Expanding Natural Gas Markets (PNWER)

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Ian Burkheimer
Director of Business Development
Plum Energy LLC
• Focused on development of small-scale LNG value chains
• Based in Seattle, WA
• Privately held with two outside shareholder
  • Avista Capital
  • World Fuels Service (Fortune 100)
• Key personnel involved in development and operation of several small-scale LNG production facilities
• Helped pioneer new markets in mining and drilling sectors
• Built two LNG production facilities in North Dakota in the last year
THE SMALL-SCALE LNG VALUE CHAIN

Small-Scale LNG Production

LNG Transport and Delivery

On-Site Storage and Regasification

Consumption in LNG Powered Equipment

AGRICULTURE & INDUSTRY

MARINE

MINING

TRUCKING

RAIL

GENSET

DRILLING
UPDATE FROM LAST YEAR
North Dakota LNG
## Pricing of LNG--Example

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Miles</th>
<th>LNG price ($/Gallon)</th>
<th>DGE Price (X 1.68)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedstock for LNG</td>
<td>$3.00/MMBTU</td>
<td>$0.25</td>
<td>$0.42</td>
<td></td>
</tr>
<tr>
<td>Liquefaction</td>
<td>$5.45/MMBTU</td>
<td>$0.45</td>
<td>$0.75</td>
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<tr>
<td>FOB Price</td>
<td>$8.00/MMBTU</td>
<td>$0.70</td>
<td>$1.17</td>
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<tr>
<td>Transport, Delivery, refueling</td>
<td>$3.00/MMBTU</td>
<td>500</td>
<td>$0.25 $0.42</td>
<td></td>
</tr>
<tr>
<td>Delivered Price</td>
<td>$11.00/MMBTU</td>
<td>$0.95</td>
<td>$1.59</td>
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</tr>
</tbody>
</table>

Diesel Rack rates are in the $1.80-2.00 range right now in many markets.
OTHER PROJECTS
Off-Grid Applications

- Oil and Gas
- Asphalt Plants
- Remote Communities

Proprietary and Confidential
CASE STUDIES—MINING
Conversion of Mine-Haul Trucks to Bi-Fuel

Cat 793 converted using EVO-MT system provided by Gaseous Fuel Systems
CAT 793’s at coal mine in the Powder River Basin. Average diesel burn is ~700 gallons per day

Gold Mine in Africa that uses diesel to generate up to 20MW of power when grid goes down.
New Refueling Infrastructure

• Refueling is critical in conversion to LNG as it cannot adversely impact production
• Many mines refuel several trucks at one time, often in multi-station refueling facilities
• Others require mobile refueling, or strategically placed single station fueling
Eagle Butte Mine Site
Ancillary Equipment for Mine Truck Conversion

- Mobile Re-fueler from Chart called an Orca
- Holds 3,500 gallons of LNG
- Submerged delivery pump can deliver ~50 gallons per minute at 210 psig

- Vertical 16,000 gallon tank
- Pump skid to pump 50-100 gpm
- Single refueling nozzle, expandable to 8