

Clean Coal 101: Gasification (Biogas Enhancer?)

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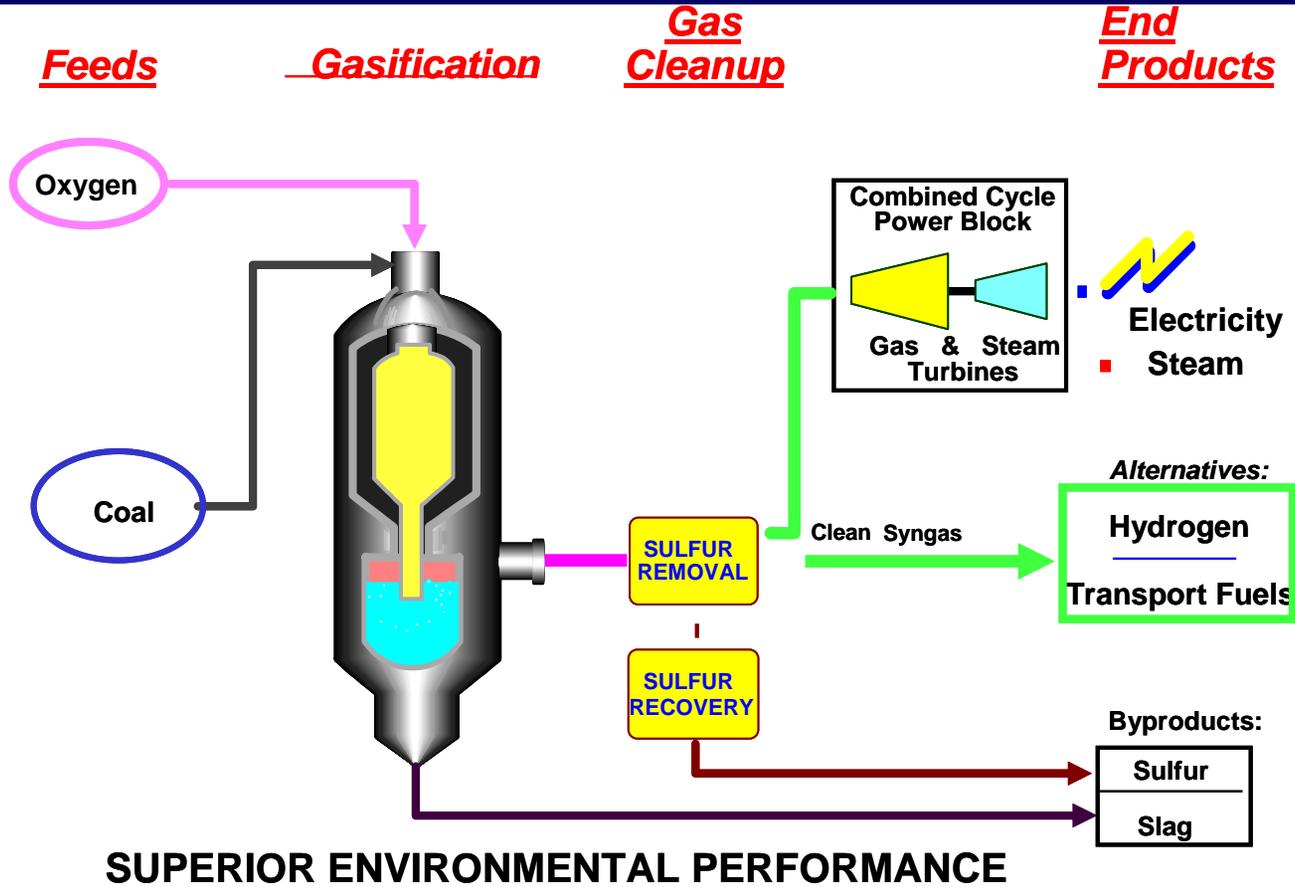


