

Independent Project Analysis, Inc. is the preeminent organization for quantitative analysis of capital project effectiveness worldwide. At IPA, we provide practices you can use to ensure your success.

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## IPA Completes Comprehensive Study of China-based EPC Contractors in the Global Projects Marketplace



By Christina Yip, Senior Project Analyst

China-based engineering, procurement, and construction (EPC) contractors are recent arrivals to the global contracting marketplace.

Most of the capital projects Chinese contractors have supported outside of China are located in developing countries, especially in Africa and Central Asia.<sup>1</sup> However, since 2000 when the Chinese government began pushing its “Go Global” investment strategy, Chinese EPC contractor activity in the global projects marketplace has steadily increased.

China-based EPC contractors may become vital project resources in the future global EPC services marketplace. Chinese contractors are steadily gaining project work

experience inside and outside China. Meanwhile, the demographic challenges of an aging engineering workforce that North America and Europe face in the next couple of decades create an opportunity for new players. Learning to work with Chinese contractors effectively now, when their comparative costs are still low, may provide owners future strategic advantage.

In addition, IPA observes that when Chinese owner companies are doing joint-venture projects with non-Chinese owner companies—and the project is *Continued on page 4*

<sup>1</sup> Peter Reina and Gary J. Tulacz, The Top 225 International Design Firms – Competition on the Rise, ENR, July/August 2014

## Merrow Presents Keynote Address at 2015 COAA Best Practices Conference

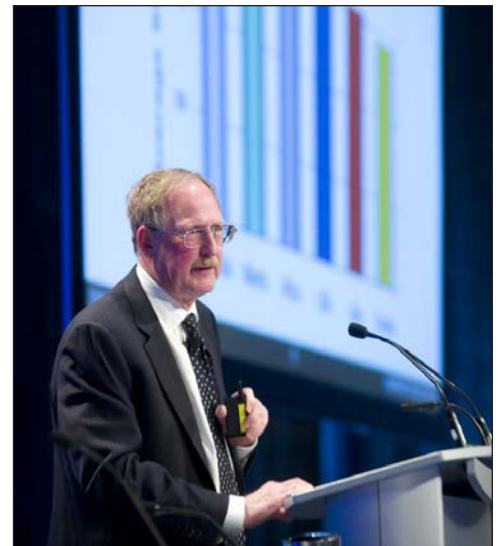
By Keith Mayo, Western Canada Regional Expert

Yes, there are issues in Alberta with craft labor productivity, but when recognized Best Practices for project definition are used on projects, the productivity in Alberta is excellent, IPA Founder and President Edward Merrow recently told owner company representatives attending the 2015 Construction Owners Association of Alberta (COAA) Best Practices Conference in Edmonton, Alberta.

Based on data and research findings derived from IPA's proprietary databases, Merrow warned that trying to fix productivity at the workforce without fixing specific business and project practices first will not be successful.

Delivering the event's keynote address on May 12, titled “Attack the Real Issues: Improving Projects in Alberta”, Merrow highlighted three areas for owner companies to focus on to

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**Alberta Projects:** Better FEL and clarity of business objectives drive improved project outcomes, Merrow tells COAA conference attendees. (Photo credit: COAA)

## E&P Industry’s Lost Decade

### A Missed Opportunity to Strengthen the Industry

By Neeraj Nandurdikar, Director, IPA Oil & Gas Practice

At the time of this writing, prices for West Texas Intermediate (WTI) crude and Brent crude were at \$57.97 and \$65.14 per barrel of oil, respectively—well off the lofty heights of around \$100 per barrel six months ago. As a result, exploration and production (E&P) industry executives—operators and supply chain providers—are adjusting their long-term thinking and project plans for the future by focusing on cost reductions to make asset development projects viable.



Nandurdikar

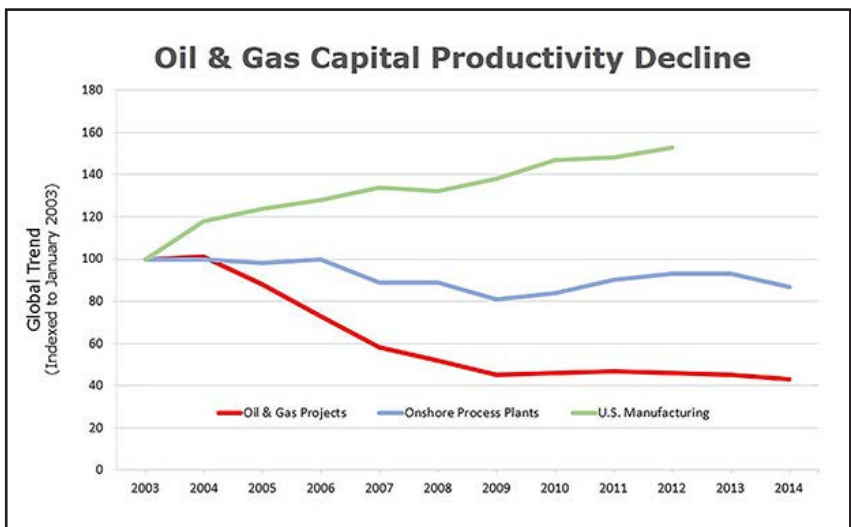
Cost optimization and capital discipline is now all of a sudden the rage—and that is a tragedy. Why? Cost reduction and capital discipline should be ingrained in the DNA of commodity industries—most certainly in the psyche of industry executives. That has not been the case for the E&P Industry for the last decade. As the industry made tremendous technological progress in safety and successfully extracting hydrocarbons from the deepest oceans and most frontier areas of the world, it badly squandered an opportunity to improve capital productivity and efficiency when oil prices were high.

In the last decade, while U.S. manufacturing capital productivity increased and the downstream (refining, petrochemicals) Industry fought through the hot market to maintain its capital productivity, the E&P Industry reduced its productivity by 60 percent. Looked at another way, a dollar spent on an E&P capital project today buys less than half as much project as it used to. What is sad is that the E&P Industry missed an opportunity to take advantage of the favorable conditions during the last decade to put in place Industry-wide initiatives that would have strengthened the Industry to weather the current storm.

