Innovations for the Global LNG Industry

Bringing Continents of Energy Together

Marine Technology Society

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President and Chief Executive Officer
Excelerate Energy
First and only company in the world to develop, construct, and operate an offshore LNG receiving facility

First and only company in the world to develop, construct and operate a dockside LNG receiving facility

First and only company to complete commercial LNG ship to ship transfer operations

Soon....

First and only company to develop, construct and operate an offshore LNG receiving terminal on the U.S. East Coast
The Traditional LNG Value Chain

- Natural Gas Production
- Liquefaction Plant
- LNG Shipping
- Regasification Terminal
Energy Bridge™ Regasification Vessels Provide Natural Gas Delivery in Three Ways

Energy Bridge™ was primarily designed to access markets unreachable by conventional means...

Energy Bridge™ Deepwater Port

Excelerate GasPort™

Conventional Land-Based Terminal

...however, its economics are competitive with a conventional, land-based LNG terminal – with added flexibility benefits
Energy Bridge™ Regasification Vessels
Location of the Three Discharge Points

- Conventional LNG Manifold
- High Pressure Gas Manifold
- STL Buoy
The Energy Bridge™ system is based on proven technology used for over a decade in the harsh North Sea marine environment.

When not in use, the buoy remains 80 to 100 feet below the surface.
Energy Bridge™ Technology Makes GasPort Possible

EBRVs come with a high pressure gas manifold as standard equipment.

Allows delivery of regasified LNG directly into a gas pipeline installed on the jetty.
Excelerate Energy’s
Current Market Access Network

~ Gulf Gateway deepwater port
  ~ Commissioned March 2005
  ~ 500 mmcf/d baseload
  ~ 690 mmcf/d peak

~ Northeast Gateway deepwater port
  ~ In-service December 2007
  ~ 400 mmcf/d baseload
  ~ 800+ mmcf/d peak

~ Teesside GasPort™
  ~ Commissioned February 2007
  ~ 400 mmcf/d baseload
  ~ 600 mmcf/d peak
Long permitting process may hinder development of future LNG projects: Excelerate’s Experience

~ The U.S. (Northeast Gateway)
  ~ Overlapping jurisdiction and responsibilities among Agencies
  ~ Evolving rules and policies for approving (offshore) projects
  ~ Results is a lengthy and complex process

~ The UK (Teesside GasPort)
  ~ Defined jurisdiction and responsibilities among Agencies
  ~ Established rules and policies for approving projects
  ~ All parties driven to see project going through – very short process

Impact to Permitting Timeline:
US (Federal = 18 months; State = 4 months; Overall = 22 months)

UK (Overall = 3 months)
Hurricane Rita’s Path
Approximately 25 Miles From The Eye

Source: NOAA
Hurricane Katrina Timeline For Gulf Gateway

EBRV Excellence arrives at Gulf Gateway & starts the commissioning process on 8/19.

Hurricane Katrina makes landfall in Florida on 8/25, with expectations it will trend north.

Hurricane Katrina enters the Gulf of Mexico on 8/26, strengthening to a Category 5 storm by 8/28.

EBRV Excellence continues operations with 5 to 6 meter sea states and ≈50 knots winds on 8/28.

Discharge successfully completed with no interruptions due to weather on 8/30.

Source: AccuWeather, Inc.
Second operational LNG receiving facility in the United Kingdom