Gov Energy 07
New Orleans

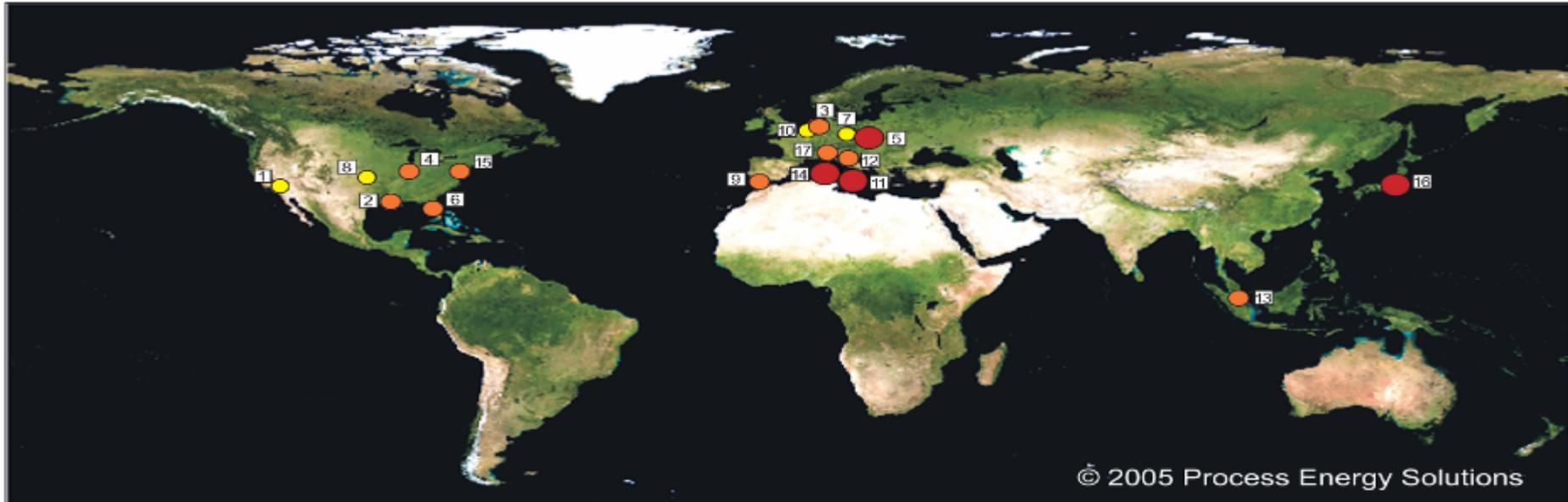


Thayer Gate Energy, LLC

Coal Gasification



Coal Gasification



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IGCC PLANTS (1984-2005)

- | | | |
|-----------------|----------------|------------------|
| 1. Cool Water* | 7. SVZ | 13. ExxonMobil |
| 2. Dow* | 8. Frontier | 14. SARLUX |
| 3. Nuon | 9. Elcogas | 15. Delaware |
| 4. Wabash River | 10. Pernis | 16. Negishi |
| 5. SUAS | 11. ISAB | 17. EniPower |
| 6. Polk | 12. apiEnergia | * decommissioned |

GROSS OUTPUT

- <150 MWe
- 150-325 MWe
- >325 MWe



Coal Gasification
Environmental Factors

Sulfur emissions are lowest of any solids to energy process
(Sulfur recovered as elemental or Sulfuric Acid)

Gasification does not emit NO_x:

(NO_x is emitted upon use of syngas only, or NG start up)

Particulates are the lowest of any coal process

CO₂ Recovery is greatly enhanced, best of any process available
(With Sequestration, better than NG)

Water usage is greatly reduced from traditional plants

Waste solid (Ash) generation is smallest of any coal process



CO 2 Sequestration

- **Enhanced Oil Recovery**
- **Coal Bed Methane**
- **Saline Aquifer**
- **Ocean Burial**



Gasification

What Challenges Will There Be To Putting Together A Project?

- 1) Finding The Best Site
- 2) Power Transmission Lines
- 3) Size Of the Plant (Likely several hundred MW of Power)
- 4) Receiving Coal – Rail / Barge
- 5) Ownership & Financing
- 6) Permitting Issues
 - Water Uses- Air Emissions
 - Visual Montages- Noise Monitoring
 - Polyuse Problems – CO 2
- 8) Approvals Cycle – COE/ Other
- 9) MuniGrid Interfacing