Consider how everybody is now espousing the merits of eliminating waste from the industry—excessive documentation requirements, duplicate and confusing standards, no common work breakdown structures, etc. Take the industry buzzword “standardization,” for instance. Standardization initiatives take a long time to implement before they are truly effective. Instead, in the current tight cash situation, upfront CAPEX gets top priority with a much lower priority given to ideas that offer significant savings in operating and maintenance costs further down the road, even though they offer significant improvements in cost in the long run. We should have tackled this in the last decade when we had the cash. But a long-term view doesn’t seem to be the Industry’s strong suit.

Industry as a whole can be made much stronger if we collaborate across owners, vendors, and suppliers—across the entire value chain, in other words—and agree to tackle this loss in productivity and improve efficiency. Low commodity prices have given us a chance. What remains to be seen is whether we will embrace this fight and take a long-term view, or do it the way we always have.

Let’s think about ways to make the Industry stronger!



Interested in learning more about IPA’s Oil & Gas Practice? Neeraj Nandurdikar can be reached at [nnandurdikar@ipaglobal.com](mailto:nnandurdikar@ipaglobal.com).

## The FEL Workshop: Mapping a Course for Successful Projects

### A Customizable Project Planning Activity from the IPA Institute

By Kate Rohrbaugh, IPA Institute Human Capital Strategist

Identifying key capital project definition activities and integrating project team functions into the work process for a particular project is a challenge for many companies. Not only do project definition processes vary by company, but individual project-specific circumstances also affect Front-End Loading (FEL) decisions and, ultimately, project outcomes.

Taking the time to map out critical planning stages is critical to project success. To help a project team identify gaps in project planning and assign leads for filling them, IPA offers the FEL Workshop.

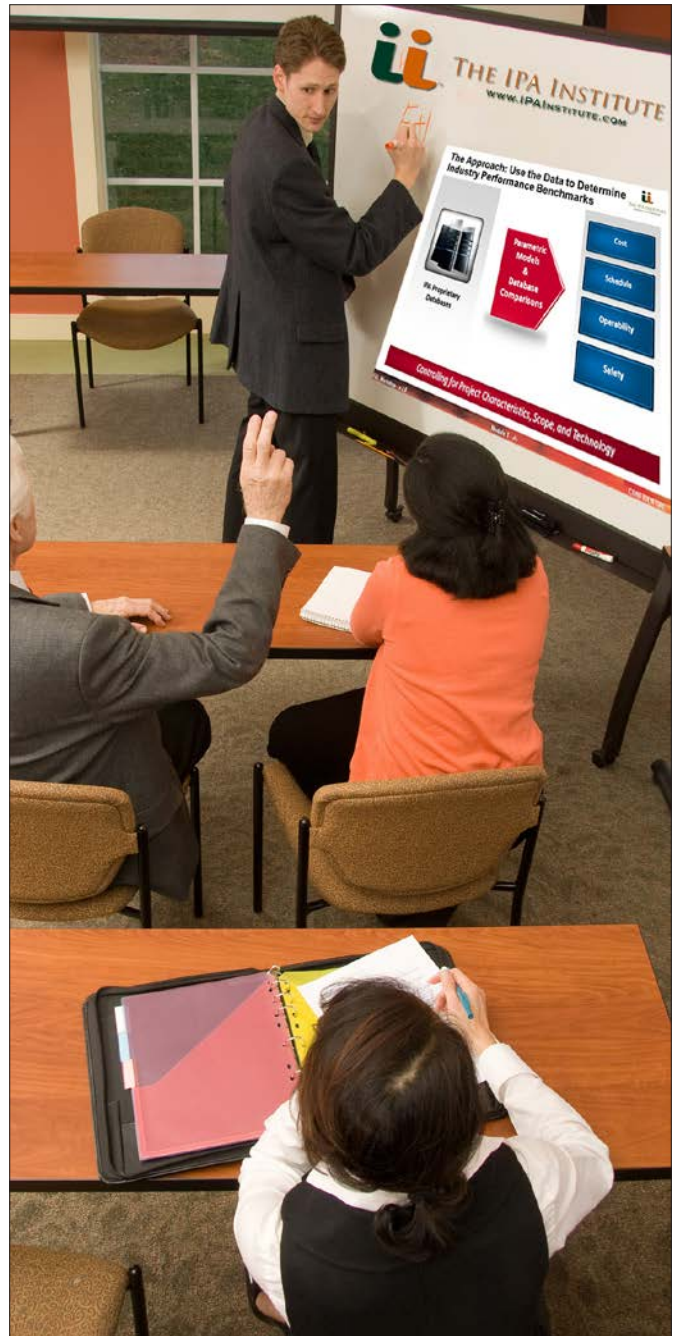
In its most basic form, the FEL Workshop is the engagement of the various functions that make up a project team to develop an FEL Roadmap for a project. Most FEL Workshops are customized to meet the specific project's needs. Workshops usually entail a short presentation on an FEL topic or topics, exercises so participants can apply front-end practices, a review of the FEL Roadmap, and the identification of the gaps—and who is responsible for closing those gaps—during an FEL roadmapping exercise.

The FEL Workshop effectively combines the collective wisdom of the project team with the Best Practices identified by IPA. This is achieved through IPA's facilitation of active engagement of team members from all functions working through a generic FEL Roadmap for a project.

Providing companies with impartial and seasoned advice on project definition and execution activities, experienced IPA project analysts lead workshop facilitation and instruction. Lessons and coaching are rooted in the quantitative and empirical analysis of thousands of capital projects.

The overarching aim of the workshop is to align business goals with project objectives and integrate key project functions, both key elements of strong FEL. For instance, the plans for a schedule-driven project might not include enough time integrating the team—this workshop is an excellent forum for doing so. Another project team might neglect the importance of establishing the right contracting strategy for the project at the proper time.

The workshop is not limited to the creation of an FEL Roadmap, however. Because the workshop is a highly-customizable activity, it can be used to address project-specific concerns and critical planning topics, including risk management, alignment between business and project teams, team development and



**FEL Roadmap:** During the workshop participants create an FEL Roadmap, a precedence diagram identifying key deliverables and activities during all phases of FEL.

