This presentation contains forward-looking statements regarding CB&I and represents our expectations and beliefs concerning future events. These forward-looking statements are intended to be covered by the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements involve known and unknown risks and uncertainties. When considering any statements that are predictive in nature, depend upon or refer to future events or conditions, or use or contain words, terms, phrases, or expressions such as “achieve,” “forecast,” “plan,” “propose,” “strategy,” “envision,” “hope,” “will,” “continue,” “potential,” “expect,” “believe,” “anticipate,” “project,” “estimate,” “predict,” “intend,” “should,” “could,” “may,” “might,” or similar forward-looking statements, we refer you to the cautionary statements concerning risk factors and “Forward-Looking Statements” described under “Risk Factors” in Item 1A of our Annual Report filed on Form 10-K filed with the SEC for the year ended December 31, 2016, and any updates to those risk factors or “Forward-Looking Statements” included in our subsequent Quarterly Reports on Form 10-Q filed with the SEC, which cautionary statements are incorporated herein by reference.
AGENDA

E-Gas Gasification Technology

Feedstocks Flexibility and Experiences

Case Study – Urea

E-Gas Projects Feedstock Type

E-Gas Advantages and Conclusion
E-Gas Gasifier

Two-stage design with dry char filtration and recycle combines advantages of slurry and dry feed systems → High conversions, efficient, simple

Demonstrated for low reactivity as well as reactive fuels → Fuel flexible

Continuous Slag Removal – no lock hoppers → Lower cost, more reliable slag system

Compact design, efficient water handling system → Lower cost

Experience-driven design → Licensor hands-on operating experience

Continuous technology improvements → Innovation for better performance, high availability

Balance of low cost and high efficiency
E-Gas technology handles reactive as well as less reactive feedstocks
Higher carbon conversions (>99+%) for low reactivity feedstocks
AGENDA

E-Gas Gasification Technology

Feedstocks Flexibility and Experiences

Case Study – Urea

E-Gas Projects Feedstock Type

E-Gas Advantages and Conclusion
E-GAS BACKGROUND

Bench-Scale, Mini Plant, Pilot Plant 1975 – 1982
36 TPD

Proto 1
1979 - 1983
400 TPD

Proto 2
1983 - 1987
1600 TPD

LGTI
1987 - 1995
2,400 TPD

Wabash River
1995 - 2000
2,500 TPD Coal

Wabash River
2000 - 2016
2,000 TPD Pet coke

Lignite
Sub-Bituminous Coal
Bituminous Coal
Petroleum Coke

40+ YEARS OF CONTINUOUS IMPROVEMENT

A World of Solutions
Processed almost 12 million tons of solid fuels, including:

- ~4 million tons sub-bituminous coal
- ~2 million tons bituminous coal
- ~5.8 million tons petcoke

E-Gas handles reactive as well as less reactive fuels

E-Gas is “Fuel Flexible”
### E-GAS COMMERCIAL EXPERIENCE

<table>
<thead>
<tr>
<th></th>
<th>Sub-bituminous Coal</th>
<th>Bituminous Coal</th>
<th>Petcoke</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ash</strong></td>
<td>% (dry)</td>
<td>5 - 10</td>
<td>13 - 20</td>
</tr>
<tr>
<td><strong>Moisture</strong></td>
<td>%</td>
<td>25 - 30</td>
<td>12 - 17</td>
</tr>
<tr>
<td><strong>HHV</strong></td>
<td>kcal/kg (ar)</td>
<td>4,400 – 4,900</td>
<td>6,500 – 7,200</td>
</tr>
</tbody>
</table>