Site selection to in-service in 12 months

Low capital cost, high flexibility asset for LNG impact
## Development Timeline

### Chronology of Teesside GasPort

<table>
<thead>
<tr>
<th>Month</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2005</td>
<td>Global price differentials for upcoming winters reveal a market opportunity</td>
</tr>
<tr>
<td>December 2005</td>
<td>Excelerate teams with Gas Strategies to identify best sites in UK for GasPort</td>
</tr>
<tr>
<td>February 2006</td>
<td>Teesport identified as an ideal location – discussion on possible locations ensues</td>
</tr>
<tr>
<td></td>
<td>Agreement reached with PD Teesport to locate on a disused crude jetty – the Excelerate Jetty is born</td>
</tr>
<tr>
<td>June 2006</td>
<td>Design work commences - planning application filed</td>
</tr>
<tr>
<td>August 2006</td>
<td>EPIC contract executed – construction commences</td>
</tr>
<tr>
<td></td>
<td>Planning permissions received – investment to date over £10 million</td>
</tr>
<tr>
<td>February 2007</td>
<td>Detailed risk assessments performed with close regulatory coordination</td>
</tr>
<tr>
<td></td>
<td>First cargo arrival and discharge!</td>
</tr>
</tbody>
</table>
GasPort Offloading Arm
Brings It All Ashore

~ High-pressure gas arm capable of accommodating full flows of up to 600 million cubic feet per day (17 mcmd)

~ Designed to accommodate a wide tidal range while Energy Bridge Regasification Vessels are moored at the jetty.

~ Quick connect / quick disconnect coupling allows for rapid “dry-break” separation in an emergency.

(excelerate energy)
LNGC Excalibur
At Anchor – Scapa Flow

Ship to Ship Transfer February 8-10, 2007
Ship to Ship Transfer February 8-10, 2007
Mooring With Tugboat Assistance

Ship to Ship Transfer February 8-10, 2007
Ship to Ship Transfer February 8-10, 2007
Connecting Hoses

Ship to Ship Transfer February 8-10, 2007
Full Rate Cargo Transfer (5,000 m³/hr)

Ship to Ship Transfer February 8-10, 2007
Draining and Purging Hoses

Ship to Ship Transfer February 8-10, 2007
Ship to Ship Transfer February 8-10, 2007
<table>
<thead>
<tr>
<th>Activity</th>
<th>Time (Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigging Fenders</td>
<td>1.0</td>
</tr>
<tr>
<td>Approach Maneuver</td>
<td>1.9</td>
</tr>
<tr>
<td>Mooring</td>
<td>1.9</td>
</tr>
<tr>
<td>Pre-Transfer Safety Meeting</td>
<td>1.0</td>
</tr>
<tr>
<td>Connecting Hoses</td>
<td>2.5</td>
</tr>
<tr>
<td>Hose Purge &amp; Cool Down</td>
<td>4.0</td>
</tr>
<tr>
<td>Emergency Shut Down Test</td>
<td>0.7</td>
</tr>
<tr>
<td>Cargo Transfer</td>
<td>25.8</td>
</tr>
<tr>
<td>Hose Drain and Purge</td>
<td>2.0</td>
</tr>
<tr>
<td>Disconnect Hoses</td>
<td>2.0</td>
</tr>
<tr>
<td>Letting Go Mooring Lines</td>
<td>0.9</td>
</tr>
<tr>
<td>Separate Vessels</td>
<td>0.3</td>
</tr>
<tr>
<td>Recover Fenders</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>TOTAL STS TRANSFER OPERATION</strong></td>
<td><strong>45.0</strong></td>
</tr>
</tbody>
</table>
To date, Excelerate Energy traded 25 LNG cargoes since early 2005.
Loaded in Trinidad and Tobago

- Sts in Scapa Flow
- 5% discharged via dockside to commission Teesside GasPort
- 90% discharged as liquid at Cove Point
- 5% discharged via the buoy at Gulf Gateway
Implications from the Excelerate Value Chain

Excelerate’s Network and Technology Offer Significant Contributions

~ Low capital cost offers inexpensive insurance plan (aprox $50 MM) for markets/ suppliers

~ Dramatic reduction in capital concentration reduces risks and some costs

~ Time to In-Service reduced by 75%

~ Multi-point delivery approach mitigates risk, and creates combination of liquidity points and high value market access

~ StS technology breaks LNG logistics paradigm