


 Southeast Clean Energy Application Center


 Energy Efficiency & Renewable Energy




Mississippi Biomass & Renewable Energy Council – Energy Policy & Perspectives

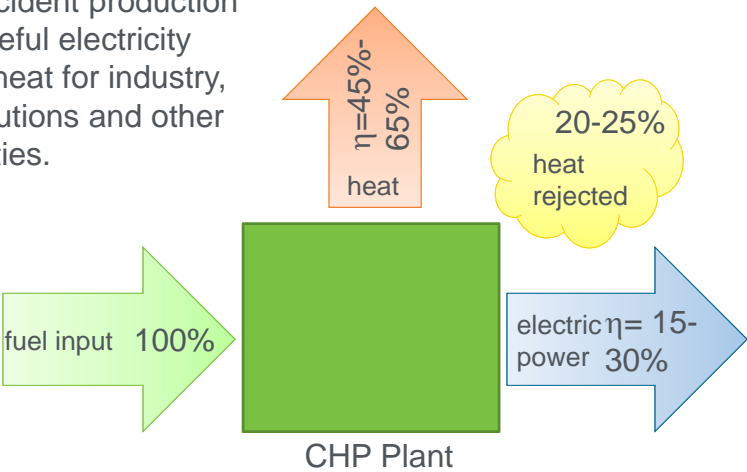
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What is Combined Heat and Power?


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Coincident production of useful electricity and heat for industry, institutions and other facilities.



75%+/- EFFICIENCY FOR CHP SYSTEMS

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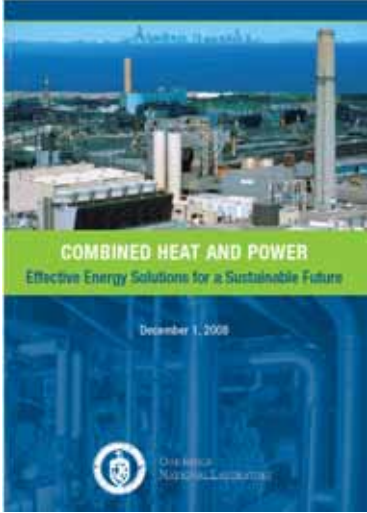
Benefits of CHP to Adopters + Public



- greater fuel efficiency
- heat capture
- fuel diversity
- emissions reductions
- lower costs
- reliable power
- grid modernization
- energy productivity
- domestic employment

