
July 8, 2009 Briefing
385 Russell Senate Office Building

Presented By:
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President, The Corporation for Economic Opportunity
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SC Emissions By Sector

Figure EX-1. Gross GHG emissions by sector, 1990–2020: historical and projected (consumption-based approach) business-as-usual/base case

MMtCO₂e = million metric tons of carbon dioxide equivalent; RCI = direct fuel use in residential, commercial, and industrial sectors; ODS = ozone depleting substance; Ind. = industrial.
Planning Process, Results & Challenges

• A broad array of stakeholders comprised the Climate, Energy & Commerce Advisory Committee (CECAC), which was broken up into topic Task Forces

• Numerous Task Force and Full Committee meetings

• Reviewed and issued recommendations

• Governor has not yet acted
South Carolina’s Renewable Energy Programs

• 2004: Secured a DOE Biomass planning grant
• Created a Biomass Development Program
• 2006: Created broadly representative SC Biomass Council (SCBC)—www.scbiomass.org
• SCBC developed and lobbied for State Biomass and Bio-Energy Programs
• 2007: General Assembly overrode Governor’s veto and programs began to be implemented
Lessons Learned

• State-level planning and actions are important & should be encouraged
• State governmental actions and support are critical
• Federal encouragement and support of state planning is helpful
• Feedback about state efforts can help shape federal policies and programs
Case Study: How South Carolina’s Renewable Energy Programs & Policies Are Helping ATP Commercialize Torrefaction Technology

By

Joseph J. James, President
Agri-Tech Producers, LLC (ATP)
The Problem

Untreated cellulosic biomass may be as much as 50% water, it’s bulky, of low value, fibrous, perishable, costly to transport and it’s not the most efficient or useable bio-fuel or bio-feedstock.
Solution: NC State University’s Unique Application of Torrefaction Technology

- Untreated Biomass:
  - Bulky
  - Moist
  - Fibrous
  - Perishable
  - Waste
  - Expensive to transport

- Torrefied Biomass:
  - Dense, If Pelletized, Etc.
  - Dry & Water Resistant
  - Easily Crushed
  - Does Not Rot
  - Valuable Fuel
  - Energy Dense

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Torrefaction: Process & Benefits

• Heating (300-400º C) wood, in a low-oxygen environment, evaporates water, volatile organic compounds (VOC’s), and hemicellulose (HC) from the cellulose and lignin.

• The VOC’s and HC are combusted to generate 80% of the torrefaction process heat.

• The resulting and remaining warm lignin acts as a binder when the torrefied wood is compressed.

• Torrefied wood cost-effectively replaces coal, makes superior pellets and is a superior feedstock for further pyrolysis or gasification for combined heat and power or Fischer-Tropsch liquids. Shipping costs/BTU are reduced.

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South Carolina’s Programs

- **SCREG**: Provides matching bio-energy grants.
- **SC EPSCoR**: Covers costs of developing SBIR/STTR grant applications.
- **SC Launch**: Provides matching grants for high-growth technology companies.
- **Technical Assistance**: Includes matchmaking and other technical support.
- **One-Stop Shop**: Coordinates the process of state development and regulatory approvals.

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Suggested Federal Actions

• **Enact a Comprehensive Climate/Energy Bill:** Will create stimulative market conditions.

• **Small Business Financing:** Quickly un-freeze and expand the availability of debt capital.

• **Regional Differences:** Recognize regional strengths and weaknesses.

• **Regional Cooperation:** Encourage states, universities and companies, within regions of common renewable energy resources, to collaborate.

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Suggested Federal Actions Cont...

• **Promote Inter-Agency Collaboration:** Encourage various federal agencies to coordinate and expedite their programs at the national and regional level.

• **Promote Rural Development and Poverty Reduction Opportunities:** Biomass utilization stimulates rural development and poverty reduction.

• **Biomass Zones:** Create multi-state Biomass Zones to achieve multiple benefits.
Thanks!!!

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