Last five (5) years - 95% average reliability
Single gasification train operation on petcoke
<table>
<thead>
<tr>
<th><strong>E-GAS EFFLUENTS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solid</strong></td>
</tr>
<tr>
<td>Slag</td>
</tr>
<tr>
<td>Vitreous and non-leachable material</td>
</tr>
<tr>
<td><strong>Liquid</strong></td>
</tr>
<tr>
<td>Water from Chloride Scrubber bottoms</td>
</tr>
<tr>
<td>Processed in Sour Water Treatment Unit</td>
</tr>
<tr>
<td>Recycled back to E-Gas to minimize fresh raw water</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
</tr>
<tr>
<td>Vent streams from Slurry Preparation and Slag Dewatering</td>
</tr>
<tr>
<td>Processed In Thermal Oxidizer and Sulfur Recovery Unit</td>
</tr>
<tr>
<td>May recycle back to E-Gas to minimize sulfur emissions</td>
</tr>
</tbody>
</table>
AGENDA

E-Gas Gasification Technology

Feedstocks Flexibility and Experiences

Case Study – Urea

E-Gas Projects Feedstock Type

E-Gas Advantages and Conclusion
COAL / PETCOKE GASIFICATION to UREA PRODUCTION

Feed to E-Gas

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pet coke</td>
<td>0.4% Ash</td>
</tr>
<tr>
<td>coal</td>
<td>40% Ash</td>
</tr>
<tr>
<td>pet coke</td>
<td>0.4% Ash</td>
</tr>
</tbody>
</table>

Or

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Slag</td>
<td>75 TPD</td>
</tr>
<tr>
<td>Slag</td>
<td>890 TPD</td>
</tr>
</tbody>
</table>

By Products

- Slag 75 TPD
- Slag 890 TPD

Plant Use

- Steam Turbine
- CO Shift AGR & SRU

PSA Exit, mol%

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H₂</td>
<td>99.99</td>
</tr>
<tr>
<td>CO</td>
<td>nil</td>
</tr>
<tr>
<td>CH₄</td>
<td>nil</td>
</tr>
</tbody>
</table>

E-Gas Exit, mol%

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H₂</td>
<td>33-38</td>
</tr>
<tr>
<td>CO</td>
<td>40-50</td>
</tr>
<tr>
<td>CH₄</td>
<td>0.7 – 2.0</td>
</tr>
</tbody>
</table>

Ammonia: 2,600 TPD
Urea: 4,715 TPD

218,000 Nm³/h (H₂+CO) CO Shift

Power

CO² compression for sequestration
Methanol Production
Dry Ice
Simple Payback, Years vs Urea Price for E-Gas and Natural Gas Reforming

Feed: 3,500 TPD
Ammonia: 2,600 TPD
Urea: 4,715 TPD
AGENDA

E-Gas Gasification Technology

Feedstocks Flexibility and Experiences

Case Study – Urea

E-Gas Projects Feedstock Type

E-Gas Advantages and Conclusion
<table>
<thead>
<tr>
<th>Type of Feedstock</th>
<th>Wabash (USA)</th>
<th>RELIANCE (INDIA)</th>
<th>CNOOC (CHINA)</th>
<th>SINCIER (CHINA)</th>
<th>POSCO (S.KOREA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petcoke</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
<td></td>
</tr>
<tr>
<td>Sub-bituminous coal</td>
<td></td>
<td>✅</td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Bituminous coal</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
<td></td>
</tr>
</tbody>
</table>
AGENDA

E-Gas Gasification Technology

Feedstocks Flexibility and Experiences

Case Study – Urea

E-Gas Projects Feedstock Type

E-Gas Advantages and Conclusion
Technical Advantages:
- Higher carbon conversions (>99+%) for low reactivity feedstocks
- Fuel Flexibility
- No problematic waste water stream
- Lower oxygen use than single stage designs
- More compact process design

Capital Cost Advantages:
- Lower structure height
- Compact fire tube syngas cooler instead of large radiant exchanger or additional boilers
- Simpler slag and water handling system (No Lockhoppers)

Best balance of high efficiency and low capex/opex vs other heat recovery design
Contact us:

CB&I – India
Gurgaon Infinity Tower
Gurgaon, India
Anil Sarin, ASarin@cbi.com
Jayesh Shah, Jayesh.Shah@cbi.com