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in a location where the Chinese owner has previous project experience or where neither party has a clear location advantage or monopoly—the Chinese owner often favors using its own China-based contractors for some or all project activities. Non-Chinese owner companies stand to benefit from understanding the capabilities and the weaknesses of the Chinese contractors in advance. That way they can better ensure any required mitigation strategies and related management expenses are in place as part of pre-joint venture negotiations.

Because owner companies are showing increasing interest in using Chinese contractors in other parts of the world, either as standalone owners or within joint ventures with Chinese owners, IPA set out to examine several issues regarding the strengths and weaknesses of using Chinese EPC contractors for the development and execution of capital projects.

IPA's study was based on IPA's database of projects executed by owners using Chinese contractors outside of China in the process industry and IPA's discussion with Chinese company representatives. The study was further supplemented with public data and information sourced from both inside and outside China, including lessons learned captured by Chinese contractors and presented at the China Institute of Project Management in China.

As a result of the study, IPA can now quantify the potential cost savings associated with engaging Chinese contractors. IPA can also discuss methods that owner companies use to select and manage these contractors, with specific examples to examine success factors for these strategies.

As noted before, Chinese owners and contractors have



**Figure 1**

been working outside China for a decade, especially in developing regions in Africa and central Asia. Therefore, the Chinese have been building capability to compete with their international counterparts, especially in regions in which the regulatory and environmental regimes closely resemble the Chinese domestic scene.

Additionally, compared to more established providers of EPC services with headquarters in North America, Europe, and Asian nations such as Japan and South Korea, Chinese EPC contractors are often regarded by owner companies as being potential low-cost alternatives for capital project services.

But while China-based EPC firms may deliver certain project cost savings, IPA found that the value is only realized when the owners assign additional project management and construction management resources to their projects. Therefore, even though the overall project cost tends to be lower using China-based EPC firms in projects outside China, the magnitude of overall cost saving is often less than estimated with

additional owner costs incurred during the execution phase.

These findings are aligned with those for projects executed by non-Chinese owners in China—the first project is unlikely to fully realize the potential benefits (especially cost savings) of using Chinese contractors.

Of course, other than the potential cost saving achieved by engaging Chinese EPC firms, there are other considerations supporting and discouraging the use of Chinese EPC firms for projects outside of China. Some of the commonly cited considerations when engaging Chinese EPC contractors outside China are shown in the Figure 1, above.

**Selected Study Highlights**

Project scope and size, innovative technology, intellectual property protection, and the level of local content required as stipulated by the host country are among the project issues organizations should consider when selecting EPC service companies.

In particular, owner companies should:

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- 1. Set realistic expectations when engaging contractors in relation to safety/cost/schedule/quality trade-offs.**

Contractors may appear to provide a cost advantage but owners must be proactive to manage the weaknesses (e.g., quality issues) of the contractors to ensure the cost savings can be realized.

- 2. Staff project teams appropriately during FEL to address specific challenges associated with**

the use of EPC contractors during project execution.

- 3. Understand the general strengths and weaknesses of contractors** so specific risk management activities can be developed to manage them effectively.

- 4. Proactively support contractors to manage local content requirements,** as contractors tend to struggle with local issues such as obtaining local permits and managing local environmental and industrial relationships.

- 5. Avoid using a EPC contractor if protecting intellectual property (IP) is a concern** or prepare for the additional management efforts required and cost involved in setting up an IP protection management plan appropriate for the project.

**Accessing the Study**

For further discussion of your strategy to use Chinese contractors outside China, please contact: Allison J. Aschman, IPA Asia Pacific Regional Director, [aaschman@ipaglobal.com](mailto:aaschman@ipaglobal.com), or Christina Yip, Study Lead, [cyip@ipaglobal.com](mailto:cyip@ipaglobal.com).

**Newly Formed Contractor Research Consortium Participates at Industry Benchmarking Consortium**

For the first time, IPA invited contractors to participate at the Industry Benchmarking Consortium (IBC). The contractor representatives attending the IBC belong to IPA's recently established Contractor Research Consortium (CRC), whose members sponsor research aimed at improving capital project performance for their owner clients.

Members of the CRC have the same values regarding quantitative research as the owner companies that comprise the IBC, which focuses on the capital project system improvement through benchmarking, research, and the exchange of Best Practices. Therefore, it only makes sense for the CRC and IBC members to periodically discuss common topics.

The IBC 2015 conference was held in late March at the Lansdowne Resort in Northern Virginia.

Fluor, Jacobs, and Kiewit are the founding members of the CRC. Senior representatives of these three contractors led a panel discussion at the conference and shared their perspective on work share arrangements with their companies' engineering offices and the use of value centers. Following individual panelist presentations, a 45-minute question and answer session took place among panelists and conference attendees.

More than 40 owner companies were present at the IBC 2015 conference, the consortium's 25th gathering dating back to 1992. (The IBC met twice in 1992.)

The third day of the four-day conference was devoted to research and the main topic was how to improve engineering.

Pieter Diedericks, a recently retired Vice President from Nexen Energy, presented *Innovative Ways to Manage and Control Engineering*. Also, IPA's Dean Findley presented research on Best Practices for using engineering offices located in emerging regions such as India. His presentation was titled *Getting Value from Value Centers*.

**For more information about the CRC, please contact Dean Findley at [dfindley@ipaglobal.com](mailto:dfindley@ipaglobal.com).**



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attain the association’s goal of its members being twice as safe and twice as productive on capital projects by 2020:

- Business behavior
- Team development
- Work process adherence

First, however, Merrow recognized the substantial improvements in safety performance that companies have made since the turn of the century. This fact is highlighted in the IPA safety data and can be seen in public safety data for the construction industry. The industry has benefited from improved safety practices that are being required by most owners, Merrow said, adding that global safety improvement trends are similar to the trends seen in Alberta.

