



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

## ***Fuels Flexibility Breakout Group Report***



***2006 ITP Corporate Peer Review  
September 7, 2006  
Arlington, Virginia***

# Challenges (Fuel Flexibility)

- Technical
  - Scaleability
  - Economics and costs
  - Multiple users and products, multiple requirements and markets
- Institutional
  - Industry “buy-in”
  - Operational adjustments
- Regulatory
  - Environmental (inc both conventional and carbon)
  - Carbon capture and sequestration
  - Safety
- Infrastructure
  - Regional differences
  - Fuel transportation
  - Stranded investment

## Proposed Solutions/Strategies

- Look at industrial by-products (e.g., corn husks, pallettes, waste materials), biodiesel, sugar cane waste as “opportunity fuels”
- Direct use of biomass/landfill gas
- Investigate small-scale fuel cells
- Target smaller scale applications
- Electrotechnology substitution targetting steam generation
- Waste streams within a facility – focus should be on point-of-use generation of alternate fuel; look at plant’s waste stream
- Look at specific applications in a plant where quality and control issues are not as critical (e.g., steam generation)
- Robust, economical control systems

## Proposed Solutions/Strategies

- Build excess capacity in pipelines
- Solar thermal technologies
- Look at regional solutions depending on feedstock availability
- Start pilot operations by 2008/2009 and find 2-4 uses and have them underway in order to meet goal
- Techno/economic analysis of cost of producing pipeline-quality gas
- Alternative business model for gasification (MSW)
- Look at Sasol experience in South Africa; lessons learned
- Characterize potential applications
- Examine strategies for getting feedstock to the site

# Action Plan

Next Steps
Techno/economic assessment of various alternatives including SNG option
Look at potential applications of electrotechnology and other alternative fuels in the industrial sector
Work with industry and regulatory institutions on needs and implementation challenges
Initial financial opportunity agreement that goes to the public so they can generate proposals