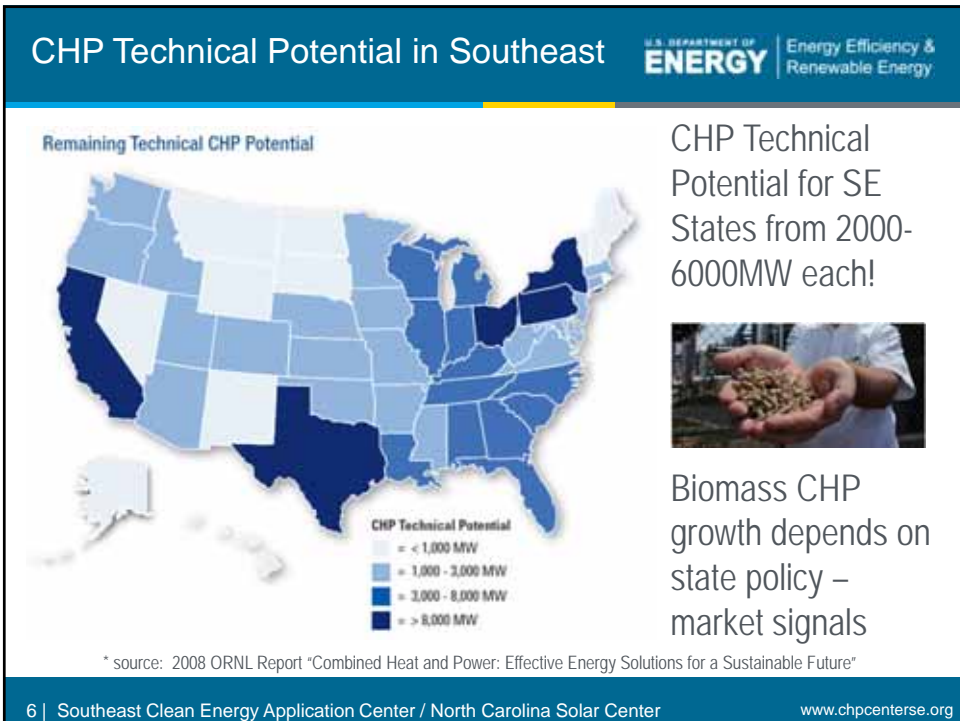
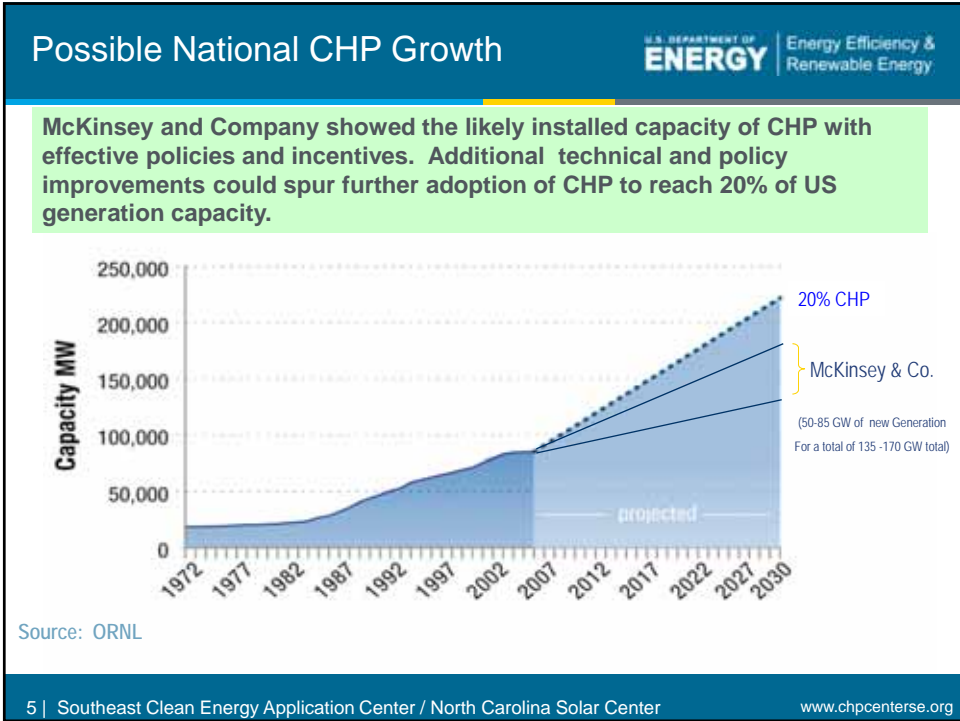
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CHP a National Priority





2006 Existing CHP - 9% of U.S. Capacity	85 GW
Reduced Annual Energy Consumption With CHP	1.9 Quads
Total Annual CO ₂ Reduction	248 MMT
Carbon Saved	68 MMT
Number of Car Equivalents Taken Off Road	45 million
2030 CHP - 20% of U.S. Capacity	240 GW
Reduced Annual Energy Consumption With CHP	5.3 Quads
Total Annual CO ₂ Reduction	648 MMT
Carbon Saved	221 MMT
Number of Car Equivalents Taken Off Road	154 million

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U.S. DEPARTMENT OF ENERGY
Southeast Clean Energy Application Center
Promoting CHP, District Energy, and Waste Heat Recovery






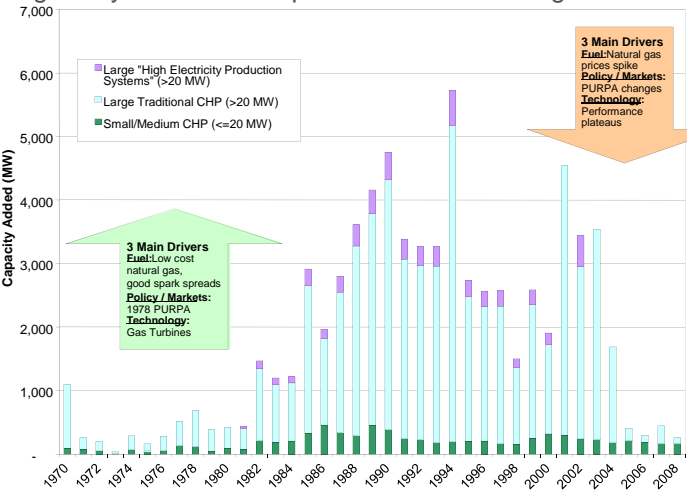
Regional Services
Core Activities
Education & Outreach
Policy Support
Implementation Support

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CHP Market Drivers and Major Issues


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Restarting the CHP market requires overcoming the barriers that negatively affect the adoption of CHP technologies.