As for construction labor productivity (when measured by quantities installed per craft hour), the data show that productivity is worse in Alberta than on the U.S. Gulf Coast (USGC). In fact, the productivity tends to erode as you move further north in Alberta. However, Merrow told conference attendees that it would be incorrect to come to the conclusion that companies need only focus on improving construction labor productivity at the workforce.

**Project Definition Drives Outcomes**

Merrow noted that there is a lot of variability in the quantity based performance metrics for Alberta (shown in Figure 2). When Alberta projects are separated into those that had *Good* or *Best* FEL (well defined) vs. those that had *Poor* FEL, there is a clear distinction in labour productivity performance.

The well-defined projects in Alberta are just as productive as

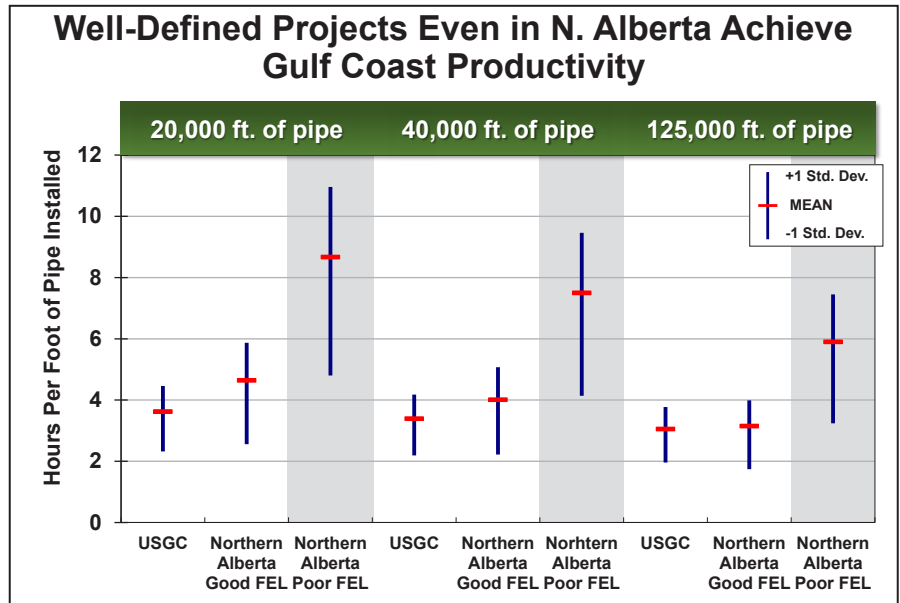


Figure 2

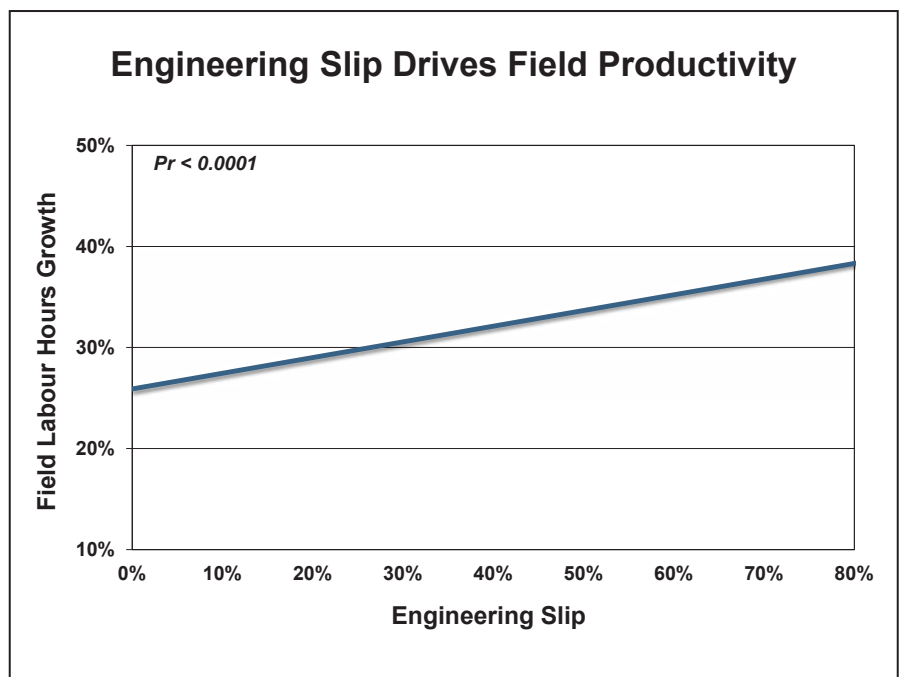


Figure 3

those along the USGC, whereas the *Poor* FEL projects are 2 or 3 times slower. Additionally, engineering drives labor productivity, particularly the availability of engineered materials and accurate design.

Recent IPA research shows that when engineering slips, a sequence of cascading circumstances begins: materials

procurement is late and out of sequence; IFC design is insufficient to start work in the field (but field work starts anyway, especially with EPC contracting), and design falls behind and design quality starts to plummet as the review cycle and quality control are under stress. The end result is poor labour

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productivity (shown in Figure 3).

Alberta projects have the second highest average engineering slip in the world at about 55 percent. Of course the real question is: "What causes engineering to slip?" Merrow said. The three focus areas identified by Merrow go a long way toward answering that question.

### Better Business Behavior

The first area companies should focus on is clarity of business objectives. The lack of clear project objectives and clear project priorities and tradeoffs plagues Alberta projects more than any other region.

Alberta businesses tend to drive schedule more than other regions. The drive for schedule is unnecessary because the Alberta projects in IPA's database produce commodities.

Commodity sales are price driven. Therefore, market timing is rarely a significant factor. The problem with schedule-driven projects is that the practices used, especially on the front-end, tend to be worse than those used for projects that have other outcomes as their top priority. This is because the speed of FEL is outrunning the resources committed to the project and sometimes even the Basic Data development. Schedule-driven projects are more sensitive to practices than any other group of projects.



### Team Development

Engineering slip occurs because of poor team development. Team development quality in Alberta lags other regions. Critical project team members are missing on a higher percentage of projects in Alberta.

Turnover of project team leadership happens more often. Even basic team practices like formally assigning team member roles and responsibilities happens on fewer projects in Alberta compared to other regions. Collectively, issues in team development lead to delays in engineering.

