CHP Survey Results

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CHP Barriers
Market and Technology Barriers

- Natural gas price volatility
- Insufficient "spark spread"
- Cost of CHP equipment / systems
- Lack of technical data on CHP equipment
- Limited understanding of CHP benefits
- Reliability of CHP systems
- Natural gas availability
- Equipment not environmentally friendly
Utility Interconnection and Regulatory

- Existing utility rate structures / tariffs
- Non cooperative electric utility
- Utility commision not showing leadership
Environmental Permitting Issues

- Lack of state incentives
- Environmental Permitting (Lengthy)
- Emissions regulations and trading
End-user Attitudes

- Inadequate ROI's / paybacks
- No experience with self-generation
- NIMBY attitudes

Barrier

Low Barrier

High Barrier

-0.30

0.50

0.75
CHP Barriers- Points of Disagreement

• Market and Technology
  – Natural Gas Prices
  – Low Electric Rates
  – Lack of Qualified Engineering Firms knowledgeable in CHP
  – Lack of Engineering Firms Willing to Specify CHP systems
  – Mismatch in sizes & timing of electrical and thermal loads
CHP Barriers- Points of Disagreement (cont.)

• Market and Technology
  – Mismatch in sizes & timing of electrical and thermal loads
  – Lack of Certified CHP Systems
  – Lack of Packaged CHP Systems
  – Difficult to Install CHP Systems

• Utility Interconnect and Regulatory Issues
  – Lack of Grid Interconnect Standards
  – Non Cooperative Gas Utility
CHP Barriers- Points of Disagreement (cont.)

• Environmental Issues
  – Environmental Permitting (complex)
  – Environmental Permitting (too costly)
  – Local Code Issues

• End-user Attitudes
  – Lack of Case Studies & Basic information
  – Lack of Screening Tools & assistance
  – Lack of Accurate Financial Analysis Tools
  – Difficult to Obtain Project Financing
Potential Markets for CHP
Industrial Applications

Potential

- Food processing
- Chemicals
- Paper / pulp
- Manufacturing plants
- Petroleum refining
- Metal fabrication

Low Potential

-0.57
-0.50

High Potential

0.18
0.56
0.67
0.78

Potential

-1.00 -0.80 -0.60 -0.40 -0.20 0.00 0.20 0.40 0.60 0.80
Institutional Applications

- Universities
- Hospitals
- Prisons
- Water pumping stations

Potential

Low Potential: -0.57
High Potential: 0.75

Potential Range: -1.00 to 1.00
Commercial Applications

- Industrial parks
- Shopping malls
- Refrigerated warehouses
Fuel Utilization for CHP Systems

% of Those Surveyed

- Process wastes: 0.83
- Biomass: 0.82
- Natural gas: 0.67
- Coal: 0.18
- Fuel oil: 0.17
- Propane: 0.00
Application Type

% of Those Surveyed

- Electrical generation: 0.83
- Process heating: 0.75
- Cooling: 0.58
- Steam generation: 0.42
- Dehumidification: 0.25
- Space heating: 0.83
MOTIVATION

- Disaster recovery
- Power quality
- Power reliability
- Economics
Southeast CHP Application Center

ACTIVITIES
Communication Channel Priorities

- Website: Low = 0.33, High = 0.80
- Sector targeted CHP workshops: Low = 0.67, High = 0.80
- One-on-one meetings: Low = 0.44, High = 0.67
- Presentation at association meetings: Low = 0.67, High = 0.80
Technical Assistance

- Support end-user's planning and RFP process: 0.78
- Feasibility analysis: 0.80
- Assist state utility and environmental regulators: 0.67
- Conduct feasibility studies: 0.64
- Independent evaluation of proposals: 0.44
- Analytical software support: 0.36
State Familiarity

- North Carolina: 16%
- South Carolina: 23%
- Tennessee: 8%
- Georgia: 8%
- Florida: 8%
- Arkansas: 8%
- Alabama: 14%
- Mississippi: 15%
- Florida: 8%
- Georgia: 8%
- Tennessee: 8%
- North Carolina: 16%
- South Carolina: 23%
Roles in CHP Industry

- Academia: 33%
- Government: 25%
- Engineering Firm: 17%
- NGO: 17%
- Equipment Mfg: 8%