The Shale Revolution

• Abundant domestic crude long-term low crude prices

• Abundant domestic natural gas and NGL’s-long-term low prices.
The Shale Revolution

- 10+ Mega Olefins projects in construction
- 6 Mega LNG projects in construction
- Labor availability challenges
- Higher wages, per diems, retainage bonuses, 50 hrs+/week
The Chemical Customer

Integrated/semi-integrated chemical company
- NGL Feedstocks
- Olefin production from NGL’s
- Derivative production from Olefins (PE, PP, EG, etc.)
The Chemical Customer

Non-integrated Chemical Company

- Derivative production from purchased olefins
- Providing less value added to the molecule
- Project economics are highly CAPEX dependent
- Projects are more discretionary—hence a higher susceptibility to cancellation
Market Observations

- Integrated chemical companies are diverting mid-cap CAPEX to their mega projects.
- Less CAPEX for operating plant projects.
- CAPEX may become more scarce when mega projects near completion (2017-2018)
Market Observations

In general:

- Owner’s Commercial Leaders are becoming the primary project decision makers over Owner Project Leaders.
- More onerous T’s & C’s
- Less forgiveness/understanding for schedule and cost challenges
- More Lump Sum EPC Tenders
- Thinner margins of error
Relative E&C Margins

Before the Shale Revolution
Currently

Offshore Upstream
Onshore Upstream
Refining
Chemicals
Survival Guide for the E&C Industry

- Listen to the Economic Buyer - Commercial/Business Leader
- Manage Owner’s Project Team
- Acknowledge EPC costs have to be contained
  - Offshore Engineering
  - Improve EP/C Interface
  - Embrace EPC
  - Reduce Field Labor
Survival Guide for the E&C Industry continued

• Re-tool the EPC Delivery Process (Project Intrepid)
  – Standardization of Design
  – Re-use of Design
  – Leverage Technology
  – Early Design Freeze (and really mean it!)
  – Engage Key Suppliers and Constructors

• Heavy Engagement of Executive Steering Teams
Consequences of Tougher EPC Execution (Cost Driven)

- Less flexibility and participation in the Design Process
- Less “User Friendly” latitude given to Contractor’s Teams
- No Budget for optimal or perfect solutions
- More likelihood for contention and conflict at project team level
- Project teams with a business mindset versus a technical mindset will survive
Conclusion

• Stormier before the climate gets better
• Excellent project execution skills and project controls adherence are critical for survival
• Engagement at all levels of both the Owner and Contractor’s organizations will be essential for project success.
• Questions and Comments?

Thank You