### Adherence to Good Work Processes

Engineering slip also occurs when projects are not adhering to their own work processes. Compared to other regions, fewer projects in Alberta have completed front-end engineering at project sanction. Execution planning lags on Alberta projects also. The incomplete FEL work ends up being done in parallel with engineering.

### For More Information

An in-depth review of Merrow's complete remarks before the COAA and other articles concentrating on issues of interest to companies investing in capital projects in Alberta can be found in the latest issue of *IPA's Western Canada Capital Projects Journal*.

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structuring, use of Value Improvement Practices (VIPs), and commercializing new technology. The workshop can also include a facilitated Business and Engineering Alignment Meeting (BEAM).

It is highly recommended that an IPA-facilitated workshop is held early during FEL.

As an additional benefit, eligible participants may claim PMI® professional development units (PDUs), depending on the duration of the workshop.



For more information about the FEL Workshop, please contact Kate Rohrbaugh, IPA Institute Human Capital Strategist, at: [krohrbaugh@ipaglobal.com](mailto:krohrbaugh@ipaglobal.com).

### Upstream Offshore-Facility Weight Growth Study Article Published

A peer-reviewed paper written by IPAE&P Project Researcher Ray (Zhenhua) Rui and IPA E&P Research Team Leader Jason Walker on recent research examining offshore-facility weight was published in the April 2015 issue of *Oil and Gas Facilities* magazine.

According to the authors, the industry typically allocates 6 percent of dry weight for weight contingency at authorization. However, it actually turns out that one-half of the topsides reviewed for the study had more than 10 percent weight growth from authorization to completion, and more than one in three substructures had more than 10 percent weight growth from authorization to completion.

For more information about the study and to learn more about IPA's E&P business unit, visit <http://www.ipaglobal.com/>.





## IBC 2015 Highlights New Research, Industry Trends

**G**lobal productivity losses and declining engineering quality are among the reasons owner companies are not delivering more effective capital projects, according to Independent Project Analysis (IPA) Inc., research presented to the Industry Benchmarking Consortium (IBC).



The IBC, a cooperative effort facilitated by IPA to improve capital effectiveness among its industry members, meets every year to review project development and execution issues and find out how the individual member company's project performance ranks against industry competitors. The IBC met for the 25th time March 23-26, 2015, at the Lansdowne Resort near Leesburg, Virginia.

Recent IPA research indicates that the cost performance of large capital projects remains worse than what owner companies were able to deliver prior to the global financial crisis in 2008. Due to lower work productivity and poor project definition, or Front-End Loading (FEL), project schedule slip is worsening and project teams are setting soft cost targets to avoid overruns. Research suggests that the global shortage of quality engineering talent is driving degraded capital performance across Industry.

In his keynote address at the IBC 2015 conference, IPA President and CEO Edward Merrow remarked on key areas of concern for Industry. Most notably, there has been a worrisome increase in the frequency of "de facto" authorizations for cost-driven projects, when a company authorizes sufficient funds for project execution to begin before the project completes definition.

Interestingly, the data show that the rise in this phenomenon has not been accompanied by an increase in the frequency of schedule-driven projects in Industry. As such, these projects appear to be rushing for reasons that are not logical in light of long-term capital effectiveness. Merrow said he suspects the commercial organization's "dash for cash" mentality is to blame for de facto authorizations, despite IPA research showing that the strategy undermines capital effectiveness.

### New Research

As usual, IPA presented several new research studies at the consortium meeting, leveraging a rich database of more than 17,000 capital projects.

**Contracting for Engineering and Construction** – Merrow, who led the contracting study, discovered that since the early 2000s, use of engineering, procurement, and construction (EPC) lump-sum contracts has all but disappeared in many global regions, including Southeast Asia.

In its place, the EPCm contract form has become the dominant global contracting approach, although the data show that this strategy is almost universally correlated with poor cost performance. (IPA analysts Chris Valleau and Neal Banks helped prepare the study.)

**Understanding FEL Durations** – This study revealed that widespread focus on FEL speed is misplaced. More than 70 percent of recent large projects missed their planned end of FEL date. It is more important to set a predictable FEL end date and give project teams sufficient time to achieve Best Practical definition. The study also used historical data from refining and chemicals projects to identify key factors that add or subtract time from a given project's FEL duration. (IPA analysts Chris Mullaly and Dhiraj Pant prepared the study.)

**Engineering Value Centers (EVCs)** – Use of EVCs has been increasing for the past decade, but the percent of engineering executed in EVCs remains around 30 percent of all engineering. Project engineering slip

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### IBC Consecutive Attendance Recognition

The following long-standing IBC companies were recognized at IBC 2015 for their demonstrated commitment to continuing improvement in capital effectiveness and consecutive attendance at IBC conferences:

**All 25 IBCs** – Eastman, Chevron

**21 IBCs, from 1995 to 2015** – BP

**20 IBCs, from 1996 to 2015** – Dow



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occurs much less when EVCs are used, and the use of EVCs makes a project more cost effective. The research shows that projects using EVCs generally have better drivers and therefore perform better than those that don't, which suggests that when project teams have more cause to be wary, their due diligence improves. (IPA Subscriptions Director Dean Findley and analyst Kate Rohrbaugh prepared the study.)

**Site Dynamics** – IPA introduced a new methodology called Site Dynamics, which measures a site-based project organization's perception of their working environment. The tool can be used to tailor improvement plans and better understand the capital performance of site-based systems. (IPA analysts Karine Cung and Chris Lampris prepared the study.)

Industry representatives also delivered presentations at this year's consortium meeting, and for the first time at an IBC gathering, contractor firm representatives were invited to attend select sessions and participate in a panel discussion (See story on page 5). Several breakout meetings focusing on topics such as project assurance, team organization, megaprojects, and cost controls were also held.



**For more information about the IBC, including the annual IBC conference and roadshows, please contact Jennifer Nicolaisen at [jnicolaisen@ipaglobal.com](mailto:jnicolaisen@ipaglobal.com).**



## Mid-Year IBC Roadshow Set to Stop in Houston

IBC member Williams is hosting a mid-year roadshow for the 2015 IBC meeting at their facilities in Houston, Texas. Any employee of an IBC member company is invited to attend.

