2011 Water Research Center

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Kemper County IGCC Plant
21st Century Coal – Air and Water

- 582 MW TRIG™ technology
- Local lignite fuel source

Water Supply
Treated effluent from city of Meridian

Water Discharge
ZLD by capture, reuse and evaporation of process water

- 65% CO₂ capture for EOR
- Sig reduced NOx, SOx, and Hg
Water Research Center (WRC)

What: • Facility for water-based technology R&D

Where: • Plant Bowen: Cartersville, GA

Who: • GPC and SoCo
    • Southern Research Institute (SRI)
    • Electric Power Research Institute (EPRI)

Goal: • Facilitate innovative technologies to address:
    • Withdrawal, consumption and discharge
    • Regulatory constraints (present and future)
WRC Address Core Issues

1. Fixed Resource with Increasing Demand
   – *Water is a Limited Resource*

2. Regulatory Pressure (Water Management)
   – *Withdrawal, Consumption and Discharge*

3. R&D for Water Conscious Technologies
   – *Business Opportunities (Technology Providers)*
WRC Focus Areas

- Cooling Systems
- Carbon Technology Effects
- Moisture Recovery
- Low Volume Wastewater
- Zero Liquid Discharge
- Solid Landfill
WRC Partnership Strategy

• Engage Technology Providers
• Identify Common R&D Interests and Needs
• Establish Partnership Terms and Conditions
• Determine Suitable Testing Model
• Design and Construct Generic Infrastructure
• Aid System O&M
• Provide Additional Support
Outreach for World-Class Technologies
Pilot-Scale Model

Generic Infrastructure for Testing
WRC Schedule

Phase 0
Technology Assessment and Partnership

Phase 1
Conceptual Design and FEED Study

Phase 2
Construction

Phase 3
Commissioning and Testing
- All areas operating by August 2012
True Collaboration

- Science
  EPRI & SRI

- Design
  A&E Firms

- Regulators
  State & Federal

- Operators
  Georgia Power

- Technology
  OEMs