest export market, behind only Canada
- More than \$3B Alabama-made goods were shipped to China in 2016
- Top exports include automobiles, chemicals, and agricultural products
- In 2016, Chinese exports to Alabama surpassed \$1.9B
- 阿拉巴马州是三家中国公司的所在地，雇佣大约700名员工
- 中国是阿拉巴马州第二大出口市场，仅次于加拿大
- 2016年，由阿拉巴马州制造的超过30亿美元的商品运往中国
- 主要出口商品包括汽车，化学制品和农产品
- 2016年，中国对阿拉巴马州的出口超过了19亿美元



Alabama's Electricity Generation 阿拉巴马州的发电情况

Electricity Generation (2011)

发电 (2011)

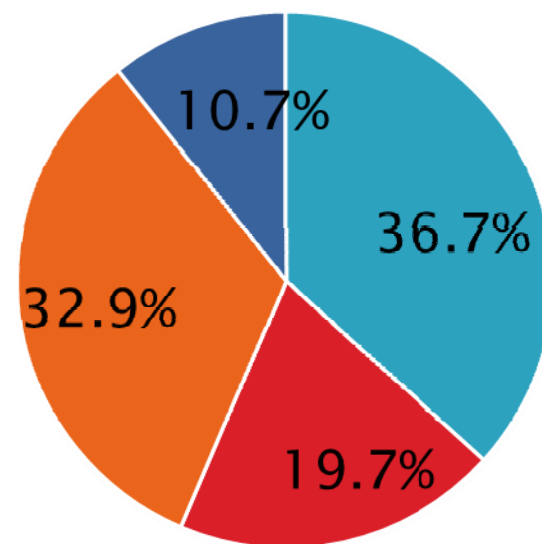


■ Coal 煤
■ Natural Gas 天然气

Electricity Generation

(April 2017)

发电 (2017年4月)



■ Natural Gas 天然气 ■ Coal 煤 ■ Nuclear 核电 ■ Renewables 可再生能源



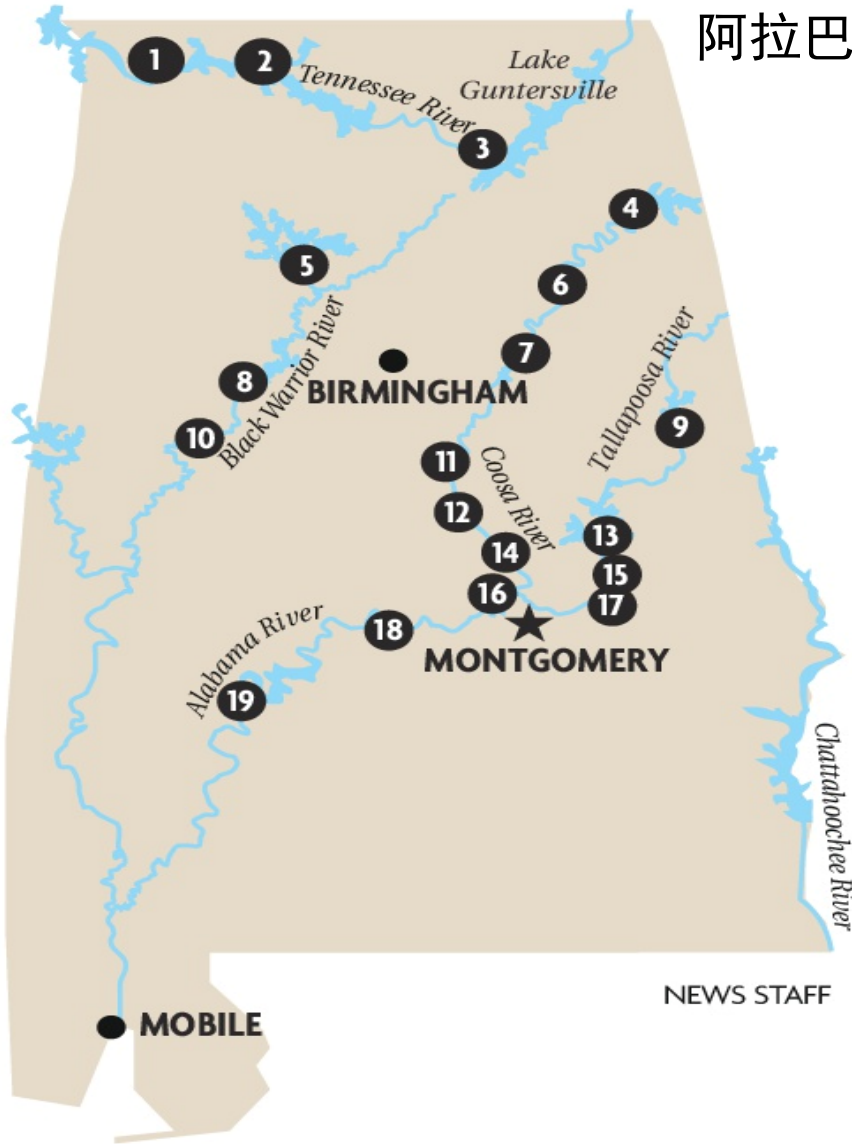
Alabama's Electricity Generation

阿拉巴马州的发电情况

- Browns Ferry Nuclear Plant's 3310mw of nuclear generating capacity is nation's second largest
- Alabama is the nation's 6th largest producer of electricity
- Plant McIntosh 110mw compressed air energy storage generation facility is only one in U.S.
- In 2016, Hydropower provided 70% of renewable generation
- Browns Ferry核电站的核电发电装机为3310兆瓦，是全国第二大核电站
- 阿拉巴马州是全美第六大电力生产地
- McIntosh电厂110Mw压缩空气储能发电设施在美国是唯一一套相关设施
- 2016年，水力发电占可再生能源发电的70%