The roadshow will take place July 28-29 and will provide an excellent opportunity to internally disseminate the research and metrics that the industry shared at this year's annual meeting of the IBC. The planned agenda will feature highlights and best-rated studies from the IBC 2015 conference that was held in late March in Northern Virginia.

If you have any questions about the IBC or the North America roadshow, please contact Jennifer Nicolaisen at +1 703 726-5316 or by email at [jnicolaisen@ipaglobal.com](mailto:jnicolaisen@ipaglobal.com). Once we have a better understanding of your interest, we'll send you an invitation packet with payment and registration information.

We look forward to seeing you in Houston this summer!



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- **A Joint Industry Study on Capital Project Excellence**
- **Just Give Me the Money Already!—Best Practices for Project Sanction/Authorization**

## Research Corner: Updates for IPA's Current Research Initiatives



### ■ USGC Construction Labor Market Intelligence (New Subscription Service)

Decline in crude oil prices is impacting capital investment in many industrial sectors. However, prior to the fourth quarter of 2014, a dramatic increase in oil and gas production in the United States spawned one of the largest planned build-outs of industrial projects, including the construction of several large ethylene crackers, LNG export facilities, and fertilizer projects. The USGC is the primary target for most of this investment. What will be the extent of the CAPEX reductions and project cancellations/delays, and how will they affect the state of the USGC labor market? To help answer these questions, IPA is introducing a subscription service to provide market intelligence to owner companies on aggregate construction labor demand and supply, and the quantified effect of the market's response to labor wages and productivity in the USGC industrial construction market.

**i** *Aditya Munshi, Study Principal Investigator: [amunshi@ipaglobal.com](mailto:amunshi@ipaglobal.com)*

### ■ Why Do LNG Projects Cost So Much and Take So Long ? – A Root Cause Analysis

A major oil and gas company recently asked IPA to examine the drivers of cost and schedule performance of recent LNG projects. IPA's detailed database of LNG projects allowed us to analyze these drivers. The study quantified the real growth to cost and schedule over time after controlling for project escalation, project size, complexity, project location, contracting strategy, choice of liquefaction technology, and construction technique. The value of the study was to separate the technical and other inherent drivers of cost and schedule from the practices employed by the project teams. These can be used to help explain the root causes of the growth in costs and lengthening of project schedules.

**i** *Tom Mead, Deputy Director of Research: [tmead@ipaglobal.com](mailto:tmead@ipaglobal.com)*

### ■ Just Give Me the Money Already – Best Practices for Project Authorization

IPA recently published the results from a joint industry study on authorization durations and trends. The study developed norms for authorization durations based on project size and other characteristics, identified practices that can speed the authorization process, and established optimal approval levels based on project size. The study also identified areas where companies are making rational decisions and where companies are perhaps less cognizant of risk. These issues were examined through the lens of quantitative metrics about this critical phase in a project's lifecycle. The study is complete but its results and associated system evaluation are still open to new participants.

**i** *Natalia Zwart, Business Manager, Chemicals, Life Sciences, and Nutrition: [nzwart@ipaglobal.com](mailto:nzwart@ipaglobal.com)*

**i** *David Purzer, Study Principal Investigator: [dpurzer@ipaglobal.com](mailto:dpurzer@ipaglobal.com)*

### ■ 'Best of the Best' Projects Executed by the Oil & Gas Industry

IPA from time to time comes across an oil and gas project that delivers superior results compared to a client company's average project results. Collectively, these individual top performers are known to IPA as the "best of the best" projects. How were these projects developed by the project team and executed differently? What is it about these projects that make them stand out from the rest of the company's projects? IPA offers a study for projects teams and senior management to find out how their project practices and systems stack up against the best of the best projects. By examining this class of projects, it is possible to understand common themes and practices that drive superior performance.

**i** *Tom Mead, Deputy Director of Research: [tmead@ipaglobal.com](mailto:tmead@ipaglobal.com)*

**i** *Neeraj Nandurdikar, Director, Oil & Gas Practice: [nnandurdikar@ipaglobal.com](mailto:nnandurdikar@ipaglobal.com)*

### ■ Understanding Drivers of Rising Owner's Costs in the Oil & Gas Industry

IPA has completed a study to investigate and provide solutions in response to the rapid increases in E&P owner's costs. Participants in this joint industry project received a unique set of benchmarks and insights into why owner's costs are rising so much; how their owner's costs compare with competitors; and how owner's costs should change with project size, complexity, or geography. This study is now complete, but its insights as well as the system diagnostic are available to new participants.

**i** *Jonathan Walker, Study Principal Investigator: [jewalker@ipaglobal.com](mailto:jewalker@ipaglobal.com)*

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### Global Equipment Procurement for Capital Projects

IPA has just completed a study that advances Industry's understanding of the current trends and practices in equipment procurement for capital projects. A key focus area was to evaluate the total cost of procurement in various global regions, taking into account equipment prices, the costs associated with transportation and setting up and maintaining regional procurement organizations, and other costs tied to addressing potential quality problems. The study also assesses how companies' organizational structures, procurement approaches, contracting strategies, and other purchasing practices and strategies affect procurement effectiveness.

**i** **Josh McClellan, Study Principal Investigator:** [jmcclellan@ipaglobal.com](mailto:jmcclellan@ipaglobal.com)

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### Managing Non-Operated Ventures

Companies are good stewards of capital when they consistently identify and develop the most promising investments and execute them well. Many organizations, however, struggle to drive the performance of their non-operated ventures (NOVs). IPA has launched a study with a core group of clients to explore how governance, oversight, and organizational practices contribute to NOV success. IPA will accomplish these goals by analyzing a sample of NOV projects using elements of IPA's Upstream Project Evaluation (PES®) system, interviewing non-operating partner companies, and surveying operating companies. Six operators have joined the study which is now underway. The study remains open to new participants and is expected to be complete in December 2015.

