The Gasification Industry: 2007 Status & Forecast

COAL-GEN Mega Session
August 3, 2007
Milwaukee, WI

James Childress
Executive Director
Gasification Technologies Council
We wish to acknowledge...

- Continuing support of DOE/NETL in maintaining the database project
- Participation of members of Gasification Technologies Council
- Information Technology Department of the GTC

http://www.gasification.org
Information Collection

- Survey based on publicly available information.
- Conservative approach on “planned” projects – assume 4-5 year period from securing financing to operation.
- Cutoff for “firm forecast” is 2010.
- May be other surveys, forecasts, studies that are more aggressive with regard to existing capacity and future growth.

http://www.gasification.org
2007 World Gasification Survey

- Summary Findings
- Geographical Distribution
- Feedstock Distribution
- Product Distribution
- Comparison to 2004 Survey
- Where’s the Growth?
- Outlook - Plausible 2015 Scenario

http://www.gasification.org
## Survey Results
### Operating Plant Statistics 2004 vs. 2007

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants</td>
<td>117 operating plants</td>
<td>138 Operating Plants</td>
</tr>
<tr>
<td></td>
<td>385 gasifiers</td>
<td>417 Gasifiers</td>
</tr>
<tr>
<td></td>
<td>Capacity~45,000 MWth</td>
<td>Capacity~56,000 MWth</td>
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<tr>
<td>Feeds</td>
<td>Coal 49%, Pet. Resid. 36%</td>
<td>Coal 55%, Pet. Resid. 32%</td>
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<td>Products</td>
<td>Products</td>
</tr>
<tr>
<td></td>
<td>Chemicals 37%, F-T 36%, Power 19%</td>
<td>Chemicals 44%, F-T 30%, Power 18%</td>
</tr>
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http://www.gasification.org
Geographical Distribution of World Gasification Capacity

(MW\textsubscript{th} Equivalent)

http://www.gasification.org
Feedstock Distribution of World Gasification Capacity

(MWth Equivalent)

http://www.gasification.org
Product Distribution of World Gasification Capacity

(MWth Equivalent)

http://www.gasification.org
Where’s the Growth?
Shares of Growth in World Gasification Capacity 2004-2010

- Asia: 53%
- Africa/M.E.: 35%
- Europe: 9%
- Americas: 3%

Regions:
- Canada, Long Lake
- Qatar, Pearl GTL

http://www.gasification.org
Shares of Growth in World Gasification Capacity 2004-2010 (without Pearl GTL)

- Asia: 81%
- Europe: 14%
- Americas: 5%
- Canada, Long Lake: 5%
<p>| | |</p>
<table>
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<tbody>
<tr>
<td>China</td>
<td>29</td>
</tr>
<tr>
<td>U.S.</td>
<td>0</td>
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2004-2010 Gasification Scoreboard

http://www.gasification.org
U.S. Gasification Outlook

- No new gasification-based plant has started up since 2002.

- Challenges posed by:
  - High/rising construction costs, project finance, lower cost competition in power market, uncertainty about future public policy incentives/regulations.
  - Anti coal attitudes, even when employing “clean” technologies (e.g. IL Sierra Club v. Taylorville IGCC)

- However, high degree of interest in new plants due to:
  - Oil/gas prices and price expectations,
  - More stringent criteria pollutant control requirements,
  - Growing consensus that CO$_2$ controls are on the horizon.

http://www.gasification.org
Crystal Ball Gazing
“Prime Movers” in Gasification Growth

- **China**
  - Chemicals, fertilizers
  - Coal-to-liquids (direct/indirect)

- **Canada**
  - Oil sands (steam, power, H₂)

- **United States**
  - Polygeneration, H₂, power, fuels
  - Unscientific survey: 5-10 new plants by 2015?

- **Europe**
  - Refining, power, CO₂ driven

http://www.gasification.org
World Gasification Growth: Plausible Scenario

(MWth Equivalent)

72% Growth
2007-2015

http://www.gasification.org
Save the Date

Gasification Technologies 2007 Conference

OCTOBER 14–17, 2007 · HYATT REGENCY · SAN FRANCISCO

http://www.gasification.org
Questions? Comments?

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