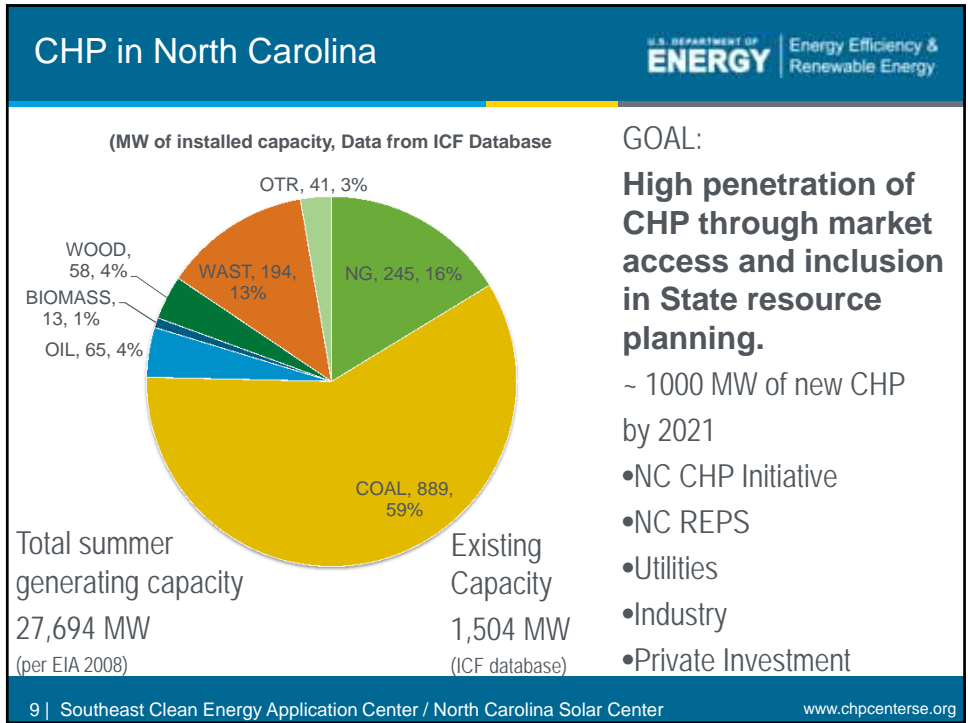
3 Main Drivers
Fuel: Low cost natural gas, good spark spreads
Policy / Markets: 1976 PURPA
Technology: Gas Turbines

3 Main Drivers
Fuel: Natural gas prices spike
Policy / Markets: PURPA changes
Technology: Performance plateaus


These Barriers include:


- Grid Interconnection and Regulatory Issues
- Capital and Life-cycle Cost
- Fuel Availability and Price Volatility
- Uncertainty in the future of CO2 emissions treatment

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Existing NC Energy Policies


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Existing NC Energy Policies that Support CHP & other Distributed Generation

- 35% Renewable Energy ITC
- Renewable & Efficiency Portfolio Standard – 12.5% by 2021
- Interconnection Regs up to 10MW
- Net Metering Regs up to 2MW
- Mandate for economic, reliable generation

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Recent Growth as a Result of REPS U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy



Registrations of New Renewable Energy Facilities

- 2008-2010 – **5,977 MW**
- Q1-2011 – **1,570 MW**


The renewable energy and energy efficiency industries currently support **12,500** full-time equivalent employees (FTEs) in North Carolina, a **22% increase** from 2009. (NCSEA 2010)

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New NC Policy – Market Signals U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy

NC Legislature
SB 694, “Energy Independence & Job Creation in NC”, and act to provide for 3rd party sales of electricity from renewable energy facilities up to 2MW

NC Utilities Commission
Director of the NC Utility Commission recently was quoted “some mix of natural gas and renewable is the most economic way to go”, opening the way for biomass and CHP.



NC Electric Utilities
Studying CHP investment opportunities at 126 sites, intent to include CHP in upcoming its IRP for the first time ever.

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