**i** **Rolando Gächter, Business Manager, Exploration and Production:** [rgachter@ipaglobal.com](mailto:rgachter@ipaglobal.com)

**i** **Katya Petrochenkov, Study Principle Investigator:** [kpetrochenkov@ipaglobal.com](mailto:kpetrochenkov@ipaglobal.com)

### Up, Down or Flat? A Forecast of Deepwater Rig Demand Through 2020

An investment firm involved in acquisitions and divestitures of oil and gas assets asked IPA to complete an outlook of deepwater rig demand for the next five years. We provided an overview of the rigs currently under contract, the number of deepwater opportunities that are expected to be developed in five of the main basins for deepwater projects (U.S. Gulf of Mexico, Brazil, South East Asia & Oceania, North Sea, and West Africa), and the number of rigs expected to be required to meet demand based on forecast project activity and break-even analysis under different oil price scenarios. With a demand forecast combined with supply, oil companies and rig operators can get a complete picture of the market.

**i** **Tom Mead, Deputy Director of Research:** [tmead@ipaglobal.com](mailto:tmead@ipaglobal.com)

### Decommissioning Study, Phase 2

Phase 1 of the Decommissioning Study pooled the learnings of decommissioning projects in the Gulf of Mexico (GOM) from several operators and benchmarked company performance against Industry as a whole to guide future projects on cost and schedule planning. The analysis phase of the study was completed on the removal of intact platforms and well abandonments. The second phase of the study proposes to include additional decommissioning activities and an expansion to other regions of the world to provide clients with the most comprehensive study on the scope of decommissioning in Industry.

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### Fab Yard Trends Revealed in Recent E&P Market Study

A major petroleum exploration and production company sought market intelligence on the fabrication costs for large offshore processing facilities. IPA was commissioned to study how these costs varied by global region. We looked at fabrication yard cost trends in terms of cost and capability for six different regions. This study not only helped our client to gauge whether they were getting competitive bids from fabrication yards but also improved the company's understanding of IPA benchmarks.

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## Upcoming IPA Events & Presentations for 2015



**June 16**

### **IPA North America Regional Director to Participate in CURT Webinar**

*IPA North America Regional Director Elizabeth Sanborn* is participating in a **Construction Users Roundtable® (CURT)** webinar for young professionals. Sanborn's presentation is titled: "What is Front-End Loading?"

**June 24 - 25**

### **UCEC 2015 Annual Meeting in Houston, Texas**

The **Upstream Cost Engineering Committee (UCEC)**, formally organized in 1999, is an approved subcommittee of the Upstream Industry Benchmarking Consortium (UIBC). The purpose of the UCEC is to improve upstream project and business results by providing metrics for better cost engineering. For more information, contact **Jonathan Walker** at [jewalker@ipaglobal.com](mailto:jewalker@ipaglobal.com).

**July 28 - 29**

### **Summer IBC Roadshow in Houston, Texas**

Industry Benchmarking Consortium (IBC) member companies are invited to attend a **mid-year IBC roadshow in Houston, Texas**, featuring highlights and best-rated studies from the IBC 2015 conference held in March. For more information, contact **Jennifer Nicolaisen** at [jnicolaisen@ipaglobal.com](mailto:jnicolaisen@ipaglobal.com).

**August 13**

### **IPA Plant-Based Systems Manager to Speak at Southern Company Event**

*IPA Plant-Based Systems Manager Phyllis Kulkarni* will speak at **Southern Company's Technical Conference** in Birmingham, Alabama, an annual event that brings together plant engineering and construction representatives and central PMO group representatives.

**September 28 - 30**

### **CEC 2015 Annual Meeting in Tysons Corner, Virginia**

The **Cost Engineering Committee (CEC)**, an approved subcommittee of the Industry Benchmarking Consortium (IBC), focuses on all aspects of cost (or investment) engineering. This will be the committee's 17th annual meeting. For more information, contact **Luke Wallace** at [lwallace@ipaglobal.com](mailto:lwallace@ipaglobal.com).

**November 16 - 18**

### **UIBC 2015 Annual Meeting in Leesburg, Virginia**

The annual meeting of the **Upstream Industry Benchmarking Consortium (UIBC)** provides an independent forum for each participating company to view its performance against the performance of other companies. For more information, contact **Neeraj Nandurdikar** at [nnandurdikar@ipaglobal.com](mailto:nnandurdikar@ipaglobal.com).





# 2015 Public Course Schedule

*The IPA Institute, a division of Independent Project Analysis (IPA), develops and delivers educational seminars to further IPA's mission to improve capital effectiveness. IPA Institute courses are derived from IPA's extensive research and quantitative analysis of capital projects, linking statistically proven Best Practices to business value. In addition to public courses, the IPA Institute can deliver courses privately at a company's preferred location. Choose from existing off-the-shelf courses or highly customized courses designed to help improve a company's internal training program. To view full course descriptions, pricing, up-to-date registration details, and special discounts, please visit our website at [www.IPAInstitute.com](http://www.IPAInstitute.com).*

### **Project Management Best Practices (22 PDU's)**

June 16-18: Curitiba, Brazil

July 7-9: Santa Cruz, Bolivia

September 1-3: Buenos Aires, Argentina

November 17-19: Seoul, South Korea

### **Establishing Effective Cost & Schedule Processes (14 PDU's)**

August 18-19: Curitiba, Brazil

### **Gatekeeping for Capital Project Governance (16 PDU's)**

October 6-7: Curitiba, Brazil

October 8: London, United Kingdom

### **Best Practices for Small Projects (22 PDU's)**

September 8-10: Kuala Lumpur, Malaysia

September 22-24: The Hague, Netherlands

October 13-15: Orlando, Florida

### **Megaprojects - Concepts, Strategies, and Practices for Success (22 PDU's)**

October 5-7: London, United Kingdom

October 13-15: Perth, Australia

### **Practices for Shorter, More Cost Effective Turnarounds (14 PDU's)**

June 17 - 18: The Hague, The Netherlands

Webinars  
Also  
Available

## **In-House Solutions**

Whether you are looking for a Tailored or Off-the-Shelf seminar, IPA Institute in-house training solutions provide a company-focused, cost-effective vehicle to educate large groups within an organization or project team.