HYDROELECTRIC POWER PLANTS IN ALABAMA

阿拉巴马州水电站



FACILITY	LOCATION
1. Wilson Dam	Tennessee River near Muscle Shoals
2. Wheeler Dam	Tennessee River near Muscle Shoals
3. Guntersville Dam	Tennessee River near Guntersville
4. Weiss Dam	Coosa River near Leesburg
5. Smith Dam	Black Warrior River near Jasper
6. H.N. Henry Dam	Coosa River near Ohatchee
7. Logan Martin	Coosa River near Vincent
8. Bankhead	Black Warrior River near Northport
9. Harris	Tallapoosa River near Lineville
10. Holt	Black Warrior River near Holt
11. Lay	Coosa River near Clanton
12. Mitchell	Coosa River near Verbena
13. Martin	Tallapoosa River near Tallassee
14. Jordan	Coosa River near Wetumpka
15. Yates	Tallapoosa River near Tallassee
16. Bouldin Dam	Coosa River near Wetumpka
17. Thurlow	Tallapoosa River near Tallassee
18. Henry	Alabama River
19. Millers Ferry	Alabama River

Sources: Alabama Power, Corps of Engineers, TVA



Plant Barry Carbon Capture and Sequestration (CCS) Project Barry电厂碳捕捉与碳封存（CCS）项目

- Partnership with DOE, Alabama Power, Southern Company, Mitsubishi Heavy Industries, and others
 - 25mw slip stream of flue gas from 2657mw coal-fired plant
 - Over 114,000 tons of CO₂ injected in deep saline formation for permanent storage
 - At the time of the project, was the largest CCS demonstration in the United States
- 与美国能源部，阿拉巴马电力公司，南方电力公司，三菱重工等合作
 - 25兆瓦烟道气滑流（由2657兆瓦燃煤电厂产生）
 - 超过114,000吨二氧化碳被注入深层盐层永久封存
 - 该项目在建设时是美国最大的CCS示范项目



Nation Carbon Capture Center (NCCC)

国家碳捕捉中心 (NCCC)

- Partners: DOE, Southern Company, Alabama Power, Multiple International Partners
- Able to perform tests on CO2 capture technology due to multiple, adaptable slipstreams for both pre and post combustion
- NCCC is also home to the Carbon Capture International Test Center Network (ITCN)
- ITCN has facilities worldwide, including China and Korea
- 合作伙伴：美国能源部，南方电力公司，阿拉巴马电力公司，多个国际合作伙伴
- 能够对二氧化碳捕捉技术进行测试，因为燃烧前和燃烧后具有多种可变的滑流
- NCCC也是碳捕捉国际测试中心网络（ITCN）的所在地
- ITCN设施遍布全球，包括中国和韩国



Federal and State Electric Generation Conflicts 联邦和州在发电领域的冲突

- DOE to release grid reliability study
- Baseload generators, particularly nuclear, feel they are not properly compensated
- FERC Chair Chatterjee also commented that coal generator's compensation needs addressed
- Reduced electricity demand, cheap natural gas, and proliferation of renewables having impact
- 美国能源部将开展电网可靠性研究
- 基荷发电厂，特别是核电，认为它们没有得到适当的补偿
- FERC主席Chatterjee也表示，燃煤发电厂的补偿需要解决
- 下降的电力需求，便宜的天然气和可再生能源的发展都造成了影响



Federal and State Electric Generation Conflicts 联邦和州在发电领域的冲突

- Many states have Renewable Portfolio Standards (RPS) which do not align with market pricing
- States also have subsidies which aide in growth of renewables and distort market pricing
- State regulators must ensure reliability and access to electricity for all consumers – from low-income residential to large industrial consumers
- 许多州都有不采用市场定价的可再生能源配额标准（RPS）
- 很多州也有补贴，推进了可再生能源发展，但扭曲了市场定价
- 州监管机构必须确保电力的可靠性以及所有消费者（从低收入居民到大型工业用户）都能利用电



Office of
Alabama Public Service Commissioner
Jeremy Oden

(联系方式)

ALABAMA PUBLIC SERVICE COMMISSION

100 North Union Street – RSA Union Building

Montgomery, Alabama 36104

Telephone: (334) 242-5203

Consumer Services Hotline: 1-800-392-8050

jeremy.oden@psc.Alabama.gov



Commissioner Jeremy H. Oden



JeremyHOdenPSC

