What is Wrong with EPC Contracting?

enermex

enermex

What Drives the Cost?

- Project Cycle Times
  - Decisions made in timely manner allow for proper definition of the development solution
  - Decisions delayed in the selection of alternatives compress the decisions made in the execution phase of the project and lead to mistakes
  - Time pressure created by decision delays drive Project Managers to "same as before" solutions when it may not be the best.

enermex

What Drives the Cost?

- Distribution of Risk
  - Contractors taking on project risks that they can't define just to win the work
  - High Insurance rates driving operators to push more risk onto contractors
  - Lack of specific experience for either contractor or operator at a given water depth, flow rate, reservoir characteristic, etc.
  - Ultimately risk money is added that is ill defined, too high in price and hidden from the operator. This lack of transparency erodes trust.

enermex

What Drives the Cost?

- Fixed price bidding
  - First cost of fixed price bid is the lowest possible price, yet rarely the final price – it can only go up from there
  - Instinctively drives contractor into "protection" mode rather than "collaborative" mode
  - Unknowns and risk add money to the bid price
  - Overly competitive situations cause contractors to "buy" projects and then rapidly get into trouble during execution phase
  - Ultimate installed price is far higher than necessary

enermex

Less than what? Selecting the Right Benchmarks

- Large share of benchmarks are for shelf projects that don't apply
- Geography plays a very large role in:
  - Best practices – N. Sea vs GOM vs Brazil vs West Africa
  - Government oversight – can impact cost
  - Local infrastructure "assistance" and logistical support
- Operator preferences
  - Can vary widely
  - Sometimes override contractor lessons learned due to "not invented here" attitude
  - Asset managers still driven to first cost of capital rather than optimizing on life of field and aftermarket costs
  - NOC's often focus on lowest initial bid, not life of field cost

enermex

Benchmarks according to Independent Project Analysis (IPA)

- The cost of facilities has improved by about 12 percent in real terms over the last 5 years
- Execution schedules have improved nearly 30 percent over the past decade
- Construction safety has improved dramatically
- Operability has held steady

We should be collectively focusing on positive impacts on Life of Field costs

enermex

A Modest Proposal – How to drive down the costs

- Project Life Cycles
  - Bring preferred equipment suppliers early rather than engineering houses – suppliers have the latest knowledge on technology and field development
  - Select a preferred field development strategy and then freeze designs as early as possible – sometimes "Better is Worse than Good Enough"
  - Go beyond standardized designs – standardize your processes. Repeatable processes are the cornerstone of quality.
  - Embrace the "One Team" approach to achieve the project goal of first oil. Walk your Talk.

enermex

A Modest Proposal – How to drive down the costs

- Distribution of Risk
  - Develop real contractual relationships with key suppliers
    - Standardize contract terms
    - Reduce "risk money" in bids
  - Beware of Frame Agreements
    - Develop pricing based on philosophies of development, not standardized equipment
    - Variations can become expensive
  - Assign the risks to those who can actually impact
    - Installers cannot assume product liabilities
    - Equipment suppliers cannot assume weather downtime
  - Physically separate Risk Price from Equipment/Services Price when constructing contract models – see what you pay for when you review your contracts

enermex

A Modest Proposal – How to drive down the costs

- **Life of Field Approach**
  - Suppliers should interact with Production companies/departments in addition to Development companies/departments
  - Incentivize Asset managers on total field productivity, not just first cost of capital/NPV
    - Provide products and services that extend beyond traditional hardware supply and service contracts
    - Link field development bonuses to long term performance of the assets

A Modest Proposal – How to drive down the costs

- Incentivize suppliers with a Balanced Scorecard that includes Life of Field
  - Equipment uptime
  - Expandability
  - Logistics and continued service
  - Long term support
  - Selling price
  - Shared risk pool
  - Change Order Minimization

enermex

A Modest Proposal – How to drive down the costs

- Embrace New Technology
  - The same "old" two challenges for new technology acceptance:
    - Reliability concerns
    - Value proposition
  - Time for 50% market acceptance of new technology:
    - Consumer products - 7 years
    - Medical (pharmaceuticals) - 12 years
    - Telecoms - 16 years
    - Oil and gas - 32 years
  - Thank goodness there are some Bravehearts out there!

enermex

Some Enabling Technologies/Systems

- **Next generation sub-sea processing & production control management systems**
- **No surface piercing structures**
  - **Subsea to beach**
- **Low cost well construction/intervention systems**

enermex

Conclusions of Note

- Improve your front end design by bringing in the companies that produce the products
- Separate the risk from the product when you ask for pricing – determine the real value of what you need
- Bridge the gap between development and production – get the team involved across that interface to improve your Life of Field
- Understand the new technologies and embrace their potentials

enermex

A Final Thought

We need to continuously challenge all of our current approaches….

Definition of Insanity

"Doing the same thing over and over and expecting a different result"