Improve your company's existing internal training program(s) by incorporating the IPA Institute's extensive experience in capital project research, training, and instructional design.

## **PMI Registered Education Provider**

The IPA Institute is a Registered Education Provider (REP) of the Project Management Institute (PMI). All IPA Institute seminars align with current PMBOK standards, enabling PMI credential holders (PMP, PgMP, PMI-SP, PfMP, etc.) to claim Professional Development Units (PDUs) upon completion of each IPA Institute course.



To subscribe to the IPA Newsletter and to view an archive of all past issues, please visit our website at <http://www.ipaglobal.com/knowledge-ideas/subscribe>.

To be kept informed regarding upcoming IPA Institute programs and courses being developed for capital project improvement, please join our mailing list at [www.IPAInstitute.com](http://www.IPAInstitute.com).

## Tailored Services to Address Site-Based Systems Needs

Unfortunately, the performance of many site-based systems is struggling to improve. In fact, many of the systems that IPA has benchmarked multiple times over the past decade actually declined in their most recent benchmarkings, suffering a dip both in practices (such as use of project controls and completion of basic engineering) and outcomes (such as cost effectiveness and cost predictability). Each site-based system has a unique set of issues, but the general theme can be summed as: *chaos*.

Over the past few years, we've seen a higher number of sites with dramatic changes, including change in ownership, change in contractor, change in contractor location (e.g., moving from onsite to offsite), wholesale turnover in site leadership, and more. What this turbulence has revealed is that even top performing systems can be quite fragile. Use of Best Practices is sometimes very much driven by specific leaders within the organization—and when those people move on, things can deteriorate quite rapidly. The key conclusion is that the value proposition for the site project organization must continually be refreshed and shared.

Any time significant turnover occurs, the site must revisit the fundamentals to ensure alignment on the use of Best Practices and solid gatekeeping. A robust framework for measuring and reporting Key Performance Indicators such as the Front-End Loading (FEL) Index and cost deviation can help ensure that new contractors and new owner staff adhere to the same set of expectations.

To address this situation and assist sites in rapidly turning things around, IPA offers a number of smaller, tailored services to address specific improvement needs. Some recent examples of work we have completed with sites include:

- A one-day [in-house training](#) session to orient site leadership to gatekeeping Best Practices and what key deliverables to look for when making investment decisions
- [Special studies/reviews](#) to compare new project cost estimates against norms for similar industry projects, to help companies set more competitive estimates at authorization
- Participation in several internal FEL reviews to offer a cold-eye perspective on whether the site is accurately assessing its level of definition on current small projects and identify gaps that should be closed before authorization



For more information about IPA services for site-based systems, contact Phyllis Kulkarni at [pkulkarni@ipaglobal.com](mailto:pkulkarni@ipaglobal.com).



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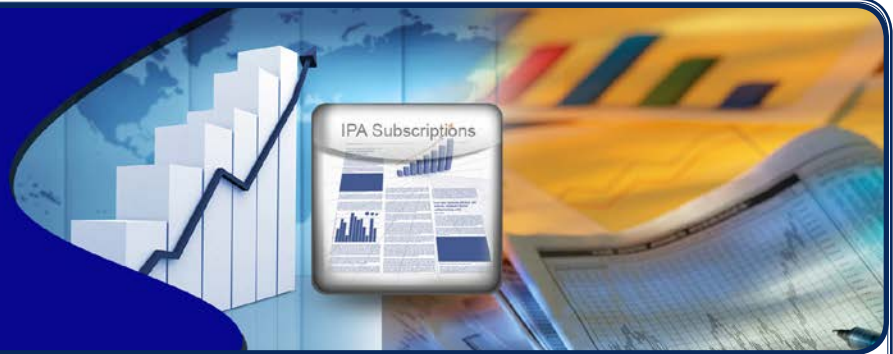
IPA improves the competitiveness of our customers through enabling more effective use of capital in their businesses. It is our mission and unique competence to conduct research into the functioning of capital projects and project systems and to apply the results of that research to help our customers create and use capital assets more efficiently.



The IPA Institute's mission is aligned with the overall IPA mission to improve the capital productivity of its clients. The programs offered provide a forum for in-depth understanding of key elements of the capital project process and how to apply these learnings to effect positive changes and improvements, resulting in the more effective use of capital.



# IPA's SUBSCRIPTION SERVICES



## EPC Market Forecast Newsletter

Providing historical and forecasted escalation indices for global capital project cost categories, IPA's *EPC Market Forecast Newsletter* has become the standard source of cost escalation information of the Engineering, Procurement, and Construction markets and is widely used in estimating the escalation line item in cost estimates.

Using IPA's project's database, price trends are forecasted 5 years ahead for project cost categories, including:

- Engineering Services
- Construction Labor
- Major Equipment
- Bulk Materials
- Composite Regional Price

Published quarterly, the newsletter is available to existing IPA clients on an annual subscription basis.

## Business Professionals' Capital Projects Newsletter

The *Business Professionals' Capital Projects Newsletter* is for the business professional who recognizes financial returns are directly related to capital project performance.

The connection between business and capital project representatives has proven to be a critical leveraging point for improved financial returns.

Through data, articles, and discussion points, this newsletter quantifies the benefits and practices surrounding the business connection to projects, which can help your organization improve the connection between these two functions.

Issues of the newsletter also feature exclusive interviews with industry experts, case studies, and recent IPA research.

## Western Canada Capital Projects Journal

The *Western Canada Capital Projects Journal* aims to deepen and quantify the collective knowledge around regional/local issues that shape how projects are developed.

The goal is to help organizations better manage the Western Canada regional constraints so that capital project performance is improved.

Reasons for these regional challenges include weather-related issues, infrastructure constraints, local labor characteristics, contracting norms, social and political issues, and environmental concerns.

Each edition of the newsletter takes a new step to helping readers better understand and quantify these local challenges.



For more information about IPA's subscription publications, contact Dean Findley at [dfindley@ipaglobal.com](mailto:dfindley@ipaglobal.com).



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